Abdimas Umtas: Jurnal Pengabdian Kepada Masyarakat
LPPM-Universitas Muhammadiyah Tasikmalaya
Volume: 8, Issue: 4, October, 2025; pp: 2011-2022
E-ISSN: 2614 - 8544

Enhancing History Education Through Smart Apps Creator: Integrating Differentiated Learning and Gamification

Oka Agus Kurniawan Shavab [a], Edi Fitriana Afriza, Erwin Hilman Hakim, Miftahul Habib Fachrurozi, Darwis Darmawan, Zeyn Dwi Alfaridza Rifahma, Muhamad Ikbal

Universitas Siliwangi, Tasikmalaya, Indonesia

[a]Corresponding author: okaaks@unsil.ac.id

ABSTRACT

Multiple factors propel this community service initiative, specifically: 1) The insufficiency of diversity and innovation in the application of educational media within historical pedagogy necessitates the provision of training for educators to incorporate innovative learning media effectively, 2) The imperative for enhanced accessibility to information is paramount, thereby necessitating the development of proficiency in utilizing educational media that facilitates seamless access to a plethora of learning resources without temporal and spatial constraints for history instructors, 3) The concept of differentiated instruction remains inadequately comprehended by educators, resulting in challenges during its practical application alongside the utilization of educational media, various components, or instructional models. This community service endeavor aims to implement a training program on utilizing the Smart Apps Creator application, which is integrated with differentiated instruction and gamification strategies for secondary education history teachers throughout Serang City. The number of respondents in this activity was 23 people. The methodologies employed encompass several components: 1) Providing comprehensive modules, 2) Conducting training sessions, 3) Administering evaluation instruments pre- & post-training. The results of the community service activities show that the average teacher competency increased by 29%, from 64% to 93%. With these results, the training activities provided provide benefits for the participants. The results reflect the successful implementation of the program, which not only enhanced the teachers' professional development but also contributed to their ability to provide higher-quality education.

ARTICLE INFO

Article History:
Submitted/Received: 22 Sept. 2025
First Revised: 28 September 2025
Accepted: 30 September 2025
First Available online: 31 October 2025
Publication Date: 31 October 2025

Keyword:
Community Service
History Education
Smart Apps Creator
Differentiated Learning
Gamification

https://doi.org/10.35568/abdimas.v8i4.7191

INTRODUCTION

Education is no longer confined to conventional classrooms but has expanded into the digital realm, allowing for broader and more flexible accessibility to learning materials. The development of technology has penetrated every aspect of life, including education, making it impossible to rely solely on conventional methods (Hasnida et al., 2023; Furmaisuri et al., 2025). This means that education has great potential to develop learning activities using technology-based/digital learning media. This is reinforced by the results of other studies (Zewde et al., 2020), which show that integrating technology into education is an option and a necessity to ensure that education remains relevant and responsive to current developments. This idea certainly poses challenges in its implementation, including in history education.

The challenges of history education in the millennium era require a supply of technology in the learning process. Traditional approaches are considered less effective in the globalized and digital era, so active learning methods and technology integration are needed to increase student interest and achievement (Sanday & Mahzan, 2023; Moreno-Vera et al., 2023). Another benefit is that digital media can increase students' interest, understanding, and critical thinking skills in studying history, as well as make learning more interactive, relevant, and enjoyable (Ni, 2022; Tribukait, 2020) (Evurulobi et al., 2024) (Ni, 2023). With this great potential, history teachers should spark their creativity and motivation to understand more deeply the use of digital media in history learning. The next step is for history teachers to create and develop history learning media to implement learning activities.

Field observations and interviews with the head of the Serang City History MGMP revealed that the Serang City History MGMP was founded around 2015 and currently has approximately 50 history teachers. Interviews with the head of the History MGMP revealed several challenges the Serang City History MGMP faced. First, training on the use of learning media has never been conducted, so it seems appropriate to conduct training with this partner to improve the abilities and skills of history teachers in utilizing learning media. This also serves as a basis for Unsil to have a broader impact outside of West Java Province regarding community service. Second, many members can still not utilize digital-based learning media and implement differentiated learning in their learning activities. This is because it takes time to learn, and because teachers are busy with other activities, they do not do self-development. For the use of learning media themselves, teachers usually only rely on PowerPoint or textbooks from the Ministry of Education without developing them.

The use of learning media in the learning process has a positive urgency because it can develop attention, arouse interest in learning, and provide psychological benefits that support student engagement. Learning media during orientation is especially crucial for creating a compelling, interactive, and easy-to-understand environment. Selecting the right media enables teachers to convey messages and lesson content more effectively, thereby increasing student motivation and comprehension from the beginning of the learning process (Wulandari et al., 2023). Furthermore, it helps avoid monotony and fosters a more enthusiastic and active classroom atmosphere (Agustin & Riyanti, 2024).

In recent years, the integration of digital learning media has become particularly significant, as application-based platforms allow teachers and students to design, access, and interact with content more flexibly. Such tools not only encourage creativity but also align with the increasing trend of mobile learning, where students can learn through smartphones and tablets. One promising digital medium is Smart Apps Creator (SAC), a software that allows users to create applications without prior coding

https://doi.org/10.35568/abdimas.v8i4.7191

experience. Developed by U-Smart Technology Corporation Limited, SAC is designed to support teachers in producing engaging and interactive learning resources (Shavab, 2025). It functions as a desktop application for creating Android and iOS mobile applications without programming knowledge, and can generate HTML5 and .exe formats (Rustandi et al., 2020). Moreover, SAC can be introduced across educational levels—from elementary to vocational schools—to enhance students' creativity in managing content and designing attractive mobile applications (Cahyati et al., 2020). Because it can be accessed via smartphones, SAC is also part of the broader category of mobile learning (Nisa et al., 2020).

Another innovation, besides utilizing learning media, is the implementation of differentiated learning, a diversity-based activity that involves learning about students and addressing their learning responses based on their diversity. Differentiated learning is a strategy or model for developing and implementing learning in schools, designed to optimize the development of the potential or competencies of each class of students through diversification of content, processes, and products (Saputra & Marlina, 2020). Differentiated learning is a way to understand and provide knowledge tailored to students' talents and learning styles with many characteristics (Wahyuningsari et al., 2022). Teachers facilitate their students according to their needs, as each student has different conditions and learning styles. The final innovation is implementing a gamification approach in learning activities, defined as using game elements in learning activities to make them more engaging (Nabilah et al., 2023). Using gamification in learning has attracted numerous experts to research it to increase engagement and effectiveness (Kalogiannakis et al., 2021). The application of gamification in learning provides the potential to create collaborative learning (Dalponte Ayastuy et al., 2021) (Shavab et al., 2023), participatory (Silveira, 2020), & innovative (Patrício et al., 2020).

Thus, through appropriate training, teachers can optimize and utilize the potential of learning media, particularly the Smart Apps Creator application, differentiated learning, and gamification, to create more engaging, interactive, and impactful learning experiences for students. Furthermore, teachers will increase their creativity in implementing learning activities to achieve learning outcomes. Based on this background, the research question is: To what extent does Smart Apps Creator (SAC) training integrated with differentiated learning and gamification improve history teaching for high school teachers in Serang City? The purpose of this activity is to determine the effect of Smart Apps Creator (SAC) integrated with differentiated learning and gamification on improving history teaching for high school teachers in Serang City.

METHOD

The study sample consisted of 23 history teachers, drawn using purposive sampling. The instrument used was a history teaching questionnaire. Data were analyzed using the Shapiro-Wilk normality test and paired sample t-test for normal data and the Wilcoxon mean squared analysis for non-normal data. The activities were conducted from September 1 to September 4, 2025.

Figure 1 illustrates the phases of community service implementation:

FIGURE 1. Procedures for carrying out community service initiatives

Socialization

https://doi.org/10.35568/abdimas.v8i4.7191

Socialization will be prioritized concerning the Smart Apps Creator (SAC) learning media, differentiated learning, and gamification. This is communicated through lectures and Q&A sessions that involve resource persons, student involvement in assisting with activities, and participants from MGMP History instructors throughout Serang City.

Training

Training During this phase, teachers will receive training on using learning media (SAC) and differentiated learning through mentoring, lectures, Q&A, and staged application demonstrations. Additionally, students will assist with technical issues in the field. Initially, the application must be downloaded and installed. The application's features should be explained, and the application should be used in accordance with the learning design in history learning activities.

Application of Technology

During this phase, a participant can directly demonstrate using the Smart Apps Creator (SAC) learning media. They will be asked to develop learning steps that utilize the Smart Apps Creator (SAC) learning media per their own interpretation. Students will be involved in assisting with technical issues in the field.

Mentoring and Evaluation

The mentoring stage can commence upon the completion of the training, which includes the distribution and installation of the application and its integration with the independent curriculum. The evaluation stage is characterized by fulfilling the teacher competency instrument both before and after the training. This allows for measuring the degree of improvement and the involvement of students in resolving technical issues in the field.

Sustainability of the Program

Training in developing Smart Apps Creator (SAC) learning media and differentiated learning for high school history instructors throughout the Regency can be implemented to ensure the program's sustainability at this juncture.

RESULTS AND DISCUSSION

Socialization

The utilization of learning media has become a critical component of the educational process in the current digital era. In addition to enhancing student engagement and participation in the learning process, learning media also facilitates the delivery of material. In order to facilitate this, a socialization activity was conducted to introduce history teachers to the use of Smart Apps Creator (SAC) learning media, which can be used to enhance their abilities in implementing it in the classroom. This approach not only aligns with contemporary pedagogical strategies but also leverages technology to create a more dynamic and effective learning environment for students. As educators increasingly adopt innovative tools like Smart Apps Creator, they can better cater to diverse learning styles and foster a more inclusive educational experience.

https://doi.org/10.35568/abdimas.v8i4.7191

Training

The following methods are employed to provide instructors with training on the use of learning media (SAC) at this stage:

- Theory Session: Teachers are provided with an explanation of the theory of learning media, the types of media that can be used, and the fundamental principles guiding the selection and development of learning media.
- Direct Practice and Demonstration: Training participants are invited to observe a demonstration of the use of SAC media and subsequently engage in direct practice.
- Media Utilization Workshop: Teachers are organized into groups to develop learning activities that incorporate SAC learning media in accordance with the material they are teaching. Each group is granted the opportunity to present its work,
- Evaluation and Discussion: After the workshop, an assessment of the learning design is conducted, and a discussion is held to address the obstacles and potential solutions.
- Pretests and posttests were administered to participants in the activity to ascertain the level of competence of the participating teachers before and following the community service activity. These are the outcomes of the data processing:

TABLE 1. Pre-test and post-test data of participants

Respondent	Pre test	Post test
1	57	91
2	48	89
3	75	100
4	54	93
5	70	93
6	54	75
7	70	98
8	70	84
9	59	93
10	62	86
11	66	100
12	75	100
13	77	100
14	50	93
15	75	100
16	75	100
17	50	91
18	70	79
19	75	100
20	75	100
21	59	100
22	48	93
23	66	84
AVERAGE	**64**	**93**

Based on this data, the next step is to carry out data normality analysis using the Shapiro-Wilk analysis shown in Table 2.

https://doi.org/10.35568/abdimas.v8i4.7191

TABLE 2. Shapiro-Wilk normality test results

Information	Df	Sig.
Pretest	23	0.013
Posttest	23	0.003

Table 2 shows that the results of the normality test for the pretest and posttest were not normal because the significance value was less than 0.05. Therefore, the analysis test used was the Wilcoxon test, as described in Table 3.

TABLE 3. Wilcoxon test results

Asym. Sig. (2-tailed)
0.000

Based on Table 4, the significance value is <0.05, indicating that the Smart Apps Creator training has an impact on history teachers' teaching skills. These results indicate a positive impact on history teachers' teaching skills. Further confirmation is the average pretest score of 64 and posttest score of 93, indicating a 29% increase.

Following the training, a testimonial from the head of the Serang City History MGMP stated, "Face-to-face history learning in class is still necessary. However, in today's digital era, the use of technology is crucial, especially for the younger generation, who are increasingly familiar with digital technology. Therefore, this training is beneficial for Serang City history teachers, providing digital media for smart app creators, thus having a broader impact."

This is the documentation about the activity in Figures 2 and 3.

FIGURE 2. Photo with the community service team and activity participants

https://doi.org/10.35568/abdimas.v8i4.7191

FIGURE 3. The community service team is providing guidance to activity participants

Application of Technology

At this juncture, one of the participants is granted the opportunity to directly demonstrate the use of the Smart Apps Creator (SAC) learning media. They are then requested to develop learning steps that utilize the Smart Apps Creator (SAC) learning media according to their own version. Additionally, students are encouraged to assist with technical issues in the field. This collaborative effort empowers teachers and fosters a sense of ownership among students, enhancing their learning experience and engagement in the subject matter. This hands-on experience with the Smart Apps Creator (SAC) allows teachers and students to explore innovative teaching methods collaboratively, ultimately enriching the learning environment. This collaborative exploration of the Smart Apps Creator (SAC) enhances teaching methods and significantly boosts student engagement and understanding of historical content, fostering a more dynamic learning atmosphere.

Mentoring and Evaluation

The mentoring stage commences with the completion of the training, which includes the distribution and installation of the application and the subsequent application to the independent curriculum. The evaluation stage is characterized by comparing the teacher competency instrument's work before and after training. This allows for the measurement of the degree of development and the involvement of students in resolving technical issues in the field. This comprehensive approach ensures that teachers and students are well-prepared to leverage technology in the learning process effectively. The anticipated outcome is an enriched learning experience that empowers educators and students to navigate the complexities of history education through innovative technological solutions. This initiative aims to foster a collaborative learning environment where teachers and students can thrive, ultimately enhancing the overall quality of history education in the digital age.

Sustainability of the Program

Training on developing Smart Apps Creator (SAC) learning media and differentiated learning for high school history teachers can be implemented to ensure the sustainability of the current program. This training will not only improve teachers' skills but also ensure that students benefit from innovative and engaging learning experiences in history education. Ultimately, the successful implementation of SAC learning media will depend on ongoing support and resources for teachers, enabling them to effectively

https://doi.org/10.35568/abdimas.v8i4.7191

integrate these tools into their teaching practices.

Discussion

The implementation of Smart Apps Creator (SAC) as a digital learning medium demonstrates significant potential in supporting history teachers to innovate in their classroom practices. Teachers reported higher engagement and improved learning design outcomes after training, as reflected in the post-test results. This finding is consistent with the argument that integrating technology in history classrooms can enhance teaching effectiveness and student motivation (Heafner, 2004). A study conducted by Shavab et al. (Shavab et al., 2025), the outcomes of the Smart Apps Creator application development workshop indicated that the organizational management competencies of the Garut Regency History MGMP educators varied between 61% and 92%. Simultaneously, the competencies of history educators rose from 64% to 91%. This program aligns with broader efforts to embed digital literacy within pedagogical frameworks by providing teachers with structured training on SAC.

While the improvement is compelling, two patterns merit scrutiny:

- Ceiling Effects & Distribution. Many post-test scores cluster near 100, producing non-normality (Shapiro–Wilk $p < .05$). This suggests a possible ceiling effect or a test that primarily captured short-term procedural mastery rather than deeper, transferable competencies.
- Heterogeneity of Gains. Score gains ranged from +9 to +45 points, indicating variability in benefit—potentially due to differences in baseline skills, digital literacy, or access to devices/time for practice.

These nuances imply the need for multi-method evaluation beyond knowledge tests (e.g., classroom observations using TPACK/ISTE indicators, product quality rubrics, and student learning outcomes) to validate skill transfer and pedagogical impact.

Based on the activities conducted, several limitations should be noted: the absence of a control/comparison group renders causal attribution tentative and does not rule out alternative explanations (e.g., Hawthorne or novelty effects); the measurement window was short, as post-tests were administered immediately after training and thus capture only short-term gains, indicating the need for delayed assessments (e.g., 4–8 weeks) to evaluate retention and classroom transfer; and the findings derive from a single MGMP context with a small sample ($N = 23$), which constrains external validity and limits generalizability beyond this region.

Furthermore, the results highlight that interactive media makes differentiated learning more feasible. Teachers trained with SAC could design multiple pathways for student learning, catering to diverse needs and abilities. Such approaches resonate with Tomlinson's model of differentiated instruction, which emphasizes varied content, processes, and products to address student diversity (Tomlinson & Imbeau, 2023). The program's success indicates that digital media like SAC can enable pedagogical flexibility, making history lessons more inclusive and effective.

The training also revealed the importance of hands-on practice and peer collaboration in adopting new technologies. Teachers who engaged directly with SAC and collaborated during workshops demonstrated stronger competencies in developing learning media. This finding echoes research by Ertmer and Ottenbreit-Leftwich (Ertmer & Ottenbreit-Leftwich, 2010) which emphasizes that teacher confidence and technological pedagogical knowledge grow significantly when they are immersed in authentic learning environments. This program provided a solid foundation for sustainable teacher development by embedding direct practice into the training.

https://doi.org/10.35568/abdimas.v8i4.7191

There are several potential challenges and barriers to implementation, including issues related to infrastructure and access, such as variability in school devices, bandwidth, and classroom display facilities. Teachers may also face time and workload constraints, making it difficult to allocate time for media development and iteration during the semester. Digital literacy gaps can present another challenge, as differing starting points among teachers require tiered support and just-in-time help. Licensing and maintenance issues, including tool licensing, updates, and compatibility, can also hinder continuity without institutional backing. Finally, ensuring that SAC artifacts align with national curriculum objectives, assessment standards, and local context is another important consideration.

Moreover, mentoring and evaluation were critical in reinforcing the training's outcomes. By comparing teacher competencies before and after the program, evidence suggested significant growth in their ability to integrate SAC into history lessons. This aligns with findings by Tondeur et al. (Tondeur et al., 2017), who noted that ongoing mentoring and reflection play essential roles in ensuring that professional development leads to long-term changes in teaching practice. Thus, mentoring ensured teachers' readiness and supported continuous improvement in digital pedagogy.

Finally, the sustainability of this program requires institutional support and continuous capacity-building initiatives. Without long-term reinforcement, teachers may revert to traditional methods. Voogt et al. (Voogt et al., 2013) noted that systemic support and access to resources are essential for scaling technology integration in education. Therefore, continuing SAC training, along with regular mentoring and resource provision, will ensure that teachers and students continue to benefit from innovative and engaging history learning practices.

Future research should employ quasi-experimental designs or randomized controlled trials (RCTs) to isolate the effects of SAC training relative to alternative professional development or business-as-usual; track longitudinal retention by incorporating delayed post-tests and classroom implementation audits across an entire semester; adopt mixed-methods approaches that triangulate quantitative gains with interviews and focus groups to surface adoption barriers and enablers; directly measure student-level outcomes, including engagement, disciplinary historical thinking, and achievement; analyze cost-effectiveness by relating time, licensing, and support costs to observed learning benefits; and examine scalability by testing the model across schools, regions, and subjects to assess generalizability.

CONCLUSION

The implementation of Smart Apps Creator (SAC) in history education has proven to be an effective tool for enhancing teacher competence and increasing student engagement. The results of the training and mentoring activities demonstrated significant growth in teachers' ability to design and apply digital learning media, as evidenced by the improvements in pre-test and post-test scores. Additionally, the collaborative nature of the program, which actively involved both teachers and students, helped create a supportive learning environment that encouraged innovation and problem-solving. This initiative emphasizes the importance of integrating technology into history education to enhance teaching practices and address diverse learning needs. By equipping teachers with the necessary skills to utilize SAC, the program fosters more interactive, differentiated, and student-centered learning experiences.

However, to ensure the program's sustainability and long-term success, ongoing training, mentoring, and institutional support will be essential for maintaining and advancing SAC integration. It is also important to note that this study had limitations, including the lack of a control group, small sample size, and short-term assessment. Future research should address these limitations by employing quasi-experimental designs, conducting longitudinal studies to track the long-term impact of SAC, and exploring the scalability of this

https://doi.org/10.35568/abdimas.v8i4.7191

model across different schools and subjects. Ultimately, this program contributes to shaping a dynamic, inclusive, and future-focused approach to history education in the digital era, with potential for wider application and continuous refinement.

ACKNOWLEDGMENTS

Thank you to Siliwangi University and the Serang City History Teachers Association for helping with this community service activity.

REFERENCES

Agustin, D., & Riyanti, H. (2024). The Influence of Audio Visual Media on Students' Learning Interest To Improve Their Learning Outcomes. Esteem Journal of English Education Study Programme, 7(2), 1–15. https://doi.org/https://doi.org/10.31851/esteem.v7i2.14166

Cahyati, S., Suherman, W. S., & Sumaryanto. (2020). Development of Martial Arts Learning Media for Junior High School Students. Solid State Technology, 1146–1162.

Dalponte Ayastuy, M., Torres, D., & Fernández, A. (2021). Adaptive gamification in Collaborative systems, a systematic mapping study. In Computer Science Review (Vol. 39). Elsevier Ireland Ltd. https://doi.org/10.1016/j.cosrev.2020.100333

Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher Technology Change: How Knowledge, Confidence, Beliefs, and Culture Intersect. Journal of Research on Technology in Education, 42(3), 255–284. www.iste.org/jrte

Evurulobi, C. I., Dagunduro, A. O., & Ajuwon, O. A. (2024). Digital narratives and historical representation: A review - analyzing how digital mediums are revolutionizing the way history is taught and perceived. World Journal of Advanced Research and Reviews, 24(1), 2083–2096. https://doi.org/10.30574/wjarr.2024.24.1.2852

Furmaisuri, R., Yulianda, M., & Khadavi Alzafani, R. (2025). Evolusi Peran Guru Dari Era Konvensional Ke Era Teknologi Dalam Meningkatkan Kemajuan Proses Pembelajaran. Berajah Journal: Jurnal Pembelajaran Dan Pengembangan Diri, 4(11), 1881–1892. https://doi.org/10.47353/bj.v4i11.516

Hasnida, S. S., Adrian, R., & Siagian, N. A. (2023). Tranformasi Pendidikan Di Era Digital. Jurnal Bintang Pendidikan Indonesia, 2(1), 110–116. https://doi.org/10.55606/jubpi.v2i1.2488

Heafner, T. (2004). Using Technology to Motivate Students to Learn Social Studies. Contemporary Issues in Technology and Teacher Education, 4(1), 42–53.

Kalogiannakis, M., Papadakis, S., & Zourmpakis, A. I. (2021). Gamification in science education. A systematic review of the literature. Education Sciences, 11(1), 1–36. https://doi.org/10.3390/educsci11010022

Moreno-Vera, J. R., Monteagudo-Fernández, J., Cosme, J., & Gómez-Carrasco, J. (2023). Teaching history to face the world today: Socially-conscious approaches, activity proposals and historical thinking competencies. Peter Lang.

https://doi.org/10.35568/abdimas.v8i4.7191

Nabilah, S., Pujiastuti, H., & Numerasi, L. (2023). Systematic Literature Review : Literasi Numerasi dalam pembelajaran Matematika, Jenjang, Materi, Model dan Media Pembelajaran. Jurnal Ilmiah Ilmu Pendidikan, 6, 1–6. https://doi.org/https://doi.org/10.54371/jiip.v6i4.1448

Ni, L. B. (2022). Media for History Learning in The Digital Era. SPEKTA (Jurnal Pengabdian Kepada Masyarakat: Teknologi Dan Aplikasi), 3(2), 117–128. https://doi.org/10.12198/spekta.v3i1.6276

Ni, L. B. (2023). Digital Tools & Inquiry-Based Learning In History Education. Muallim Journal of Social Science and Humanities, 7(4), 78–88. https://doi.org/10.33306/mjssh/255

Nisa, H., Permana, A., & Firmansyah, R. (2020). Peranan Smarthphone Dalam Dunia Pendidikan di Masa Pandemi Covid-19. TEMATIK, 7(2), 140–146. https://doi.org/https://doi.org/10.38204/tematik.v7i2.460

Patrício, R., Moreira, A. C., & Zurlo, F. (2020). Enhancing design thinking approaches to innovation through gamification. European Journal of Innovation Management, 24(5), 1569–1594. https://doi.org/10.1108/EJIM-06-2020-0239

Rustandi, A., Asyril, & Hima, N. (2020). Pengembangan Media Pembelajaran Berbasis Android Pada Mata Pelajaran Simulasi dan Komunikasi Digital Kelas X Sekolah Menengah Kejuruan Teknologi Informasi Airlangga Tahun Ajaran 2020/2021. Media Bina Ilmiah, 15(2), 4085–4092. https://doi.org/https://doi.org/10.33758/mbi.v15i2

Sanday, V., & Mahzan, M. A. (2023). Why Teaching History Is Difficult. Asian Journal of Research in Education and Social Sciences, 5(1), 273–284. https://doi.org/10.55057/ajress.2023.5.1.25

Saputra, M. A., & Marlina, M. (2020). Efektivitas Strategi Pembelajaran Berdiferensiasi untuk Meningkatkan Konsentrasi Belajar Anak Berkesulitan Belajar. Jurnal PAKAR Pendidikan, 18(2), 94–104. https://doi.org/https://doi.org/10.24036/pakar.v18i2.222

Shavab, O. A. K. (2025). The Effect of Smart Apps Creator on Improving Student History Learning Outcomes. Journal for Lesson and Learning Studies, 8(1), 172–180. https://doi.org/10.23887/jlls.v8i1.87074

Shavab, O. A. K., Afriza, E. F., Jayusman, I., Rifahma, Z. D. A., Amelia, I., Hakim, F. M., & Rosinta. (2025). Training to Create Smart Apps Creator (SAC) Learning Media and Differentiated Learning Materials to Improve the Competency of History Teachers. ABDIMAS: Jurnal Pengabdian Masyarakat, 8(1), 53–61. https://doi.org/10.35568/abdimas.v8i1.5503

Shavab, O. A. K., Yulifar, L., Supriatna, N., & Mulyana, A. (2023). Development Of Gamification Apps To Enhance Critical Thinking And Creative Thinking. Journal of Engineering Science and Technology, Special Issue, 99–106. https://jestec.taylors.edu.my/Special%20Issue%20AASEC2022/RPI_SI_2023_14.pdf

Silveira, M. S. (2020, October 26). Badges for all: Using gamification to engage HCI students. IHC 2020 - Proceedings of the 19th Brazilian Symposium on Human Factors in Computing Systems. https://doi.org/10.1145/3424953.3426486

Tomlinson, C. A., & Imbeau, M. B. (2023). Leading and Managing A Differentiated Classroom 2nd Edition. Association for Supervisions and Curriculum Development (ASCD). www.ascd.org/deskcopy.

Tondeur, J., van Braak, J., Ertmer, P. A., & Ottenbreit-Leftwich, A. (2017). Understanding the relationship between teachers' pedagogical beliefs and technology use in education: a systematic

https://doi.org/10.35568/abdimas.v8i4.7191

review of qualitative evidence. Educational Technology Research and Development, 65(3), 555–575. https://doi.org/10.1007/s11423-016-9481-2

Tribukait, M. (2020). Digital learning in European history education: Political visions, the logics of schools and teaching practices. History Education Research Journal, 17(1), 1–19. https://doi.org/10.18546/herj.17.1.02

Voogt, J., Knezek, G., Cox, M., Knezek, D., & ten Brummelhuis, A. (2013). Under which conditions does ICT have a positive effect on teaching and learning? A Call to Action. Journal of Computer Assisted Learning, 29(1), 4–14. https://doi.org/https://doi.org/10.1111/j.1365-2729.2011.00453.x

Wahyuningsari, D., Mujiwati, Y., Hilmiyah, L., Kusumawardani, F., & Sari, I. P. (2022). Pembelajaran Berdiferensiasi Dalam Rangka Mewujudkan Merdeka Belajar. Jurnal Jendela Pendidikan, 2(4), 529–535. https://doi.org/https://doi.org/10.57008/jjp.v2i04.301

Wulandari, A. P., Salsabila, A. A., Cahyani, K., Nurazizah, T. S., & Ulfiah, Z. (2023). Pentingnya Media Pembelajaran dalam Proses Belajar Mengajar. Journal on Education, 05(02), 3928–3936. https://doi.org/https://doi.org/10.31004/joe.v5i2.1074.

Zewde, H. E. S. W., Aoyagi, M., Morozov, E., Appadurai, A., Mundy, K., & Awuah, P. (2020). International Commission on the Futures of Education. UNESCO Publishing.

https://doi.org/10.35568/abdimas.v8i4.7191