PUBLISHER
YAYASAN PENDIDIKAN DAN PENGEMBANGAN HARAPAN ANANDA

JURNAL
WAWASAN DAN AKSARA

Juwara | p-issn: 2797-2097 | e-issn: 2797-2119 | **Vol. 5 No. 2 (2025)**
https://doi.org/10.58740/juwara.v5i2.736

Integration of Communication Based Learning Media in Distance Learning in Higher Education

Juandana Kawuladini Putra[1(✉)], Bayu Purwo Adhi[2]
[1,2]Universitas Doktor Nugroho Magetan, Indonesia

✉Correspondence Author:
juandanaputra@gmail.com

Abstract
This study aims to examine the application of communication based learning media in distance learning in universities, especially in communication study programs. Using a qualitative approach, this study collected data through semi-structured interviews involving 5 lecturers and 20 students at Nugroho Doctoral University, Magetan Regency, in the 2025/2026 academic year. The results of the study show that communication-based learning media, such as Google Classroom, Zoom, and WhatsApp, can increase interaction between lecturers and students and provide flexibility in learning. However, the main challenge faced is limited internet access, which affects smooth learning, as well as technological skills that need to be improved for both lecturers and students. The key contribution of this study is the identification of critical factors such as technological readiness and infrastructure limitations that influence the effective use of communication-based learning media in distance learning. The implication of this research is the need to improve technological infrastructure in universities as well as continuous training for lecturers and students to make optimal use of communication-based learning media. This will strengthen the success of distance learning, make it more inclusive and effective, and support the development of higher education in the digital age.

Keywords
Communication Based Media, Distance learning, Digital Learning, Lecturer Student Interaction, Technological Skills

INTRODUCTION

Higher education in the digital age faces major challenges in responding to society's need for more flexible, effective, and affordable learning (Benavides et al., 2020). One of the biggest innovations facing the higher education system is the growing implementation of distance learning, especially in universities that offer a wide range of study programs,

including communication study programs. Along with the rapid development of information and communication technology, distance learning has become a necessity, both in times of crisis such as the COVID-19 pandemic and in response to the demands of globalization that encourage international mobility (Masalimova et al., 2022; Sarwari et al., 2022). However, to ensure that distance learning can achieve its goal of creating a learning experience that is equivalent to face-to-face learning, digital communication-based learning media must be well integrated. This media not only serves as a tool for delivering material, but also as a platform for interaction and collaboration between lecturers and students (Hoerudin et al., 2023).

In the midst of rapid digital transformation, communication-based learning media plays an important role in creating more interactive and participatory learning (Widiyanto, 2021). Various digital platforms such as Google Classroom, Zoom, Microsoft Teams, and social media such as WhatsApp and YouTube have become important means in enriching the distance learning experience (Andewi & Pujiastuti, 2021). These media allow students to access subject matter anytime and anywhere, while also facilitating two-way communication that enhances student understanding and engagement (Periani & P. E. D, 2022). In the context of the communication study program, the ability to integrate communication media in distance learning is vital, considering that this discipline focuses on developing efficient and effective communication skills. Therefore, this research focuses on how communication-based learning media can be implemented in distance learning, as well as its impact on the teaching and learning process in communication study programs.

Several previous studies have shown that the use of technology-based learning media can increase student involvement in the learning process. For example, research by Nababan et al, (2023) states that the use of communication media in learning can enrich the learning experience by increasing interaction between students and between students and lecturers. In addition, a study conducted by Hanik, (2020) found that the integration of media in distance learning allows for more cooperative and collaborative learning, where students can share knowledge and build understanding together. However, although there are many studies that show the positive potential of the use of digital media in learning, many also reveal that the main challenges in its implementation are uneven technological infrastructure and limited technological skills of both lecturers and students

(Sarwari et al., 2022). This is an obstacle, especially in areas with limited internet access and among students or lecturers who are less skilled in using digital learning tools.

Previous research has also highlighted the importance of developing technology skills among lecturers and students (Goudeau et al., 2021; Masalimova et al., 2022; Priyanto, 2024). However, research specializing in the use of communication-based learning media in distance learning in communication study programs is still limited. Many studies focus more on the use of digital media in general, without delving deeper into the challenges and opportunities specifically faced by communication studies programs (Brika et al., 2022; Perez et al., 2023; van der Meer et al., 2023). In addition, most studies tend to ignore the direct experiences of lecturers and students in applying communication-based learning media, even though these two groups play a very important role in the successful use of such media.

Therefore, this research will fill this gap by exploring the perception of lecturers and students regarding the use of communication media in distance learning, as well as providing new insights into the factors that affect its effectiveness in communication study programs. This study aims to investigate how communication-based learning media are applied specifically in communication study programs and the impact of such applications on the teaching and learning processes, with a focus on addressing challenges unique to this discipline.

The novelty of this research lies in its in-depth approach to understanding the application of communication-based learning media in communication study programs, using a qualitative methodology to explore the first-hand experiences and perspectives of both lecturers and students. Unlike previous research that broadly examines digital media in general education contexts, this study offers a unique contribution by focusing specifically on the role of communication media in enhancing the effectiveness of distance learning in communication disciplines. By investigating factors such as technological readiness, user skills, and infrastructure constraints, this study provides a fresh perspective on the challenges and opportunities that directly impact the effectiveness of communication-based learning media in this field.

Overall, this research aims to make a significant contribution to the development of more effective distance learning through the integration of communication-based learning media, by prioritizing the direct experience of stakeholders in the communication study

program. Thus, the results of this study are expected to provide practical recommendations for improving teaching policies and practices in higher education and enrich the literature on the role of communication media in higher education, especially in distance learning.

METHOD

This study uses a qualitative approach to explore an in-depth understanding of the integration of communication-based learning media in distance learning within the communication study program. This approach enables the researcher to capture the subjective experiences and perspectives of both lecturers and students, providing richer and more contextual data to comprehensively describe the phenomenon.

Research Participants

The participants consist of two main groups: 5 lecturers and 20 students involved in distance learning within the communication study program. The participants were selected using purposive sampling, focusing on individuals with direct experience using communication-based learning media in their academic activities. This research will be conducted at Nugroho Doctoral University in Magetan Regency, during the 2025/2026 academic year, as it offers a relevant context for studying the integration of communication-based learning media.

Data Collection

Data was collected through semi-structured interviews with lecturers and students, providing flexibility to explore deeper insights while maintaining focus on the research topic. Each interview lasted between 30 to 45 minutes, and all sessions were recorded for transcription and subsequent analysis.

Data Analysis

Data collected from the semi-structured interviews will be analyzed using thematic analysis, a process that involves identifying patterns or themes within the data. First, open coding will be conducted to break down the data into smaller, meaningful units by assigning codes that capture the essence of each segment. These initial codes will then be grouped during axial coding, where related codes are organized into broader categories or

themes. Finally, the researcher will develop these categories into distinct themes that best represent the underlying patterns in the data. Thematic analysis will allow for a comprehensive understanding of the participants' perceptions, challenges, and experiences regarding the integration of communication-based learning media in distance learning, providing insights into the factors that influence its effectiveness in the communication study program.

RESULT

In this section, the results of research obtained from interviews with lecturers and students at Nugroho Doctoral University, Magetan Regency, in the 2025/2026 academic year are presented. This study explores perceptions, experiences, and challenges related to the use of communication-based learning media in distance learning. Data collected from 5 lecturers and 20 students were analyzed to find the main themes that emerged. The findings are divided into several sub-chapters relevant to the research topic.

Lecturers' Perception of Communication-Based Learning Media

Based on interviews with lecturers, most participants indicated that communication-based learning media, such as Google Classroom and Zoom, are very helpful in increasing the effectiveness of distance learning. These platforms provide flexibility and efficiency in interacting with students, which is crucial for teaching complex materials like communication theory. For instance, Lecturer 1 (D1) explained:

> *"I think the use of communication media such as Google Classroom and Zoom makes it easier to interact with students. Especially in material that requires direct discussion, such as communication theory. I was able to facilitate virtual meetings that allowed students to ask questions in person."*

This statement underscores the value of these platforms in promoting direct engagement and offering students a space to clarify complex concepts in real-time.

However, challenges persist in the implementation of communication-based learning media. Lecturer 2 (D2) highlighted the issue of technological access, stating:

> *"The challenge is the difficulty of students in accessing this media, especially for those who live in areas with limited internet connections. This is the main obstacle in the optimal use of communication media."*

This concern illustrates a significant barrier to the effective use of digital media—uneven access to reliable internet services, which can create a divide in the learning experience, particularly for students in remote areas.

Further, Lecturer 3 (D3) emphasized the need for professional development for educators:

> *"I personally feel that this technology is very supportive of learning. However, not all lecturers have adequate skills in making the most of this platform. There is training needed to improve the understanding and use of technology among lecturers."*

This response reflects a crucial finding: while the technology itself is supportive, the effectiveness of its implementation depends heavily on the technological competence of the lecturers. This highlights the need for continuous training to ensure that educators can maximize the potential of digital tools.

The lecturers' perceptions reveal that while communication-based learning media have the potential to enhance interaction and learning effectiveness, access to technology and the digital literacy of both students and lecturers remain significant barriers. The gap in technological readiness, coupled with infrastructure limitations, suggests that effective distance learning requires targeted interventions in both training and access to ensure equity in learning opportunities.

Student Perception of Communication-Based Learning Media

Students in the communication study program expressed diverse views regarding communication-based learning media in distance learning. While most students acknowledged the convenience of these platforms, there were mixed opinions on the level of interaction and the challenges faced during online learning.

Student 1 (M1) shared:

> *"I find it easier to access lecture materials through Google Classroom. All the materials and tasks are well organized, and I can access them at any time. However, I felt that I didn't get the opportunity to interact directly with lecturers and classmates, as happened in face-to-face meetings."*

This response highlights the advantages of using platforms like Google Classroom for easy access to materials. However, it also reveals a common limitation: students miss the direct interaction and social connection that comes with face-to-face learning. Despite the convenience of digital tools, the lack of physical presence hinders the interactive,

collaborative aspect of learning, suggesting that digital learning must balance content delivery with social engagement to enhance student learning outcomes.

Student 2 (M2) noted:

> *"Zoom is very helpful when there are question and answer sessions or group discussions, but sometimes a bad internet signal hinders our communication. Some of my friends had trouble taking classes because of technical issues like this."*

This comment underscores the ongoing infrastructure challenges in distance learning. While platforms like Zoom facilitate live interactions, poor internet connectivity remains a persistent barrier, especially in remote areas. This suggests that even with effective tools in place, infrastructure limitations (such as unreliable internet access) continue to undermine the full potential of communication-based learning media. Addressing these technical issues is critical for ensuring that all students can benefit equally from online learning platforms.

Student 3 (M3) expressed:

> *"On the positive side, social media like WhatsApp makes it easier for me to reach out to lecturers or classmates if I have questions, but on the other hand, the sheer volume of messages that come in makes me feel overwhelmed and hard to focus."*

This perspective highlights both the benefits and drawbacks of using social media for communication in learning. While WhatsApp fosters easy and instant communication, the volume of messages can overwhelm students, making it difficult to maintain focus on academic tasks. This reflects a growing concern regarding the balance between accessibility and the potential for distraction in digital learning environments. Managing communication volume and ensuring its relevance to academic goals is crucial in maintaining an effective learning experience.

The student perceptions reveal that communication-based learning media offer significant advantages, such as easy access to materials and increased interaction with lecturers and classmates. However, challenges such as the lack of face-to-face interaction, poor internet connectivity, and overwhelming communication volumes persist. These factors collectively suggest that while digital learning platforms facilitate more flexible learning, they also require strategies to ensure that technical barriers are addressed and that communication remains manageable and focused. There is a clear need for universities to

provide infrastructure improvements and establish guidelines for effective communication management to enhance the learning experience.

Challenges in the Use of Communication-Based Learning Media

Both lecturers and students identified several main challenges in the use of communication-based learning media. The following table 1 summarizes the challenges faced by both parties.

Table 1. Challenges of Using Communication-Based Learning Media

Challenge	Lecturer (%)	Students (%)
Unstable internet connection	60%	75%
Lack of technological skills	40%	55%
Lack of face-to-face interaction	50%	60%
Difficulties in time management	30%	50%
Limited infrastructure	20%	45%

Table 1 shows that the problem of unstable internet connections is the main challenge felt by students (75%) and lecturers (60%). Students face more obstacles related to poor internet connections, while lecturers experience more challenges related to skills in using technology (40%). The problem of lack of face-to-face interaction is also a concern, both from the lecturer and student side.

The Impact of Communication-Based Learning Media on Interaction

Limited interaction is one of the main problems in distance learning. Lecturers and students as a whole revealed that the interaction between lecturers and students, as well as between students themselves, is often less effective than face-to-face learning.

Lecturer 4 (D4):

> *"Zoom allows us to have face-to-face interactions, but I feel that the interaction in discussions can't be as intensive as face-to-face. However, platforms like Google Classroom provide a space for students to ask questions at any time."*

Lecturer 4 noted that interaction in distance learning cannot completely replace more intense face-to-face interactions. However, media such as Google Classroom provides opportunities for students to interact in written form, which is helpful although not as intensive as in-person meetings.

Student 4 (M4):

"Social media helps me communicate with my classmates, but during discussions on Zoom, sometimes we can't communicate freely like we usually do in the classroom. Interaction feels limited."

Student 4 emphasized that while discussions on Zoom provide an opportunity to interact, they feel less free to express their opinions as they do in the classroom. This reflects that although communication media can facilitate discussions, the quality of interaction remains limited by existing digital formats.

This study shows that although the use of communication-based learning media in distance learning in communication study programs has great potential, challenges such as unstable internet connections, limited technological skills, and lack of face-to-face interaction remain major obstacles. Concrete steps, such as improving infrastructure and technology training for lecturers, are needed to overcome these obstacles and maximize the use of communication-based learning media.

DISCUSSION

The application of communication-based learning media in distance learning in higher education, especially in communication study programs, has made a significant contribution to the way learning is carried out in the digital era. Technologies such as Google Classroom, Zoom, and WhatsApp allow lecturers and students to communicate and collaborate despite being separated by space and time (Nababan et al., 2023; Qi, 2025; Widiyanto, 2021). These media provide easy access to learning materials and give students the opportunity to interact in virtual discussion forums. The main advantage of the application of digital-based communication media is the flexibility of time and place, which allows students to access the material independently, thus providing freedom in managing their study time, especially for students who have limited time or work (Ndibalema, 2022). This aligns with the findings of Nababan et al, (2023) and Qi (2025), who also emphasized the role of flexibility in enhancing student learning experiences. However, it contrasts with Rosita et al (2022) who argued that excessive reliance on digital platforms can reduce face-to-face interactions that are essential for building deeper social connections in learning.

While there are many advantages offered by the use of communication-based learning media, the biggest challenge remains the uneven technological infrastructure in

different regions. Limited access to fast and stable internet is the main obstacle faced by many students, especially in remote areas (Hébert et al., 2021). Poor internet connection quality affects the smooth learning process, both in terms of accessing materials through platforms such as Google Classroom and participating in virtual meetings via Zoom. This finding is consistent with Yeh & Tsai (2022), who noted that infrastructure gaps hinder the optimal use of digital learning tools. However, it contradicts Masalimova et al. (2022), who argued that technological infrastructure has significantly improved in some regions, allowing for smoother distance learning implementation. This discrepancy highlights the importance of addressing infrastructure disparities to ensure equitable access to digital learning resources.

In addition to infrastructure issues, technological skills are also a significant challenge in the implementation of communication-based learning media. Lecturers and students need to be equipped with adequate skills to take advantage of the various features available in digital platforms (Hébert et al., 2021). Without these skills, the full potential of communication media will not be optimally utilized, and this can be an obstacle to the effectiveness of distance learning (Dinc, 2019). This aligns with (Hanik, 2020), who found that inadequate skills among both students and lecturers undermine the effectiveness of digital media. However, this study emphasizes the need for continuous, targeted training programs, an area that has been somewhat overlooked in previous research. Therefore, it is important for universities to provide technology training on an ongoing basis for lecturers and students so that they can master digital learning tools effectively.

In addition, interaction between lecturers and students in distance learning through digital-based communication media can create a more interactive learning space (Martin et al., 2022). Although it cannot completely replace the face-to-face learning experience, communication-based learning media allows for direct communication between lecturers and students through question-and-answer forums or group discussions via Zoom (Rosita et al., 2022). This helps students feel connected to teaching, even if they are in a separate room. This is consistent with (Martin et al., 2022), who argued that digital platforms can offer a collaborative environment that facilitates student engagement. However, it challenges earlier studies like that of (Periani & P. E. D, 2022), who pointed out that virtual interactions often lack the personal touch that face-to-face sessions provide, making it harder for some students to engage deeply in the material. Thus, while digital platforms

enhance interactivity, they still need to bridge the emotional gap created by the absence of physical presence.

Collaborative and cooperative-based learning models facilitated by communication-based learning media are becoming increasingly relevant in the digital era. Through platforms such as WhatsApp and discussion forums within Google Classroom, students can work together in groups to complete assignments or projects, share materials and ideas, and discuss learning topics (Afandi & Saputri, 2020; Sudaryani et al., 2023). This collaboration not only improves students' understanding of the material but also hones social and communication skills that are highly valued in the professional world. This is in line with the findings of (Afandi & Saputri, 2020), who highlighted the importance of collaborative learning in digital environments, and Sudaryani et al. (2023), who emphasized the benefits of peer interactions in enhancing academic performance. However, studies like those by (Brika et al., 2022) argue that online collaborations often fall short in building the trust and interpersonal connections fostered in face-to-face interactions, leading to challenges in teamwork dynamics.

Overall, despite challenges such as limited technology infrastructure and limited skills, the use of communication-based learning media in distance learning in universities, particularly in communication study programs, still has significant benefits in creating more flexible, interactive, and collaborative learning (Maria et al., 2026; Siradjuddin et al., 2026). These findings contribute to the theoretical discourse on digital communication learning by underlining the importance of addressing both infrastructure gaps and skill development to fully optimize the potential of digital learning tools. Effective distance learning can serve as an inclusive and equitable educational solution in the digital age.

CONCLUSION

This research highlights the significant potential of communication-based learning media, such as Google Classroom, Zoom, and WhatsApp, in enhancing the effectiveness of distance learning, particularly within communication study programs at universities. However, despite their flexibility and ability to foster interactive learning, the challenges of limited technological infrastructure and digital literacy remain substantial barriers, especially in regions with poor internet access. Reflecting on these findings, it becomes clear that universities must not only invest in improving technology and infrastructure but

also prioritize continuous training for both lecturers and students to optimize the use of these tools. Furthermore, while digital learning offers greater flexibility and accessibility, it is essential to recognize the potential loss of face-to-face interactions, which are vital for the social and emotional aspects of learning. Therefore, a balanced and holistic approach is needed, one that combines technological advancements with pedagogical support, to ensure that distance learning becomes an inclusive and sustainable educational model that transcends geographical and time constraints.

REFERENCES

Afandi, M. D., & Saputri, T. (2020). the Effectiveness of Google Classroom for Online Discussions. *Exposure : Jurnal Pendidikan Bahasa Inggris*, *9*(2), 322–331. https://doi.org/10.26618/exposure.v9i2.4179

Andewi, W., & Pujiastuti, D. (2021). Google Classroom: The Web-Based Media for Teaching English. *Jurnal Penelitian Ilmu Pendidikan*, *14*(2), 189–198. https://doi.org/10.21831/jpipfip.v14i2.41450

Benavides, L., Tamayo Arias, J., Arango Serna, M., Branch Bedoya, J., & Burgos, D. (2020). Digital Transformation in Higher Education Institutions: A Systematic Literature Review. *Sensors*, *20*(11), 3291. https://doi.org/10.3390/s20113291

Brika, S. K. M., Chergui, K., Algamdi, A., Musa, A. A., & Zouaghi, R. (2022). E-Learning Research Trends in Higher Education in Light of COVID-19: A Bibliometric Analysis. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.762819

Dinc, E. (2019). Prospective Teachers' Perceptions of Barriers to Technology Integration in Education. *Contemporary Educational Technology*, *10*(4), 381–398. https://doi.org/10.30935/cet.634187

Goudeau, S., Sanrey, C., Stanczak, A., Manstead, A., & Darnon, C. (2021). Why lockdown and distance learning during the COVID-19 pandemic are likely to increase the social class achievement gap. *Nature Human Behaviour*, *5*(10), 1273–1281. https://doi.org/10.1038/s41562-021-01212-7

Hanik, E. U. (2020). Self Directed Learning Berbasis Literasi Digital Pada Masa Pandemi Covid-19 Di Madrasah Ibtidaiyah. *ELEMENTARY: Islamic Teacher Journal*, *8*(1), 183. https://doi.org/10.21043/elementary.v8i1.7417

Hébert, C., Jenson, J., & Terzopoulos, T. (2021). "Access to technology is the major

challenge": Teacher perspectives on barriers to DGBL in K-12 classrooms. *E-Learning and Digital Media*, *18*(3), 307–324. https://doi.org/10.1177/2042753021995315

Hoerudin, C. W., Syafruddin, S., Mayasari, A., Arifudin, O., & Lestari, S. (2023). E-Learning as A Learning Media Innovation Islamic Education. *QALAMUNA: Jurnal Pendidikan, Sosial, Dan Agama*, *15*(1), 723–734. https://doi.org/10.37680/qalamuna.v15i1.4466

Maria, E., Friani, D. A., & Setiati, A. D. (2026). Implementation of project-based collaborative learning models to improve students' social skills in elementary schools. *Arshaka: Pedagogy and Learning Review*, *1*(2), 103–109. https://doi.org/10.65779/arshaka.v1i2.62

Martin, F., Sun, T., Westine, C. D., & Ritzhaupt, A. D. (2022). Examining research on the impact of distance and online learning: A second-order meta-analysis study. *Educational Research Review*, *36*, 100438. https://doi.org/10.1016/j.edurev.2022.100438

Masalimova, A. R., Khvatova, M. A., Chikileva, L. S., Zvyagintseva, E. P., Stepanova, V. V., & Melnik, M. V. (2022). Distance Learning in Higher Education During Covid-19. *Frontiers in Education*, *7*. https://doi.org/10.3389/feduc.2022.822958

Nababan, D., Wijayanti, A. P., Rico, Nashrallah, M. N., & Sari, W. A. S. (2023). Web-Based Learning Media for Distance Education: A Review. *Jurnal Penelitian Pendidikan IPA*, *9*(12), 1342–1353. https://doi.org/10.29303/jppipa.v9i12.5827

Ndibalema, P. (2022). Constraints of transition to online distance learning in Higher Education Institutions during COVID-19 in developing countries: A systematic review. *E-Learning and Digital Media*, *19*(6), 595–618. https://doi.org/10.1177/20427530221107510

Perez, E., Manca, S., Fernández-Pascual, R., & Mc Guckin, C. (2023). A systematic review of social media as a teaching and learning tool in higher education: A theoretical grounding perspective. *Education and Information Technologies*, *28*(9), 11921–11950. https://doi.org/10.1007/s10639-023-11647-2

Periani, K., & P. E. D, S. (2022). Students' Perception on The Use of Google Classroom in English Online Learning at A Rural Junior High School. *Jurnal Pendidikan Bahasa Inggris Undiksha*, *9*(3), 256. https://doi.org/10.23887/jpbi.v9i3.43763

Priyanto, D. (2024). Education towards Equality: A Review of the Contribution of Distance Learning Technology in Expanding Access and Promoting Social Equality. *Technology and Society Perspectives (TACIT)*, *2*(1). https://doi.org/10.61100/tacit.v2i1.139

Qi, Z. (2025). A modified technology acceptance model for digital learning in Chinese universities. *E-Learning and Digital Media*. https://doi.org/10.1177/20427530251313758

Rosita, T., Suherman, M. M., & Nurhaqy, A. A. (2022). Keterampilan Kolaborasi Guru Sekolah Dasar Untuk Keberhasilan Pendidikan Inklusif. *Warta Pengabdian*, *16*(2), 75. https://doi.org/10.19184/wrtp.v16i2.23395

Sarwari, K., Kakar, A. F., Golzar, J., & Miri, M. A. (2022). Distance learning during COVID-19 in Afghanistan: Challenges and opportunities. *E-Learning and Digital Media*, *19*(2), 144–162. https://doi.org/10.1177/20427530211044757

Siradjuddin, S., Hasanah, U., & Handayani. (2026). The effect of problem-based learning on students' critical thinking skills in school. *Arshaka: Pedagogy and Learning Review*, *1*(2), 88–94. https://doi.org/10.65779/arshaka.v1i2.61

Sudaryani, H., Rukmini, D., & Ardiasih, L. S. (2023). Students' Perceptions on Benefits and Challenges in Using Google Classroom for Online English Learning during Pandemic Covid-19. *Jurnal Pendidikan Bahasa Inggris Undiksha*, *11*(1), 24–32. https://doi.org/10.23887/jpbi.v11i1.59176

van der Meer, N., van der Werf, V., Brinkman, W.-P., & Specht, M. (2023). Virtual reality and collaborative learning: a systematic literature review. *Frontiers in Virtual Reality*, *4*. https://doi.org/10.3389/frvir.2023.1159905

Widiyanto, A. (2021). The Effect of E-Learning as One of the Information Technology-Based Learning Media on Student Learning Motivation. *IJIIS: International Journal of Informatics and Information Systems*, *4*(2), 123–129. https://doi.org/10.47738/ijiis.v4i2.108

Yeh, C.-Y., & Tsai, C.-C. (2022). Massive Distance Education: Barriers and Challenges in Shifting to a Complete Online Learning Environment. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.928717