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The Effects of Writing to Remember Katakana and the Teaching Styles Preferred by Students

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ABSTRACT

Katakana is one kind of Japanese character and is often used together with other characters in the same sentence. However, the complexity of the Japanese writing system is said to be one of the reasons for Japanese language learners to stop learning. Despite the recognised difficulties in learning katakana, there is still little research on the subject. The aim of this paper is to find out statistically how students in North Macedonia think about writing and learning katakana, and whether it helps memory retention. In addition, this paper also identifies the teaching style that students want. A total of 19 university students studying Japanese participated in the survey. Findings were that the truth values of seeing and writing were not neutral significantly in the one-sample Wilcoxon test, and that the overall positive position as specific data. Additionally, in Spearman's correlation analysis, there was a significant positive moderate correlation between Memory retention and listening, and also a significant positive moderate correlation between Student attitude and Memory retention. Moreover, students' preferred teaching style is also discussed. However, the same results may not necessarily appear in the case of other kinds of characters or in the case of Japanese language learners from other Balkan countries. In the future, it is recommended that the differences between handwriting and application use should be explored in order to provide a teaching style that overcomes students' weaknesses in katakana.

1. Introduction

The Japanese language uses three types of characters - kanji, hiragana and katakana – simultaneously (Okugakiuchi, 2010). Katakana, the subject of this research, is used not only for foreign words and foreign languages, but also for special words such as onomatopoeia, animal names and plant names. Modern Japanese language is generally expressed using a mixture of kanji and hiragana; however, when katakana is used in the same sentence, the expression stands out. This is the major role of katakana (Yamada, 2020). In other words, katakana can be used as part of grammatical structures for explanatory purposes as well as for emphases, in addition to foreign words and other expressions (Harun & Biduri, 2024). Then,

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according to Okugakiuchi (2010), each letter is perceived and recognised by sight from the perspective of cognitive linguistics. Visual differences are then linked to differences in imagination, and these are expressed as differences in meaning (Okugakiuchi, 2010). This writing system is very important in Japanese because the three kinds of characters are often used together in a single sentence, and each character is combined to express words and form complete sentences (Harun & Biduri, 2024). Japanese language learners therefore need to learn not only hiragana and kanji, but also katakana from the early stages of learning.

However, Hossain and Uddin (2008) have pointed out that Japanese is one of the most challenging languages for non-native speakers due to its complex writing system. Although learners were initially highly motivated, their motivation gradually declined as the course progressed. Consequently, many students enrolled in Japanese courses were unable to continue studying until the end, with one contributing factor being the difficulty in correctly identifying characters (Hossain & Uddin, 2008). The author also observed that even upper beginner-level students who had studied Japanese for over a year at university still carried printed lists of katakana, highlighting their struggles with character learning. This observation served as the inspiration for this research. While the difficulty of learning katakana is well recognised, there is still a lack of research focusing specifically on katakana (Jinnai, 2008; Okugakiuchi, 2010; Yamashita et al., 2023). Additionally, Kobayashi (2024) discovered that university students in North Macedonia had a positive attitude towards writing hiragana. However, the researcher pointed out as a limitation of the study that the same results may not necessarily apply to katakana or kanji. This research, as a case study conducted in a university in North Macedonia, aims to statistically clarify how beginner learners of Japanese perceive writing to remember katakana, as well as how it helps them retain information.

Furthermore, the same questionnaire also surveyed students to identify their preferred teaching style. Learning styles influence students' academic performance (Ariastuti & Wahyudin, 2022). In teaching practice, lecturers must be prepared to adapt, reassess, and reselect textbooks, supplementary materials, and digital tools according to course objectives (Tevdovska & Macedonia, 2024). Ultimately, this research aims to contribute to students' learning while also proposing teaching styles that meet students' expectations.

2. Literature Review

2.1. The Need to Strengthen Katakana Learning

Hossain and Uddin (2008) identified the complex writing system of the Japanese language as one of the reasons why Bangladeshi learners often fail to complete their courses. In their study, they found that all 22 students considered katakana to be more difficult than hiragana. Additionally, Jinnai (2008) compared students' perceptions of writing katakana and hiragana. While only 7% of students described writing hiragana as "difficult" or "very difficult," 37.2% considered writing katakana to be "difficult" or "very difficult," suggesting that katakana poses greater challenges for learners. Jinnai (2008) also noted a strong demand from students for more comprehensive katakana instruction and emphasised that teachers need to help reduce students' aversion to katakana.

2.2. Effectiveness of Handwriting

Mangen et al. (2015) demonstrated the effectiveness of handwriting for recalling words. Specifically, the study involved 36 women aged 19 to 54, who wrote word lists using pen and paper, a laptop keyboard, and an iPad touchscreen. The researchers compared how well

participants could recall the words and found, using non-parametric statistics, that handwriting outperformed the other methods. Additionally, Naka (1997) compared American university students with Japanese students and found that those who used the method of writing to remember achieved better results. This effect was not attributed to the influence of kanji culture. In North Macedonia, Kobayashi (2024) observed a trend indicating that writing hiragana helped learners retain information better than merely looking at the characters. However, no prior research has investigated katakana in North Macedonia. Thus, the following hypotheses were established:

- ***H_1:*** Writing influences the retention of katakana.
- ***H_{01}***: Writing does not influence the retention of katakana.
- ***H_2***: Writing and remembering katakana characters leads to better memory retention compared to only looking at the characters.
- ***H_{02}***: There is no difference in memory retention between writing and remembering katakana characters and merely looking at them (i.e., they are equivalent).

2.3. The Relationship Between Listening Skills and Memory

Word recognition fundamentally involves separating sound groups from auditory input and accessing knowledge about word meanings. However, incomplete auditory perception can impede the recognition of familiar words, presenting a significant barrier to understanding (Stæhr, 2009). The researcher investigated the relationship between listening comprehension and vocabulary knowledge among 115 advanced English learners in Denmark. The study found a significant correlation between "breadth and depth of vocabulary knowledge" and listening comprehension. Vocabulary knowledge greatly facilitated listening comprehension and proved beneficial for other aspects of language acquisition. This research builds on these findings by applying them to katakana, exploring whether listening to audio while viewing and pronouncing characters influences other aspects of language. Based on this, the following hypotheses were formulated:

- ***H_3:*** There is a positive correlation between writing to remember katakana and listening comprehension of katakana audio.
- ***H_{03}:*** There is no correlation between writing to remember katakana and listening comprehension of katakana audio.

2.4. The Impact of Enjoying Writing

Kawai et al. (2020) conducted a study on "writing activities" involving 60 sixth-grade pupils at a public primary school. The study reported that the more positively the pupils responded to liking writing, the more favourable their familiarity with and motivation towards writing grew. Furthermore, based on observational findings, the pupils were reported to engage in the act of writing with enjoyment. Similarly, as Kobayashi (2024) discovered in North Macedonia, university students traditionally displayed a positive attitude towards writing on paper. However, there is still limited prior research exploring the relationship between liking to write and memory retention. Therefore, the following hypotheses were proposed:

- ***H_4:*** There is a positive correlation between "liking to write characters" and "perceived memory retention."
- ***H_{04}:*** There is no correlation between "liking to write characters" and "perceived memory retention."

2.5. Students' Preferred Learning Styles

According to Ariastuti and Wahyudin (2022), differences in learning styles affect students' academic performance. Specifically, a visual learning style is most effective for improving academic achievement, while learning through physical activity is more effective than visual or auditory learning styles in enhancing students' performance. Although students tend to prefer visual learning, learning through physical activity has been found to be the most effective for improving academic outcomes (Ariastuti & Wahyudin, 2022). Furthermore, educational approaches using computers and mobile tools have a positive effect on language education (Pham, 2022). Pham (2022) investigated students' perceptions of the learning support app Quizlet and found that the "Test" mode was particularly effective in helping students review vocabulary, leading to higher satisfaction. While many students appreciated Quizlet's convenience and effectiveness, some were dissatisfied with spelling or definition errors and unnatural pronunciation. Based on the author's experience, students in Japanese elective classes and extracurricular courses were required to use Quizlet's Test mode, aiming for scores of 80% or higher as part of their self-study or occasional assignments. Some students even submitted screenshots of their 100% scores, which served as a clear motivation for their learning. Kurbakova and Kolesnikova (2020) also confirmed the high learning effectiveness of Quizlet in English education, highlighting the need for updates in foreign language education. Furthermore, the effectiveness of using AI tools for language learning was investigated with 405 English as a Foreign Language (EFL) learners, and the analysis using structural equation modelling revealed that learners with a positive attitude towards ChatGPT's usefulness tend to exhibit higher levels of behavioural intent (Liu & Ma, 2024). However, in Japanese classes, students have varying preferences and levels. For example, if a student has already fully understood new vocabulary, participating in a group game using an app during class may actually be inefficient and time-consuming. Therefore, in addition to the element of writing to remember katakana, the preferred teaching styles of students will also be quantitatively clarified.

3. Theoretical Framework

The theoretical framework underlying this research is Schmidt's (1990, 2001) Noticing Hypothesis. According to this hypothesis, language acquisition occurs when learners consciously notice input; without noticing, the input does not contribute to language learning (Schmidt, 1990, 2001). In English letter learning, for Japanese learners, the sounds of "l" and "r" are represented by the *ra*-line in Japanese script. Therefore, in order to acquire these sounds, learners need to notice the distinction between them, and without such awareness, they might not be able to recognise the difference (Ohyama, 2024). Moreover, in the context of Japanese character learning, writing functions as a cognitive method that helps learners become aware of the structure of characters, facilitating their ability to notice the differences between them. According to Sato (2022), noticed input that speakers repeatedly touch is more likely to be recalled as comprehensive episodic memory. As discussed in the literature review, encouraging positive activities like writing has been shown to enhance memory retention. Additionally, if the acquisition of characters is not progressing well, it is recommended to practise writing the shapes of the characters several times to help notice and accurately understand their characteristics (Kobayashi, 2024). Characters such as katakana *n (ン)* and *so (ソ)*, or *shi (シ)* and *tsu (ツ)*, which might be easily confused by merely passively looking at a textbook, can be differentiated through writing, thereby promoting learners' input. This study, based on Schmidt's Noticing Hypothesis, explores the role of writing in facilitating awareness during katakana acquisition and measures the impact of writing on the learners' memory retention.

4. Research Method

4.1. Survey and Sample Size

This research employs a quantitative research approach. To test the hypotheses, the following questions were designed to assess how participants perceive writing katakana as a memorisation method. The variable names are provided before each question. A seven-point Likert scale was used for the questions regarding the various aspects of writing katakana, and the responses were quantitatively analysed.

- Did you practise writing katakana? (Yes or No)
- Reading: I can read katakana without Roman letters or hiragana annotations.
- (1: Strongly disagree --- 4: Neither --- 7: Strongly agree; the same scale applies to the following questions)
- Memory: Regarding katakana, writing the characters helped me remember them better than just looking at them in the textbook.
- Motivation: The lecturer providing katakana worksheets boosted my motivation for learning.
- Memory from listening: As homework, listening to the katakana sounds and pronouncing them helped with my memory.
- Student ATT (Attitude): I enjoy practising by writing the characters.

In the same cohort, prior to this survey, a mini-test on katakana reading was conducted. The results showed a mean score of 8.5 and a median score of 9 out of 10 points, which can serve as an indicator of the reading skill (Reading). Additionally, to improve the extracurricular classes, students were also asked about their preferred teaching styles. In recent years, there has been a positive student attitude towards educational approaches that incorporate mobile tools or learning apps (Pham, 2022), as well as AI tools for language learning, particularly English, where high levels of behavioural intent have been observed (Liu & Ma, 2024). Furthermore, in North Macedonia, there has been an increasing enthusiasm for ICT-based education in the past decade (Jovkovska, 2023). Therefore, to provide up-to-date data on the teaching styles students prefer in Japanese language education in North Macedonia, these questions were also included. The full survey is provided in the Appendix.

The sample population consisted of 24 students from the elective course Japanese Language 2 and the extracurricular Japanese language course in the summer semester. Therefore, the case study population comprises 24 participants. The required sample size was calculated to be 22 (95% confidence interval, ±5% margin of error, 80% response rate). The study received responses from 19 participants.

4.2. Ethical Considerations

I conducted a survey using Google Forms from 26th March to 2nd April 2024. Ethical considerations were outlined at the beginning of the survey. Specifically, it was stated that anonymity would be maintained, participation was voluntary, and there would be no disadvantages for those who chose not to participate. Additionally, it was clarified that the survey results would be used solely for research purposes and to improve the course. Furthermore, the settings were configured to ensure that email addresses would not be collected. This approach ensured complete anonymity, maintained a positive trust relationship between the researcher and participants, and allowed respondents to freely and

confidently express their opinions (Kang & Hwang, 2023). The survey contained a total of 12 questions, designed with a minimal number of questions to keep the required response time between 3 to 5 minutes, making it as low-burden as possible for the students.

4.3. Data Analysis

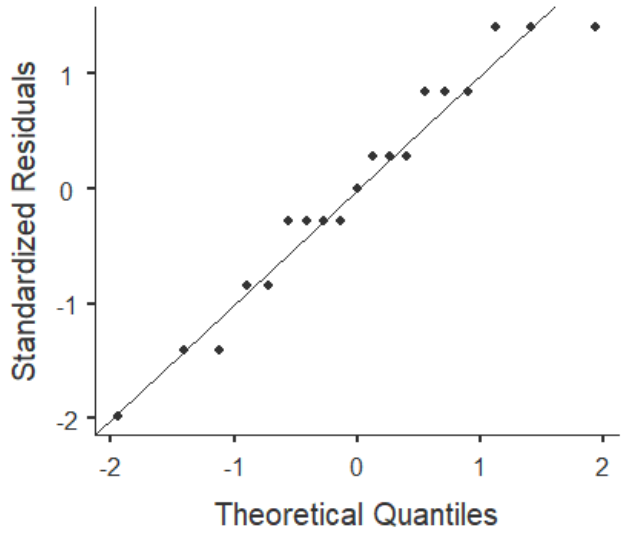
The data analysis was conducted using jamovi, a free statistical software designed for intuitive user operation. In addition to basic descriptive statistics, it supports exploratory and confirmatory factor analysis among other functions (Şahin & Aybek, 2019; The jamovi project, 2024). The software operates on the R language, enabling users to incorporate desired analysis methods through modules (Onodera, 2022). In the next section, the students' attributes are quantitatively summarised, followed by an analysis of continuous variables. To determine the appropriate method for analysing continuous variables, the Shapiro-Wilk test for normality was conducted. As shown in the Table 1, only the Reading variable was confirmed to follow a normal distribution. This was further validated by observing a clean straight line in the QQ plots. However, the other variables did not meet the normality criteria.

Table 1. Normality Test (Shapiro-Wilk)

	W	*p*	Results
Reading	.936	.227	Normal distribution
Memory Retention	.698	< .001	Non-normal distribution
Motivation	.648	< .001	Non-normal distribution
Memory from Listening	.882	.024	Non-normal distribution
Student ATT	.777	< .001	Non-normal distribution

Note. A low *p*-value suggests a violation of the assumption of normality

Figure 1. QQ plots: Reading



To test $\boldsymbol{H_{01}}$, only the Reading variable was used, and a parametric test was adopted to compare groups based on whether participants practised writing katakana. Assuming normal distribution, Student's *t*-test was deemed suitable for comparing two groups (Hamada, 2015). Therefore, $\boldsymbol{H_{01}}$ was tested using Student's *t*-test. Conversely, when no specific distribution assumption could be made, non-parametric tests were applied (Hamada, 2015). Since none of the variables except Reading were normally distributed, $\boldsymbol{H_{02}}$ through $\boldsymbol{H_{04}}$ were tested using

non-parametric methods. Specifically, the one-sample Wilcoxon test was used for $\boldsymbol{H_{02}}$, while Spearman's rank correlation analysis was applied to $\boldsymbol{H_{03}}$ and $\boldsymbol{H_{04}}$. The Table 2 summarises the analytical methods used for each null hypothesis. The Results section presents findings based on these analytical approaches.

Table 2. Analytical methods

	Parametric or non-parametric	Analytical method
$\boldsymbol{H_{01}}$	Parametric test	Student's *t*-test
$\boldsymbol{H_{02}}$	Non-parametric test	One-sample Wilcoxon test
$\boldsymbol{H_{03}}$	Non-parametric test	Spearman's rank correlation analysis
$\boldsymbol{H_{04}}$	Non-parametric test	Spearman's rank correlation analysis

5. Results

Table 3 presents the attributes of the participating students. A total of 19 students responded to the survey, of whom 13 (68.4%) were female, and 6 (31.6%) were male. Sixth-year students, primarily from the medical school, constituted the largest group at 31.6%. Additionally, around 50% of respondents were second- to fourth-year students, while first-year students made up only 5%. Some respondents identified themselves as university students or graduates in the open-response section. Regarding academic departments, the majority, 12 students (63.2%), were from the Faculty of Medicine, followed by 4 students (21.1%) from the Faculty of Computer Science and Engineering, and 3 students (15.8%) from the Faculty of Philology. In response to the question, "Did you practise writing katakana?" 18 students (94.7%) answered "Yes," indicating that most participants engaged in writing practice. The trends observed in this study, including the predominance of female participants, the high representation of medical students, the presence of students from the Faculty of Computer Science and Engineering and the Faculty of Philology, and the widespread practice of katakana writing, align with findings reported by Kobayashi (2024) during the winter semester.

Table 3. Attributes of students (N = 19)

		n	%
Gender	Female	13	68.4
	Male	6	31.6
What grade are you?	Freshman (1st grader)	1	5.3
	Sophomore (2nd grader)	3	15.8
	Junior (3rd grader)	4	21.1
	Senior (4th grader)	3	15.8
	6th grader (Medical student)	6	31.6
	Free answer: Undergraduate studies	1	5.3
	Free answer: Graduate	1	5.3
What is your major (faculty)?	Computer Science and Engineering	4	21.1
	Medicine	12	63.2
	Philology	3	15.8
Did you practise writing katakana?	No	1	5.3
	Yes	18	94.7

As demonstrated in the research methods section, the variable representing the ability to read katakana followed a normal distribution. A comparison of katakana reading ability between students who practised writing and those who did not was conducted using Student's *t*-test. The results showed a *p*-value of .079, indicating no statistically significant difference at the 95% confidence level. Therefore, $\boldsymbol{H_{01}}$ was not rejected.

Table 4. Students *t*-test

	Statistics	*df*	*p*
Reading	-1.87	17.0	.079

Next, to examine whether the memory retention of learning katakana by visual recognition versus writing was neutral, I conducted a one-sample Wilcoxon test. As shown in the Table 5, the *p*-value was calculated as $p < .001$. Therefore, $\boldsymbol{H_{02}}$ was rejected, indicating that the memory retention of learning katakana by visual recognition and writing is not neutral. Additionally, descriptive statistics were calculated using jamovi's One-sample Wilcoxon test under the additional statistics feature. The mean score for the Memory Retention variable was 5.74, and the median was 7. These results revealed that most students expressed a more positive opinion towards writing as a method for better memory retention compared to just visual recognition.

Table 5. One sample Wilcoxon test

	Statistics	*N*	*M*	*Mdn*	*SD*	*SE*	*p*
Memory	190	19	5.74	7	1.91	.438	< .001

Subsequently, Spearman's rank correlation analysis was conducted to test $\boldsymbol{H_{03}}$ and $\boldsymbol{H_{04}}$. First, examining the correlation between memory retention and listening, the Spearman correlation coefficient was .538, indicating a positive moderate correlation (Schober et al., 2018), with a *p*-value of .017, which was significant at the 95% confidence level. Therefore, $\boldsymbol{H_{03}}$ was rejected. Following this, between student attitudes and their perception of memory retention, the correlation coefficient was .648, with a *p*-value of .003. This confirmed a significant positive moderate correlation, leading to the rejection of $\boldsymbol{H_{04}}$.

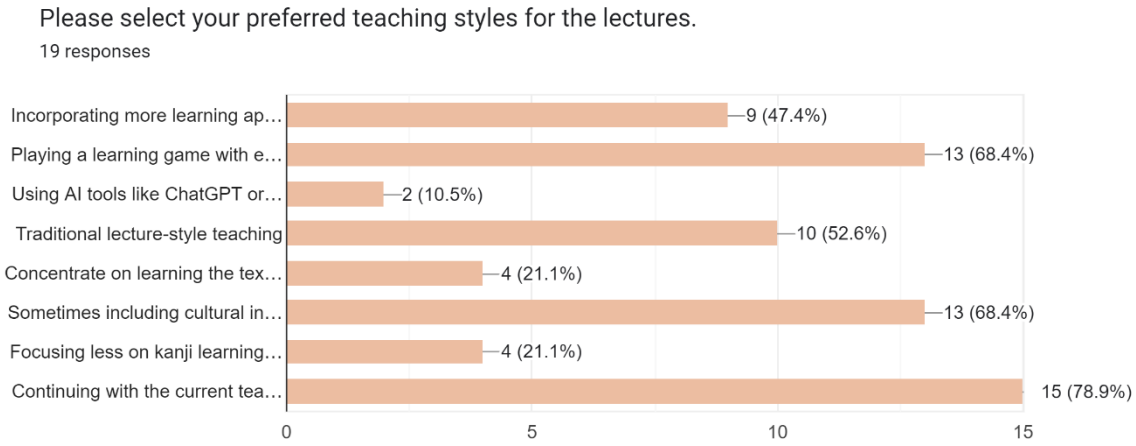
Table 6. Correlation Matrix

		Reading	**Memory Retention**	**Motivation**	**Memory from Listening**	**Student ATT**
Reading	r_s					
	p					
Memory Retention	r_s	.214				
	p	.378				
Motivation	r_s	-.321	.333			
	P	.181	.163			
Memory from Listening	r_s	-.090	.538*	.369		
	p	.715	.017	.120		
Student ATT	r_s	.344	.648**	.243	.704***	
	p	.149	.003	.317	< .001	

Note. * p < .05, ** p < .01, *** p < .001

Finally, the survey results on the teaching style preferred by students were as follows. 15 students (78.9%) selected "Continuing with the current teaching style." Next, 13 students (68.4%) selected both "Playing a learning game with everyone" and "Sometimes including cultural introduction videos." Furthermore, the choices "Traditional lecture-style teaching" (52.6%) and "Incorporating more learning applications within the lectures" (47.4%) were each selected by approximately half of the participants. The options "Concentrate on learning the textbook" and "Focusing less on kanji learning and more on conversation practice" were chosen by 21.1% of respondents. The lowest response was for "Using AI tools like ChatGPT or Copilot," which was selected by 10.5% of students.

Figure 2. Students'preferred teaching styles



6. Discussion

6.1. Effectiveness of Writing Katakana

6.1.1. Practical Implications

Firstly, this study did not find a direct relationship between writing katakana and reading comprehension. This finding is consistent with Kobayashi's (2024) result that "writing hiragana" does not affect reading comprehension. However, the *p*-value was .079, which may indicate that extreme responses, possibly influenced by a small sample size, introduced a bias. Additionally, since reading comprehension was assessed through self-evaluation, it's possible that students with stricter self-assessment tendencies may have rated their reading abilities more modestly. As mentioned in the Research Method section, the mini-test on katakana reading yielded an objective score of $M = 8.5$ out of 10 and $Med = 9$, indicating a potential discrepancy between subjective and objective evaluations. Therefore, further research in this area is necessary. Next, the study observed that students still tend to use traditional writing methods, such as writing to memorise, despite the variety of modern learning methods, including digital media. This suggests that writing as a memorisation tool will likely continue for some time (Tanahashi, 2024). Writing by hand, while considering the components of characters, helps students inductively remember kanji, a process they report experiencing (Tanahashi, 2024). In this research, students were generally positive about writing, with many agreeing that writing katakana helps with memory retention. The result of the one-sample Wilcoxon test indicated a significant difference, suggesting that the true value is not neutral. In fact, the data revealed a greater positive response to writing as a memorisation method compared to simply visualising the characters. Similar findings were observed for both hiragana (Kobayashi, 2024) and katakana. Although there are countries in the Balkans that practise Japanese language education, few studies focus on the writing of Japanese characters. Research is needed not only for hiragana and katakana but also for kanji in the future, as it will contribute to the development of Japanese language education.

Besides, the following discussion focuses on hypotheses $\boldsymbol{H_{03}}$ and $\boldsymbol{H_{04}}$. As shown in the results section, a statistically significant moderate positive correlation was found between memory retention and memory from listening. According to Kormos and Sáfár (2008), in second language acquisition, phonological short-term memory and general working memory play different roles depending on the learner's level. At the intermediate level, the ability to efficiently recall words and learned expressions is related to the capacity of phonological

short-term memory. For beginner-level students, however, complex language working memory plays a clear role in supporting the learning mechanism (Kormos & Sáfár, 2008). In this research, the act of seeing katakana while pronouncing it may have helped students recognise the shape of the characters, think about how to write them, and engage in complex language processing that aided memory retention. Additionally, in the case of children, there is said to be a unique interaction between the development of syllabic analysis and the acquisition of reading and writing skills in Japanese characters. Phonemic awareness and the acquisition of reading Japanese characters are interdependent (Amano et al., 1999). In the context of Japanese language education in North Macedonia, encouraging students to pronounce characters while viewing them, and writing them down, may help with memory retention. Furthermore, this research found a significant positive moderate correlation between student attitudes and the perceived retention of katakana memory. In addition to the positive relationship between liking to write and familiarity or motivation, as demonstrated by Kawai et al. (2020), student attitudes also positively influenced the perceived retention of katakana memory. Moreover, Chen et al. (2018) found that from a neurocognitive perspective, a positive attitude towards subjects like mathematics in children increases engagement with the hippocampus's learning and memory systems, which in turn leads to more efficient memory and improved academic performance. These previous studies suggest that student attitudes, particularly a positive attitude towards writing, help with memory retention. Therefore, traditional writing practices will continue to be valuable. However, for students who show a negative attitude towards writing as a memorisation technique, memory retention may not be aided. Hence, lecturers should pay close attention to students' reactions and opinions during lectures. Minagawa and Takeguchi (2024) suggest that, depending on the purpose, handwriting should be used over typing in situations where memorisation is essential. It is also recommended that students practise writing katakana characters by hand several times to ensure accurate recognition and memorisation, especially when they have a positive attitude towards writing. Additionally, for students who struggle to read Japanese characters just by looking at them in the textbook, even writing them by hand a few times might help solidify their memory of the characters.

6.1.2. Theoretical Implications

The findings of this research suggest that writing enhances learners' ability to notice subtle differences in katakana characters, thereby reinforcing the input effect on learning, specifically in terms of memory retention. Participants who practised writing demonstrated a greater awareness of character structures compared to those who relied solely on visual memorisation. This supports Schmidt's (1990) assertion that noticing is a prerequisite for learning. Furthermore, the results of this research identified a moderate positive correlation between Memory Retention and Memory from Listening, suggesting that traditional handwriting practice may enhance phonological recognition. This implies that the act of writing not only facilitates visual recognition but also aids in the integration of auditory and written information, reinforcing the role of noticing in second language acquisition.

6.1.3. Confirming Katakana Learning Outcomes

As part of this study, ICT-based materials created by the author were used in class to assess students' katakana knowledge. To evaluate whether students could accurately distinguish similar-looking katakana characters, such as *shi (シ), tsu (ツ), so (ソ),* and *n (ン),* their recognition skills were tested. The results indicated that students were able to identify and differentiate these characters with accuracy, confirming the effectiveness of the instructional approach.

Figure 3. Which characters are *"tsu" (つ)* in katakana?

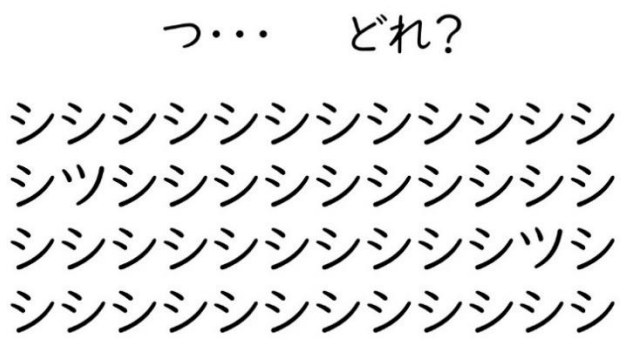
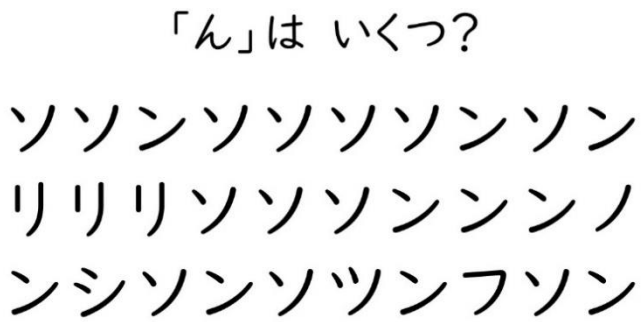


Figure 4. How many katakana characters for *"n" (ん)* are there?



6.2. Teaching Styles

The most common response indicated a preference for the current teaching style. Additionally, the second most frequent request was for occasional inclusion of cultural introduction videos in the lectures. Currently, Japanese language lessons at the introductory level are based primarily on textbooks, with vocabulary, grammar, and conversational expressions being taught in a manner that promotes effective real-world communication (The Japan Foundation Japanese-Language Institute, Urawa., n.d.; The Japan Foundation (Ed.), 2013). When necessary, videos introducing Japanese culture are shown, and events related to Japanese culture held within North Macedonia are also presented. According to a case study by Kobayashi (2024), 86.4% of students who chose the Japanese language course during the Winter semester extracurricular activities stated their liking for Japanese culture as the reason, further supporting the continuation of this teaching style. Moreover, the incorporation of group learning games in the classroom was confirmed as a teaching style students enjoy. According to previous research, learning games positively affect students' learning attitudes and encourage active communication (Liu et al., 2021; Yang & Chen, 2023). Additionally, intrinsic motivation through participation in games has been shown to positively impact learning performance (Ishak et al., 2023).

On the other hand, potential drawbacks of using educational games include time constraints, the lack of specific curriculum design and strategies related to the games, and insufficient teacher training (Mohamed & Shaaban, 2021). Moreover, differences in students' game skills have been identified as a factor influencing variations in learning performance (Ishak et al., 2023). The author also observed differences in learning performance when using educational

apps in class, which were influenced by variations in students' game skills. Specifically, students familiar with games performed well, while those who were not accustomed to games struggled to keep up with the game's pace, potentially reducing effectiveness. However, despite this, the positive reactions from students, such as expressing enjoyment, smiling, and increased communication, were also empirically observed. Therefore, it is recommended that, in Japanese language classes at universities in North Macedonia, in addition to improving overall language and communication skills, occasional inclusion of cultural introduction videos and the incorporation of learning games, such as Quizlet's "Classic Live" or "Checkpoint" modes, be integrated as classroom activities. To introduce these effectively, it is essential to ensure students become familiar with the games by assigning vocabulary learning as homework and for teachers to invest personal time in becoming proficient with the game features. It is also important for the curriculum to clearly define the goals for using learning apps and address the potential drawbacks highlighted in previous research. Given that most students carry mobile phones and can engage in fun, effective learning in class, such an approach would be beneficial for them (Cheung & Ng, 2021).

Conversely, the introduction of AI tools received the lowest preference. Since learning environments should be tailored to individual students' needs (Bonner et al., 2023), it may be best to introduce AI tools when a high demand is confirmed. The use of AI chatbots in classroom activities has been reported to boost confidence in communication and reduce anxiety in beginner-level Korean language learners (Kim & Su, 2024), indicating potential benefits for their use. Further in-depth research is necessary to identify the most appropriate learning styles for Japanese language learners in North Macedonia.

6.3. Research Limitations and Future Perspectives

The aim of this research was to statistically elucidate the tendencies of university students learning Japanese in relation to writing and memorising katakana. However, it remains unclear whether similar results would be observed with kanji or other script forms (Kobayashi, 2024; Naka, 1997). Results may vary depending on factors such as the type of characters and whether they have meaning or not (Naka, 1997), highlighting the need for further investigation. Additionally, this research was conducted with a small sample size, which limits the generalisability of the findings to a broader population in quantitative research. A larger sample size would be required to make stronger claims about generalisability (Dehalwar & Sharma, 2024). In the context of a limited population of Japanese language learners in North Macedonia, conducting research with a small sample size requires prioritising depth over breadth and considering qualitative research approaches. A detailed analysis of a small participant group could enrich the study's findings (Dehalwar & Sharma, 2024). Since this research was a case study conducted in a North Macedonian university, its applicability to other Balkan countries remains uncertain. Future research should explore similarities and differences among Japanese language learners in Cyrillic-script countries, other Balkan nations, and Eastern European regions to enhance the diversity of research perspectives. Furthermore, this research focused specifically on handwriting as a learning strategy, yet the impact of educational applications on Japanese character retention remains unexamined. Future research should focus on learning methods and conduct comparative studies to examine these differences.

7. Conclusion

This research revealed that the position of "writing katakana to memorise it" versus "memorising by only looking at it" is significantly non-neutral. Specifically, the mean score

was 5.74, and the median was 7, indicating a generally positive opinion toward writing as a memorisation method. A significant positive moderate Spearman correlation was also found between the variables "Memory Retention" and "Memory from Listening." Additionally, a significant positive moderate Spearman correlation within a 99% confidence interval was identified between the variables "Student ATT" and "Memory Retention." These findings suggest that, even in the context of Japanese language education in North Macedonia, the traditional act of writing remains potentially effective for memorising characters. Moreover, combining writing with the act of pronouncing characters while viewing them supports memory retention. It was also discussed that when students have a positive attitude, writing contributes more effectively to character memory retention. In terms of preferred teaching styles, most students expressed a desire to maintain the current teaching approach. However, there was a notable interest in occasionally incorporating videos introducing Japanese culture and engaging in learning games during class. It should be noted, however, that these results may not necessarily apply to kanji or other character types. The perspectives of students from other Balkan countries regarding the practice of writing Japanese characters remain unclear. Furthermore, future studies are needed to compare the effects of traditional writing methods with those of learning characters solely through language learning applications.

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Declaration of No Conflict of Interest

I hereby affirm that there are no conflicts of interest associated with this research.

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Appendix: Questionnaire

Title: Japanese Language Courses: Effects of Writing the Katakana Characters and Teaching Style

Thank you for eagerly learning Japanese this semester as well.

This survey is anonymous, so feel free to share your thoughts. The collected data will be used only for the purpose of improving classes, suggesting teaching styles suitable for the students, and for research purposes. Participation in this survey is voluntary, so you will not suffer any disadvantage if you do not participate.

Estimated time: 3-5 minutes

ありがとうございます. (Arigatoo gozaimasu; Thank you so much!)

よろしくおねがいします. (Yoroshiku onegaishimasu; Best regards.)

Atsushi Kobayashi (Japanese language lecturer)

Ss. Cyril and Methodius University in Skopje, Faculty of Philology “Blaze Koneski”

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1. Gender

(Mark only one oval.)

- Male
- Female
- Other

2. What grade are you?

(Mark only one oval.)

- Freshman (1st grader)
- Sophomore (2nd grader)
- Junior (3rd grader)
- Senior (4th grader)
- 6th grader (Medical student)
- Master's program
- Doctoral program
- Other

3. What is your major (faculty)?

Faculty of _____

(Mark only one oval.)

- Medicine

- Philology
- Computer Science and Engineering
- Bioinformatics
- Economics
- Law
- Other

4. Did you practise writing katakana?

(Mark only one oval.)

- Yes
- No

Effects of writing

Please answer the following questions.

(1: strongly disagree --- 4: neither --- 7: strongly agree)

(Mark only one oval.)

5. I can read katakana without Roman letters or hiragana annotations.
6. Regarding katakana, writing the characters helped me remember them better than just looking at them in the textbook.
7. The lecturer providing katakana worksheets boosted my motivation for learning.
8. As homework, listening to the katakana sounds and pronouncing them helped with my memory.
9. I enjoy practising by writing the characters.

Preferred teaching style, and the pace of the lectures

I would like to ask you about your preferred teaching styles and the speed of teaching.

10. Please select your preferred teaching styles for the lectures. (Tick all that apply.)

- Incorporating more learning applications within the lectures.
- Playing a learning game with everyone.
- Using AI tools like ChatGPT or Copilot.
- Traditional lecture-style teaching
- Concentrate on learning the textbook.
- Sometimes including cultural introduction videos.
- Focusing less on kanji learning and more conversation practice.
- Continuing with the current teaching style.

11. Please tell me about the pace of the lectures.

(Mark only one oval.)f

- A slightly faster pace would be acceptable.
- The current pace is just right.
- I would prefer a slightly slower teaching speed.

12. If you have any additional comments or feedback, please share them.

(Optional)