



An Application of Multimodal Text-Based Literacy Activities in Enhancing Early Children's Literacy

Endang Fatmawati¹, Nanda Saputra², Magdalena Ngongo³, Ridwin Purba⁴, Herman⁵✉

Informasi dan Humas, Universitas Diponegoro, Semarang, Indonesia⁽¹⁾

Pendidikan Bahasa Indonesia, STIT Al-Hilal Sigli, Aceh, Indonesia⁽²⁾

Pendidikan Bahasa Inggris, Universitas Kristen Artha Wacana, Kupang, Indonesia⁽³⁾

Pendidikan Bahasa Inggris, Universitas Simalungun, Pematangsiantar, Indonesia⁽⁴⁾

Pendidikan Bahasa Inggris, Universitas HKBP Nommensen, Medan, Indonesia⁽⁵⁾

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Abstrak

Salah satu program pengembangan yang sangat penting dalam pendidikan anak usia dini adalah pengembangan bahasa. Tujuan dari penelitian ini adalah untuk mengembangkan kegiatan literasi dengan menggunakan Kegiatan Literasi Berbasis Teks Multimodal untuk anak usia dini di salah satu sekolah TK di Pematangsiantar. Metode deskriptif kualitatif diterapkan dalam penelitian ini. Sumber data penelitian ini adalah anak usia dini sebanyak 26 siswa. Observasi, wawancara, dan dokumentasi digunakan untuk memperoleh data. Triangulasi teknik dan triangulasi sumber digunakan dalam analisis data. Proses interpretasi data yang terkumpul menggunakan analisis deskriptif kualitatif. Penelitian ini mengalami peningkatan kenyamanan lingkungan belajar peserta didik dengan persentase peningkatan rata-rata sebesar 15,8% sehingga kegiatan literasi berbasis multimodal ini layak untuk dikembangkan dan dilaksanakan pada anak usia dini. Para peneliti juga menyarankan agar pihak sekolah memahami pentingnya membangun lingkungan literasi yang baik di dalam kelas dalam mendukung penerapan literasi berbasis multimodal untuk perkembangan kemampuan literasi anak.

Kata Kunci: literasi; multimodal; anak usia dini

Abstract

One of the most crucial development programs in early childhood education is language development. The purpose of this study was to develop literacy activities using Multimodal Text-Based Literacy Activities for early childhood at one of Kindergarten school in Pematangsiantar. Qualitative descriptive method was applied in this research. Sources of data in this study were early childhood as many as 26 students. Observations, interviews, and documentation were used to obtain data. Technique triangulation and source triangulation were used in data analysis. The process of interpreting the collected data uses descriptive qualitative analysis. This study experienced an increase in the comfort of the learner's learning environment with an average increase of 15.8% so that this multimodal-based literacy activity is feasible to be developed and implemented in early childhood. The researchers also suggest that schools understand the importance of building a good literacy environment in the classroom to support the implementation of multimodal-based literacy for the development of children's literacy skills.

Keywords: literacy; multimodal; early childhood.

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✉ Corresponding author :

Email Address : herman@uhn.ac.id (Medan, Indonesia)

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Introduction

Early childhood education is a critical foundation for children's growth and development in order to ensure that they are ready to learn when they join secondary school. Language development is one of the most important development programs in early childhood education. Reading is an important ability in children's school learning because it is a part of their language development. Reading abilities are required to reach the primary school level of instruction. The capacity to recognize letters or characters, sound letters or a succession of letters (words), and comprehend the meaning or intent of words and readings is referred to as reading aptitude. In the world of education and everyday life, literacy learning attracts the attention of educators and governments who seek to prepare students for the flood of information and a rapidly changing world (Ahmad, 2018). The era of the industrial revolution 4.0 in the field of information and digital now causes literacy learning to be needed by anyone, anywhere, anytime for active involvement as citizens who are able to solve problems or make decisions that affect themselves, their families, society, country, and the world (Patriana, Sutama and Wulandari, 2021). There are three main elements in literacy, namely: literacy as a dual path in learning, literacy as a bridge in obtaining academic success, and literacy as a window for social and personal reading of students (Toharudin, et al, 2011), which seeks to improve the positive character of literate learners so as to support the ongoing learning process. The literacy movement is also predicted to be able to foster positive behavioral changes in students to have noble character through various examples written in fiction and non-fiction books (Herman et. al., 2022). Good literacy practices can be familiarized with fifteen minutes of reading non-lesson books before the learning time begins.

The introduction of basic literacy concepts, such as reading, writing, and arithmetic, is one of the efforts made to develop children's cognitive and language abilities. This includes the introduction of concepts such as reading, writing, and arithmetic so that children do not have difficulty adjusting to those used in secondary schools, namely Elementary Schools. Children's literacy skills have an impact on their social, emotional, and cognitive development. As a result, introducing the concept of reading to children at a young age can have an impact on their development in a variety of areas. As stated in the Regulation of the Minister of Education and Culture Number 23 of 2015, the School Literacy Movement can boost the character development of students. An important support for the success of this activity is the availability of literacy materials that contain moral values such as nationalist, local and global wisdom that are adapted to the stage of development of students. The School Literacy Movement (GLS) is not an independent activity by schools. Support is needed from various parties who participate in the success of the program (Education, 2021). One way to make it happen is through collaboration with literacy activists around the school. Collaboration can be done in reading degree activities and literacy performances. Periodic borrowing of books can also be done by reading gardens in collaboration with schools. Literacy activities in the school environment can be carried out well if there is cohesiveness of all school members. Literacy is designed to stimulate school residents, all related organizations, the community to jointly build a literate school environment (Zukhrufurrohmah and Putri, 2021)

This research departs from the problems encountered by the author at the one of Kindergarten school in Pematangsiantar. Based on the results of interviews and observations on 26 July 2021, several facts were found in the implementation of the GLS of one of kindergarten school in Pematangsiantar. One of kindergarten school was chosen in this research because of this private school is one of favourite school in the city Books and various materials for filling the school library are old publications whose content does not attract students' reading interest. Schools have not tried to bring in the community, students' families, and other elements of society to develop school literacy activities. Utilization of the school environment, school gardens, canteens, and UKS into a literacy-rich environment is still not optimal (Sinambela et. al., 2022). In addition, there are no posters for reading campaigns in classrooms, corridors, and other areas of the school and a School Literacy Team has not been

formed. Observations made in classrooms indicate the fact that classroom reading corners are not yet available in every class. There have not been fifteen minutes of reading aloud and reading silently every day (at the beginning, middle, or towards the end of the lesson). GLS activities have not been integrated into the school's lesson schedule. All school residents have not tried to involve themselves in literacy habituation activities before reading and literacy begins. Students' reading interest is still low. In addition, there are school and class magazines, but they have not been used to their full potential. Not only that, the collection of enrichment books is less varied. Based on the facts that have been obtained, it is very necessary to develop multimodal text-based literacy activities at one Kindergarten school in Pematangsiantar. The purpose of this development is so that students are able to master and apply multiliteracy skills in active, creative, innovative learning, and are sensitive to the surrounding environmental conditions.

Sihombing, Herman and Saputra (2022) defined that multimodal is one of the theory in linguistics that are quite popular nowadays as a tool or aid in teaching language. In linguistics, there is a science discuss about language as broad perspective called systematic functional grammar (Ngongo et. al., 2022; Herman et. al., 2022). In addition, the development of multimodal text-based literacy activities is expected to help students master multiliteracy skills. This study developed a guidebook for multimodal text-based literacy activities in the classroom and in the school environment. The multimodal text-based literacy activity guidebook is expected to assist teachers in implementing GLS which is developed according to teacher creativity. First, multimodal text-based literacy activities which will be realized in the form of reading activities, copyright activities, and work activities. Reading activities include classroom reading corners, reading carts, and reading areas in other school environments such as UKS, canteen, and school gardens. Second, copyright activity is an area that accommodates the results of students' scientific writing based on the results of reading and writing literacy. Third, work activities are the results of students' work related to multiliteracy abilities that are displayed on class and school wall magazines. Research Development Literacy activities in elementary schools were chosen based on considerations of their usefulness and benefits. According to Tanri (Culache & Obadă, 2014) literacy activities are designed in the packaging of literacy activities before lessons, in teaching and learning activities in class, after the learning process, creating a literate learning environment, making mini libraries in class, carrying out literacy festivals periodically with the aim of growing and boosting students' reading interest(Sari, 2020).

Purnaningwulan (2015) which states that literacy skills can be developed by reading aloud fiction and non-fiction books according to the developmental stage of students so as to improve students' literacy skills both in terms of effectiveness, application, and motivation (Simanjuntak et. al., 2022). This product is a product of multimodal and multiliterate text-based literacy activities. Ngongo, Purba, Thao and Herman (2022) explained that multimodal texts are teaching aids that combine more than one semiotic system (spoken, written, visual, audio, gestural, and spatial text) to become an inseparable part of students' lives (Tirtaatmaja, Tampi and Punuindoong, 2019) . Multimodal texts should be used by teachers in every learning process. Some examples of multimodal texts that are most often encountered in the classroom are picture books for children and posters that combine text and images (Murica, 2018) . Other examples are digital pages, movies, and short videos that combine text, images, and sound. For this reason, a variety of multimodal texts are applied by teachers as teaching aids that provide flexibility for teachers to innovate and develop creativity. The goal is to apply a prototype learning environment that can foster a sense of fun and increase the potential of students (Bilfaqih & Qomarudin, 2017)

Methodology

This research used a descriptive qualitative research. Herman et. al. (2020) defined that a qualitative research method was a method of gathering descriptive data from people in the form of written or spoken words, as well as observable behavior (Hutabarat et. al., 2020). This study used a descriptive analysis study approach in gathering, expressing, and achieving numerous challenges and objectives (Nasution et. al., 2022). There were 26 students of early children at one of Kindergarten school in Pematangsiantar. This study used the procedural method proposed by Borg and Gall which is composed of ten stages and then condensed into nine steps, namely (1) needs analysis and data collection, (2) planning, (3) product design development, (4) initial trial/validation, (5) initial product revision, (6) limited field trial, (7) product revision, (8) dissemination, and (9) implementation. All procedures were collected in order to enhance early children's literacy ability with the multimodal text-based literature activities. Source triangulation, which compares and checks both the degree of confidence in information collected through multiple tools, will be employed by researchers. This can be accomplished by comparing data from observations to data from interviews, comparing subjects and informants, and comparing interview results to related documents. The research design is presented in Figure 1.

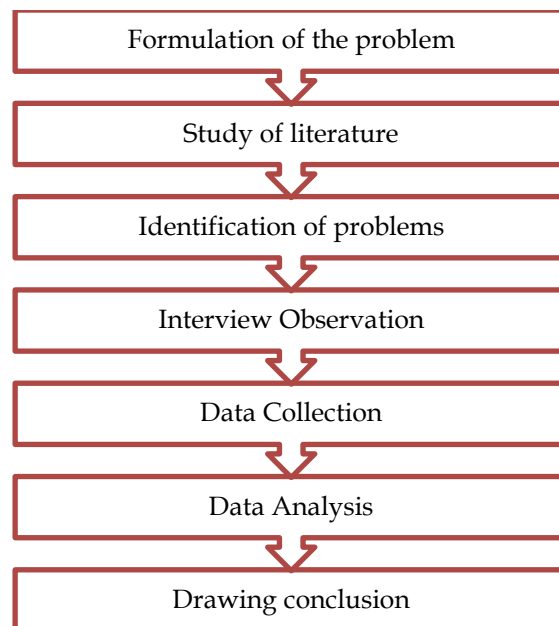


Figure 1. Steps involved in analyzing research data on teacher strategies in using Multimodal text based literacy (Purnomosari, Indrawati and Pirunika, 2022)

Results and Discussion

The data from the validation of the guidebook above shows that the feasibility of linguistic rules reaches a percentage of 94%, the feasibility of the flow of the material reaches a percentage of 100%, the feasibility of readability reaches a percentage of 100%, and the feasibility of presentation reaches 94%, so that based on the overall data obtained an average percentage of 97% . The data from the validation guide book above shows that the linguistic rules reach a percentage of 94%, the flow of the material reaches a percentage of 88%, readability reaches a percentage of 100%, and the feasibility of presentation reaches a percentage of 94%, so that based on the overall data, an average percentage of 94% is obtained.

The data from the validation results of the literacy activity guidebook above shows that the ease of use reaches a percentage of 100%, completeness of content reaches a percentage of 87.5%, conformity reaches a percentage of 100%, clarity of instructions reaches a percentage of 100%, and effectiveness reaches a percentage of 100% so based on the overall data obtained an average percentage of 97.5%.

The data from the student trials above shows that accessibility has increased by 5%, visibility has increased by 3%, flexibility has increased by 33%, comfort has increased by 21%, and beauty has increased by 17%, so that based on the overall data obtained an average percentage increase of 15.8%. In addition to the quantitative data above, in this student trial there is also qualitative data. Qualitative data in the form of notes during observations, documentation, and expressions of students' feelings towards the design of classroom literacy activities. All the data above showed that there is an improvement for the literacy activities completed by children from accessibility, visibility, flexibility, comfort, and beauty.

Analysis of the Evaluation Results of Learning Technology Experts The results of the analysis and evaluation of learning technology experts show that in the aspect of the feasibility of linguistic rules, the percentage is 94%. There is one indicator that has not been achieved from the developed product, namely the accuracy of the use of letters and punctuation with standard linguistic rules. This is because the arrangement of letters that lack consonants or vowels and sentences that lack punctuation can result in the emphasis of the sentence being less precise. Based on this assessment, modifications will be made in the form of rearranging aspects of the accuracy of the use of letters and punctuation in the design of the class literacy activity guidebook. The feasibility aspect of the material flow reaches a percentage of 100%. All indicators of the products developed have been met, namely the harmony of sentences and language applied to practical guides, various correct and appropriate terms according to PUEBI, the accuracy of sentence structure to convey the material, and the appropriateness of the use of punctuation marks in the classroom literacy activity guide book.

Based on this, it is no longer necessary to revise the product on the aspect of the feasibility of the material flow. The readability aspect of the feasibility reaches a percentage of 100%. All indicators of the developed product have been met, namely ease of reading from written form, size of phonology and punctuation marks, suitability of instructions and materials presented, completeness of indications for use and contents of manuals; as well as; density and attractiveness of the contents of the classroom literacy activity guidebook. Based on this, the product revision was not carried out on the feasibility aspect of the material flow. The presentation feasibility aspect reaches a percentage of 94%. There is one indicator that has not been achieved from the developed product, namely the accuracy of the layout and typography of the text in the class literacy activity guidebook. This is because there are still words and sentences that lack space marks so that they look close together. Based on the considerations above, it is deemed necessary to make improvements to the creation in the form of rearranging the presentation feasibility aspect in the design of the classroom literacy activity guidebook.

Analysis of the Evaluation Results of Indonesian Language Experts The results of the evaluation of Indonesian language experts show that the aspect of linguistic rules reaches a percentage of 94%.

There is one indicator that has not been achieved from the developed product, namely the accuracy of the use of letters and punctuation with standard linguistic rules. This is because the arrangement of letters that lack consonants or vowels and sentences that lack punctuation can result in the emphasis of the sentence being less precise. According to the results of the analysis, better changes are needed to the results in the form of rearranging the aspects of the accuracy of the use of letters and punctuation in the design of the classroom literacy activity guide. The feasibility aspect of the material flow reaches a percentage of 88%. There are two indicators that have not been achieved from the developed product, namely the communicative use of the language of presenting the material and the continuity of presenting the material in accordance with this guidebook for classroom literacy activities. The reason is because there are still some materials that are less coherent and communicative. Based on direct inspection and correction, it is necessary to improve better by tracing the flow of material in the product guidebook for literacy activities to be more communicative.

The readability aspect reaches a percentage of 100%. All indicators of the developed class literacy activity products have been met, namely the ease of reading from written form, font size and punctuation, making it easier for readers to use and the suitability of how to use and the contents of the guidebook, as well as the density and attractiveness of the contents of the book using class literacy activities. Based on this, the product revision was not carried out on the feasibility aspect of the material flow. The presentation feasibility aspect reaches a percentage of 94%. There is one indicator that has not been achieved from the developed product, namely the accuracy of the layout and typography of the text in the class literacy activity guide book.

The reason is because there are still words and sentences that lack spaces so they look close together. It is necessary to improve the artificial results according to the assessment in the form of rearranging the presentation feasibility aspect in the design of the classroom literacy activity guidebook. Analysis of Practitioner Evaluation Results The practitioners' evaluation results showed that the criteria for the ease of use of the classroom literacy activity guidebook reached a percentage of 100%. All indicators of the developed product have been met, which includes a guide book for classroom literacy activities presented in a coherent and clear manner, a manual for classroom literacy activities presented in a complete and communicative way, a class literacy activity book presented in easy-to-understand language, and a class literacy activity guide book presented with clear instructions. Based on this, it is not necessary to revise the product on the criteria for the ease of use of the classroom literacy activity guidebook. The criteria for the completeness of the contents of the guidebook for classroom literacy activities reached a percentage of 87.5%. There are several indicators that have not been achieved from the developed product, namely a guide book accompanied by an illustration of the design of literacy activities and a literacy activity guide book accompanied by an example of an instrument for determining the design of a literacy activity. According to the results of the analysis, it is necessary to improve quality by adding examples of illustrations and examples of instruments for determining the design of literacy activities in the product guide book for classroom literacy activities. Criteria for conformity Class literacy activities with learning reach a percentage of 100%. All indicators of the developed product have been met, namely: Class literacy activities are presented according to the characteristics of students, Class literacy activities are presented in accordance with the learning styles of students, Class literacy activities are presented according to the ability level of students, and Class literacy activities are provided. presented in accordance with the needs of learning activities.

Referring to the practicality of practical results, it is not necessary to improve the literacy activity guide on the criteria for the suitability of literacy activities with learning. The criteria for the clarity of the guidebook instructions for classroom literacy activities reached a percentage of 100%. All indicators of the products developed have been met, namely the instructions and steps in the guidebooks are presented in a coherent, complete manner, accompanied by analytical instruments, and easy-to-understand instructions. Guide to literacy activities on the criteria for clarity of guidance for classroom literacy activities. The criteria for the effectiveness of the implementation in the classroom reach a percentage of 100%. All indicators of the products developed have been met, namely, class literacy activities are easy to implement, easy to present in class, easy to use, and provide convenience in the learning process in class. the criteria for the effectiveness of the implementation in the classroom. Analysis of Student Trial Results The results of student trials showed that the conditions before and after the application of the product experienced an increase in percentage.

The percentage increase includes aspects of accessibility which have increased by 5%, visibility has increased by 3%, flexibility has increased by 33%, comfort has increased by 21%, and beauty has increased by 17%. Based on the overall data, the average percentage increase is 15.8%. This shows that the design of classroom literacy activities is proven to be able to increase accessibility, visibility, flexibility, comfort, and beauty. Prototype results. Literacy

activities that have been implemented in the classroom have a real and massive impact. Increasing the comfort and beauty of the class shows that the application of literacy activities has a positive impact according to the results of interviews with students. Motivation and enthusiasm for learning has also increased, as can be seen from the enthusiasm of students in participating in the learning process by utilizing prototypes of literacy activities in the classroom.

Furthermore, the researchers would like to present the result of this study to the previous studies that discussed about early children's literacy. The researchers had searched and tried to compare this result of study with previous ones, but the researchers found that research about multimodal text-based literacy activities was less and no other researchers did the research by using this theory. The researchers hope that this research can give more references and horizons to other researchers, readers, especially teachers and parents in teaching the children. Since literacy is one important factor for children to start their activities in world of education at school. Some of schools won't accept students who do not know how to read and write as the basic to continue their studying in the level of elementary school.

Conclusion

Good practice of literacy in filling out the GLS program at school has a broad meaning in utilizing everything creatively and innovatively through literate activities, including students' reading degrees. The design guidebook for classroom literacy activities that have been tested on one of Kindergarten teachers in Pematangsiantar, shows very satisfactory achievements. Text-based literacy activities are very important to the early children's growth indicator. Factors from parents are also playing an important part in their development. Teachers and parents need to pay more attention to the factors of children's characteristics and their ability in teaching since they are different to every child.

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References

- Ahmad, F. (2018) *Media Literasi Sekolah : Teori Dan Praktik*. Pilar Nusantara.
- Bilfaqih, Y., & Qomarudin, M. N. (2017) *Multimodal Analysis*. Dee Publish.
- Culache, O., & Obadă, D. R. (2014). Multimodality as a Premise for Inducing Online Flow on a Brand Website: A Social Semiotic Approach. *Procedia - Social and Behavioral Sciences*, 261-268. <https://doi.org/10.1016/j.sbspro.2014.08.227>
- Herman, H., Purba, R., Sijabat, P. A., Saputra, N., Muhammadiyah, M., & Thao, N. V. (2022). Investigating the Realization of Speech Function in a Speech through Systemic Functional Linguistics Perspective. *Script Journal: Journal of Linguistics and English Teaching*, 7(01), 31-41.
- Herman, H., Sherly, S., Sinaga, Y. K., Sinurat, B., Sihombing, P. S. R., Panjaitan, M. B., Purba, L., Sinaga, J. A. B., Marpaung, T. I., and Tannuary, A. (2022). Socialization of the implementation of digital literacy for educators and students in the digital era in Pematangsiantar city. *Jurnal Kreativitas Pengabdian kepada Masyarakat*, 5(6), 1683-1689. <https://doi.org/10.33024/jkpm.v5i6.5864>
- Herman., Purba, R., Thao, N. V., & Purba, A. (2020). Using Genre-based Approach to Overcome Students' Difficulties in Writing. *Journal of Education and E-Learning Research*, 7(4), 464-470. <https://doi.org/10.20448/journal.509.2020.74.464.470>
- Hutabarat, E., Herman, Silalahi, D.E., and Sihombing, P. S. R. (2020). An Analysis of Ideational Metafunction on News Jakarta Post about Some Good Covid-19 Related News. *VELES*

Voices of English Language Education Society, 4(2), 142-151.
<https://doi.org/10.29408/veles.v4i2.2526>

- Murica (2018). Interactive and multimodal pedagogy: A case study of how teachers and students use interactive whiteboard technology in primary science, *Australian Journal of Education*, 58(1), pp. 74-88. <https://doi.org/10.1177/0004944113517834>
- Nasution, T., Afrianti, D., Tukiyo, Sulistyani, and Herman. (2022). Critical Discourse Analysis in the Classroom: A Critical Language Awareness on Early Children's Critical Thinking. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 6(5), 4992-5002.
- Ngongo, M., Maromon, E., Loba, D., and Herman. (2022). A systemic functional linguistics analysis of text transitivity of Mathew Gospel, New Testament of Kupang Malay. *World Journal of English Language*, 12(5), 188-201. <https://doi.org/10.5430/wjel.v12n5p188>
- Ngongo, M., Purba, R., Thao N, V., & Herman. (2022). An Application of Compositional Metafunctions in Improving Children's Ability to Learn English Through Images. *Jurnal Pendidikan Progresif*, 12(3), 1177-1188. <https://doi.org/10.23960/jpp.v12.i3.202214>
- Patriana, W. D., Utama, S. and Wulandari, M. D. (2021). Pembudayaan Literasi Numerasi untuk Asesmen Kompetensi Minimum dalam Kegiatan Kurikuler pada Sekolah Dasar Muhammadiyah, *Jurnal Basicedu*, 5(5), pp. 3413-3430. doi: <https://doi.org/10.31004/basicedu.v5i5.1302>
- Pendidikan, D. K. (2021). Modul Literasi Numerasi Di Sekolah Dasar. Kementerian Pendidikan dan Kebudayaan. http://ditpsd.kemdikbud.go.id/upload/filemanager/2021/06/2_Modul_Literasi_Numerasi.pdf.
- Purnaningwulan, R. D. (2015). *Analisis Multimodal iklan Shampoo*. Commonline Departemen Komunikasi., 4.
- Purnomosari, E., Indrawati, I., and Pirunika, S. (2022). Penerapan literasi pada anak usia 5-6 tahun sebagai upaya persiapan masuk ke jenjang SD/MI. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 6(4), 3381-3390. <https://doi.org/10.31004/obsesi.v6i4.2348>
- Sari, S. (2020). Analisis Multimodal. *Journal Of Reflection : Economic, Accounting, Management Business*, 3, pp. 291-300.
- Sihombing, P. S. R., Herman., & Saputra, N. (2022). How to teach English conversation? An implementation of a multimodal discourse analysis through images. *English Review: Journal of English Education*, 10(2), 431-438.
- Simanjuntak, M.M., Saputra, N., Afrianti, D., Mulyadi, J. and Herman. (2022). Implementing Multimodal Literacy to Improve Students' Ability in Literacy for Classroom Practice. *Sarcouncil Journal of Education and Sociology*, 1(4), 1-5
- Sinambela, P., Siregar, R., Tambunan, T. A., Pandiangan, O. M. B., Sianipar, D. A., Herman, and Sigiro, M. (2022). Implementasi gerakan belajar dalam meningkatkan mutu pembelajaran Bahasa Inggris di SMP Negeri 1 Baktiraja Kabupaten Humbang Hasundutan. *Jurma : Jurnal Program Mahasiswa Kreatif*, 6(1), 178-187.
- Tirtaatmaja, D. I., Tampi, J. R. E. and Punuindoong, A. Y. (2019). Pengaruh Brand Image dan Harga Terhadap Keputusan Pembelian Mobil Toyota Avanza pada PT. Hasjrat Abadi Tendeand Manado. *Jurnal Administrasi Bisnis*, 9(1), 90. <https://doi.org/10.35797/jab.9.1.2019.23704.90-95>
- Toharudin, U., dkk (2011). Membangun Literasi Sains Peserta Didik, *Humaniora*.
- Zukhrufurrohmah, Z. and Putri, O. R. U. (2021). Pendampingan Pengembangan Instrumen Berciri Literasi Numerasi dalam Menyiapkan AKM pada Guru SD. *JPMB: Jurnal Pemberdayaan Masyarakat Berkarakter*, 4(2), 249-260.