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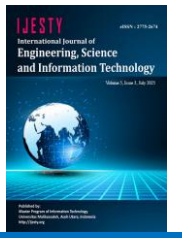

The Impacts of Collaborative Online International Learning, Web-Based Language Learning, and Onsite Learning on Japanese Language Ability

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Abstract

Learning foreign languages, particularly Japanese, following COVID-2019 integrates many models and approaches, and to increase student proficiency in learning Japanese, B University has implemented several learning models, including studying through traditional techniques in class face-to-face with a digital application and a collaborative online learning model. This study, which frequently employed quantitative methods, would impact those three models and their relations to improve Japanese language proficiency. The information used comes from a survey that uses a Likert scale. The population for the raw data was drawn from 2022–2023 first- and second-semester students. These students responded to our survey as Japanese Department students and actively participated in three different learning environments: B-apps (web-based language learning), Collaborative Online International Learning (COIL), and regular class attendance. Our research demonstrated that B-apps had a minor impact on learning Japanese. At the same time, Collaborative Online International Learning and regular interactive class sessions were necessary to acquire deeper abilities.

Keywords: *Web-Based Language Learning, Interactive Class, Collaborative Online International Learning, COIL.*

1. Introduction

Foreign languages have been adopted significantly as an outcome of the digital age, technology's increased fluency, and the post-pandemic environment. Before the outbreak pandemic, students at B University often engaged in interactive discussions with lecturers about Japanese literature. After that, Covid-19 made several modifications, notably adopting online learning through Zoom and new study techniques.

Numerous instruments are available in the educational industry [36, 37, 38] that can assist students in learning, comprising video conferences and video-based learning, which can serve as an alternative to face-to-face instruction [1, 34, 35, 39]. While many locations of the pandemic, instructors, and students differ, video conferencing and video-based learning still function on a virtual platform for both actors.

Binus University tried three methods for accelerating Japanese: grammar, listening, or speaking. First, in conventional learning, students' attendance is counted by studying face-to-face in class. Secondly, using the B-apps, an app for Japanese study where students can learn anytime online. In early-stage development until 2022, the first usage was in the even semester 2021/2022 (February 2022). Currently, B-apps would keep improvising to have a better experience using the app digitally. In Japanese Department B University, B-apps were used in the first year with passive listening, reading, and grammar skills. However, active language skills courses are still held in the face-to-face meeting mode in the classroom, or this post-pandemic era, face-to-face meetings are held at the school together with the Hybrid learning method.

The third way is Collaborative Online International Learning (COIL), where students and lecturers from two or more educational institutions on different geographical scales, local or worldwide, collaborate to study. Students from various ethnicities and cultures can collaborate to achieve learning outcomes using communication and collaboration technology. The purpose of the diversity technique was to increase pupils' exposure to study Japanese. Complaints were made in a couple of discussions with students regarding the B-apps app's learning style. As a result, this study decided to investigate the three Japanese Department B University techniques, which are the B-apps application, the Collaborative Online International Learning (COIL) method, and onsite learning, for developing Japanese skills. This study evaluated learning methods in general, focusing on Japanese Department students at B University in Indonesia.

This research focused on the impact study through B-apps, Collaborative Online International Learning (COIL) method, and onsite learning. Previous research on Collaborative Online International Learning [2][3][4][5][6][7][8]. Subsequent research on the use of learning applications has been widely studied, including [9] the use of learning apps focusing on five platforms: Duolingo, Rosetta Stone, Memrise, LingQ, and Busuu [10]. [11] research aimed at optimizing e-learning through Google Forms features and add-ons [12] dis-

cussed using Zoom meetings and Google Classroom applications. Previous researchers have also conducted other studies [13][14][15][16][17][18][19][20]. There are further studies on Language Learning with Technology and the Effectiveness of Using the Android App [21][22][23][24]. Previous study research about study learning variables onsite/ face to Face [25][26][27][28][29][23][30].

2. Method

This research was an ex post facto study, which examined causal relationships that the researchers did not manipulate or treat. This research also conducted systematic empirical research. The researchers did not have direct control over the independent variable because the phenomenon was complex to exploit [31]. From the purpose perspective, this was applied research whose results could be used to obtain information to solve problems [32]. Based on the level of empirical research, this research fell into the associative and comparative or relational research category. The research method was quantitative because it met the scientific principles: empirical, objective, measurable, rational, and systematic [33].

The primary data used was obtained through a questionnaire. The population of this study was the students of the 1st and 2nd semester, odd & even semester of the 2022/2023 academic year. These students used three methods in learning the Japanese language skills: digital learning (B-apps), Collaborative Online International Learning (COIL), and regular classroom learning.

As for the sampling method, it used a non-probability method with purposive random sampling. Purposive random sampling was used because the researchers determined the respondents based on the assumption that they met the desired characteristics. To analyze the data, the researchers used inferential statistics. Inferential statistics is intended to make predictions or decisions about a population based on the information contained in the sample. In other words, inferential statistics infer from the model to the population.

In this case, the researchers used a non-probability sampling method because they could not access the entire population of students who used the three methods of learning Japanese. Purposive random sampling is a type of non-probability sampling that allows the researcher to select respondents based on their characteristics. In this case, the researchers selected respondents who they believed were representative of students who used the three methods of learning Japanese.

The next step in the analysis was to conduct two main tests: Data Test and Model Test. The researchers would conduct data quality and classic assumption tests in the Data Test. Before entering the model testing stage, this procedure was necessary to ensure that all data used were BLUE (Best Linear Unbiased Estimator). As for model testing, the researchers used the SEM (Structural Equation Modelling) method.

There were three dependent variables used in this research, i.e., Collaborative Online International Learning (X1), B-apps (X2), Face-to-face meeting (X3), and one dependent variable, i.e.,

Improvement of Japanese Language skills (Y). To answer the research problems above, the researchers formulated three hypotheses related to the research.

2.1. First hypothesis (Partial test result)

H1o: Collaborative Online International Learning (COIL) does not affect Japanese language skills.
H1a: Collaborative Online International Learning (COIL) affecting Japanese language skill improvement.

2.2. Second hypothesis (Partial test result)

H2o: B-apps do not affect Japanese Language Skills
H2a: B-apps Affect Japanese Language Skills

2.3. Third hypothesis (Partial test result)

H3o: Onsite face-to-face learning is not affecting Japanese Language skills.
H3a: Onsite face-to-face learning is affecting Japanese Language skills.

3. Result and Discussion

In this study, two data quality tests were carried out, namely the validity and reliability tests, which will be summarized as follows.

3.1. Data quality test 1

3.1.1. Validation test

Based on the result, the correlation for each variable indicator was above the bear average. The r value of each indicator was higher than the r-table that weighted 0,28. By this validation test, each variable per individual can be summarized as valid, and the data from this study can be included in subsequent data analysis.

3.1.2. Reliability test

Based on the reliability test, the value of Cronbach Alpha in each variable was above average parameter. The Cronbach Alpha value variable was above 0.6. This data is considered reliable, and the data from this study can be included in the following validation test.

3.2. Classical assumption testing

Classical assumption testing aimed to see any signs of data divergence from classical assumptions and ensure the structural equation model is BLUE (best linear unbiased estimator). Three Classical Assumption Tests were performed in this work: Normality, Multicollinearity, and Heteroskedasticity, which will be discussed below.

3.2.1. Normality test

The Kolmogorov-Smirnov and Histogram tests were employed in this investigation, assuming that if the Sig. The parameter value was greater than 0.05; the data residuals are normally distributed. Table 1 and the image above show that the Sig value of 0.200 is greater

than 0.05 using the Kolmogorov-Smirnova test. This implies that the study residual data were from a population with a normal distribution and that the regression model meets the normality assumption.

Table 1. Result Of Kolmogrov-Smirnov Test

	N	47.00
Normal	Mean	(0.00)
Parameters	Std. Deviation	0.53
	Absolute	0.08
Most Extreme	Positive	0.07
Differences	Negative	(0.08)
	Test Statistic	0.08
	Asymp. Sig (2-tailed)	200c.d

a. Test distribution is Normal.
b. Calculated from data
c. Lilliefors Significance Correction
d. This is a lower bound of the true significance

3.2.2. Multicollinear test

The testing method used in this study was the Variance Inflation Factor (VIF) and Tolerance (TOL) test with the following acceptance criteria:

1. If the TOL value is greater than 0.10, then there is no multicollinearity in the data being tested.
2. If the TOL value is less than or equal to 0.10, then there is multicollinearity in the data being tested.
3. If the VIF value is less than or equal to 10, then there is no multicollinearity in the tested data.
4. If the VIF value is greater than 10, then there is multicollinearity in the data being tested.

Table 2. Vif & Tol Multicollinearity Test Results

Model	Unstandardized Coefficients		Standardized Coefficients Beta			Colinearity Statistics	
		B	Std Error		T	Sig	Tolerance	VF
	(Constant)	1.44	0.66		2.18	0.03		
	X1	0.37	0.27	0.26	1.37	0.18	0.55	1.81
1	X2	(0.01)	0.15	(0.01)	(0.06)	0.95	0.86	1.17
	X3	0.22	0.19	0.20	1.16	0.25	0.62	1.60

a. Dependent Variable Y

Table 2 shows that the TOL value is greater than 0.10 for all variables, and the VIF value is greater than 10. This suggests that the research data is not multicollinear. Two tests are being conducted to determine the data quality: the validation and reliability tests, which are summarized below.

3.2.3. Heteroskedasticity test

The testing method used in this study is the Glejser test, with the following acceptance criteria:

1. There is no heteroskedasticity if the Sig value is greater than 0.05.
2. There is heteroskedasticity if the Sig value is less than or equal to 0.05.

Table 3. Results of the Glejser Heteroskedasticity Test

Model	Unstandardized Coefficients		Standardized Coefficients Beta		
		B	Std Error	T	Sig
	(Constant)	0.47	0.41	1.14	0.26
	X1	0.04	0.17	0.04	0.22	0.83
1	X2	(0.05)	0.09	(0.08)	(0.49)	0.63
	X3	(0.01)	0.12	(0.02)	(0.12)	0.91

a. Dependent Variable ABS_RES

The Sig value for all variables was greater than 0.05 using the Glejser test. This signifies that the research data show no signs of heteroskedasticity.

3.3. Model test (associative hypothesis testing)

3.3.1. Overall model fit

The overall model fit test findings indicate that the model provided in this study was good (good fit). Some Goodness of Fit (GOF) parameters had values that fell inside the acceptable parameter range. As a result, the model's overall fit (excellent fit) could be determined. The following is a summary of the overall model fit assessment results obtained with the LISREL tool:

Table 4. The Goodness of Fit Results of the Associative Hypothesis

No	GOF Parameter	Acceptance Parameters	Statistic Value	Model Fit
1	Root Mean Square Error of Approximation (RMSEA)	≤ 0,05: Good fit 0,05 – 0,08: accepted (reasonable) 0,08 – 0,10: Marginal fit ≥ 0,10: Poor fit	0.16	Poor fit
2	Expected Cross Validation Index (ECVI)	ECVI model that approaches the saturated ECVI value.	M* = 17.32 S* = 16.43 I* = 36.44	Good fit
3	Akike Information Criterion (AIC)	AIC model that approaches the saturated AIC value.	M* = 796.73 S* = 756.00 I* = 1753.15	Good fit
4	Non-Normed Fit Index (NNFI)	≥ 0,9: Good fit 0,80 – 0,9: Marginal fit	0.7	Marginal fit
5	Comparative Fit Index (CFI)	Between 0 – 1, the closer to 1, the better The fit limit is 0.9 è Bentler.	0.73	Marginal fit
6	Incremental Fit Index (IFI)	≥ 0,9: Good fit 0,80 – 0,9: Marginal fit	0.74	Marginal fit

3.3.2. Structural model fit

This analysis evaluates coefficients demonstrating the causal relationship or effect between one latent variable and other latent variables. Essentially, this relationship is the same as the theory researchers employed in this study (there are three causation theories). Structural Equations 1: Sales Model

$$\eta 1 = \gamma 1\ \xi 1 + \gamma 2\ \xi 2 + \gamma 3\ \xi 3 + \zeta 1 \qquad \ldots\ldots(1)$$

Ability = 0.72*Coil + 0.039*B-apps + 0.29 Face-to-face, Errorvar. = 0.21, R^2 = 0.79

Statistical interpretation or reading of the regression equation for "Interest" is as follows.

1. If "Coil" increases by 1 unit and other variables remain the same, then "Ability" will increase by 0.72 units.
2. If "B-apps" increases by 1 unit and other variables remain the same, then "Ability" will increase by 0.039 units.
3. If "Face-to-face" increases by 1 unit, and other variables remain the same, then "Ability" will increase by 0.29 units.

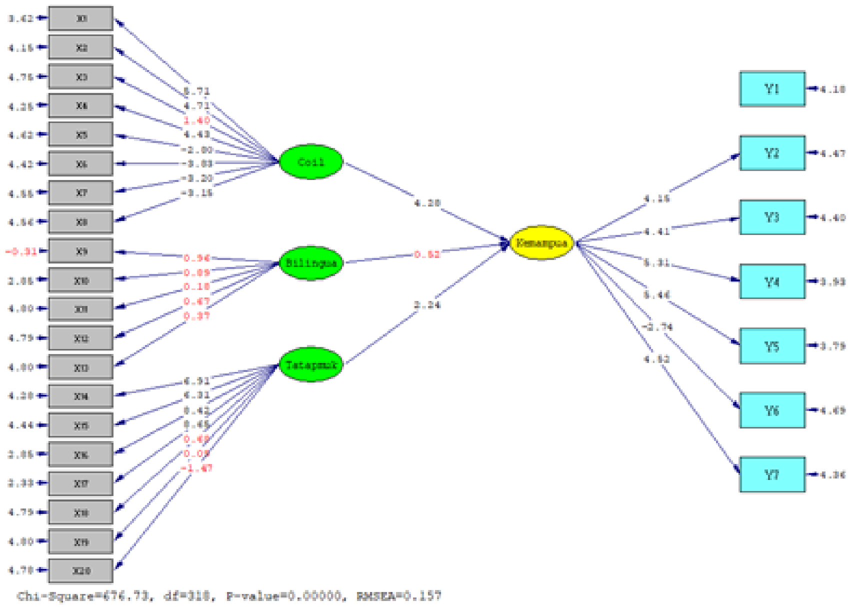

Fig 1. Basic Model Path Diagram – t Values (Associative Hypotheses)

Table 5. Summary of SEM Testing Results (Associative Hypotheses)

No	Hypotheses	Relationship path between variables	t-Value	Conclusion
1	H1o	COIL to Japanese language proficiency	4.28>2.00	Ho rejected, Ha accepted
2	H2o	Bilingual to Japanese language proficiency	0.52<2.00	Ho accepted, Ha rejected
3	H3o	Face to Face Learning to Japanese Language proficiency	2.4>2.00	Ho rejected, Ha accepted

Discussion of all research hypotheses based on data in Table 5 is as follows.

First Hypothesis (Partial Test Result)
H1o: Collaborative Online International Learning (COIL) does not affect Japanese Language Ability.
H1a: Collaborative Online International Learning (COIL) Affects Japanese Language Ability.

Based on the data in Table 5 above, it is known that t-count > t-table, so the null hypothesis (Ho) is rejected, and the alternative hypothesis (Ha) is accepted. This means that Collaborative Online International Learning (COIL) affects Japanese Language Ability.

Second Hypothesis (Partial Test Result)
H2o: B-apps do not affect Japanese Language Ability.
H2a: B-apps affect Japanese Language Ability.

Since the t-count t-table is known from the data in Table 5, the null hypothesis (Ho) is accepted, and the alternative hypothesis (Ha) is rejected. This indicates that the B-app factor does not affect Japanese language ability.

Third Hypothesis (Partial Test Result)
H3o: Face-to-face learning does not affect Japanese Language Ability.
H3a: Face-to-face learning affects Japanese Language Ability.

Given that it is known from the data in Table 5 above that t-count > t-table, the null hypothesis (Ho) is rejected, and the alternative hypothesis (Ha) is accepted. This implies that the component of Face-to-Face learning influences Japanese Language Ability.

4. Conclusion

The following are the results of the partial test of two association hypotheses to explain the previously mentioned research problems: the impact of Collaborative Online International Learning (COIL) on Japanese Language Ability. Second, the B-apps did not affect Japanese language ability improvement, and face-to-face learning enhanced Japanese language ability. Our research demonstrated that B-apps had a minor impact on learning Japanese. At the same time, Collaborative Online International Learning and regular interactive class sessions were necessary to acquire deeper abilities.

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