



THE EFFECT OF USING THE HEY JAPAN APP AND STUDENTS' LEARNING STYLES ON THEIR MASTERY OF HIRAGANA CHARACTERS

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ABSTRACT

This study aims to determine the effect of the Hey Japan application and students' learning styles (visual and auditory) on hiragana mastery. Students often struggle with hiragana due to the large number of characters, similar shapes, and complex writing rules. This quantitative correlational study involved 28 students of grade XI AKL at SMK Yayasan Tinta Emas Indonesia. Data were collected through a hiragana mastery test and a learning style questionnaire, then analysed using the Shapiro-Wilk normality test and simple and multiple linear regression. The results show that the Hey Japan application and learning styles simultaneously have a positive and significant effect on hiragana mastery (sig. 0.000021 < 0.05; R Square = 0.578). Partially, the application has a significant effect on both visual (sig. 0.020) and auditory (sig. 0.033) learning style groups. These findings suggest that Hey Japan supports hiragana learning through character recognition, pronunciation audio, and reading and writing exercises that accommodate both learning styles.

Keywords: *hey japan application; learning style; hiragana; digital learning media; japanese language*

INTRODUCTION

The development of digital technology has had a significant impact on education, including foreign language learning. Baroroh et al. (2024) explain that Learning Management Systems (LMS) enable the management of materials, assessments, and teacher-student interactions to be conducted online, while Sari and Munir (2024) emphasize that e-learning platforms and digital collaborative tools create a more interactive and responsive learning environment. One foreign language that has received attention at the senior high/vocational school level is Japanese, with Indonesia recorded as the country with the second-highest interest in learning Japanese after China (Japan Foundation, 2024).

Nevertheless, students generally experience difficulty in mastering hiragana characters. Miyarti & Arni (2022) reveal that this difficulty is caused by the large number of characters, similarities in shape between characters, and the writing rules that must be followed. Kumala & Febriyanti (2022) add that many students still make mistakes in writing hiragana characters correctly. A preliminary survey conducted by the researcher on grade XI AKL students at SMK Yayasan Tinta Emas Indonesia showed that 25 out of 28 students (87%) had difficulty remembering hiragana characters, a finding reinforced by interviews with the school's Japanese language teacher.

One proposed solution is the use of application-based learning media, one of which is the Hey Japan application. This application provides a reading practice feature equipped with pronunciation audio and a writing practice feature equipped with stroke order (kakijyun)



visualization, allowing students to practice repeatedly as needed. Research by Permana et al. (2024) shows that the Hey Japan application is effective as a learning medium for basic Japanese grammar, while Ardianto & Buchari (2022) and Juliani et al. (2022) found that digital media in general increases students' interest and understanding of hiragana and katakana characters. However, these studies have not yet linked application effectiveness with individual student characteristics, particularly learning styles.

Learning style is an individual's distinctive way of absorbing, processing, and understanding information DePorter in Magdalena & Afifah (2020). Perumal et al. (2022) categorize learning styles into three types: visual, auditory, and kinesthetic. This study limits its scope to the visual and auditory learning style groups, as the features of the Hey Japan application are considered most relevant in accommodating these two modalities. Based on the above description, this study aims to determine: (1) the simultaneous effect of using the Hey Japan application and students' learning styles on hiragana mastery; (2) the effect of using the Hey Japan application on the visual learning style group's hiragana mastery; and (3) the effect of using the Hey Japan application on the auditory learning style group's hiragana mastery. The novelty of this study lies in combining two independent variables application use and learning style analyzed both simultaneously using multiple linear regression and separately for each learning style group using simple linear regression.

METHOD

This study employs a quantitative method with a correlational (associative) design, a type of research aimed at determining relationships between variables without manipulating those variables (Itting et al., 2024). The study was conducted in mid-May 2026 at SMK Yayasan Tinta Emas Indonesia, Bekasi City. The population consisted of all students at SMK Tinta Emas Indonesia enrolled in Japanese language courses, with a sample of 28 grade XI AKL students.

The research procedure was carried out in three stages. The initial stage included interviews with the supervising teacher, distribution of a needs questionnaire, problem identification, literature review, and the preparation and validation of instruments by expert judgment before being tested for validity and reliability. The implementation stage involved distributing a learning style questionnaire to 28 respondents to classify tendencies toward visual, auditory, and kinesthetic learning styles, followed by learning sessions using the Hey Japan application over four meetings, and then administering a multiple-choice hiragana mastery test. The data analysis stage included processing questionnaire and test data, descriptive analysis, prerequisite testing, hypothesis testing, and drawing conclusions.

The research instruments consisted of a hiragana mastery test and a learning style questionnaire. The test was initially composed of 60 items covering aspects of character sounds and writing order, then validated by expert judgment and piloted on non-sample students, resulting in 28 items deemed suitable for use as the posttest. The learning style questionnaire was developed using a 4-point Likert scale (Strongly Agree, Agree, Disagree, Strongly Disagree) to measure tendencies toward visual and auditory learning styles, with respondent grouping calculated using the Z-Score formula. Instrument validity was tested

using the Pearson Product Moment correlation technique (Paulus Banu & Hidayatur Rahman, 2025), while reliability was tested using the Cronbach Alpha formula (Widodo et al., 2023).

Before hypothesis testing, a prerequisite test in the form of a normality test using the Shapiro-Wilk test was conducted at a significance level of $\alpha = 0.05$. Data were declared normally distributed if the p-value was greater than 0.05. Hypothesis testing was conducted using multiple linear regression analysis to determine the simultaneous effect of using the Hey Japan application (X1) and learning style (X2) on hiragana mastery (Y), with the equation $Y = a + b_1X_1 + b_2X_2 + e$, as well as simple linear regression analysis ($Y = a + bX$) to determine the effect of application use on each of the visual and auditory learning style groups. A variable was declared to have a significant effect if the significance value was less than 0.05.

RESULTS AND DISCUSSION

RESULTS

Data description shows that the hiragana mastery of students learning with the Hey Japan application ranged from a score of 75–93, with a mean of 83 (standard deviation 4.2). In the visual learning style group (14 students), scores ranged from 79–93, while in the auditory learning style group (10 students), scores ranged from 75–86. The Shapiro-Wilk normality test results for all research variables application use (X1), learning style (X2), and hiragana mastery (Y) showed p-values of 0.258, 0.209, and 0.079, respectively, all of which were greater than 0.05. Thus, the data were declared normally distributed and eligible for further analysis using multiple linear regression and simple linear regression.

The multiple linear regression analysis testing the simultaneous effect of using the Hey Japan application and learning style on hiragana mastery produced the regression equation $Y = 12.033 + 0.199(X_1) + 0.702(X_2)$, with an R Square value of 0.578 and a significance value of 0.000021 ($p < 0.05$). This finding proves that the use of the Hey Japan application and learning style together have a positive and significant effect on hiragana mastery, contributing 57.8% to the variance in students' hiragana mastery.

The simple linear regression analysis for the visual learning style group produced the equation $Y = 42.510 + 0.546(X_1)$, with a significance value of 0.020 ($p < 0.05$) and an R Square of 0.374, indicating that the use of the Hey Japan application has a significant effect on hiragana mastery among students with a visual learning style. Meanwhile, the analysis for the auditory learning style group produced the equation $Y = 22.242 + 0.760(X_2)$, with a significance value of 0.033 ($p < 0.05$) and an R Square of 0.453, indicating that the use of the Hey Japan application also has a significant effect on hiragana mastery among students with an auditory learning style.

DISCUSSION

The research results show that the use of the Hey Japan application contributes to hiragana mastery in the aspects of sound recognition, character shape, and writing order. This finding aligns with Mujiono & Rohman (2024), who state that application-based learning media for hiragana and katakana have a high level of feasibility and receive positive responses from users, and is reinforced by Setiadi et al. (2024), who found that Android-based applications make it easier for students to understand Japanese characters.

In the visual learning style group, the application's success is supported by the dynamic stroke order (kakijyun) visualization feature, picture-based quizzes, and character-writing



animations that help students encode the physical shape of hiragana into long-term memory. This is consistent with the Cognitive Theory of Multimedia Learning (Mayer, 2021), particularly the signaling and multimedia principles, which state that learning becomes more effective when words and images are presented together compared to words alone. The graphic elements and animations in the Hey Japan application facilitate information processing through the visual channel, thereby reducing students' cognitive load when comprehending complex character shapes.

In the auditory learning style group, the application's significant effect is driven by the native speaker pronunciation audio feature, listening practice (kiki-tori), and interactive sound effects when students answer quizzes. This finding aligns with the Sensory Modality Theory of Barbe and Swassing in Willingham et al. (2015), which asserts that learning efficiency increases when the delivery channel of material aligns with the learner's dominant sensory modality. Intensive audio stimulus helps auditory learners recognize hiragana phonemes more accurately, particularly in distinguishing long-short vowel sounds and double consonants.

The novelty of this study lies in the specific synchronization between the essential features of the Hey Japan application (audio-visual) and the two dominant learning style characteristics (visual and auditory), differing from previous studies that generally tested application effectiveness in general without linking it to students' learning styles. This finding reinforces the concept of Differentiated Content and Learning Media (Tomlinson, 2014), which shows that technology-based applications can bridge different learning modality needs within a single platform, allowing students' individual characteristics to be optimized for achieving maximum language competence

CONCLUSION

Based on the research results and discussion, it can be concluded that the use of the Hey Japan application and students' learning styles together (simultaneously) have a positive and significant effect on hiragana mastery among grade XI AKL students at SMK Yayasan Tinta Emas Indonesia, contributing 57.8%. Partially, the use of the Hey Japan application was also proven to have a positive and significant effect on hiragana mastery among both the visual and auditory learning style groups. In the visual group, success was supported by stroke visualization and character animation features, while in the auditory group it was supported by native speaker audio and listening practice features. This finding confirms that the effectiveness of application-based learning media (Mobile Assisted Language Learning) achieves optimal results when the application's features align with users' dominant learning modality.

Based on these findings, it is recommended that Japanese language teachers map students' learning styles at the beginning of the semester and integrate the Hey Japan application as a supporting medium within a blended learning scheme. Students are advised to recognize their own learning style tendencies in order to make optimal use of the application, while application developers are advised to maintain the quality of visual stroke order and native speaker audio, as well as add a learning style diagnostic feature. Future research is recommended to expand the scope to katakana or kanji mastery, use a true

experimental design with a full control class, and expand the research population to other schools to improve the generalizability of the results.

BIBLIOGRAPHY

- Ardianto, A., & Buchari, A. (2022). *Peningkatan kemampuan siswa membaca teks bahasa Jepang menggunakan huruf Hiragana dan Katakana dengan Google Japanese Input berbasis Google Classroom*. 21(2), 188–198. <https://doi.org/10.21831/ltr.v21i1.49577>
- Iting, A., Ondeng, S., & Mustami, Muh. K. (2024). Pendekatan Penelitian Korelasional: Konsep, Metode, dan Aplikasinya. *Jurnal Panrita*.
- Juliani, D. A. A., Pramesti, P. D. M. Y., & Rahman, Y. (2022). Hiragana dan Katakana dalam Pembelajaran Daring. *Jurnal Penelitian Mahasiswa Indonesia*, 2.
- Kumala, I., & Febriyanti, R. (2022). Ketidaksesuaian Penulisan Huruf Hiragana Pada Pemelajar Pemula Bahasa Jepang. *JPBJ*, 8(3).
- Magdalena, I., & Afifah, A. N. (2020). Identifikasi Gaya Belajar Siswa (Visual, Auditorial, Kinestetik). In *PENSA : Jurnal Pendidikan dan Ilmu Sosial* (Vol. 2, Number 1). <https://ejournal.stitpn.ac.id/index.php/pensa>
- Mayer, R. E. (2021). *The Cambridge Handbook of Multimedia Learning* (R. E. Mayer & L. Fiorella, Eds.). Cambridge University Press. <https://doi.org/10.1017/9781108894333>
- Miyarti, I., & Arni, R. (2022). *Implementasi Scientific Approach, Case Method dan Project Based Learning dalam Pembelajaran Bahasa Jepang 12 Oktober 2022 Prosding Seminar Nasional Bahasa Jepang MINASAN IV | MINASAN IV Analisis Kemampuan Membaca dan Menulis Hiragana Siswa Kelas XI MIPA 4 SMA Negeri 2 Bukittinggi*.
- Mujiono, A., & Rohman, Y. L. (2024). Pengembangan Media Pembelajaran Hiragana dan Katakana Berbasis Kodular Kana Tank. *JPBJ*, 10(1). <https://bit.ly/KanaTank>
- Paulus Banu, E., & Hidayatur Rahman, D. (2025). Uji Validitas dan Reliabilitas Alat Ukur Penelitian: Resiliensi Akademik pada Siswa SMP Insight. In *Jurnal Bimbingan dan Konseling* (Vol. 14, Number 1).
- Perumal, P., Husin, M. R., & Nachiappan, S. (2022). Analisis Gaya Kognisi dan Afeksi Murid dalam Penulisan Karangan Bahasa Melayu di Sekolah Rendah. *Journal of Humanities and Social Sciences*, 4(1), 22–28. <https://doi.org/10.36079/lamintang.jhass-0401.340>
- Setiadi, I., Widiyanti, S., & Afratofani, A. A. (2024). Aplikasi Pengenalan Huruf Hiragana dan Katakana Jepang Berbasis Android Menggunakan Kodular. *Jurnal Penelitian Sistem Informasi*.
- Tomlinson, C. A. . (2014). *The differentiated classroom : responding to the needs of all learners*. ASCD.
- Widodo, S., Ladyani, F., Asrianto, L. O., Rusdi, Khairunnisa, Lestari, S. M. P., Wijayanti, D. R., Devriany, A., Hidayat, A., Dalfian, Nurcahyati, S., Sjahriani, T., Armi, Widya, N., & Rogayah. (2023). *BUKU AJAR METODE PENELITIAN*. CV Science Techno Direct.
- Willingham, D. T., Hughes, E. M., & Dobolyi, D. G. (2015). The Scientific Status of Learning Styles Theories. *Teaching of Psychology*, 42(3), 266–271. <https://doi.org/10.1177/0098628315589505>