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The Effectiveness of Super Chinese Application for Training Mandarin Speaking Skills for Class XI IBB Students of SMA Laboratorium UM

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Abstract

One of the language skills used for communication purposes is speaking skills. In Mandarin, speaking skills are skills to express ideas or ideas that involve pronunciation and require proper intonation. As technology advances, learning Mandarin using applications is very helpful because of the ease of access and increasing enthusiasm for learning. For example, the Super Chinese application utilizes AI technology in materials and practice questions. Applications that utilize artificial intelligence (AI) technology are expected to support the learning process, especially learning Mandarin. This study was conducted with the aim of describing the level of students' speaking skills and determining the effectiveness of AI-based applications, one of which is the Super Chinese application. This study uses a quantitative correlational method with a pre-experimental design in the form of a one-group pretest-posttest design. The instrument used is a test instrument in the form of pretest and posttest questions. The data source used was class XI IBB SMA Laboratorium UM, totaling 24 students. Data were obtained from the average results of students' pretest and posttest scores. The data analysis techniques used were paired sample t-test, n-gain test, and pearson correlation test.The results of this study indicate that the Super Chinese application is effective in training the Mandarin speaking skills of class XI IBB students at SMA Laboratorium UM.

Keywords: Artificial Intelligence; Super Chinese Application; Speaking Chinese

Introduction

Mandarin has been established as the official or national language of China and is one of the most widely studied languages in the world. Mandarin is now the second international language with an estimated 1.1 billion speakers, making it the second most widely spoken language after English. In today's era, it is important for every individual to learn a foreign language such as Mandarin because Mandarin is one of the second universal languages to be applied in social life and cooperation activities. The importance of Mandarin speakers is a way to connect all kinds of activities and cooperation in various aspects that are intertwined with China (Ventivani & Ul Muyassaroh, 2021). China, a nation experiencing rapid growth in both its economy and technology, plays a crucial role in the global rise of the Mandarin language (Murtadhoh & Arini, 2023). Therefore, Mandarin language is considered important to learn as a step forward to follow the development process of the times.

In the process of learning Mandarin, there are basic skills that must be understood and mastered. The goal of learning Mandarin is to improve four aspects of skills, including 听力 [tīnglì] `listening`, 口语 [kǒuyǔ] `speaking`, 阅读 [yuèdú] `reading`, and 写作 [xiězuò] `writing`. In line with that, Massitoh, (2021) stated that all of these language skills are a complete unit that cannot be divided. Thus, learners are required to master all skills so that language skills and teaching objectives are achieved properly.

One of the language skills used for communication purposes is speaking skills. Speaking skills in Mandarin are skills that involve pronunciation and require proper intonation. Therefore, understanding and the ability to string words together are needed to communicate using Mandarin. Speaking skills include knowledge of phonology, the ability to choose or determine words and string together sentences, and expressing thoughts so as to be able to master communication .(Ayu Trihardini, 2022). It is important to master the four tones in Mandarin so that there are no mistakes in pronunciation, so it requires regular practice to master speaking skills.

In mid-July 2024, researchers conducted interviews regarding the Mandarin speaking skills of class XI IBB students with teachers at SMA Laboratorium UM. From the results of the interviews, data was obtained regarding the average student who was still not fluent in speaking Mandarin. In fact, class XI IBB students should have mastered vocabulary such as 在和正在 [zài, he zhèngzài] `in and is`. However, in practice, students still have difficulty mastering the pronunciation of the sounds [q], [z], [ch], and [zh] due to challenges in pronunciation and phonological accuracy, as well as the lack of arranging words into a sentence. Students also said that Mandarin speaking skills were difficult because they had to pay attention to the pronunciation of tones or 声调 [shēngdiào], consonant sounds or 声母 [shēngmǔ], and vowel sounds or 韵母 [yùnmǔ]. It is very common that they mispronounce the consonants of Chinese Mandarin thus there are not a lot of students who can pronounce Chinese Mandarin consonants accurately (Hasel, 2022). This is due to lack of speaking practice and focus on the material.

Based on the facts in the field, students often make mistakes in pronouncing tones and pronouncing vowel sounds incorrectly. This is because students practice writing and reading skills more, while speaking skills are still lacking. The Mandarin language learning process uses media including ppt, ukbm and LKPD. These media have the disadvantage that they cannot directly provide two-way feedback, so students tend not to know the benchmark for whether their speaking ability is correct or not. Every approach, strategy, method, media, and learning model has disadvantages, these disadvantages can be minimized with the right efforts (Kurniawan, 2020). Thus, it is necessary to have an update in teaching by utilizing technological developments.

The rapid development of technology has made learning media varied. This development encourages teachers to utilize technology to create transitions or conceptual changes in teaching and learning mechanisms. Therefore, the position of teachers here is important in determining the right media for students. In the era of the industrial revolution 4.0 or in this era, the position of teachers is very important to be able to have the ability to direct in line with the circumstances, environment and needs of students (Kartika Ardiyani & Kurniawan, 2020). Varied and appropriate media will help students learn with more enthusiasm and not get bored easily. The new learning method will help create long-term memory and enhance responses during the learning process (Kurnia et al., 2023). Learning media has the benefit of facilitating the teaching

and learning process and increasing students' learning motivation (Dewi & Kurniawan, 2018). In addition, Putriadi, Kurniawan & Sunarti (2022) also added that media is a tool to help students master a material and as an option to overcome boredom and boredom during the learning process.

One form of technological development that is increasingly rapid and popular today is artificial intelligence or often popularly known as Artificial Intelligence (AI). AI-based applications are widely used in the era of the industrial revolution 4.0 because of easy access. The existence of artificial intelligence technology has significantly changed aspects of human life, including language learning in schools. One aspect of life that is affected by the development of this technology is education (Ardiansyah & Kurniawan, 2019). Farwati et al., (2023) added that artificial intelligence can provide effective and innovative solutions in facing challenges because it is very relevant for use in various lives. This shows that technology can help the process of learning Mandarin using AI-based applications.

Researchers chose the AI-based application, Super Chinese, as a learning medium because this application is a new application with a high rating of 4.9 stars with more than one million users. This application contains practice questions and learning materials that cover all aspects of basic Mandarin language skills. There are practice questions to measure Mandarin language skills. The types of practice questions provided include multiple choice, incomplete sentences, random vocabulary, matching, and speaking practice. One of the features that supports this study is automatic correction of students' speaking ability results, such as correction of vowel and tone pronunciation and inappropriate use of words in a sentence. Artificial intelligence can detect common mistakes such as intonation in students' speech and incorrect use of words in a sentence and provide corrections with relevant explanations (Tundreng et al., 2023). However, although the use of AI-based applications is increasing, there is still a gap in research on its effectiveness specifically in Mandarin learning mechanisms.

Based on these problems, this study was conducted to fill the gap from previous studies by examining the effectiveness of Super Chinese as an AI-based application in learning Mandarin. Therefore, the researcher conducted a study entitled "The Effectiveness of the Super Chinese Application to Train Mandarin Speaking Skills of Class XI IBB SMA Laboratorium UM Students" in line with the theme of the ongoing activity, namely KD 3.4. This study is expected to provide a clear picture of the level of effectiveness of the Super Chinese application in training students' speaking skills. The objectives of the study include (1) describing the level of speaking skills of class XI IBB SMA Laboratorium UM students before and after the treatment and (2) determining the effectiveness of the Super Chinese application to train the speaking skills of class XI IBB SMA Laboratorium UM students.

Research Methods

In this study, the researcher used a quantitative approach because the type of data produced is numbers. This type of data is obtained from using student test results, namely pretest and posttest scores, which are then processed using statistical methods. According to Nanang (2017), data in quantitative research is in the form of numbers. The research design used in this study is a pre-experiment in the form of One Group Pretest-Postest Design. In this study, the correlational method is used to obtain information about the closeness of the relationship between variables in the use of the Super Chinese application with students' speaking skills.

The population taken includes all students of class XI IBB SMA Laboratorium with a total of 24 students. The sampling technique used is a non-probability sampling technique, especially total sampling. This technique is used when all members of the population of class XI IBB with a total of 24 students are used as samples. This technique is often used when the population is smaller or low. This research was conducted at SMA Laboratorium UM face-to-face in the subject of Mandarin.

This study used an instrument in the form of a test device that included pretest and posttest questions. The researcher created descriptive questions, each consisting of 2 questions in the form of questions to make sentences and retell the contents of the text. The test was carried out by Mrs. Karina Fefi Laksana Sakti, S.Pd., MTCSOL., and Mrs. Windi Amalina Nurcahyani, S.Pd as validators. In August 2024, pretest questions were given to class XI IBB to obtain the initial value of students' speaking ability before the application was implemented. Furthermore, students were asked to download the Super Chinese application, while the researcher displayed a PPT related to the procedures for using the application and related learning materials. Then students were given a posttest with the same number and form of questions but with different content to obtain the final value of students' speaking ability after the application was implemented. The researcher also took pictures while carrying out activities in class as documentation.

The data from the two tests were then tested for a hypothesis, using a paired sample t-test to obtain information about the differences between before and after the Super Chinese application treatment was given. After the hypothesis test was conducted, the next step was to test the effectiveness level of the Super Chinese application using the n-gain formula. Then, to determine how close the level of a relationship is between variables, a Pearson correlation test was conducted. All tests were conducted using SPSS Windows version 29.

Results and Discussion

Validity Test and Reliability Test

Validity testing is the initial stage carried out with the aim of determining whether an instrument is valid or not. The validated instruments are test instruments, namely pretest and posttest, which were first tested for their content validity by Mandarin language material experts, namely Mrs. Karina Fefi Laksana Sakti, S.Pd., MTCSOL and Mrs. Windi Amalina Nurcahyani, S.Pd. After the test questions were validated and the results were declared suitable for use by the material experts, the next step was to test the instrument on class XI IBB students at SMA Laboratorium UM. Pretest data collection was carried out on August 8, 2024, 23 students were present to take the pretest and 1 student was absent due to illness and took a follow-up pretest at the next meeting. Meanwhile, posttest data collection was carried out on August 22, 2024, 24 students were present. From the results of the test scores, a test of the validity of the question items was carried out with the help of SPSS version 29 using the product moment correlation formula. The following is a presentation of the results of the validity test of the two pretest and posttest questions:

Table 1. Pretest Item Validity Test Results

Question Number	Calculate Value	Significance level 1%	Conclusion
Question 1	0.779	0.515	*Valid*
Question 2	0.929	0.515	*Valid*

Table 2. Posttest Item Validity Test Results

Question Number	Calculate Value	Significance level 1%	Conclusion
Question 1	0.778	0.515	*Valid*
Question 2	0.947	0.515	*Valid*

Based on the presentation of the results of the pretest and posttest validity test, the calculated values of all the questions above have higher numerical results than the r table value with a significance level of 1% of 0.515. Based on these findings, the conclusion is that all statements in the questions of the two tests are declared valid and are declared worthy of being used as research instruments.

After passing the validity test stage, the next stage is the reliability test. This test is conducted with the aim of obtaining information on whether the questions in the instrument that will be given to students are reliable in providing measurements with the same results (consistent) or not. In conducting the reliability test with the help of SPSS Windows version 29 using the Alpha Cronbach formula with the following results:

Table 3. Results of the Pretest and Posttest Item Reliability Test

	Cronbach's Alpha	*N of Items*
Pretest	0.602	2
Posttest	0.605	2

From the presentation of the reliability test results above, both variables obtained Cronbach's Alpha values higher than the basic value, which is 0.6. Thus, the test results prove that all questions in the pretest and posttest test instruments are declared reliable.

Level of Speaking Skills of Class XI IBB Students at SMA Laboratorium UM

The first objective of this study was to describe the level of Mandarin speaking skills of class XI IBB students at SMA Laboratorium UM before and after the treatment. The speaking skill scores were obtained through an oral test in the form of a pretest and posttest, each consisting of 2 descriptive questions. Students were asked to work on the pretest and posttest questions on the worksheets provided. Furthermore, students were asked to answer questions by recording their voices using a cellphone and sending them via the Google Form link provided by the researcher in audio format with MP3 format. The results of the two test scores were used to determine the first objective of this study. From the results of the pretest data, the average score of students was 64.96. The highest score was 80 obtained by 2 students and the lowest score was 46 obtained by 1 student. A total of 22 students did not meet the KKM score determined at the school, which was 75. The following are the results of the students' pretest presentation:

Table 4. Frequency and Average Score of Students' Pretest

Score	Many Students	Number Of Values
46	1	46
53	3	159
60	6	360
67	7	469
73	5	365
80	2	160
Total	24	1559
	Average	64.96

The results of the pretest data showed that many students made mistakes in pronouncing the sounds q, zh, z in certain vocabulary. For example, 去 [qu] `go` is pronounced with the sound "ku", 正在 [zhengzai] `medium` is not pronounced correctly because students still pronounce it in Indonesian. Most students still do not understand how to use 正在 [zhengzai] `medium` in a sentence and speak carelessly without paying attention to the pronunciation of tones and vowel sounds. Furthermore, students also cannot retell and only speak according to the text presented with unclear pronunciation and intonation. This is because students have not mastered the correct pronunciation of tones, consonant sounds and vowel sounds as a basis for speaking Mandarin.

Table 5. Frequency and Average Student Posttest Scores

Score	Many Students	Number Of Values
53	1	53
67	5	335
73	6	438
80	8	640
86	1	86
93	3	279
Total	24	1831
	Average	76,29

Then for the results of the data presentation above, the average pretest score of class XI IBB students was 76.29. The highest score was 93 obtained by 3 students and the lowest score was 53 obtained by 1 student. Half of the total students achieved a score above 75. Several students answered questions clearly and longer than the previous test. Students' pronunciation also improved, such as in the pronunciation of the sounds q, zh, z, in a sentence. Students spoke quite clearly and made fewer mistakes. The difference between the two student test scores can be seen from the data presentation in the following bar chart:

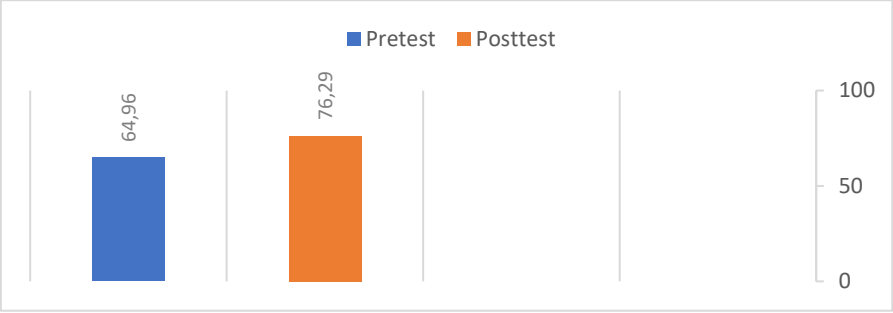

Figure 1. Bar Chart of Pretest and Posttest Average

The blue bar chart shows the pretest score while the orange bar chart shows the posttest score. Based on the chart, the average posttest score obtained by class XI IBB students is higher than the average pretest score. The difference is due to the use of the Super Chinese application. This shows that implementing an AI-based application can help and improve students' Mandarin speaking skills. In line with the research of Muhammadiyah Muara Bungo et al., (2024) which states that the use of AI can improve the quality of Mandarin teaching and help basic Mandarin language skills, but it must be used wisely and under teacher supervision.

Based on the results of the analysis, student scores increased and showed differences in results before and after using the Super Chinese application to train

students' speaking skills. The use of the application is mainly to provide feedback on students' speaking skills. A study by Susilo et al., (2023) also stated that the use of AI can clearly tell where students' mistakes are, so that students can correct deficiencies in language learning, especially pronunciation for speaking skills.

The Effectiveness of Super Chinese Application to Train Speaking Skills of Class XI IBB Students of SMA Laboratorium UM

The second objective of this study was to determine the effectiveness of the Super Chinese application in training the Mandarin speaking skills of class XI IBB students of SMA Laboratorium UM. After calculating the results of the students' pretest and posttest scores, the next stage was a hypothesis test to obtain information about the differences between the results before and after being given the Super Chinese application treatment. The following is an explanation of the results of the paired sample t test using SPSS version 29.

Table 6. Paired Sample T-Test Results

		Mean	*Std. Deviation*	*Std. Error Mean*	*95% Confidence Interval of the Difference*		*t*	*Df*	*Sig, (2-tailed)*
					Lower	*Upper*			
Pair	*Pretest-Posttest*	-11.333	3.608	.736	-12.857	-9.810	-15.390	23	<0.001

Based on the data exposure from the test results above, the results obtained show that the significance value is <0.001 which is smaller than 0.05. The results of this value can be interpreted that H0 is rejected and Ha can be accepted. Thus, there is a difference in results between before and after implementing the Super Chinese application. The data above also shows the mean obtained from the difference in pretest and posttest data, namely 64.96-76.92 with a result of -11.333. The range of the difference in the two data is -12.857 to -9.810 at 95% confidence interval of the difference.

The next calculation is to find out how much the level of effectiveness of the Super Chinese application is in training students' speaking skills. In this study, the n-gain formula was used with an average result of 0.4525. When viewed from the normalized gain criteria table, the results are in the range of $0.30 \leq g < 0.70$, falling into the fairly effective category. The following are the results of the data presentation from the n-gain test:

Table 7. N-Gain Result

N-Gain	
N	24
Minimum	0.15
Maximum	1
Mean	0.4525

The next stage is the correlation test which is used to measure a relationship in a variable in order to obtain information on how close the relationship is. Decision making is done by looking at the significance value, namely based on the level of correlation between variables. The following are the results obtained from the Pearson correlation test using SPSS version 29 below:

Table 8. Uji Korelasi *Pearson Correlation*

Correlations			
		Pretest	*Posttest*
Pretest	*Pearson Correlation*	1	0.925**
	Sig. (2-tailed)		0.000
	N	24	24
Posttest	*Pearson Correlation*	0.925**	1
	Sig. (2-tailed)	0.000	
	N	24	24
***. Correlation is significant at the 0.01 level (2-tailed).*			

Based on the table above, it shows information about whether or not there is a relationship or correlation between variables before and after implementing the Super Chinese application media. The correlation results obtained can be known if the significance value is 0.000 with the intention of a correlation relationship that occurs between variables. This explains that there is a relationship between students' speaking skills before and after implementing the Super Chinese application media.

The results of this study are reinforced by the results of previous research by Abimanto & Mahendro (2023) which explains that the use of artificial intelligence technology has the potential to assist language learning and provide a role in expanding a better learning system. These results are known from the differences in the results of the pretest and posttest of students' speaking which showed an increase in the average score of 50 to 65 and an increase of 30%. A study by Muhammadiyah Muara Bungo et al., (2024) showed a significance value of 0.000 <0.05 which then means that learning after utilizing artificial intelligence is higher than before utilizing artificial intelligence. than before. Furthermore, previous research by Susilo et al., (2023) showed a difference in the average pretest value obtained, namely 46.27, while the average posttest value increased to 66.72.

The use of AI-based applications in this study shows that AI technology makes a positive contribution to the aspect of Mandarin speaking skills. Although it does not increase drastically, the application helps gradually through the learning outcomes obtained by students. The use of AI technology also requires adequate support such as device access and training and assistance in using AI. Therefore, in its use, students need guidance and direction from teachers in order to achieve optimal results. A study by Hidayatullah, (2024) added that educators play an important role in supervising the use of AI and providing additional explanations regarding material that is difficult to understand.

Based on the data exposure above, the conclusion obtained is that Ha is accepted with a significance value of <0.001. The results are smaller than 0.05 which can then be interpreted that the Super Chinese application can improve students' Mandarin speaking skills. Furthermore, the test using the n-gain formula proves that the mean value obtained is 0.4525. These results are categorized as quite effective in improving students' speaking skills.

Conclusion

From the results of the data analysis and discussion above, the conclusion that can be drawn is that the Mandarin speaking skills of students before and after implementing the Super Chinese application have changed. The average post-test score obtained by students was higher at 76.29 while the average pre-test score obtained by students was 64.96. The two scores have a score difference of 11.33.

This difference shows that the Mandarin speaking skills of students who have implemented the Super Chinese application have increased.

There is a difference between before and after the implementation of the Super Chinese application based on the results of the hypothesis test. The results of the t-test obtained a significance value (2-tailed) of <0.001. These results are smaller than 0.05 which can then be interpreted that H0 is rejected and Ha can be accepted. Then the n-gain test stage obtained a mean value of 0.4525. These results are in the range of 0.30 ≤ g <0.70 so that the Super Chinese application can be categorized as quite effective. Then for the results of the correlation test, a significance value of 0.000 was obtained. These results explain that there is a relationship between students' speaking skills before and after implementing the Super Chinese application media.

From the results of this study, the researcher provides suggestions for teachers, namely that learning media that use AI technology need to pay attention to several things such as the availability of adequate facilities and internet networks. In addition, increasingly advanced technology risks making students dependent on artificial intelligence which can have positive and negative impacts. It is better to use it more wisely, such as in conjunction with traditional learning methods.

References

Abimanto, D., & Mahendro, I. (2023). Efektivitas Penggunaan Teknologi AI Dalam Pembelajaran Bahasa Inggris. *Sinar Dunia: Jurnal Riset Sosial Humaniora Dan Ilmu Pendidikan*, *2*(2), 256–266. https://doi.org/10.58192/sidu.v2i2.844

Ardiansyah, B. I, & Kurniawan, D. (2019). Instructional Media Development “Dakon” to Improve Speaking Skill OF SMA Negeri 5’s 10th Grade Students. *Journal DaFIna - Journal Deutsch Als Fremdsprache in Indonesien*, *3*(1), 26–30.

Ayu Trihardini. (2022). Pemanfaatan Youtube sebagai Media Pembelajaran Keterampilan Berbicara Bahasa Mandarin. *Universitas Negeri Jakarta*, *2021*, 1–10.

Dewi, F. K. K. U., & Kurniawan, D. (2018). Pengembangan media pembelajaran berbasis android “funologie” untuk materi peta dan sistem fonem bahasa Jerman pada matakuliah deutsche phonologie. *Journal DaFIna - Journal Deutsch Als Fremdsprache in Indonesien*, *2*(2), 238–247.

Dharma, E. (2024). Efektivitas dan Dampak Pemanfaatan Artificial Intelligence Dalam Pembelajaran Bahasa Mandarin. *PROSIDING SEMINAR NASIONAL KEGURUAN DAN PENDIDIKAN (SNKP)*, *2*(1), 401–406. https://ejournal.ummuba.ac.id/index.php/SNKP/hm

Farwati, M., Salsabila, I. T., Navira, K. R., & Sutabri, T. (2023). Analisa Pengaruh Teknologi Artificial Intelligence (Ai) Dalam Kehidupan Sehari-Hari. *Jursima: Jurnal Sistem Informasi & Manajemen*, *11*(1), 39–45.

Hasel, C. A. (2022). The Research Comparison Between the Consonants of Bahasa Indonesia and Chinese Mandarin. *MANDARINABLE : Journal of Chinese Studies*, *1*(1), 1–9. https://doi.org/10.20961/mandarinable.v1i1.322

Hidayatullah, R. (2024). *Implementasi AI dalam Proses Pembelajaran pada Mahasiswa Semster Awal Pendidikan Bahasa Inggris*. *2*(1), 13–18.

Kartika Ardiyani, D., & Kurniawan, D. (2020). Policy and Curriculum of Study Program of German Language Education at the State University of Malang in Welcoming the Needs of German Language Teachers in Indonesia in the Era of Industrial Revolution 4.0. *KnE Social Sciences*, *2020*, 50–56. https://doi.org/10.18502/kss.v4i4.6465

Kurnia, I., Lutvianda, G. E., Cheryl, E. E., & Adhimas, Y. B. (2023). Application of Motion and Song Media in Mastery of “不”, “没” and “Tidak” Which is Bahasa Indonesia Equivalents (Perspective of Applied Contrastive Analysis). *Journal of Maobi*, *1*(1), 59. https://doi.org/10.20961/maobi.v1i1.84371

Kurniawan, D. (2020). Pembelajaran Bahasa Jerman Di Kala Pandemi Covid-19: Fleksibilitas Dan Aksesibilitas. *Prosiding Seminar Nasional Pembelajaran Bahasa Dan Sastra 4*, 55–56. http://repository.um.ac.id/id/eprint/961

Martono, N. (2010). *Metode Penelitian Analisis Isi dan Analisis Data Sekunder dan Primer* (Revisi 2). PT RajaGrafindo Persada. https://scholar.google.co.id/scholar?oi=bibs&cluster=16393685348289547035&btnI=1&hl=id

Massitoh, E. I. (2021). Analisis Faktor yang Mempengaruhi Rendahnya Keterampilan Menyimak. *Prosiding Seminar Nasional Pendidikan*, *3*, 330–333. http://prosiding.unma.ac.id/index.php/semnasfkip/article/view/614

Murtadhoh, N. L., & Arini, W. (2023). The Existence of Chinese Language in The Globalization Era. *Journal of Maobi*, *1*(1), 7. https://doi.org/10.20961/maobi.v1i1.79731

Putriadi, A. N., Kurniawan, D., & Sunarti, S. (2022). Pengembangan Media Pembelajaran 魔术口袋 Magic Pocket untuk Keterampilan Berbicara dengan Tema Kehidupan Sekolah Kelas X Tingkat SMA. *JoLLA: Journal of Language, Literature, and Arts*, *2*(4), 549–560. https://doi.org/10.17977/um064v2i42022p549-560

Susilo, P. M., Metta, K., & Cristian, V. (2023). Efektivitas Penggunaan Ponddy Chinese-Voice Scoring Widget dalam Pembelajaran Bahasa Mandarin. *Jurnal Sinestesia*, *13*(1), 1–10. https://sinestesia.pustaka.my.id/index.php/journal/article/view/253%0Ahttps://sinestesia.pustaka.my.id/index.php/journal/article/download/253/117

Tundreng, S., Kadaruddin, K., Abin, R., Syam, H., & Pratiwi, A. (2023). Strategi pembelajaran bahasa berbantukan kecerdasan buatan. *JPPI (Jurnal Penelitian Pendidikan Indonesia)*, *9*(4), 626. https://doi.org/10.29210/020233183

Ventivani, A., & Ul Muyassaroh, L. (2021). Pengembangan Media Pembelajaran 媒语 [Mèi ｙ ǔ] Berbasis Multimedia Dengan Desain Pembelajaran Cooperative Learning. *Seminar Nasional Pembelajaran Bahasa Dan Sastra (SELASAR)*, *1*, 5.