

## HIGH SCHOOL TEACHERS' PERCEPTION OF DIGITAL LEARNING AND E-LEARNING TRAINING

Zaiyana Putri \*<sup>1</sup>, Marisa Yoestara<sup>2</sup>, and Munawir<sup>3</sup>

<sup>1,2</sup>Department of English Education, Teacher Training and Education Faculty,  
Universitas Serambi Mekkah, Banda Aceh, Indonesia

<sup>3</sup>Department of Computer Engineering, Faculty of Engineering,  
Universitas Serambi Mekkah, Banda Aceh, Indonesia

\* Corresponding Author: [zaiyana.putri@serambimekkah.ac.id](mailto:zaiyana.putri@serambimekkah.ac.id)

### ARTICLE INFO

#### Article history:

Received : Dec 02, 2023

Revised : Dec 19, 2023

Accepted : Jan 16, 2023

Available online : Jan 25, 2023

#### Kata Kunci:

Pelatihan, pembelajaran digital,  
penggunaan e-learning, guru  
sekolah menengah

#### Keywords:

Training, digital learning, the use of e-  
learning, high school teachers

### ABSTRAK

Penelitian ini bertujuan untuk mengetahui persepsi guru-guru sekolah menengah atas di SMA N 1 Bandar Baru, Pidie Jaya, Aceh, Indonesia mengenai efektivitas kegiatan Pengabdian Kepada Masyarakat (PKM) yang diberikan oleh Universitas Serambi Mekkah dengan topik efektivitas penggunaan *e-learning* dalam proses belajar mengajar. Kegiatan ini dirancang khusus untuk melatih para guru dalam menggunakan media pembelajaran digital dan *E-learning* yang merupakan sebuah pendekatan yang diamanatkan oleh pemerintah guna meningkatkan kualitas dan hasil belajar. Penelitian ini menggunakan pendekatan deskriptif yang melibatkan 16 guru dari berbagai mata pelajaran di sekolah tersebut. Dalam

mengumpulkan persepsi guru, kuesioner terbuka dibagikan kepada para guru, dan semua data yang diperoleh dianalisis dengan menggunakan persentase untuk menilai efektivitas pelatihan yang diberikan. Temuan studi menunjukkan bahwa para guru menanggapi pelatihan secara positif. Mereka juga menyatakan bahwa kegiatan pelatihan dianggap efektif dalam meningkatkan penguasaan digital dan memungkinkan para guru untuk mengintegrasikan teknologi ke dalam praktik mengajar mereka, sejalan dengan tuntutan sistem pendidikan yang berkembang di Indonesia. Oleh karena itu, pelatihan terkait teknologi harus dilakukan secara kontinyu agar guru dapat menguasai teknologi dan senantiasa update dengan perkembangan jaman.

### ABSTRACT

This study aimed to investigate the perceptions of senior high school teachers at SMA N 1 Bandar Baru, Pidie Jaya, Aceh, Indonesia regarding the effectiveness of Stimulus Community Service activities (PKMs) provided by the University of Serambi Mekkah under the topic the effectiveness of using *e-learning* in the teaching and learning process. These activities were specifically designed to train teachers in using digital learning media and *E-learning* which is one of the approaches mandated by the government in order to improve learning qualities and learning outcomes. This research employed a descriptive approach involving 16 teachers from various subjects at the school. In collecting teachers' perceptions, an open-ended questionnaire was distributed to the teachers, and all the obtained data was analyzed using percentages to assess the effectiveness of the training provided. The study's findings indicate that teachers responded positively to the training. They further claimed that the training activities were perceived as effective in enhancing digital mastery

*and enabling teachers to integrate technology into their teaching practices, aligning with the growing demands of the educational system in Indonesia. Therefore, relevant educational technology teachers' training should be continuously conducted in order to assist teacher in mastering technology and keep them updated with the era development.*

---

This is an open access article under the [CC BY-NC](https://creativecommons.org/licenses/by-nc/4.0/) license.  
Copyright © 2021 by Author. Published by Universitas Bina Bangsa Getsempena



## INTRODUCTION

Education plays a vital role in shaping individuals' and communities' development. Moreover, the advancement of technology has a profound impact on the educational context. As a result, the relationship between technology and education has become inseparable. The importance of technology in education has been further highlighted by the COVID-19 pandemic, which required the educational system to transform to online and remote learning (Khusanov et al., 2022). Consequently, teachers are increasingly required to be proficient in using Information and Communication Technology (ICT) for the effectiveness of teaching and learning processes. In addition, in this digital era in which digital literacy is in high demand, teachers are also expected to direct the digital domain to engage students, enrich the learning experience, and prepare students for the competitive global market (Kivunja, 2013). As a result, teachers play a significant role in facilitating the teaching and learning process (Herdiawan & Rofi'i, 2023).

The integration of ICT into education offers various benefits for both teachers and their students. Particularly, in this globalization era in which technology also affects the educational sector (Malik, Emzir & Sumarni, 2020). For example during the school closure due to the COVID-19 pandemic, several online platforms such as Google Classrooms, Google Meet, Zoom Meetings, MS Teams, and E-learning have emerged as crucial tools for facilitating remote learning (Turnbull et al., 2021, Stecula and Wolniak, 2022). Besides, to ensure the successful implementation of technology into education, several factors should be considered. These factors are analyzing students' needs, designing effective learning experiences, monitoring the evaluation of E-learning and other digital learning tools, and implementing holistic evaluations to optimize the attainment of educational goals (Wasfy et al., 2021). Additionally, utilizing various digital media platforms such as Google Classroom, Google Meet, Zoom Meetings, Kahoot, MS Teams and many other learning platforms including blended learning will

surely assist teachers create more engaging and enjoyable learning experiences (Hidayat et al., 2020; Ambarli, Syahril & Sukardjo, 2020).

Several previous studies have provided abundant valuable insight into the significant benefits of E-learning training for teachers. This impact is obvious in a study conducted by Hofmeister and Pilz (2020). They investigate teachers' perception of technology and e-learning training in Poland, Italy and Germany. The results of the study showed that teachers showed their interest and positive perception in e-learning training as it brings many benefits for the teachers. Then a study by Thoiyibi and Nuzli (2022) about the utilization of social media-based E-learning platform *Edmodoo* involving 70 students and teachers in educational technology courses. The findings of the study indicate that both students and teachers experienced the significant advantages of using *Edmodoo* as a medium in teaching and learning activities. In addition, another study conducted by Aboud (2020) highlights the positive impact of using E-learning among EFL teachers. The study found that E-learning can influence teachers' internal aspects such as motivation, attitude, and commitment in teaching as it can reshape teachers' traditional roles and their professional identities. Similarly, Cheok et al. (2017) focused on investigating secondary teachers' perception on the use of E-learning in Malaysia. The results of the study revealed that teachers perceived many benefits from using E-learning in teaching. Henceforth, to improve their capacity in this digital age, teachers are strongly encouraged to actively participate in continuous professional development activities, especially in the use of digital media in the educational context (Li et al., 2019). It is evident that training on the use of online teaching-learning will strengthen educators' ability to use ICT tools in teaching (Llerena-Izquierdo and Ayala-Carabajo, 2021).

On the other hand, teachers play a significant role in creating the successful implementation of technology into education (Champa et al., 2019). Furthermore, the effectiveness and successful integration of these digital tools largely depend on the perceptions, competence, and teachers' experiences (Ghavifekr and Rosdy, 2015). While digital learning and E-learning training programs have been implemented to equip teachers with the required skills, a gap remains. Specifically, the perception of senior high school teachers in Kabupaten Pidie Jaya, Aceh, Indonesia. This lack of understanding hampers the development of targeted training programs and the optimization of the integration of ICT into education. Moreover, it will also limit the

ability of educational institutions to obtain the optimal benefits of digital resources and achieve educational goals in the digital era.

In some regions in Indonesia, the teachers still faced some obstacles in using E-learning to teach. Windiarti et al. (2019) brought a study involving teachers in Yoyakarta showed that even if most of the teachers agree with the abundant benefits of using E-learning in teaching, some of them still experienced the problem in utilizing it. It is in line with the results of the initial study conducted by the authors, in which it was revealed that teachers at SMA N 1 Bandar Baru have not fully utilized the school's available facilities, including computer laboratories and internet resources. Actually, the resources could be of great assistance, specifically during the implementation of online learning. Further investigation revealed that the teachers' lack of understanding of how to operate this existing infrastructure became the stumbling block that hampers teachers from utilizing it. In response, the team from Serambi Mekkah University took the initiative to provide training on the use of various digital media commonly employed in several other schools. Throughout a 3-day training program, the team focused on instructing teachers on the effective utilization of E-learning applications, Google Classroom, and Zoom Meeting in order to leverage the available resources.

Therefore, to address the aforementioned gap, it is important to investigate teachers' perceptions towards the training of digital learning and E-learning. By investigating high school teachers' perceptions, this study will contribute to the enhancement of educational practices, preparing teachers with the digital skills that need in employing effective teaching practices through the integration of technology. Additionally, it unveiled the challenges faced by the teachers in incorporating technology into their classroom's practices.

## **RESEARCH METHODOLOGY**

This study belongs to a descriptive research design where all the obtained data were analyzed using a percentage formula. A Descriptive study is used to describe a phenomenon, and characteristics, and observe a population without attempting to build a cause-and-effect relationship (Pawar, 2020). More specifically, this study employed a descriptive study approach to understand teachers' perceptions of digital learning and E-learning training activities in detail (Aggarwal & Ranganathan, 2019). The participants of this study were selected based on exclusive criteria, which means only teachers who participated in the e-learning training activities conducted in SMAN 1 Bandar Baru were

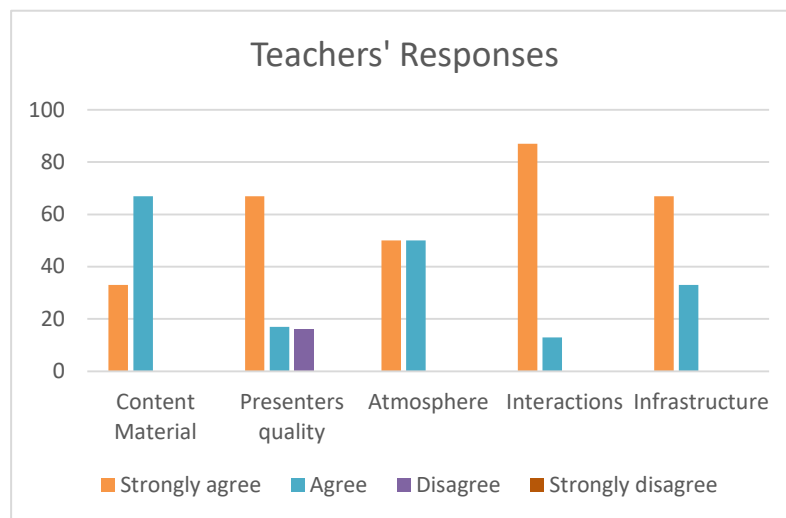
eligible. A total of 16 teachers participated in this present study. There were 10 female and 6 male teachers, and each of them teaching various subjects including English, Civic Education, Biology, Sociology, Islamic Subject, Cultural Arts, Physics, and Geography in SMAN 1 Bandar Baru, Pidie Jaya. These teachers from a range of ages, from 23 to 50, and most of them hold a bachelor's degree in education.

To carry out this study, the authors distributed an open-ended questionnaire as the instrument of the study. This questionnaire comprised 20 items that was created based on possible aspects to give perception, including the content material, qualifications of the presenters, atmosphere and learning environment, interaction between the trainers and the trainees, and facilities and infrastructures. This questionnaire consisted of 3 main parts. The first part gathered the demographic information of the participants. The second part is the essential part of the questionnaire which asked about the teachers' perception about the e-learning training. Furthermore, in the final section of the questionnaire, the participants were allowed to provide short essay responses, offering suggestions and feedback regarding the training program. This questionnaire has been validated through expert judgement, in which the items has been evaluated by educational expert to make sure that all items are appropriate to answer the research questions.

In analyzing the obtained data, the authors used percentage formula to calculate for the percentage of the effectiveness of the five aspects in the core components of the questionnaire mentioned above. The analysis aimed at providing a comprehensive of the different components of the training program, as perceived by the participants. Meanwhile, in analyzing the open-ended responses, the authors used a conventional content analysis approach. Using the conventional content approach will enable the authors to describe and interpret the phenomenon by classifying the themes and patterns of data systematically and looking for any new emerging information (Hsieh and Shannon, 2005). The process for analyzing the qualitative responses consisted of several key steps. First of all, the authors read all the responses thoroughly to get familiarity with a deeper understanding of its content. Subsequently, the authors created codes that represent the themes based on the topic of the study. Afterward, the responses were organized under the respective codes. The subsequent phase involved the identification of patterns within the responses, followed by interpretation to draw meaningful conclusions (Drisko and Maschi, 2016).

## RESULTS AND DISCUSSIONS

The following section presents the results of the investigation of the perceptions of senior high school teachers at SMA N 1 Bandar Baru, Pidie Jaya, Aceh, Indonesia, concerning the effectiveness of training in the use of digital learning and E-learning. The study encompassed five main components that were assessed: content materials, quality of the presenters, atmosphere and learning environment, the interactions between the presenters and the participants, and the available infrastructure. The following figure illustrates the results of the teachers' responses regarding the training provided.



**Figure 1. Teachers' Response Regarding the Effectiveness of the Training**

From figure 1 above, it can be seen that the distribution of responses across the five main aspects assessed in the questionnaire. Additionally, the figure above provides a clear summary of the participants' responses, indicating their level of agreement and or disagreement in each area of evaluation. It is evident that the responses vary across the different aspects, demonstrating a nuanced perspective on the training program. Regarding the usefulness of the content materials, it was found that 33% of teachers strongly agreed that the content materials were valuable for them, while the remaining 67% agreed. Then regarding the quality of the presenters, 67% of the participants strongly agreed with the quality of the presenters, indicating a high level of satisfaction. Additionally, 17% of the participants agreed with the quality of the presenters, while 16% of the participants expressed disagreement. For the atmosphere and learning environment 50% of the participants strongly agreed that the atmosphere and learning

environment were comfortable and conducive to their learning experiences. Whilst the others 50% of the participants expressed agreement with this aspect.

In terms of interaction between training participants and the presenters, a significant 87% of the participants strongly agreed that the interaction was effective and communicative. A smaller percentage of participants, 13%, expressed agreement with this aspect. Besides, concerning the availability of infrastructure, 67% of the participants strongly agreed that the infrastructure was sufficient and well-suited for the training needs. An additional 33% of the participants agreed with this assessment.

In addition, based on the teachers' feedback regarding the training provided, it's obvious that 75% of the participants found the training very useful for them. Furthermore, 56% of the participants also expected that similar training initiatives would continue in the future. It is only 6% of the participants expressed their disagreement with the training's effectiveness. These percentages reflect the general positive response to the training among the teachers.

Overall, the findings of this study shed light on the perceptions of senior high school teachers regarding the effectiveness of training in digital learning and E-Learning. These insights provide valuable information on how teachers perceive the integration of technology in their teaching practices and its implications in educational circumstances. From the analysis of the open-ended questionnaire revealed some important points. Teachers expressed a generally positive response to the training provided. They are fully aware that digital learning has enhanced their ability to create interactive and engaging learning environments. This positive response aligns with existing literature that highlights the benefits of digital training for teachers to enhance education quality (Hofmeister and Pilz, 2020).

Interestingly, it is important to note that the balanced responses received regarding the atmosphere and learning environment, with a 50:50 split among participants, indicate a noteworthy observation. Such an even distribution of responses suggests a neutral stance among the participants regarding the training environment's comfort and suitability for their learning experiences. This neutrality could be attributed to several factors: different expectations, room for improvement, and subjectivity. Therefore, it is important for training organizers to collect additional feedback and insights from participants to understand specific components of the learning environment that contributed to their perceptions. This kind of information can be valuable information that guides future improvements in designing another training. Moreover, it

is also beneficial to ensure that the atmosphere is conducive to the different needs and preferences of all participants.

## **COCLUSIONS AND SUGGESSTIONS**

Based on the results of the data analysis above, several key conclusions can be drawn. The integration of technology in education is no longer simply an option, it has become a necessity for teachers to enhance the quality of learning and improve students' learning outcomes. On the other hand, despite the obvious benefits of technology, some obstacles still hamper the effective use of technology in the teaching and learning process. One of the main challenges which is experienced by teachers is the lack of competence in employing the perspective of technology. The findings from the training and the study conducted at SMA N 1 Bandar Baru highlight the importance of addressing this competence gap. To address this issue and promote effective technology integration, it is recommended that policymakers develop more structured and comprehensive plans for teacher professional development. These plans should align closely with the specific needs of teachers themselves, ensuring that all the training activities are tailored to their unique contexts and challenges.

Additionally, the training activities must be continued instead of single events. The continuity of the training activities can have a substantial impact on the development of teacher professionalism and their teaching practices in the classroom. This is in line with Tyagi and Misra (2021), which emphasizes the significance of ongoing professional development to keep teachers up to date with the advancement of technology in the educational sector. Moreover, after conducting the training activities, it is essential to have feedback from teachers. Their input is valuable in shaping future activity plans and confirming that the training is relevant and effective. By actively involving teachers in the planning and feedback process, educational institutions can foster a culture of collaboration and continuing improvement.

To sum up, the technology intervention which is mandated by the government has one goal, and the goal is to equip teachers with robust digital literacy, enabling them to keep pace with the demands of the digital age. The objective is driven by the aim to empower teachers to effectively use technology in order to improve the quality of education, engaging students' learning motivation, and preparing them to face the global challenges.

## REFERENCES

- About, F., (2020). The effect of E: Learning on EFL teacher identity. *International Journal of English Research*, 6(2), pp.22-27.
- Aggarwal, R. and Ranganathan, P., (2019). Study designs: Part 2–descriptive studies. *Perspectives in clinical research*, 10(1), p.34.
- Ambarli, S., Syahrial, Z., & Sukardjo, M. (2020). Pengaruh model blended learning rotasi dan kecerdasan intrapersonal terhadap hasil belajar IPA di SMP. *Visipena*, 11(1), 16-32.
- Champa, R.A., Rochsantiningsih, D. and Kristiana, D., (2019). Teachers' readiness indicators on ICT integration into their teaching. *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal*, 2(4), pp.195-203.
- Cheok, M.L., Wong, S.L., Ayub, A.F. and Mahmud, R., (2017). Teachers' perceptions of E-Learning in Malaysian secondary schools. *Malaysian Online Journal of Educational Technology*, 5(2), pp.20-33.
- Drisko, J.W. and Maschi, T., (2016). *Content analysis*. Pocket Guide to Social Work Re.
- Ghavifekr, S. and Rosdy, W.A.W., (2015) Teaching and learning with technology: Effectiveness of ICT integration in schools. *International journal of research in education and science*, 1(2), pp.175-191.
- Herdiawan, R. D., & Rofi'i, A. (2023). Pre-service teachers' power dominance and interaction strategies in EFL classroom discourse. *Visipena*, 14(1), 29-39.
- Hidayat, W.N., Suswanto, H., Kristanto, C.W., Wardhani, A.P., Hamdan, A. and Sari, R.K., (2020). September. The effectiveness of interactive digital evaluation training for improving teacher skills in the covid-19 pandemic period. In *2020 4th International Conference on Vocational Education and Training (ICOVET)* (pp. 310-314). IEEE.
- Hofmeister, C. and Pilz, M., (2020). Using e-learning to deliver in-service teacher training in the vocational education sector: Perception and acceptance in poland, Italy and Germany. *Education Sciences*, 10(7), p.182.
- Hsieh, H.F. and Shannon, S.E., (2005). Three approaches to qualitative content analysis. *Qualitative health research*, 15(9), pp.1277-1288.
- Khusanov, K., Khusanova, G. and Khusanova, M., (2022). Compulsory distance learning in Uzbekistan during the COVID-19 Era: The case of public and senior secondary vocational education systems. In *Socioeconomic Inclusion During an Era of Online Education* (pp. 111-133). IGI Global.
- Kivunja, C., (2013). Embedding digital pedagogy in pre-service higher education to better prepare teachers for the digital generation. *International Journal of Higher Education*, 2(4), pp.131-142.
- Li, S., Yamaguchi, S., Sukhbaatar, J. and Takada, J.I., (2019). The influence of teachers' professional development activities on the factors promoting ICT integration in primary schools in Mongolia. *Education Sciences*, 9(2), p.78.
- Llerena-Izquierdo, J. and Ayala-Carabajo, R., (2021). January. University teacher training during the COVID-19 emergency: the role of online teaching-learning tools. In *International Conference on Information Technology & Systems* (pp. 90-99). Cham: Springer International Publishing.
- Malik, A. R., Emzir, E., & Sumarni, S. (2020). Pengaruh strategi pembelajaran mobile learning dan gaya belajar visual terhadap penguasaan kosakata bahasa Jerman siswa SMA NEGERI 1 MAROS. *Visipena*, 11(1), 194-207.
- Pawar, N., (2020) Type of research and type research design. *Social Research Methodology*, 8(1), pp.46-57.

- Stecula, K. and Wolniak, R., (2022). Influence of COVID-19 pandemic on dissemination of innovative e-learning tools in higher education in Poland. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(2), p.89.
- Thoiyibi, M. and Nuzli, M., (2022). Using Edmodo as a media of E-learning learning in educational technology courses. *Sinkron: jurnal dan penelitian teknik informatika*, 7(2), pp.478-484.
- Turnbull, D., Chugh, R. and Luck, J., (2021). Transitioning to E-Learning during the COVID-19 pandemic: How have higher education institutions responded to the challenge? *Education and Information Technologies*, 26(5), pp.6401-6419.
- Tyagi, C. and Misra, P.K., (2021). Continuing professional development of teacher educators: Challenges and initiatives. *Shanlax International Journal of Education*, 9(2), pp.117-126.
- Wasfy, N.F., Abouzeid, E., Nasser, A.A., Ahmed, S.A., Youssry, I., Hegazy, N.N., Shehata, M.H.K., Kamal, D. and Atwa, H., (2021). A guide for evaluation of online learning in medical education: a qualitative reflective analysis. *BMC medical education*, 21(1), pp.1-14.
- Windiarti, S., Fadilah, N., Dharmawati, E. and Pratolo, B.W., (2019). Teachers' perception toward the obstacles of e-learning classes. *Ethical Lingua: Journal of Language Teaching and Literature*, 6(2), pp.117-128.