Integration of Interactive Media in Language Learning to Develop Sociolinguistic Skills in Elementary Schools

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Abstract. This study aims to analyze the effectiveness of interactive media based on joyful learning in improving students' neurolinguistic activity in language learning in elementary schools. The study used a mixed methods approach with a non-random quasi-experimental pretest-posttest group control design. The study sample consisted of 36 5th grade elementary school students who were selected purposively. The results of the analysis showed a significant increase in student learning outcomes with an average pretest score of 76.689 and a posttest of 82.683. Students' neurolinguistic activities, such as vocabulary processing and sentence structure, showed an increase supported by observations of verbal and non-verbal responses. Students' responses to learning were also positive, with 92% feeling more motivated and 85% considering learning more enjoyable. This study emphasizes the importance of integrating interactive media and joyful learning to create meaningful learning, increase student motivation, and stimulate neurolinguistic activity. Implementation constraints include limited technology and preparation time, which can be overcome with strategic solutions such as teacher training and the use of offline-based media. Further research is needed to explore the impact of this method on other language skills.

Keywords: Sociolinguistic Skills, Language Learning, Interactive Media, Elementary School

1 Introduction

Learning Indonesian is ideally a mandatory lesson at every level of education in Indonesia. Language learning is one of the indicators used by teachers in seeing their ability to learn at school. This is stated in the regulations Law of the Republic of Indonesia Number 24 of 2009 and Presidential Regulation (Perpres) Number 63 of 5 related to Indonesian is the priority. One of the important skills in language learning is sociooliguistic. Sociolinguistics is used to help educators understand the variations in language use across different social groups and contexts. Sociolingualism teaches language in a way that reflects real-world usage, not just prescriptive norms [1]. In addition, sociolinguastic as Providing information on decisions on language

standards and the use of national languages [2]. It can be stated that sociolithic is very important in language learning.

The reality is that students' language learning outcomes in general do not describe how well their language skills are. This is supported by the Programme for International Student Assessment (PISA) 2022, which shows that the reading ability of Indonesian students is relatively low compared to other countries. The average reading ability score of Indonesian students is 359 points, far below the average of OECD countries which reaches 476 points. This figure recorded a decrease compared to the score in 2018 which reached 371 points. In fact, only 25.46% of students reached the minimum competency standard (Level 2), compared to the OECD average of 73.75%. It is stated that Indonesian students have low ability in that ability gap in the ability to understand social context when reading [3]. The low socioliguistic level of students is supported by the results of observations and interviews conducted on November 11, 2024 at 2 State Elementary Schools in Belitang III District, that students' sociolingual skills are still low as evidenced by a lack of linguistic variance and social context that tends to be low.

This lack of sociolinguistic ability is due to several things. One of them is the lack of variety of teachers in learning, such as lack of optimal learning media and inappropriate learning approaches. In addition to this, learning media that are in accordance with the characteristics of students are urgently needed. Based on Piaget, the characteristics of elementary school students in grade V are usually at the stage Concrete Operations, however begin to demonstrate the ability to understand abstract concepts in a particular context [4]. In addition, to keep up with the times, it is necessary to integrate media with technology. One of the media that meets some of these indicators is interactive media that matches the characteristics of students [5].

Previous research stated that learning using reading sign media (PATABA) and interactive powerpoints can improve students' reading skills [6]. In addition, research Others stated that optimizing the use of learning media to increase student learning motivation in Indonesian courses [7]. Research Similar also states that through a deeper understanding of the psycholinguistic and sociolinguistic implications, educators can develop a more effective approach to integrating digital technologies into the Arabic language curriculum [8]. Based on several previous studies, research on sociolinguistics tends to focus on secondary or tertiary education. Research on elementary school children, especially in the context of language learning using interactive media, is still very limited. In fact, the elementary school age period is a crucial period for the formation of cross-cultural and social communication skills.

Based on this presentation, the researcher is interested in researching the integration of interactive media on students' sociolingual skills. This aims to determine the influence of interactive media on the sociolinguistic ability of elementary school students. This is expected to be able to contribute to providing an in-depth view related to the use of interactive media or media that is suitable for language learning. In addition, it is also expected to contribute to seeing the ability of language variations and social context of elementary school students.

2 Research Method

This study uses a mixed approach with an exploratory design to explore in depth the influence of interactive media on sociolinguistic skills in students' language learning. This approach was chosen because it is able to provide a quantitative picture of student learning outcomes as well as qualitatively analyze the learning experiences experienced by students and teachers [9]. This

research was carried out in the odd semester of the 2024/2025 school year, precisely in November, so it is relevant to see the initial implementation of the designed learning method.

The population in this study is all 5th grade students at SDN Kutosari. The research sample consisted of 36 students who were selected through a purposive sampling technique based on certain criteria, such as willingness to participate in research and active involvement in the learning process [10]. Design This study uses a quasi-experimental method with a pretest-posttes Non Equivalent Control Group Design.

The instruments used in this study include tests and observations. The test is used to measure students' sociolinguistic skills before and after the intervention, which serves as the main quantitative data [11]. Non-participant observations were carried out to record perceptions and challenges during learning. The data collection technique is carried out systematically. Pretest and posttest were given to measure changes in student learning outcomes after the intervention. Non-participant observation is carried out during the learning process to observe student activities directly. In addition, semi-structured interviews with students and teachers were conducted to explore more deeply their experiences while using interactive media [12].

The collected data was analyzed using quantitative and qualitative techniques. Quantitative analysis was performed with a t-test to compare pretest and posttest scores between the experimental and control groups, aiming to identify significant differences in learning outcomes [13]. Qualitative data from observations and interviews were analyzed narratively to find key themes related to students' neurolinguistic activities and learning experiences. This combination of analyses provides a more complete picture of the effectiveness of interactive media in improving sociolinguistic skills.

3 Result and Discussion

Quantitative data analysis aims to analyze the influence of the integration of interactive media in language learning on the sociolinguistic skills of elementary school students. Data obtained from the pretest and posttest tests were analyzed using the Paired Samples T-Test to evaluate the difference in scores before and after the treatment.

The results of the normality test using the Shapiro-Wilk method showed a value of $W = 0.972$ with $p = 0.855$. A p-value greater than 0.05 indicates that the pretest and posttest data are normally distributed. Thus, the assumption of normality is met, so that further analysis using paired t-test can be performed. The following is a table of normality test results:

Table 1. Normality Test Results

Assumption Examination

Normality Test (Shapiro-Wilk)

	At	p
PRETEST - SUPPLIES	0.972	0.855

Note. Significant results showed deviations from normality.

The results of the Paired Samples T-Test showed a t-value of -87.806 with degrees of freedom (df) 3 and p < 0.001. These results show a very significant difference between pretest and posttest scores. This means that the use of interactive media in language learning has a significant influence on improving students' sociolinguistic skills. The following are the results of the T test using the JASP 0.17.1.0 application:

Table 2. Results of T-Test of Paired Samples

T-Test Paired Sample

Size 1	Size 2	t	Df	p
PRETEST - SUPPLIES		-87.806	3	<.001

Note. Student t-test.

Descriptive data shows that the average pretest score is 12,500 with a standard deviation of 2,082, while the average posttest score increases sharply to 149,000 with a standard deviation of 2,000. The coefficient of variation in the posttest of 0.013 was much smaller compared to the pretest (0.167), which showed that the posttest score was more consistent between subjects. The following are the results of a descriptive analysis of the use of joyful learning-based interactive media:

Table 3. Results of Descriptive Analysis

Descriptive

	N	Mean	SD	HERSELF	Coefficient of variation
PRETEST	4	12.500	2.082	1.041	0.167
SUPPLIES	4	149.000	2.000	1.000	0.013

The descriptive plots showed a clear improvement in posttest scores compared to pretest, corroborating the results of the statistical analysis that there was a significant improvement after treatment. The following is an overview of the results of the descriptive analysis:
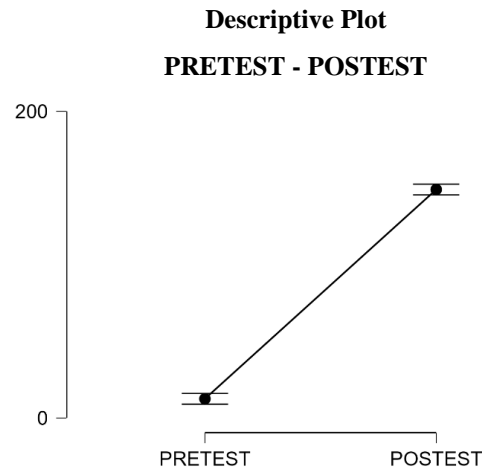
Descriptive Plot

PRETEST - POSTEST

Figure 1. Descriptive Plot Results

A significant increase in posttest scores indicates that interactive media has a positive impact on the development of students' sociolinguistic skills. Descriptive graphs also showed a sharp increase from pretest to posttest, reinforcing the finding that integrated learning with interactive media was effective in improving students' skills in understanding and using language in accordance with social contexts.

Based on the results of the analysis, it can be concluded that the integration of interactive media in language learning significantly improves students' sociolinguistic skills. This proves that interactive media can be an effective tool in teaching language skills related to social contexts, cultural norms, and empathetic communication. These findings are consistent with previous research that emphasizes the effectiveness of interactive media in supporting social context-based learning, which includes understanding social norms, culture, and appropriate use of language in a variety of situations [14], [15].

This study also evaluates students' perception of the use of interactive media in language learning to develop sociolinguistic skills. So that a clear picture of the student's views can be obtained after participating in interactive media-based learning. The results of the questionnaire showed that the majority of students responded positively to the use of interactive media. Students feel more enthusiastic about learning, as interactive media is considered engaging and motivates them to learn in a fun way [16]. In addition, students reported increased confidence in speaking. This is because interactive media provides opportunities for students to practice using language that is appropriate for various social contexts, both formal and informal.

Furthermore, students also revealed that interactive media helped them understand the difference between formal and informal language more clearly. They can differentiate language use based on the situation and the person they are talking to, such as talking to a teacher, a peer, or another adult. This shows that interactive media not only improves technical language skills, but also provides essential contextual understanding in social communication [17]. Overall, the results of this study confirm that the integration of interactive media in language learning has a positive impact on students' sociolinguistic skills. High enthusiasm, increased self-confidence, and the ability to distinguish the use of language according to the social context are indicators of the successful use of interactive media in the learning process. These findings underscore the

importance of innovation in learning methods to support the development of more holistic language skills at the primary school level [18]. These findings are consistent with Aloraini's research which shows that interactive media can significantly increase student learning motivation and engagement, especially in hands-on, practice-based learning [19].

As part of this study, in-depth interviews were conducted with teachers to gain perspectives related to the influence of interactive media in language learning and the challenges faced during its implementation. Based on the results of the interview, the teacher said that the use of interactive media has a very significant influence on students' ability to understand the social context in language. Interactive media helps students recognize differences in language use based on situations and interlocutors, both in formal and informal situations. This is evident when students are able to adjust the way they speak when communicating with peers, teachers, or other adults in the school environment. In other words, interactive media not only improves language comprehension, but also strengthens students' communication skills in a variety of social contexts [20]. This is in line with the findings that state that interactive media allows students to practice actively in real-world simulations, thereby strengthening communication skills in diverse social contexts [21].

However, teachers also identified several challenges in the implementation of interactive media in schools. One of the main obstacles is the limitation of available technological devices. Due to the limited number of devices, students must use interactive media alternately, which can slow down the learning process. In addition, teachers also highlighted that designing interactive media that suits the needs of students requires considerable time and effort. Teachers must ensure that the designed media is relevant to the learning material, interesting, and easily accessible to students.

Despite the challenges, teachers still consider that the benefits of interactive media in language learning are much greater than the obstacles. With the right tool management strategy and support in media development, the use of interactive media has the potential to be one of the effective solutions to improve students' sociolinguistic skills in primary school. The results of this interview emphasized the need to invest in educational technology and teacher training to design interactive media that is innovative and tailored to the needs of students. This is supported by the views of Mishra and Koehler (2006) in the TPACK (Technological Pedagogical Content Knowledge) model, which emphasizes the need for technology integration that is in harmony with content and pedagogy to achieve optimal learning outcomes [22].

Overall, this study provides empirical evidence that the integration of interactive media in language learning not only improves students' technical skills, but also provides essential contextual understanding in social communication. Therefore, the use of interactive media in primary schools needs to be supported by adequate education policies, teacher training, and the provision of technological infrastructure to ensure its sustainability and successful implementation.

4. Conclusion

Based on the results of the study, it can be concluded that the integration of interactive media in language learning at the elementary school level significantly improves students' sociolinguistic skills. These findings show that there is an increase in students' ability to understand and use language according to social contexts, including distinguishing the use of formal and informal

language. Quantitative data revealed significant differences between pretest and posttest scores, while qualitative results reinforced that interactive media not only captured students' attention but also increased confidence in communication.

Interactive media has been proven to provide a more contextual, relevant, and enjoyable learning experience for students. Teachers also noted that the use of this media helps students understand the differences in language use in diverse social situations, although there are still challenges such as limited technological devices and time to design effective media. Therefore, policy support, technology infrastructure, and teacher training are needed to ensure the sustainability and effectiveness of interactive media implementation.

This study provides important empirical evidence about the benefits of interactive media in language learning, especially for developing sociolinguistic skills. These results are relevant to support learning innovations that integrate technology in an effort to improve students' language competence holistically.

References

[1] J. Leeman and R. Showstack, "The Sociolinguistics of Heritage Language Education," in *In The Routledge Handbook of Second Language Acquisition and Sociolinguistics*, Routledge, 2022, pp. 328–340. doi: https://doi.org/10.4324/9781003017325-30.

[2] C. A. Seals and H. Salanoa, "Sociolinguistic Perspectives on Discourse and Second Language Research," *Routledge Handb. Second Lang. Acquis. Discourse*, vol. Routledge, 199 187AD, doi: https://doi.org/10.4324/9781003177579-16.

[3] B. Badawi, "Penanaman Nilai-Nilai Karakter dalam Fenomena Sosiolinguistik di Sekolah Dasar," *J. Educ. Instr. JOEAI*, vol. 3, no. 2, pp. 305–311, 2020, doi: https://doi.org/10.31539/joeai.v3i2.1613.

[4] M. Cerovac and T. Keane, "Early insights into Piaget's cognitive development model through the lens of the Technologies curriculum.," *Int. J. Technol. Des. Educ.*, 2024, doi: https://doi.org/10.1007/s10798-024-09906-5.

[5] C. Kun, "The Research and Implementation of Interactive Media Art Design System," *J. Phys. Conf. Ser.*, vol. 1345, no. 5, 2019, doi: https://doi.org/10.1088/1742-6596/1345/5/052030.

[6] D. Noor Ahadiyah and D. Bramasta, "Cendikia Pendidikan Integrasi Media Pataba (Papan Tanda Baca) Dan Power Point Interaktif Dalam Meningkatkan Keterampilan Membaca Pada Mata Pelajaran Bahasa Indonesia Materi Tanda Baca Di Kelas 3B SD Negeri 1 Banteran," vol. 1, no. 6, 2024, doi: https://doi.org/10.9644/sindoro.v4i5.3317.

[7] M. Palyanti, "Media Pembelajaran Asik dan Menyenangkan untuk Meningkatkan Motivasi Belajar Mahasiswa dalam Mata Kuliah Bahasa Indonesia," *Attract. Innov. Educ. J.*, vol. 5, no. 2, 2023, doi: https://www.attractivejournal.com/index.php/aj/.

[8] V. R. Ummah, "Integrasi Teknologi Digital dalam Pembelajaran Komunikasi Bahasa Arab: Implikasi Psikolinguistik dan Sosiologuistik," *-Turost J. Islam. Stud.*, vol. 11, no. 1, 2024.

[9] J. W. Cresswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, Fourth Edition*. Singapore: SAGE Publication, 2014.

[10] L. A. Palinkas, "Purposeful sampling for qualitative data collection and analysis in mixed method implementation research," *Adm. Policy Ment. Health Ment. Health Serv. Res.*, vol. 42, no. 5, pp. 533–544, 2015.

[11] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan Kombinasi (Mixed Methods)*. Bandung: Alfabeta, 2020.

[12] Ardiansyah, Risnita, and M. S. Jailani, "Teknik Pengumpulan Data Dan Instrumen Penelitian Ilmiah Pendidikan Pada Pendekatan Kualitatif dan Kuantitatif," *J. IHSAN J. Pendidik. Islam*, vol. 1, no. 2, pp. 1–9, 2023, doi: 10.61104/ihsan.v1i2.57.

[13] B. Darma, *Statistika Penelitian Menggunakan SPSS (Uji Validitas, Uji Reliabilitas, Regresi Linier Sederhana, Regresi Linier Berganda, Uji t, Uji F, R2)*. Jawa Barat: Guepedia, 2021.

[14] J. S. Chung and C. C. Chen, "The impact of interactive media in language learning: A systematic review," *Educ. Technol. Soc.*, vol. 24, no. 3, pp. 77–91, 2021.

[15] V. Iasha, R. Rachmadtullah, and A. Sudrajat, "The Impact Interactive Learning Media on The Learning Outcomes of Fifth Grade Social Science Knowledge in Elementary Schools," *Int. Conf. Technol. Educ. Sci. ICTES 2018*, pp. 1–5, 2018, doi: 10.4108/eai.21-11-2018.2282120.

[16] Suryanti, W. Widodo, and Y. Yermiandhoko, "Gadget-Based Interactive Multimedia on Socio-Scientific Issues to Improve Elementary Students' Scientific Literacy," *Nternational J. Interact. Mob. Technol. IJIM*, vol. 15, no. 01, pp. 56–69, 2021, doi: 10.3991/ijim.v15i01.13675.

[17] H. Aulia, M. Hafeez, H. U. Mashwani, and J. D. Careemdeen, "The Role of Interactive Learning Media in Enhancing Student Engagement and Academic Achievement," *Int. Semin. Stud. Res. Educ. Sci. Technol.*, vol. 12, pp. 57–67, 2024.

[18] L. Ugalde, M. Santiago-Garabieta, B. Villarejo-Carballido, and L. Puigvert, "Impact of Interactive Learning Environments on Learning and Cognitive Development of Children With Special Educational Needs: A Literature Review," *Front. Psychol.*, vol. 12, pp. 1–9, 2021, doi: 10.3389/fpsyg.2021.674033.

[19] S. Aloraini, "The impact of using multimedia on students' academic achievement in the College of Education at King Saud University," *J. King Saud Univ. - Lang. Transl.*, vol. 32, no. 2, pp. 142–147, 2018.

[20] S. Robiah and M. N. Fawaiq, "Analysis of the Use of Interactive Media in Students' Communication Skills in Independent Curriculum Learning," *Edumaspul-J. Pendidik.*, vol. 8, no. 2, pp. 3295–3305, 2024, doi: 10.33487/edumaspul.v8i2.8442.

[21] Z. Zainuddin, M. M. Yunus, and H. Salehi, "The effects of multimedia-based learning on language learning in elementary education," *Int. J. Educ. Technol. High. Educ.*, vol. 16, no. 1, pp. 1–10.

[22] P. Mishra and M. J. Koehler, "Technological pedagogical content knowledge: A framework for teacher knowledge," *Teach. Coll. Rec.*, vol. 108, no. 6, pp. 1017–1054, 2006.