ANALYZING TECHNOLOGY INTEGRATION IN ENGLISH FOR SPECIFIC PURPOSES (ESP) LEARNING THROUGH A SYSTEMATIC LITERATURE REVIEW OF PRISMA AND SINTA-ACCREDITED JOURNALS

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Abstract: *In Indonesia, educational research has focused mostly on including technology into English for Specific Purposes (ESP) learning. This study systematically reviews ESP research published in SINTA-accredited journals (Ranks 1 and 2) applying PRISMA methodology to guarantee rigor and transparency. Examining 45 papers overall, focusing toward significant trends in research design, participant demographics, applied technique, and technological advancements, With considerable application of tools like digital storytelling, Prezi, and multimedia platforms to promote language acquisition, the review reveals a clear inclination for qualitative and quantitative approaches. Among university students, engineering, Islamic education, and maritime studies are the most often sought-after disciplines. Among routinely utilized tools include pre/post exams, reflective journals, and questionnaires. The results show that learners' domain-specific vocabulary, communication skills, and general motivation enhance with technology-infused ESP instruction. Though there are encouraging patterns, a sizable portion of the study is still non-interventionist, suggesting the necessity of more practical and development-oriented studies. The study underlines the transforming ability of technology in creating more specialized, dynamic, and interesting ESP learning settings. Particularly in vocational and professional learning environments, future research should investigate more deeply the cognitive and pedagogical ramifications of developing technologies including artificial intelligence, virtual reality, and adaptive learning systems.*

INTRODUCTION

The rapid growth of digital technology has had a substantial impact on a variety of disciplines, including education. English language learning, particularly English for Specific Purposes (ESP), encounters new problems and opportunities through this digital revolution. According to (Constantinou & Papadima-Sophocleous, 2020), ESP is a field of language that

has not been impacted by technological advances. ESP requires an appropriate design and approach since it is a branch of English language learning targeted to meet certain professional or academic communication requirements. Therefore, including technology into ESP education is becoming more and more important in closing the distance between education and the always growing workplace.

As digital materials and online learning platforms become more widely available, educators will have more possibilities for designing ESP learning that is interactive, contextual, and flexible (Nichols et al., 2020). Technology enables the personalization of materials, cross-spatial collaboration, and the usage of real media tailored to the needs of a specific industry, such as tourism, commerce, medicine, or engineering. However, despite the immense potential of technology in ESP instruction, its application in the field is frequently inefficient and unequal. Many educators and institutions are still looking for the most effective kind of technology integration that is suited for their local situation (Education, 2024).

Particularly in the framework of recognized national publications, the necessity of this research arises from the need to comprehend how trends, methodologies, and approaches of technology integration in ESP learning have evolved over time. This study not only offers a thorough mapping of the conducted studies but also points up methodological trends, research gaps, and innovations implemented in the Indonesian setting. As more effective and pertinent technology-based ESP learning approaches are developed, the results of the study are expected to be a priceless tool for educators, policymakers, and future academics.

METHOD

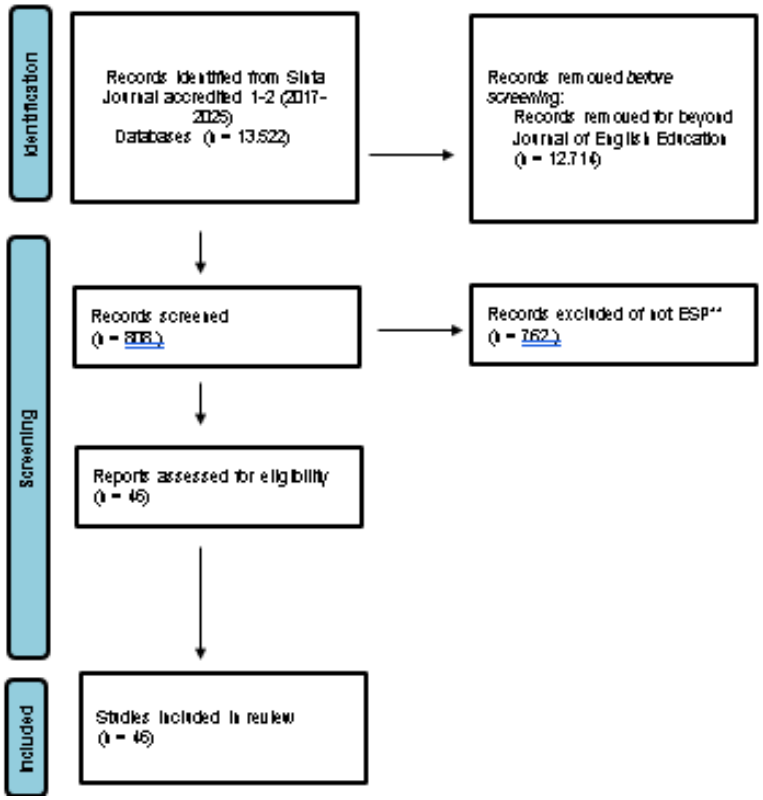

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Figure 2.1 Prisma Protocol (Page et al., 2021).

PRISMA 2020 is used to search and select the articles for this project. The first phase was to list 13,522. All papers are from SINTA-accredited journals ranked 1 and 2 between 2017 and 2025. 12,571 papers were issued since they are not from relevant journals related to the topic of the research, it is about the Journal of English Education.

A total of 808 papers were selected during the initial screening process based on their relevance to English for Specific Purposes (ESP). As of now, 762 papers have been eliminated as they did not meet the ESP criteria. Therefore, this study includes only 46 publications that were considered valuable and suitable for further investigation. Following this, these 46 papers were assessed for eligibility, and the final results showed that all of them (n = 46) met the inclusion criteria and were included in the review study.

FINDING AND DISCUSSION

The following are research trends in the field of ESP from 2017 to 2014.

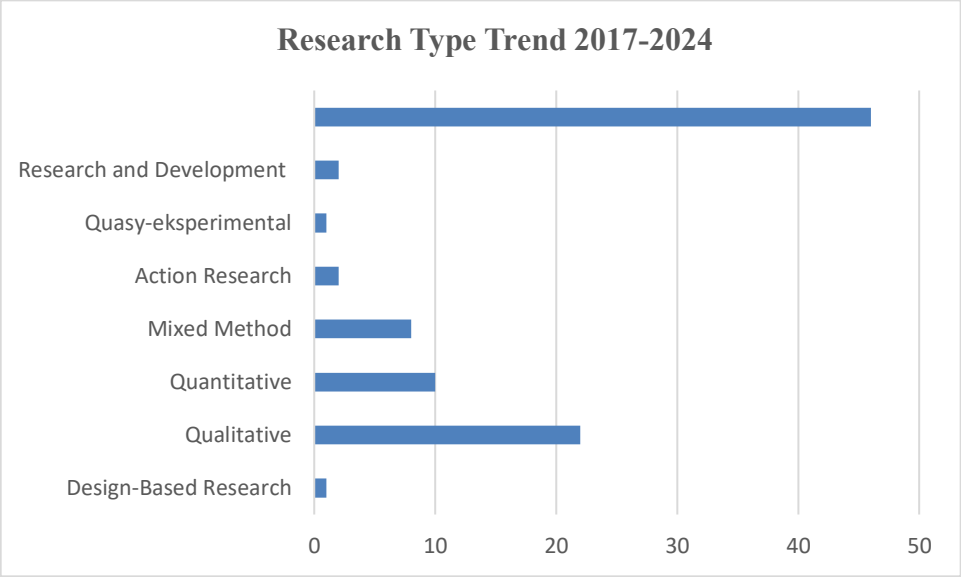

Figure 3.1 Research Trends in ESP

Figure 3.1 represents trends in research kinds from 2017 to 2024, with an emphasis on two major categories:

The graph illustrates the trends in types of research from 2017 to 2024, showing that research and development (R&D) is predominant, followed by qualitative research in the second position. In contrast, quantitative research, action research, quasi-experimental research, and design-based research are significantly less prevalent. It suggests that research in the area of Integrating Technology in English for Specific Purposes (ESP) Learning is focused on creating new models, products, or technologies to improve ESP learning. This is highlighted by the substantial number of R&D studies, which generally concentrate on developing technology-based learning resources like applications, online platforms, or digital

modules designed to enhance the effectiveness of English language learning in specific subjects.

Furthermore, a great number of qualitative research demonstrate that a thorough investigation of user experience, educator perspectives, and the efficiency of technology implementation in ESP learning are major concerns (Febriyanti, 2018). Qualitative studies in this context may involve interviews, case studies, or phenomenological evaluations of how students, lecturers, and industry practitioners use technology in English learning for professional purposes.

Quantitative, quasi-experimental, and action research techniques are still hardly applied. This shows that, while technology is increasingly integrated into ESP, statistical data-driven evaluations of its usefulness in enhancing English language competency remain limited. The design-based research method, which is typically used to generate and test educational theories in real-world settings, has not been widely adopted. Overall, this trend suggests that technology-based ESP research is more focused on generating new tools and techniques, but it still requires more experiment-based studies and real-world implementation-based study designs to assess the effectiveness of the ensuing innovations (Farida, 2022). In the future, it is essential to achieve a balance between developmental research and experimental research, ensuring that technology in ESP learning is not only advanced but also empirically validated to confirm its effectiveness in both educational and industrial contexts.

The need to balance developmental and experimental research is reflected in current trends, where most ESP studies focus heavily on students. As shown in Figure 2, expanding research to include other subjects like teachers and vocational learners is essential for broader and more effective ESP application.

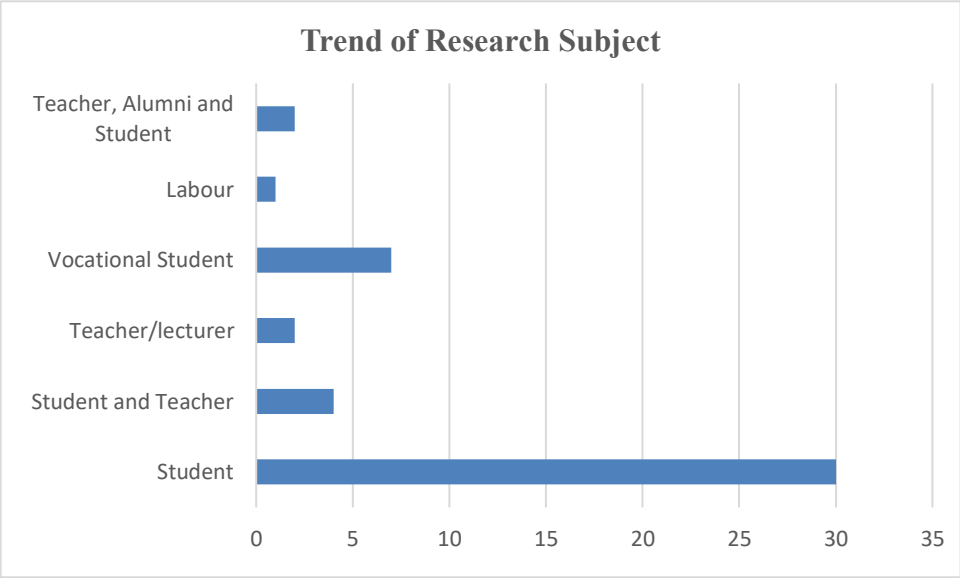

Figure 3.2 Research Trends Based on the Subject

According to the graph, students are the main focus of research trends in English for Specific Purposes (ESP) learning with technology integration, followed by vocational

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students. Other topics like teachers and lecturers, the workforce, and the mix of students and alumni receive less attention. Since students are the main users in both academic and professional settings, research frequently focuses on how technology might improve their English language proficiency (Purfitasari et al., 2019). Furthermore, extensive research on vocational students demonstrates that technology-based ESP learning is designed to assist them grasp English in their areas of competence, such as tourism, engineering, and business.

Yet, research involving teachers or lecturers remains limited, implying that the incorporation of technology in ESP education has not been thoroughly investigated from the perspective of teachers. In reality, educators play a key role in selecting and implementing appropriate technology for ESP learning. The same can be found in the field of labor, demonstrating that research on the implementation of technology-based ESP in the industrial sector remains limited (Depita, 2024). As a result, this trend highlights the need for more research that not only focuses on students and vocational students, but also investigates how teachers/lecturers may incorporate technology into learning and how ESP technology can be implemented in professional contexts.

The following are ESP research subjects that combine technology, including the sort of technology used:

a. Multimedia Technology for ESP Teaching

Multimedia technology is used to help with subject knowledge, increase student engagement, and offer a more contextualized learning environment (Purfitasari et al., 2019). This inquiry found a number of studies that employed technology, such as Digital Storytelling, which was employed as an ESP learning tool to enhance communication abilities using a narrative-based methodology. With the help of this technique, students can develop their writing and speaking abilities in a more original and industry-relevant manner. Compared to more conventional media like PowerPoint, Prezi as a learning tool makes ESP presentations more lively and interactive, making for a more captivating learning experience.t.

b. Online Platforms and Media for ESP Evaluation and Learning

Additionally, digital technologies are being employed to support data-driven learning and improve English proficiency tests (Zhang & Leong, 2024). Among the noteworthy findings is the application of the Online Dynamic Assessment (DA) to evaluate ESP students' writing and speaking abilities. By providing students with real-time feedback, this technology makes exams more adaptive. The assessment of online instructional materials in ESP shows that by improving accessibility and interactive learning features, digital platforms can boost the effectiveness of instruction.

c. Journal and Blog-Based Interactive Technology in ESP

Technology integration in ESP includes reflective and participatory techniques, such as digital reflective journals, which enable students to use digital documentation to reflect on the evolution of their language skills in addition to multimedia tools and online assessments. This approach encourages metacognitive development and experiential learning. As ESP's premier language learning tool, blogs give students a platform to share experiences, convey ideas, and hone their academic and professional writing abilities in a variety of contexts. The results of this study show that ESP uses technology as a digital tool for assessment, reflection, and interaction in addition to improving the delivery of

materials. A shift toward a more technology-based, collaborative, and industry-specific needs-based learning strategy is suggested by the growing use of technology in ESP education (Weijzen et al., 2024). Future research could uncover more individualized AI, VR, and adaptive platform technologies as a result of technology breakthroughs, supporting more effective and efficient ESP learning.

The treatments in ESP research from 2017 to 2025 can be seen on the pie chart below:

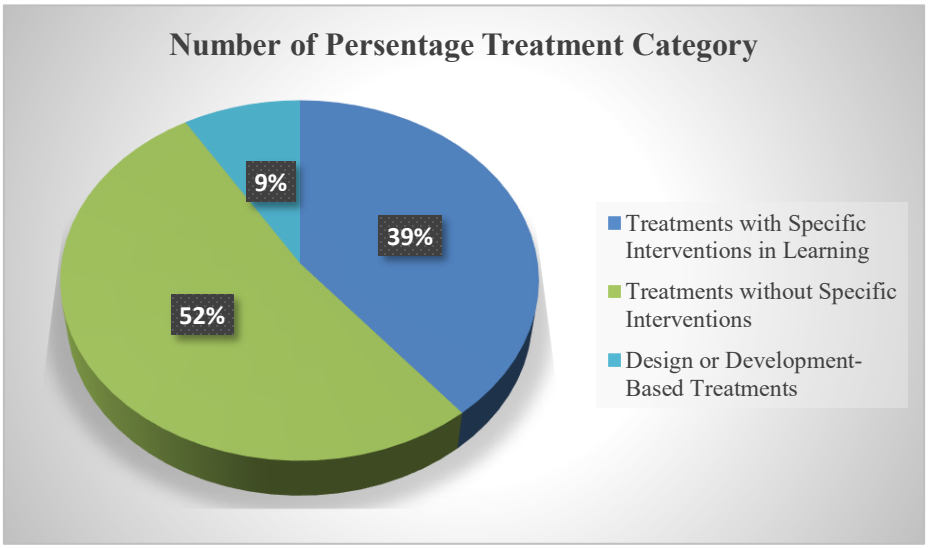

Figure 3.3 Treatment Category

The treatment categories in the study are shown in the pie chart as follows: treatment without specific interventions (52%), learning-specific interventions (39%), and treatments based on design or development (9%). Research that did not employ specific interventions accounted for the largest share, suggesting that the majority of studies are still observational or analysis-based and lack direct trials. In contrast, studies that included learning interventions made up almost 40% of the total, indicating a strong focus on experimental research to increase the efficacy of learning. However, just 9% of study is based on design or development, suggesting that innovative approaches to curriculum development or educational technology are still not well studied.

According to a systematic literature review conducted using PRISMA from a SINTA-accredited publication, these findings have a number of significant change for the integration of technology in English for Specific Purposes (ESP) learning. The high percentage of studies that do not specifically address interventions (52%) indicates that many studies still concentrate on needs analysis, trend mapping, or literature reviews instead of directly integrating technology into ESP instruction. The use of technology in ESP learning necessitates further testing through methodical interventions, highlighting a gap between theoretical study and real-world application.

The usefulness of technology in ESP has been the subject of multiple studies, according to 39% of studies with specialized learning interventions. These interventions could involve the use of learning management systems (LMS), e-learning platforms, AI-powered language analysis programs, or multimedia-based interactive media. As technology advances, future research may focus more on testing the effectiveness of digital tools in improving ESP

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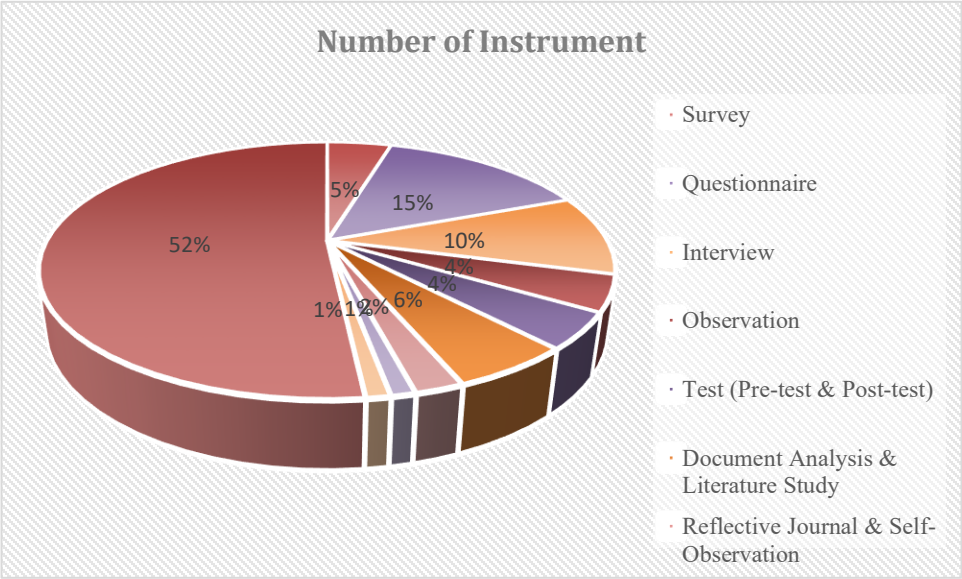
language skills, such as the use of VR for interaction simulation in the tourism industry or AI for text analysis in EAP-based ESP (Jamil et al., 2024).

Only 9% of the study is design-based or development-based, nevertheless, suggesting that there is still little room for innovation in the creation of educational resources for ESP. Actually, in order to create a technology-based ESP learning paradigm that better satisfies academic and industrial demands, development-based research is essential. Future studies might concentrate on gamifying ESP learning, producing mobile learning-based ESP modules, or constructing AI-based platforms for adaptive ESP learning (Nita et al., 2020; Sidupa, n.d.).

All things considered, these findings imply that even if technological interventions in ESP learning have started to be used, much more research may be done, particularly in development-based studies. Through needs analysis, development research can yield items that may be required (Okpatrioka Okpatrioka, 2023; Riti et al., 2021). Future studies must use more technology-based intervention and development techniques to increase the efficacy of ESP learning, given the growing demand for English language proficiency in particular fields.

The following are the instruments in ESP research in 2017-2025, as shown on the pie chart below:



The pie chart presenting the distribution of research tools shows that questionnaires (52%) are the most popular method. This shows that people favor quantitative methods for collecting data. Surveys (15%) come in second, which shows how important it is to collect data on a big scale. Interviews (10%) showed that qualitative methods had a big impact on the study at the same time. Document analysis and literature reviews (6%), observation (4%), and tests (pre-test and post-test) were used to some extent, showing that a mixed research technique was adopted. Reflective journals and self-observation (1% each) are the least popular tools, which shows that reflective methods are still being used enough.

A systematic literature review using PRISMA from a SINTA-accredited publication looked at the importance of these findings for integrating technology into English for Specific Purposes (ESP) learning. The review brought up a number of important points. The fact that

questionnaires and surveys are common in ESP research is in line with a trend toward using technology in requirements analysis through digital platforms like Google Forms and data-driven learning systems. Using technology to collect and analyze data makes the ESP program better fit the needs of students.

According to Depita (2024), technology makes things more fun, interactive, and easy to grasp. Also, the fact that just 4% of people use pre-test and post-test-based testing shows that technology for evaluation and assessment in ESP is still not very well studied. Tools like Moodle quizzes, Kahoot, and AI-based assessment systems can actually make measuring language skills more accurate (Batubara, 2017; López-Tocón, 2021). This is also true for interviews. Virtual interviews and online group conversations through Zoom, Microsoft Teams, or AI-based transcription services can help ESP researchers get better qualitative data. Also, using artificial intelligence (6%) to analyze documents and research literature could make systematic literature review more efficient. AI can quickly and reliably check homework, quizzes, and tests, and in some cases, even essay questions. This helps teachers save time (Ubihatun et al., 2024). Tools like NVivo, ChatGPT, and citation mapping tools can assist researchers find patterns and gaps in their work more precisely.

It's interesting that only 1% of people use reflective diaries and self-observation, which shows that reflection-based learning tools are still not being used enough. (Patty and Que, 2023) say that. Reflective learning through classroom action research is less common because it takes a long time, which makes it hard for teachers or lecturers. Digital e-portfolios, student blogs, and AI-powered feedback systems are examples of tools that could actually help ESP students take a more active role in tracking their learning progress. There are several ways that technology can be used to improve ESP research and learning (Dashtestani & Stojković, 2015; Jamil et al., 2024; Kusumawati, 2018). Using digital technologies for exams, online interviews, AI-based literature analysis, and reflective learning can make ESP research and learning much more effective. In the future, research should focus more on how technology may be used in different sections of ESP learning to make the learning more interesting and based on data.

CONCLUSION

This systematic review of 46 articles from SINTA-accredited journals shows that more and more technology is being used in English for Specific Purposes (ESP) learning, especially in Indonesian higher education. Digital technologies like storytelling platforms, Prezi, and online assessment systems have been demonstrated to help students learn a language better, especially when it comes to mastering domain-specific vocabulary, communication skills, and motivation. Most of the studies use qualitative and research-and-development methods, and the main subjects are college students. However, there remains much uncertainty regarding the role of educators and professional environments.

Despite the gradual increase in the prevalence of technological advancements in ESP learning, the utilization of empirical evaluations and design-based interventions remains restricted. The results of this study indicate that a more equitable approach is required, which involves the development of technical instruments and the evaluation of their effectiveness in the real world. Future research should investigate advanced technologies such as adaptive learning platforms, virtual reality, and artificial intelligence in order to

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facilitate contextualized, collaborative, and personalized ESP learning. By doing so, technology-enhanced ESP training can serve as a critical link between the knowledge students acquire in school and the requirements of the industry.s.

REFERENCE

[1] Batubara, H.H. (2017). Study on Online Learning Implementation Using Moodle LMS for PGMI UNISKA MAB Banjarmasin Students. *Al Ibtida: Jurnal Pendidikan Guru MI, 4(2):201. https://doi.org/10.24235/al.ibtida.snj.v4i2.1770*

[2] Constantinou, E.K., and Papadima-Sophocleous, S. (2020). The application of digital technology in esp: Current practices and recommendations for esp teacher education. *Journal of Teaching English for Specific and Academic Purposes, 8(1 Special Issue), 17–29. https://doi.org/10.22190/JTESAP2001017*K

[3] Dashtestani, R. and Stojković, N. (2015). *The Journal of Teaching English published a literature review on the use of technology in English for Specific Purposes (Esp) instruction. Specific and Academic Purposes, 3 (January), 435-456*.

[4] De Pita, T. (2024). Using Technology in Active Learning (Active Learning) to Increase Student Interaction and Engagement. TARQIYATUNA: *Jurnal Pendidikan Agama Islam Dan Madrasah Ibtidaiyah, 3(1), 55–64. https://doi.org/10.36769/tarqiyatuna.v3i1.516*

[5] Education, U. (2024). *Beyond Borders: Leveraging Technology to Support Sustainable Development Goals in Education*, 1. 2(2), 90-100. https://doi.org/10.33084/ijue.v2i2.8586

[6] Farida, M. (2022). Creating Local-Based English for Tourism Materials for Religious and Cultural Tour Guide Program Students: A Needs Assessment. *ENLIT Journal, 2(1), 74–82. https://doi.org/10.33654/enlit.v2i1.1896*

[7] Febriyanti, E.R. (2018). Identifikasi Analisis Kebutuhan Pembelajar Bahasa Inggris (Non-Program Studi Bahasa Inggris) Pada Mata Kulah Bahasa Inggris Esp Di Lingkungan Fkip Universitas Lambung Mangkurat Banjarmasin. *Vidya Karya, 32(2): 123. https://doi.org/10.20527/jvk.v32i2.5230*

[8] Jamil M. A., Haetami A., Mayasari M., Aina M., Sukini S., and Ulimaz A. (2024). The Role of 5G Technology in Driving Educational Innovation. *Jurnal Review Pendidikan Dan Pengajaran (JRPP), 7(1), 1841–1853. http://journal.universitaspahlawan.ac.id/index.php/jrpp/article/view/25562*

[9] Kusumawati, F P. (2018). Creating an English for Specific Purposes (ESP) module to help computer science students master their vocabulary. *English Language Teaching Education Journal, 1(1), 13. https://doi.org/10.12928/eltej.v1i1.142*

[10] López-Tocón, I. (2021). Moodle quizzes as a continuous evaluation tool in higher education: An exploratory approach to physical chemistry. *Education Sciences. 11(9). https://doi.org/10.3390/educsci11090500*

[11] Nichols, M., Choudhary, N., and Standring, D. (2020). Examining transformative learning in vocational online and distance education. *Journal of Open, Flexible, and Distance Learning, 24(2), 43–55. https://doi.org/10.61468/jofdl.v24i2.435*

[12] Nita, A.A., Busnawir, and Fahinu. (2020). *Journal Amal Pendidikan. Jurnal Amal Pendidikan, 1(1): 1-15.*

[13] Okpatrioka Okpatrioka. (2023). Innovative research and development (R&D) in

education. Dharma Acariya Nusantara: *Jurnal Pendidikan, Bahasa dan Budaya, 1(1), 86–100. https://doi.org/10.47861/jdan.v1i1.154*

[14] Page, M. J., McKenzie, J. E., Bossuyt, P., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S. (2021). The Prisma 2020 Statement is a new standard for reporting systematic reviews. *In Medicina Fluminensis (Vol. 57, Issue 4, pp. 444–465). Elsevier. https://doi.org/10.21860/medflum2021_264903*

[15] Patty, J., and Que, S. R. (2023). Reflective teaching is based on learning from experience. GABA-GABA: *Jurnal Pengabdian Masyarakat, 3(1), 171–178. https://doi.org/10.30598/gabagabavol3iss1pp171-178*

[16] Purfitasari S., Masrukhi M., Prihatin T., and Mulyono S. E. (2019). Digital Pedagogy as a Learning Approach in the Fourth Industrial Revolution. *Prosiding Seminar Nasional Pascasarjana, 2(1), 806–811. https://proceeding.unnes.ac.id/snpasca/article/view/374*

[17] Riti, Y.U.R., Degeng, I.N.S., and Sulton, S. (2021). Development of a Project-Based Learning Model Using Design Thinking to Improve Student Critical Thinking Skills in Science Education. *Jurnal Pendidikan: Teori, Penelitian, and Pengembangan, 6(10), 1581. https://doi.org/10.17977/jptpp.v6i10.15056*

[18] Sidupa, C. (n.d.). *Theoretical and Practical Language Learning Based on Technology*.

[19] R. Ubihatun, A. I. Aliyya, F. Wira, V. I. Ardhelia, D. O. Radianto, P. Perkapalan, and N. Surabaya. (2024). Literature Review on the Challenges and Prospects of Vocational Education in the Digital Age. *Jurnal Kajian Ilmu Seni, Media Dan Desain, 1(3): 1-11. https://doi.org/10.62383/abstrak.v1i2.118*

[20] Weijzen, S.M.G., Onck, C., Wals, A.E., Tassone, V.C., and Kuijer-Siebelink, W. (2024). Vocational education for a Sustainable Future: Unveiling collaborative learning narratives to create learning space. *Journal of Vocational Education and Training, 76(2), 331–353. https://doi.org/10.1080/13636820.2023.2270468*

[21] Zhang, H., and Leong, W. Y. (2024). *Industry 5. 0 and Education 5. 0: Improving Vocational Education with Intelligent Technology*. 2024(16).

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ISSN 2798-3641 (Online)