Google Classroom-Based Literacy Training E-Modules to Improve Teachers' Ability to Implement the School Literacy Movement

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A B S T R A K

Pengelolaan Gerakan Literasi Sekolah (GLS) yang efektif dapat menciptakan budaya literat warga sekolah dan meningkatkan kemampuan literasi siswa. Namun kenyataannnya pelaksanaan GLS di sekolah tidak dapat dilaksanakan sesuai tujuan GLS karena adanya kendala yang dihadapi oleh guru. Salah satunya adalah guru belum memahami tahapan dan teknis pelaksanaan GLS dengan baik. Penelitian pengembangan ini bertujuan untuk mengembangkan e – modul pelatihan pengelolaan GLS berbasis Google Classroom bagi guru jenjang SMP. Jenis penelitian ini adalah penelitian Reseach and Development *(RND) dengan menggunkan pendekatan model ADDIE. Subjek dalam penelitian ini terdiri dari validator ahli materi, ahli TIK, kepala sekolah dan guru. Teknik pengumpulan data dilakukan menggunakan instrumen wawancara, observasi, studi dokumentasi, angket dan tes. Teknik analisis data dilakukan menggunakan metode campuran (mix method). Data kualitatif dianalisis menggunakan model Milles dan Huberman dan data kuantitatif dianalisis menggunakan kuantitatif deskriptif dan Uji - T. Produk penelitian ini adalah buku E – Modul pelatihan literasi berbasis Google Clasroom. Hasil uji produk oleh validasi ahli dan calon pengguna pada uji coba produk modul berada pada kategori layak dan efektif digunakan dalam pelatihan pengelolaan GLS. Melalui modul pelatihan ini diharapkan guru dapat mempelajari dan memanfaakan sebagai panduan dalam melaksanakan kegiatan GLS yang lebih variatif dan berdampak pada peningkatan kompetensi literasi siswa.*

A B S T R A C T

Effective management of the School Literacy Movement (GLS) can create a literate culture of school members and improve students' literacy skills. However, in reality, the implementation of GLS in schools cannot be carried out according to the objectives of GLS because of the obstacles faced by teachers. One of them is that teachers do not understand the stages and technical implementation of GLS well. This development research aims to develop a Google Classroom-based GLS management training module for junior high school teachers. This type of research is Research and Development (RND) research using the ADDIE model approach. The subjects in this study consisted of material expert validators, ICT experts, principals and teachers. Data collection techniques were carried out using interviews, observations, documentation studies, questionnaires and tests. Data analysis techniques were carried out using mixed methods. Qualitative data was analyzed using the Milles and Huberman model and quantitative data was analyzed using descriptive quantitative and T-test. The product of this research is the Google Classroom-based literacy training E-module. The results of product testing by expert validation and prospective users in the module product trial were in the category of feasible and effective for use in GLS management training. Through this training module, it is expected that teachers can learn and utilize it as a guide in carrying out GLS activities that are more varied and have an impact on improving students' literacy competencies.

1. INTRODUCTION

Literacy skills are one of the important elements in the progress of a country in the era of globalization. Literacy skills that need to be mastered by Indonesians in the 21st century include six basic literacies, namely (1) language literacy, (2) numeracy literacy, (3) science literacy, (4) digital literacy, (5)

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financial literacy, and (6) cultural and civic literacy (Anhusadar, 2016; Ratama et al., 2021). The School Literacy Movement (GLS) is one of the domains of *GLN* in its implementation integrated with curricular, co-curricular and extracurricular learning activities both in the classroom and outside the classroom and supported by parents and the community (Bungsu & Dafit, 2021; Ramandanu, 2019). School Literacy Movement is implemented through the habituation stage so that a reading culture is formed, followed by the development stage and integrated in learning, so good School Literacy Movement management is needed. Optimal management of literacy culture can increase students' literacy skills which affect future success (Ichsan, 2018; Marmoah & Poerwanti, Suharno, 2022).

The ineffective management of GLS in schools has led to no improvement in reading and writing literacy at the school, regional and even national levels. According to the Program for International Student Assessment (PISA) survey in 2018, Indonesian students' reading literacy score was 371, science literacy score was 379 and mathematics literacy score was 396 (Bungsu & Dafit, 2021; Liansari et al., 2021). These scores ranked Indonesia 74th out of 79 countries surveyed, or 6th from the bottom. The results of this survey show that there needs to be an effort to address literacy issues so that Indonesia can compete with other countries. Nationally, the implementation of GLS in schools has several problems according to the Directorate General of Primary and Secondary Education in research (Ilmi et al., 2021; Srirahayu et al., 2021), the first is the unavailability of non-lesson books in schools, the second is that not all teachers understand the strategies and methods of implementing the literacy movement in schools and the third is that there are still comfortable reading facilities for students such as class reading corners, libraries to support the implementation of GLS in schools.

Based on the preliminary study conducted through interviews, GLS activities at State Junior High School 6 Sentani have not run effectively due to several obstacles such as the lack of non-lesson reading sources and the low motivation of teachers in the implementation of the GLS program at school caused by teachers not understanding the GLS guidelines and not all teachers have access to training related to the management of GLS in schools. Another problem is that literacy training that has been attended by teachers in schools does not have training modules, training is conducted conventionally and has not utilized online learning media so that teachers can utilize existing technology to overcome obstacles in implementing GLS and in learning. The constraints of teachers in the implementation of GLS is that the GLS program launched by the central and regional governments has not been well socialized to teachers so that it affects the effectiveness of GLS management in schools (Gunansyah et al., 2018; Yunita Anindya et al., 2019).

One of the efforts that can be made to overcome the above problems is to conduct training for teachers in these schools in order to improve the ability of teachers to manage *GLS* activities in schools and change the learning paradigm that is integrated with reading literacy skills. Training is an action deliberately taken by an institution to increase competence for employees in overcoming obstacles or technical problems in the institution and has an impact on the effectiveness of the institution's program. In educational institutions, the intended employees are teachers, thus teachers who have participated in training activities will experience changes both in terms of knowledge and skills and can provide solutions to problems that occur at school by adjusting the learning material in the training to the needs of teachers at school (Sudianto & Kisno, 2021; Zaenab et al., 2020). Adjustment of learning materials in training needs a module that makes it easier for teachers to participate in GLS management training. Module is a series of teaching materials that are packaged as a whole and systematically, which contains planned learning experiences. Modules were chosen because they can overcome the limitations of time, space, sensory power, both students and teachers (Bano, 2018; Xiao et al., 2020).

Modules can be adapted to current technological developments in the form of electronic modules (e-modules). E-modules have advantages including encouraging creativity, being efficient, innovative and can develop the ability of teachers to use existing technology and can be studied via smartphones. A good and interesting module has the following characteristics: (1) Self Instructional, that is, the module can be studied alone without depending on other parties; (2) Self Contained, that is, the learning material is fully loaded and can be completed; (3) Stand Alone, that is, it stands alone and does not depend on other media; (4) Adaptive, that is, adjusted to the development of science and technology and flexible; (5) User Friendly, that is, it makes it easy for users to access learning instructions and uses language that is easy to understand (Sofyan et al., 2019; Yulando, Sutopo, et al., 2019).

The use of technology as a learning media in the network (online) is often used today, one of which is Google Classroom media which makes it easier in the learning process at school or in training because it can be integrated with other Google products Google Drive, Google Form which makes it easier for participants to access learning in order to achieve the goals of the learning process. The advantages of Google Classroom are as a learning media that is easy to optimize in e-learning-based learning, can be used for free, easy to use because it is user friendly, and another advantage is that it supports going green

because it does not use paper (Alfitriani & Hutabri, 2017; Sitorus et al., 2019). The utilization of e-modules in ICT training has several advantages, namely that the training material can be loaded widely and in detail and material can be added from various sources relevant to the training in the form of URLs and QR codes so that the module display becomes simpler (Ozdamli & Ozdal, 2018; Yanuarti et al., 2022).

Previous research that has been conducted includes the implementation of training using digital learning media and modules to increase teacher knowledge in implementing learning at school and improve the digital literacy skills of Junior High School teachers (Sułkowski et al., 2021). In addition, the E - Google Workspace For Education application training module effectively improves for strengthening the digital literacy competencies of Islamic Junior High School of Kuala Jambi (Iskandar et al., 2022). The novelty of this study lies in the type of training conducted in study. This Google Classroom-based GLS management training module was developed to improve the ability of teachers to manage GLS in schools by utilizing existing technological media, teachers can carry out GLS activities that are more varied and have an impact on increasing student literacy.

2. METHOD

This research was a research and development (R&D). This research used the stages of the ADDIE model which consists of the analysis stage, they were analyzing the weaknesses of GLS training in schools; the design stage, the planning stage of product development; the development stage, namely the development of initial products based on data analysis in the form of e-modules of Google Classroom-based GLS management training, e-modules are validated by material experts, ICT experts and revisions are made to the product; the implementation stage, they are the trial stage carried out at State Junior High School 6 Sentani involving 15 teachers; and the evaluation stage, namely making revisions to the e-modules based on the results of product trials. The subjects of this study consisted of principals, teachers and 2 (two) expert validators. Qualitative data collection techniques were carried out using interviews, observations, document studies, questionnaires and tests. The research data obtained were analyzed using mixed methods. Qualitative data analysis used the Milles and Huberman model, while quantitative data used quantitative descriptive analysis of average (mean), presentation and T-test. The lattice of material expert validator instruments, prospective users, is provided in Table 1.

Table 1. The Lattice of Material Expert Validator Instruments

No	Indicator	Statement Item Number
1	Self Instructional	1,2,3,4,5,6,7,8,9,10,11
2	Self Contained	12
3	Stand Alone	13
4	Adaptive	14
5	User Frendly	15
	Number of questions	**15**

Then, the feasibility classification by validation of material experts and potential users is show in Table 2.

Table 2. Classification of Feasibility by Material Experts and Prospective Users

Score	Percentage	Category
67 – 75	89% – 100 %	Very feasible
54 – 66	72% - 88 %	Feasible
41 – 53	54% - 71 %	Sufficient
28 – 40	37% - 53 %	Less Feasible
15 – 27	20% - 36 %	Poor

Moreover the ICT expert validator instrument grid is show in Table 3 and classification of feasibility by material expert validation and prospective users is show in Table 4.

Table 3. Grid of Instrument Validation by ICT Expert

No.	Indicator	Statement Item Number
1.	Display Quality	1,2,3,4,5,6
2.	Technical Quality	7,8,9,10
	Number of questions	**10**

Table 4. Classification of Feasibility by ICT Experts

Skor	Presentase	Kategori
43 – 50	86% – 100 %	Very feasible
36 – 42	73% - 85 %	Feasible
28 – 35	55% - 72 %	Sufficient
19 – 27	37% - 54 %	Less Feasible
10 – 18	20% - 36 %	Poor

3. RESULT AND DISCUSSION

Result

The initial stage in this research is to analyze problems in GLS management training so far in schools. Based on the results of interviews, observations and document studies, it was found that there had never been training on GLS management in the school. The problem found in the interview was that literacy training that had been attended by teachers from external parties had not specifically discussed GLS management and training carried out conventionally has not been integrated with technology. This condition is the basis for the development of e-training modules for GLS management based on Google Classroom to improve teachers' abilities in managing GLS in schools so that the effectiveness of GLS activities can increase and have an impact on the literacy component of school education report cards. The framework for writing the Google Classroom-based GLS management training module is 1) the initial part consists of a title page, instructions for use, preface and table of contents; 2) an introductory section consisting of background, training objectives, training objectives and competency maps; 3) the learning section or content consists of 3 (three) chapters, namely chapter 2, chapter 3 and chapter 4 containing learning material about the basic concepts of GLS (understanding, objectives, principles and components of GLS), GLS stages (habituation stage, development stage, implementation and technical stages of GLS implementation and procedures for using google classroom; 4) the learning evaluation section consists of a summary and comprehension test; 5) The final part is the bibliography. The front cover of module is show in Figure 1, and module usage guide is show in Figure 2.

Figure 1. Front Cover of Module

Figure 2. Module Usage Guide

Validation tests against module development are carried out by expert validators of training materials, and expert validators of ICT. The instrument used for material expert validation tests refers to the characteristics of writing a good module in the form of a closed questionnaire consisting of 15 statements and an open questionnaire in the form of notes and recommendations from material expert validators. ICT expert validation test in the form of closed questionnaire is consisting of 10 statements and an open questionnaire in the form of notes and recommendations. The validation test results of the Google Classroom-based GLS management training module are presented in the Table 5 and Table 6.

Table 5. Material Expert and Prospective User Validation Test Results

No.	Indicator	Material Expert Validation
1.	Self Instructional	75%
2.	Self Contained	70%
3.	Stand Alone	80%
4.	Adaptive	80%
5.	User Frendly	70%
	Average Percentage	**75%**
	Category	**Feasible**

Table 6. ICT Expert Validation Test Results

No	Indicator	Material Expert Validation
1	Display Quality	93%
2	Technical Quality	95%
	Average Percentage	**94%**
	Category	**Very Feasible**

Base on Table 5 show the results of the Google Classroom-based GLS management training module validation test by material experts is 75% in the feasible category, while the ICT expert validation test results of 94% are in the very feasible category as show in Table 6. These results show the product is eligible for testing after several revisions based on expert validator input. The test subjects of the Google Classroom-based GLS management training   module consisted of 15 teachers from State Junior High School 6 Sentani as respondents to find out the extent of responses from module users in training. The results of module validation by 15 module user respondents are provided in Table 7.

Table 7. Test Results by Potential Users

No	Indicator	Prospective User Validation
1	Self Instructional	93%
2	Self Contained	100%
3	Stand Alone	80%
4	Adaptive	80%
5	User Frendly	100%
	Average Percentage	**91%**
	Category	**Very Feasible**

Base on Table 7, the results of module trials by prospective users of 91% are in the very feasible category. In general, the results of module trials by expert validators and prospective users who provide positive responses to the use of modules, it can be said that modules are feasible and good to be used in Google Classroom-based GLS management training. To measure the level of understanding of trainees, Google Classroom-based GLS management before and after attending the training was carried out through pre-test and post-test with an instrument in the form of a quiz containing 10 questions accessed by users through the Google Form application. The pre-test and post-test results of trainees were analyzed with the T-Test presented in Table 8.

Table 8. T-Test Pre-test and Post-test Results of Trainees

No	Information	T-Test Result
1	Average Pre-Test ($\bar{X}_A$)	50.00
2	Average Post-Test ($\bar{X}B$)	70.66
3	Standard Deviation Pre- Test (S_A)	14.14
4	Standard Deviation Post- Test (S_B)	19.80
5	T – Count (t)	2.843
6	Significance Two-Sides (p)	0.013

From Table 8 can be seen the difference between the average pre-test cesarean 50.00 and the average post-test of 70.66. The significance value obtained from the results of processing using SPSS is 0.013, indicating a difference before and after training using modules because the significance value is <

0.05. Based on these results, it can be concluded that the Google Classroom-based GLS management training module is effective for improving teachers' ability in GLS management.

Discussion

Results of training module development of GLS-based management training module Google Classroom demonstrate that the module is feasible and effective to be used in GLS management training for Junior High School (SMP) teachers. The importance of the role of teachers in supporting GLS activities and increasing student literacy in schools (Wakhinuddin S, 2020). This development is an effort to overcome the obstacles faced by teachers in running GLS programs in schools that run monotonously so that teachers can more easily carry out more varied and participatory GLS activities in creating literate school citizens according to GLS goals (Ichsan, 2018; Nurul Fauziah et al., 2020). Through GLS, schools can create a literacy-friendly school environment, increase students' understanding of reading books, critical and creative thinking which has an impact on increasing reading interest and student learning outcomes (W. S. Dewi et al., 2022; Lestari et al., 2021; Trianggoro & Koeswanti, 2021).

This module is developed through the stages of the ADDIE model which consists of five steps, namely: Analysis (analysis), design (planning), Development (development), implementation *(*implementation) (Sugiyono, 2017; Trust & Pektas, 2018). The ADDIE stage model is used because it has systematic stages and refers to the previous stages so that it can produce effective, quality and feasible products for use (Antara et al., 2022; Suryaningtyas et al., 2020). Based on the results of the module requirements analysis carried out, the module is developed in the form of an electronic module (e - module). Some previous studies stated the ease of using e-modules in training as a systematic learning medium and easily accessible anytime and anywhere through electronic devices (Melvinasari, 2019; Yanuarti et al., 2022).

E-module product development was developed using the Canva platform. Canva is an online platform that provides various interesting features for designing books, images, infographics, presentation materials as desired and can be made public. Product development e-modules are developed using the Canva platform. Canva is an Online platform which provides a variety of interesting features for the design of books, images, infographics presentation materials as desired and can be published (Sukarman et al., 2021; Tanjung & Faiza, 2019). Development *e* – module refers to the Director General of PMPTK with the following characteristics: (1) Self Instructional, i.e. modules can be studied independently; (2) Self Contained, where the learning material needed is arranged as a whole in one module; (3) Stand Alone, i.e. modules do not depend on other teaching materials used together; (4) Adaptive, that is, modules should be adapted to the development of science and technology; and (5) User Friendly, meaning modules are easily accessible and user-friendly (Iskandar et al., 2022; Yulando, Chi, et al., 2019)

Structured modules integrated with multiple applications Google Workspace that is Google Drive, Google Forms which makes it easier for users to deepen learning materials in training. In line with previous research which states that learning using e-modules makes students comfortable, learning more effective, can increase learning motivation, provide direct feedback and students can conduct self-evaluation and determine their learning acceleration (Alimin, 2019; Yulando, Chi, et al., 2019). Based on input from expert validators as a whole, the training modules developed are in the category suitable for use and meet the characteristics of good module preparation. The improved module is inserted into the GLS training virtual classroom in the application Google Classroom that has been made the reason for the selection Google Classroom Because it is easier and free to use by teachers (Kurniawan & Purnomo, 2020; Williams et al., 2009). This is done because not all teachers take advantage of the free facilities provided by Google in learning and literacy activities as well as being able to introduce students to learning activities that are integrated with technology according to the needs of the 21st century, increase student thinking creativity, foster student interest and learning and facilitate communication between teachers and students (Sari et al., 2019; Saryadi & Sulisworo, 2023; Syahroni et al., 2020).

The product trial stage is carried out through training which begins with demonstrating the usage procedure Google Classroom To make it easier for teachers to access training materials (R. Dewi et al., 2021; Sari et al., 2019). Training success is measured through implementation Pre-test and post-test to find out the increase in understanding of trainees before and after attending GLS-based management training Google Classroom. Increased teacher understanding in education and training participants is shown by an increase in the average score of the presentation of results Pre-test and post-test Training Participants the presence of mean differences (Mean) on Pre-test and post-test Demonstrate quality improvement before and after training for teachers.

Developed training modules using the ADDIE development model and online digital learning media went well and improved teachers' literacy skills. In this research, the researchers used a semi-online learning model. Training module based on an analysis of teacher needs to improve PTK

management using the heutagogy learning model. The focus of this research is on increasing teacher competency. The implication of this research makes it easier for teachers to carry out varied and effective GLS stages in schools. The weakness in this training is that the training module can be used by schools with more or less the same conditions as the schools studied. This research can be developed by integrating other Google Workspace application media to facilitate the publication of GLS program results in schools.

4. CONCLUSION

Based on the results of research and discussion of the development of e-training modules on GLS management based on Google Classroom, it can be used by teachers in overcoming obstacles faced by teachers in implementing GLS programs. The results showed that the Google Classroom-based GLS management training module is feasible and effective to be used in GLS management training for junior high school teachers and as a guide for teachers in implementing the stages and technical implementation of GLS so that the GLS program can run effectively. For school principals, the development of this training module can be an alternative module for GLS management training within the school.

5. REFERENCES

Alfitriani, A., & Hutabri, E. (2017). Kepraktisan dan Keefektifan Modul. In *Jurnal Kependidikan* (Vol. 1, Issue 1, pp. 12–23). https://www.researchgate.net/profile/Adlia-Alfiriani.

Alimin, F. G. (2019). *The Effectiveness Of Google Classroom As An Instructional Media : A Case Of State Islamic Institute Kendari , Indonesia*. *March*. https://doi.org/10.18510/hssr.2019.7227.

Anhusadar, L. O. (2016). Kreativitas Pendidikan Di Lembaga PAUD. *Jurnal Al-Ta'dib*, *9*(1), 76–93. https://ejournal.iainkendari.ac.id/al-tadib/article/view/503.

Antara, I. G. W. S., Suma, K., & Parmiti, D. P. (2022). E-Scrapbook: Konstruksi Media Pembelajaran Digital Bermuatan Soal-soal Higher Order Thinking Skills. *Jurnal Edutech Undiksha*, *10*(1), 11–20. https://doi.org/10.23887/jeu.v10i1.47559.

Bano, V. O. (2018). Development of Authentic Assessment Management Training Module for Middle School Science Teachers. *Kelola: Jurnal Manajemen Pendidikan*, *5*(2), 139–151. https://doi.org/10.24246/j.jk.2018.v5.i2.p139-151.

Bungsu, A. P., & Dafit, F. (2021). Pelaksanaan Literasi Membaca di Sekolah Dasar. *Jurnal Pedagogi Dan Pembelajaran*, *4*(3), 522–527. https://doi.org/https://doi.org/10.23887/jp2.v4i3.40796.

Dewi, R., Mulyati, Y., Rahmat, J., Sari, E. N., & Dalima, P. (2021). Manajemen Pembelajaran Daring/Online Dengan Menggunakan Google Classroom Di SDIT Fajar, Depok. *Journal of Mountain Agriculture on the Balkans*, *1*(1), 47–52. https://doi.org/10.32493/jmab.v1i1.10373.

Dewi, W. S., Karma, I. N., & Oktaviyanti, I. (2022). Implementasi Program Gerakan Literasi Sekolah (GLS) Pada Literasi Baca Tulis di SDN 30 Ampenan Tahun Ajaran 2022/2023. *Jurnal Ilmiah Profesi Pendidikan*, *7*(4), 2165–2172. https://doi.org/10.29303/jipp.v7i4.931.

Gunansyah, G., Rachmadiyanti, P., & Subagiyo, F. M. (2018). Keterampilan Informasi Melalui Pembuatan Media Literasi. *Publikasi Pendidikan*, *8*(1), 13. https://doi.org/10.26858/publikan.v8i1.4928.

Ichsan, A. S. (2018). Gerakan Literasi Sekolah Di Sekolah Islam (Sebuah Analisis Implementasi Gls Di Mi Muhammadiyah Gunungkidul). *Al-Bidayah: Jurnal Pendidikan Dasar Islam*, *10*(1), 69–88. https://doi.org/10.14421/al-bidayah.v10i1.189.

Ilmi, N., Wulan, N. S., & Wahyudin, D. (2021). Gerakan Literasi Sekolah dalam Meningkatkan Minat Baca Siswa Sekolah Dasar. Edukatif: Jurnal Ilmu Pendidikan, 3(5), 2866–2873. https://doi.org/10.31004/edukatif.v3i5.990.

Iskandar, D., Zuwerni, Z., & Sofyan, S. (2022). Pengembangan E-Modul Pelatihan aplikasi Google Workspace For Education Untuk Penguatan Kompetensi Literasi Digital Guru MTs. *Jurnal Manajemen Pendidikan Dan Ilmu Sosial*, *3*(2), 1005–1018. https://doi.org/10.38035/jmpis.v3i2.1268.

Kurniawan, B., & Purnomo, A. (2020). Pelatihan Penggunaan Aplikasi Google Classroom Sebagai Upaya Peningkatan Pembelajaran Online Bagi Guru Matapelajaran IPS. *International Journal of Community Service Learning*, *4*(1), 1–9. https://doi.org/10.23887/ijcsl.v4i1.22236.

Lestari, F. D., Ibrahim, M., Ghufron, S., & Mariati, P. (2021). Pengaruh Budaya Literasi terhadap Hasil Belajar IPA di Sekolah Dasar. Jurnal Basicedu, 5(6), 5087–5099. https://doi.org/10.31004/basicedu.v5i6.1436.

Liansari, V., Taufiq, W., & Santoso, D. R. (2021). The Implementation of Literacy Culture Programs in Elementary School. *Jo-ELT (Journal of English Language Teaching) Fakultas Pendidikan Bahasa &*

Seni Prodi Pendidikan Bahasa Inggris IKIP, *8*(2), 189. https://doi.org/10.33394/jo-elt.v8i2.4481.

Marmoah, S., & Poerwanti, Suharno, J. I. S. (2022). Literacy culture management of elementary school in Indonesia. *Heliyon*, *8*(4), e09315. https://doi.org/10.1016/j.heliyon.2022.e09315.

Melvinasari, S. (2019). Design of mathematics module based on rme to improving the problem-solving ability. *International Journal of Scientific and Technology Research*, *01*, 3918–3922. https://doi.org/10.31764/jtam.v7i1.10185.

Nurul Fauziah, S., Nur Faziah, S., Sulaehatun Nupus, F., & Ulfi, N. (2020). Evaluasi Minat Baca Siswa Melalui Program Literasi Sekolah. *Jurnal Pendidikan Dan Ilmu Sosial*, *2*(1), 108–116. https://ejournal.stitpn.ac.id/index.php/nusantara/article/view/641.

Ozdamli, F., & Ozdal, H. (2018). Developing an instructional design for the design of infographics and the evaluation of infographic usage in teaching based on teacher and student opinions. *Eurasia Journal of Mathematics, Science and Technology Education*, *14*(4), 1197–1219. https://doi.org/10.29333/ejmste/81868.

Ramandanu, F. (2019). Gerakan Literasi Sekolah (GLS) Melalui Pemanfaatan Sudut Baca Kelas Sebagai Sarana Alternatif Penumbuhan Minat Baca Siswa. *Jurnal Mimbar Ilmu*, *24*(1), 10–19. https://doi.org/https://doi.org/10.23887/mi.v24i1.17405.

Ratama, I. P., Padmadewi, N. N., & Artini, L. P. (2021). Teaching the 21st Century Skills (4Cs) in English Literacy Activities. *Journal of Education Research and Evaluation*, *5*(2), 223. https://doi.org/10.23887/jere.v5i2.30849.

Sari, D. P., Sukmawati, R. A., Purba, H. S., Maulana, D., & Azis, H. (2019). Pelatihan Penggunaan Google Classroom untuk Mengoptimalkan Proses Pembelajaran. *Jurnal Pengabdian Masyarakat*, *1*(2), 56–60. http://download.garuda.kemdikbud.go.id/article.php?article.

Saryadi, W., & Sulisworo, D. (2023). Development of E-Module Based on the Discovery Learning to Improve the Student Creative Thinking Skills. *JTAM (Jurnal Teori Dan Aplikasi Matematika)*, *7*(1), 11–22. https://doi.org/10.31764/jtam.v7i1.10185.

Sitorus, D. S., Siswandari, & Kristiani. (2019). The effectiveness of accounting E-module integrated with character value to improve students' learning outcomes and honesty. *Cakrawala Pendidikan*, *38*(1), 120–129. https://doi.org/10.21831/cp.v38i1.20878.

Sofyan, H., Anggereini, E., & Saadiah, J. (2019). Development of E-Modules Based on Local Wisdom in Central Learning Model at Kindergartens in Jambi City. *European Journal of Educational Research*, *8*(4), 1137–1143. https://doi.org/10.12973/eu-jer.8.4.1137.

Srirahayu, D. P., Kusumaningtiyas, T., & Harisanty, D. (2021). The Role of the School Librarian toward the Implementation of the School Literacy Movement (Gerakan Literasi Sekolah) in East Java. *Library Philosophy and Practice*, 1–15. https://search.proquest.com/openview/3867add817b3.

Sudianto, S., & Kisno, K. (2021). Potret kesiapan guru sekolah dasar dan manajemen sekolah dalam menghadapi asesmen nasional. *Jurnal Akuntabilitas Manajemen Pendidikan*, *9*(1). https://doi.org/10.21831/jamp.v9i1.39260.

Sugiyono, P. (2017). *Metode Penelitian dan Pengembangan (Research and Development)*. CV. ALFABETA.

Sukarman, Rahayu, W., & Hakim, L. El. (2021). The Effectiveness of Mathematics E-Modules with a Contextual Approach on Geometry Matters to Improving Students' Learning Outcomes. *Jurnal Pendidikan Indonesia (JPI)*, *10*(2), 362–369. https://doi.org/10.23887/jpi-undiksha.v10i2.33530.

Sułkowski, Ł., Kolasińska-Morawska, K., Seliga, R., & Morawski, P. (2021). Smart learning technologization in the economy 5.0—the polish perspective. *Applied Sciences (Switzerland)*, *11*(11). https://doi.org/10.3390/app11115261.

Suryaningtyas, A., Kimianti, F., & Prasetyo, Z. K. (2020). *Developing Science Electronic Module Based on Problem-Based Learning and Guided Discovery Learning to Increase Critical Thinking and Problem-Solving Skills*. *401*(Iceri 2019), 65–70. https://doi.org/10.2991/assehr.k.200204.013.

Syahroni, M., Dianastiti, F. E., & Firmadani, F. (2020). Pelatihan Media Pembelajaran Berbasis Teknologi Informasi untuk Meningkatkan Keterampilan Guru dalam Pembelajaran Jarak Jauh. *International Journal Of Community Service Learning*, *4*(3), 171–172. https://doi.org/10.23887/ijcsl.v4i3.2884.

Tanjung, R. E., & Faiza, D. (2019). Canva Sebagai Media Pembelajaran Pada Mata Pelajaran Dasar Listrik Dan Elektronika. *Voteteknika (Vocational Teknik Elektronika Dan Informatika)*, *7*(2), 79. https://doi.org/10.24036/voteteknika.v7i2.104261.

Trianggoro, I. R. W., & Koeswanti, H. D. (2021). Evaluasi Program Gerakan Literasi Sekolah (Gelis) Di Sekolah Dasar. *Jurnal Ilmiah Pendidikan Profesi Guru*, *4*(3), 355–362. https://doi.org/10.23887/jippg.v4i3.40629.

Trust, T., & Pektas, E. (2018). Using the ADDIE Model and Universal Design for Learning Principles to Develop an Open Online Course for Teacher Professional Development. *Journal of Digital Learning in Teacher Education*, *34*(4), 219–233. https://doi.org/10.1080/21532974.2018.1494521.

Wakhinuddin S, A. (2020). *Global Conferences Series : The Effect of Skill Training in Improving Teachers Competency to Made-Teacher Test Base on HOTS*. *5*, 140–143.

Williams, M. K., Foulger, T. S., & Wetzel, K. (2009). Preparing Preservice Teachers for 21st Century Classrooms: Transforming Attitudes and Behaviors About Innovative Technology. *Journal of Technology and Teacher Education*, *17*(3), 393–418. https://www.learntechlib.org/primary/p/28216.

Xiao, Y., Surasin, J., & Prabjandee, D. (2020). Development of a Training Module to Improve Initial ELT Proficiency Among Student-Teachers in Multi-Ethnic Community Schools. *Journal of Language and Linguistic Studies*, *16*(1), 366–389. https://doi.org/10.17263/JLLS.712849.

Yanuarti, R., Utari, I., & Harianti, D. (2022). Evaluation of E-Module Utilization as Self-directed Learning Materials in Teachers' Competency Improvement Program. *Jurnal TEKNODIK*, *26*(2), 101–114.

Yulando, S., Chi, T. F., Mesin, T., & Yogyakarta, U. N. (2019). *Electronic Modul Designe: Interactive Learning*. *7*(10), 694–698. https://doi.org/10.12691/pendidikan-7-10-4.

Yulando, S., Sutopo, S., & Franklin Chi, T. (2019). Electronic Module Design and Development: An Interactive Learning. *American Journal of Educational Research*, *7*(10), 694–698. https://doi.org/10.12691/education-7-10-4.

Yunita Anindya, E. F., Suneki, S., & Purnamasari, V. (2019). Analisis Gerakan Literasi Sekolah Pada Pembelajaran Tematik. *Jurnal Ilmiah Sekolah Dasar*, *3*(2), 238. https://doi.org/10.23887/jisd.v3i2.18053.

Zaenab, S., Chamisijatin, L., & Wahyuni, S. (2020). Strengthening character education through literacy movement at Muhammadiyah junior high schol. *Journal of Community Service and Empowerment*, *1*(1), 54–63. https://doi.org/10.22219/jcse.v1i1.11516.