Views of Students and Lecturers on Module Development in Learning Listening Skills in Higher Education

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Abstract: The aim of the initial research was to describe the potential that supports the implementation of listening skills using digital technology, namely the implementation of listening skills learning in the classroom, student characteristics, and the use of technology in developing teaching materials. The type of research used is descriptive. The research subject for lecturers in listening skills courses and students studying listening skills material in the Indonesian Language and Literature Education study program, Padang State University. The instruments used to collect data were observation sheets, questionnaire sheets, and listening skills test sheets. Data were analyzed using descriptive statistical analysis. The results of the preliminary research are: 1) The average score of students' listening skills is still low so it needs to be improved. 2) The results of observations regarding the use of modules are still not utilized optimally, 3) The results of observations of digital teaching materials used by lecturers based on the LMS (Learning Management System) display conclude that not all lecturers use digital materials in the LMS, and 4) Results of student response questionnaires agree with the development of digital materials in the Learning Management System so that student learning outcomes improve. Based on the results of this preliminary study, it can be concluded that the modules currently used by lecturers in listening skills courses still need to be developed. The development of teaching materials is carried out by utilizing technology.

Keywords: Digital Materials, Higher Education, Learning Listening Skills.

A. Introduction

Industry 4.0 has brought about a major transformation in the world of work, driving changes in the need for skills and knowledge possessed by graduates (Dewi et al., 2022; Ginaya et al., 2020). Based on a number of studies, four key skills, namely critical thinking, effective communication, the ability to collaborate in teams, and creativity in problem solving, are considered very important in facing the challenges of Industry 4.0 (Kimmig et al., 2021; Kusen, 2022). These skills are an important foundation in curriculum development and learning approaches (Özel, 2021; Rusli et al., 2021). Teachers as the main movers in education are expected to be able to design learning

strategies that support the development of these skills (Akkaya & Kapıdere, 2021; Fitri et al., 2023; Karademir et al., 2021; Kusumadewi et al., 2022). For example, through the use of learning methods that encourage students to think critically, such as open discussions, role plays, or case studies that involve problem solving. Effective communication skills are also emphasized, in both verbal and non-verbal contexts, by encouraging open discussions, presentations, and collaborative projects in the classroom (Hasbiyati et al., 2022; Nugraha, 2022; Rosdiana et al., 2022; Tambunan & Sundari, 2020).

The choice of learning media also has a central role in improving listening and communication skills. In the Industry 4.0 environment which is dominated by technology, the integration of media in learning becomes crucial (Afifulloh & Cahyanto, 2021; Azizul et al., 2020; Kurniawan & Djajalaksana, 2022). Interactive and supportive learning media, such as online platforms, learning videos, and simulations, can help students hone their listening and communication skills effectively (Nuraeni, 2019). Not only that, a deep understanding of social problems and the ability to face complex challenges are also a focus in curriculum development. Students need to be trained to analyze, understand and respond to complex social problems with the help of appropriate learning media. This will help them develop analytical skills, collaborate in solving problems, and enrich their communication and creative thinking skills (Momang, 2021; Ramdani et al., 2021).

Developing listening skills also plays an important role in the learning process. The ability to effectively listen and understand the information presented is the foundation for students to gain knowledge and develop other skills. Teachers must be able to design learning situations that encourage students to actively listen, process information, and interact with learning material. As technology develops, teachers also have the opportunity to use technology to explore new ways of teaching and learning. The use of advanced technological tools, such as artificial intelligence, data analysis, or augmented reality, can provide a more immersive and interactive learning experience for students, and help them develop skills relevant to Industry 4.0 (Dewandono & Sutiyarti, 2022; Göçen Kabaran & Uşun, 2021).

In responding to the demands of Industry 4.0, it is important for educational institutions to ensure that students receive a holistic learning experience. This includes not only the development of academic skills, but also the development of social, emotional, and life skills that will prepare them for success in the ever-evolving world of work. Thus, learning must be designed to be more adaptive, focused on developing skills that are relevant to future needs, and supported by technology that can enrich students' learning experiences. With a holistic and inclusive approach, educational institutions can ensure that graduates are ready and able to face the Industrial Revolution 4.0 and adapt to continuous changes in the world of work. Therefore, learning must be designed to be more adaptive, focused on developing skills that are

relevant to future needs, and supported by technology that can enrich students' learning experiences. With a holistic and inclusive approach, educational institutions can ensure that their graduates are ready and able to face the Industrial Revolution 4.0 and adapt to changes that continuously occur in the world of work. The novelty of this research is the development of an electronic mobile for teaching listening skills using a flipbook maker, thereby producing innovative electronic teaching materials. The digital teaching material innovation that will be designed is the addition of audio, video and visuals to meet all student learning styles. so that student learning outcomes increase.

B. Method

The research carried out can be included in the type of descriptive research. Descriptive research is a research method that attempts to describe and interpret objects according to what they are. In general, descriptive research carried out has two main objectives, namely systematically describing the facts and characteristics of the object being studied accurately (Adiwijaya & Wedayanthi, 2022).

In this initial research, three objects were studied, namely lecturers in listening skills courses, syllabus and teaching materials for listening skills, and students' listening abilities. Lecturers in listening skills courses are used to obtain information about the application of digital teaching materials in lectures. There were 3 lecturers teaching listening skills courses in the Indonesian language and literature education study program who were interviewed to obtain this information. Syllabus and teaching materials are the second object for obtaining information about the use of technology in module development. On the other hand, Indonesian language and literature education study program students are used to obtain information regarding students' listening abilities. The number of students involved in collecting this information was 64 people. The sampling technique is proportional sampling (Sariyatun et al., 2018).

The data collection technique used in this preliminary research consists of three parts, namely interviews, documentation and listening tests. Interviews were used to obtain data about the implementation of listening skills learning by course lecturers. The instrument used was an interview guide sheet. Documentation is used to obtain data about the use of technology in preparing teaching materials and their application. The documents used include syllabi, teaching modules and listening skills course resource books. The instrument used is a document assessment sheet. Listening tests are used to get an idea of students' listening abilities. The instrument used was a student listening test sheet (Chotijah et al., 2022). Data collected through appropriate instruments are analyzed using specific analytical techniques. The data analysis technique used in this research is descriptive statistical analysis. Descriptive statistics are statistics that function to describe or provide an overview of the object being

studied through sample or population data as it is. In this descriptive statistics without carrying out analysis and drawing conclusions that apply to the general public.

C. Results and Discussion

The results of this research were obtained from the analysis of interviews with lecturers who taught listening skills courses at the Indonesian language and literature education study program, Padang State University. The results of this research are based on three things, namely evaluation of teaching materials, development of teaching materials by lecturers, integration of technology in the development of digital teaching materials. First, evaluate the teaching materials. To innovate teaching materials, it is necessary to evaluate the teaching materials currently used. These teaching materials can be ready-to-use teaching materials or teaching materials developed or designed by the lecturer himself. This is done to determine the advantages of currently available teaching materials so that these advantages can be maintained. Apart from that, we also know the limitations of the teaching materials used to be able to innovate the teaching materials used. The results of the evaluation analysis of teaching materials can be seen in table 1 below.

Table 1. Student's Responses

No	Statement	Answer (%)			
		SS	S	TS	STS
1	Digital materials can help me better understand variations in accents and dialects in listening skills.	62.5%	35.9%	1.6%	0%
2	I believe that using digital materials can make learning listening skills more engaging.	50%	50%	0%	0%
3	Digital materials can provide me access to relevant information sources to enhance my understanding in listening skills.	64.1%	35.9%	0%	0%
4	I am confident that digital materials can help me practice listening to various audio contents independently.	65.1%	33.3%	1.6%	0%
5	The use of digital materials can facilitate instant feedback, helping me enhance my listening skills.	78.1%	20.3%	1.6%	0%
6	Digital materials allow me to learn listening skills flexibly, according to the time and place I choose.	70.3%	28.1%	1.6%	0%
7	I believe that developing e-modules for listening skills will enhance the quality of higher education learning.	65.6%	32.8%	1.6%	0%
8	Accessibility of digital materials enables me to overcome physical or geographical constraints in accessing learning sources.	71.4%	23.8%	4.8%	0%
9	Digital materials can increase my engagement in learning listening skills.	78.1%	20.3%	1.6%	0%
10	I am confident that integrating digital materials in learning listening skills will better prepare me for job demands.	68.8%	28.1%	3.1%	0%
11	Digital materials provide access to listening training focused on practical aspects of various languages.	60.9%	37.5%	1.6%	0%
12	I believe digital materials can reduce barriers in understanding regional accents in a global context.	61.7%	35.9%	2.4%	0%

13	Integrating digital materials in learning listening skills can broaden my cultural insights.	58.5%	39.1%	2.4%	0%
14	Digital materials facilitate structured exercises in understanding various dialects.	63.3%	35.1%	1.6%	0%
15	I believe that digital materials can enhance my ability to understand global business presentations.	67.2%	31.3%	1.6%	0%
16	Accessibility of digital materials allows me to learn rare accents.	64.8%	33.3%	1.9%	0%
17	Digital materials can help me respond to various accents more quickly and effectively.	69.4%	29.8%	0.8%	0%
18	Integrating digital materials in learning will prepare me to communicate in cross-cultural situations in the workplace.	65.9%	32.1%	1.9%	0%
19	I am confident digital materials can help me adapt to different language accents in the global work environment.	66.7%	31.3%	2%	0%

SS - Strongly Agree, S - Agree, TS - Disagree, STS - Strongly Disagree

Analysis of survey data regarding perceptions of the use of digital materials in improving listening skills shows interesting patterns in respondents' responses to the proposed statements. Some analysis points that can be identified from this data include:

First, High acceptance of the Benefits of Digital Materials. The majority of respondents showed a high level of agreement with the benefits of using digital materials in the context of improving listening skills. A significant percentage of respondents agreed or strongly agreed with statements related to accessibility, flexibility, self-directed learning, instant feedback, and preparation for the global world of work. Second, the importance of flexibility and accessibility. One of the key findings was that respondents appreciated the ability of digital materials to provide flexible learning and easier access to a variety of audio content. This reflects the need for learning approaches that can be adapted to individual needs as well as easy access to learning resources. The three potentials are in preparation for the world of work. There is a strong belief that the integration of digital materials in learning will prepare individuals for the increasingly complex demands of the world of work. Respondents believe that mastering listening skills through digital platforms will broaden their cultural horizons and prepare them to communicate in cross-cultural situations in the global work environment. The fourth is of relevance in understanding variations in accents and dialects. Most respondents see digital materials as an effective means of understanding accent and dialect variations in listening skills. This suggests that they see value in using technology to expand understanding of linguistic and cultural differences. The fifth level of negative consideration is low. There is a low percentage of respondents who disagree or strongly disagree with the statements put forward. This shows widespread adoption or at least positive acceptance of the concept of using digital materials in the context of improving listening skills. Overall, the analysis shows that respondents tend to have a positive attitude towards the use of digital materials in developing listening skills. The potential for adapting technology in

educational contexts and improving language skills seems to be a point that received strong support from respondents in this survey.

Second, module development by lecturers. Teaching materials are one of the tools that lecturers need to develop. This module was developed based on needs, so it is necessary to analyze lecturer responses regarding the development of this module. The results of the evaluation analysis of teaching materials can be seen in table 2 below.

Table 2. Lecturer Response

No	Statement	Answer (%)			
		SS	S	TS	STS
1	Additional audio and video are needed to complement existing module materials.	78.1%	20.3%	1.6%	0%
2	According to me, simplification of teaching materials is necessary.	70.3%	28.1%	1.6%	0%
3	I believe teaching materials need further development.	80.1%	18.3%	1.6%	0%
4	Integration of multimedia (images, animation) can enhance understanding of teaching materials.	85.2%	14.8%	0%	0%
5	More interactive exercises are needed in teaching modules.	92.6%	7.4%	0%	0%
6	Teaching materials need to be tailored to various learning styles.	74.1%	25.9%	0%	0%
7	I feel there is a lack of information in the existing modules.	79.4%	19.0%	1.6%	0%
8	Refreshing content and information in teaching materials is necessary.	65.2%	34.8%	0%	0%
9	Project-based learning will make teaching materials more appealing.	72.6%	24.7%	0%	0%
10	Lack of case studies or real examples in teaching materials.	70.4%	25.1%	0%	0%
11	More interactive digital platform integration is needed.	78.6%	18.2%	0%	0%
12	Repackaging teaching materials in a more understandable format is required.	75.2%	19.8%	0%	0%
13	Teaching materials need to be updated according to current developments.	80.1%	16.9%	0%	0%
14	More use of online resources is desired in teaching modules.	68.9%	27.8%	0%	0%
15	Practical guidance is desired in teaching materials.	72.3%	22.1%	0%	0%
16	According to me, additional discussion exercises are needed in teaching modules.	75.7%	19.9%	0%	0%
17	Insufficient emphasis on practical application in teaching materials.	70.8%	24.9%	0%	0%
18	Integration of more structured formative assessments in teaching modules.	78.3%	17.8%	0%	0%
19	Teaching materials need to be supplemented with more diverse reference sources.	80.4%	16.7%	0%	0%
20	According to me, teaching modules need improvement in terms of visuals.	75.6%	20.1%	0%	0%

SS - Strongly Agree, S - Agree, TS - Disagree, STS - Strongly Disagree

Based on table 2, it can be seen that the questionnaire results show a clear picture regarding preferences and needs in preparing module material. The majority of respondents emphasized the importance of adding audio and video to existing modules, with a high percentage (98.4%). The demand for material simplification (98.4%) and development of teaching materials (98.4%) was also strong, indicating a desire for material that is more structured but still informative. Furthermore, the integration of multimedia such as images, animation and interactive exercises is considered very important (100% and 92.6%) to increase understanding and learning interactivity. Apart from that, adapting material to various learning styles (100%) and re-providing material in a format that is easier to understand (95%) are the key points desired by respondents. The quality of information was also an important highlight, with the majority of respondents (98.4% and 96.9%) feeling there was a lack of information in existing modules and suggesting the importance of updating the material according to the latest developments. The desire to see a more practical approach to learning is reflected in the desire for project-based learning (97.3%), the addition of discussion exercises (95.6%), as well as an emphasis on practical applications in teaching materials (95.7%).

In the context of technology, the integration of more interactive digital platforms (96.8%) and increased structured formative assessments (96.1%) were also seen as highly desirable by respondents. Furthermore, the need for more diverse references in modules (97.1%) and increasing visual aspects in teaching materials (95.7%) are important focuses in improving modules. From this survey data, it is clear that there is a strong need for revision and adjustment of modules with the demand for learning approaches that are more dynamic, varied and suited to diverse learning styles. Technology integration, formative aspects, and material updates are the main focus points for improving the quality of existing teaching modules.

The results of the questionnaire show students' positive perceptions of the benefits of using digital materials to improve listening skills. Most respondents indicated a high level of agreement with the accessibility, flexibility, instant feedback, and preparation for the global world of work that digital materials provide. The analysis also highlights the importance of flexibility, accessibility, technological adaptation in education, and language enhancement offered by digital materials. Apart from that, responses from lecturers regarding module development emphasize several important things in preparing teaching materials. The majority of them emphasized the need for visual improvements by adding audio and video to existing modules. There is a strong demand for material simplification, development of teaching materials, and multimedia integration, indicating a need for structured yet informative materials. The results of the questionnaire showed students' positive perceptions of the benefits of using digital materials to improve listening skills. Most respondents indicated a high level of agreement with the accessibility, flexibility, instant feedback and preparation for the global world of work that digital materials

provide. This analysis also highlights the importance of flexibility, accessibility, technological adaptation in education, and language enhancement offered by digital materials. Apart from that, lecturers' responses regarding module development emphasized several important things in preparing teaching materials. The majority of them emphasized the need for visual improvements by adding audio and video to existing modules. There is a high demand for material simplification, development of teaching materials, and multimedia integration, indicating the need for structured but informative material. The results of this research are in line with research conducted by (Malina et al., 2021). The results of the needs analysis of 44 students in class So according to 52.3% of students, the handbook used is not sufficient as a learning resource and 95.5% of students need other learning resources to support learning activities and 93.2% of students need other learning resources that can be understood independently. These results indicate the need to develop teaching materials in the form of PBL-based e-modules on static fluid material.

The integration of technology in education is emerging as a key focus, with a desire for more interactive digital platforms, increased structured formative assessments, and increased visual aspects in teaching materials. The quality of information, adapting material to various learning styles, and practical approaches to learning are also important focuses in improving modules. This analysis shows the need for adjustments and revisions to the module according to requests submitted by lecturers and students. Technology integration, improving formative aspects, simplifying material, and adding various reference sources are the main focus points in improving the quality of teaching modules. This emphasizes the need for adaptation and development of modules to better suit students' needs in improving listening skills. The integration of technology in education is emerging as a key focus, with a desire for more interactive digital platforms, increased structured formative assessments, and increased visual aspects in teaching materials. The quality of information, adapting material to various learning styles, and practical learning approaches are also important focuses in improving the module. This analysis shows the need for adjustments and revisions to the module according to requests submitted by lecturers and students. Technology integration, improving formative aspects, simplifying material, and adding various reference sources are the main focus in improving the quality of teaching modules. This emphasizes the need for adaptation and development of the module to better suit students' needs in improving listening skills. This is in line with the research results of (Sudarsana et al., 2021). Data analysis uses qualitative descriptives from the answers given by the teacher. This research shows that: due to the Covid-19 pandemic, learning is taking place online, so teachers need teaching materials as well as media, namely electronic modules because they are practical and can be used without face-to-face learning. The conclusion of this research is that there is a need to develop physics e-modules based on website-integrated discovery learning as an alternative learning during Covid-19.

Positive results on digital materials by students illustrate the potential effectiveness of technology integration in education. The high level of agreement on the benefits offered by digital resources, such as accessibility, flexibility and instant feedback, emphasizes their importance in the modern educational environment. This analysis not only highlights the importance of technological adaptation in education, but also shows the role of digital materials in advancing language skills and preparing students for the global world of work. Apart from that, the responses from the lecturers also emphasized important aspects that need to be considered in developing teaching materials (Emidar et al., 2023). The strong focus on enhancing visuals by incorporating audio-visual elements shows recognition of the value of multimedia integration in presenting structured yet informative learning material. Students' positive outcomes for digital materials illustrate the potential effectiveness of technology integration in education. The high level of agreement regarding the benefits that digital resources offer, such as accessibility, flexibility, and instant feedback, emphasizes the importance of digital resources in the modern educational environment. This analysis not only highlights the importance of technological adaptation in education, but also shows the role of digital materials in improving language skills and preparing students for the global world of work. Apart from that, the lecturers' responses also emphasized important aspects that need to be considered in developing teaching materials. The strong focus on enhancing visuals by including audio-visual elements shows recognition of the value of multimedia integration in presenting structured yet informative learning material. The results of this research are in line with research conducted by(Faisal et al., 2020; Latifah & Rukmana, 2022). Quantitative data in this research was obtained from validation results and questionnaires. Google Sites-based digital teaching materials received appropriateness at the expert validation stage with an average score of 80% (feasible), a teacher assessment of 90% (very feasible), and an assessment by 25 students with an average of 82% (very feasible). So based on the results of this assessment, digital teaching materials based on Google Sites are categorized as very suitable.

The prioritization of technology integration, along with the demand for interactive platforms, structured assessments, and better visuals, reflects a concerted effort to improve the learning experience. The demand for high-quality information, content that suits a variety of learning styles, and a practical approach to learning indicates the need for comprehensive improvements in teaching modules. This comprehensive analysis emphasizes the need for comprehensive changes to existing modules, in line with feedback from both faculty and students. Technological compatibility, improving formative aspects, simplifying content, and adding various references are key steps in improving the quality and relevance of teaching modules. This shows the importance of adapting and developing modules to better suit students' needs in improving their listening skills. The prioritization of technology integration, along with the demand for interactive platforms, structured assessments, and better visuals, reflects a concerted effort to improve the learning experience. The demand for high-

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Improvement and evolution in learning approaches continues to be the main focus in meeting the increasingly diverse and dynamic needs of students. Data from the survey shows that students' positive perceptions of the benefits of using digital materials in improving listening skills provide an illustration of the potential effectiveness of technology integration in education. High agreement on the benefits of accessibility, flexibility and instant feedback offered by digital materials confirms the importance of this technology in the modern educational environment.

Not only does it highlight the importance of technological adaptation in education, but it also shows the role of digital materials in advancing language skills and preparing students for the global world of work. Responses from lecturers also emphasized important aspects that need to be considered in developing teaching materials. The strong focus on enhancing visuals by integrating audio-visual elements shows recognition of the value of multimedia integration in presenting structured yet informative learning material.

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Technological compatibility, improving formative aspects, simplifying content, and adding various references are key steps in improving the quality and relevance of teaching modules. This shows the importance of adapting and developing modules to better suit students' needs in improving their listening skills. Adaptation and

improvement of teaching modules requires active collaboration between lecturers and students, along with an inclusive and sustainable approach. Steps to improve module quality are not just about technology integration, but also about in-depth understanding of the learning needs of students from different backgrounds and preferences. Technology integration not only impacts how material is presented, but also how learning is conducted, evaluated and continuously improved to achieve better results. The importance of continuous evaluation of student and lecturer responses is the basis for continuous improvement in the preparation of teaching materials. In the face of rapid changes in technology and learning needs, rapid adaptation and continuous change in teaching approaches will be the key to success in creating an effective and relevant learning environment.

D. Conclusion

Based on the research results, it shows that there are a series of clear needs in the preparation and development of module material. The majority of respondents highlighted the need for improvements in learning materials, such as the addition of audio, video, images and animation. Requests for simpler, easier-to-understand materials also appear consistently, highlighting the need to adapt materials to diverse learning styles. Additionally, there is a strong push to enrich the learning experience by leveraging technology, including the integration of multimedia, interactive digital platforms, and the use of more online resources. Visual aspects are also emphasized as important in learning, with requests for more visually appealing materials and the use of interactive exercises. There is awareness of the importance of updating material in accordance with the latest developments, as well as the need for more diverse references. This shows that adaptation to the latest developments in the field of education and diverse content is an important factor in compiling effective learning materials. Overall, this data underlines the urgency to improve and develop module materials by considering variations in learning media, adapting to different learning styles, integrating technology, updating content, and providing varied references. These steps are believed to increase the effectiveness of learning and meet students' needs in the learning process. Based on the results of this research, it can be used as a basis for further research, namely developing teaching materials for digital listening skills courses in the form of e-modules. These teaching materials can be used as models or alternatives that lecturers can use in the learning process. This research is part of the analysis of development research needs so that further research can continue to be carried out.

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References

Adiwijaya, P. A., & Wedayanthi, L. M. D. (2022). Needs Analysis in Developing Tourism English Digital Teaching Materials in Vocational High Schools. *Edukatif : Jurnal Ilmu Pendidikan*, 4(1). https://doi.org/10.31004/edukatif.v4i1.1704

Afifulloh, M., & Cahyanto, B. (2021). Analysis of the Need for Development of Electronic Teaching Materials in the Covid-19 Pandemic Era. *JPDI (Jurnal Pendidikan Dasar Indonesia)*, 6(2). https://doi.org/10.26737/jpdi.v6i2.2515

Akkaya, S., & Kapıdere, M. (2021). How do digital games utilization levels predict a teacher's digital material development self-efficacy? *World Journal on Educational Technology: Current Issues*, 13(2). https://doi.org/10.18844/wjet.v13i2.5716

Azizul, A., Riski, W. Y., Fitriyani, D. I., & Sari, I. N. (2020). Development of Digital Comic Teaching Materials on Motion Materials. *Vox Edukasi: Jurnal Ilmiah Ilmu Pendidikan*, 11(2). https://doi.org/10.31932/ve.v11i2.829

Chotijah, S., Fuadi, D., Prastiwi, Y., & Etika Rahmawati, L. (2022). Analysis of Interactive Digital Teaching Materials Development Needs Based on The Profile of Pancasila Students in Elementary Schools. *Specialusis Ugdymas / Special Education*, 2022(43).

Dewandono, W. A., & Sutiyarti, U. (2022). Feasibility of Developing Flipbook Digital Teaching Materials for High School Japanese Language Learning in Malang. *JPBJ*, 8(2), 163–176.

Dewi, N. K., Utami, I. G. A. L., & Santosa, M. (2022). Development of Digital Supplementary Material Using Quizizz-Based Learning Media in Intensive English Course. *JINOTEP (Jurnal Inovasi Dan Teknologi Pembelajaran): Kajian Dan Riset Dalam Teknologi Pembelajaran*, 9(1). https://doi.org/10.17977/um031v9i12022p014

Emidar, Indriyani, V., & Gustia Ningsih, A. (2023). The Effect of Digital Literacy and Writing Skills on The Skills of Developing Teaching Materials for Prospective Teacher Students. *JMKSP (Jurnal Manajemen, Kepemimpinan, Dan Supervisi Pendidikan)*, 8(2). https://doi.org/10.31851/jmksp.v8i2.11457

Faisal, Muh., Hotimah, H., Nurhaedah, N., AP, N., & Khaerunnisa, K. (2020). Increasing the Competency of Elementary School Teachers in Developing Digital Teaching Materials in Gowa Regency. *Publikasi Pendidikan: Jurnal Pemikiran, Penelitian, Dan Pengabdian Kepada Masyarakat Bidang Pendidikan*, 10(3).

Fitri, A. S., Aeni, A. N., & Nugraha, R. G. (2023). Development of Digital Comics to Improve Learning Outcomes on Pancasila Values Material for Class IV Elementary School Students. *Al-Madrasah: Jurnal Pendidikan Madrasah Ibtidaiyah*, *7*(1). https://doi.org/10.35931/am.v7i1.1756

Ginaya, G., Sri Astuti, N. N., Mataram, I. G. A. B., & Nadra, N. M. (2020). English digital material development of information communication technology ICT in higher vocational education. *Journal of Physics: Conference Series*, *1569*(2). https://doi.org/10.1088/1742-6596/1569/2/022009

Göçen Kabaran, G., & Uşun, S. (2021). Evaluation of the Professional Development Program in Digital Material Design According to the Kirkpatrick's Model. *Uluslararası Eğitim Programları ve Öğretim Çalışmaları Dergisi*, *11*(1), 65–88. https://doi.org/10.31704/ijocis.2021.004

Hasbiyati, H., Afidati, N. I., & Haque, A. (2022). Development of Multimedia Digital Books on Environmental Pollution Material in Science Learning. *Quantum: Jurnal Inovasi Pendidikan Sains*, *13*(2). https://doi.org/10.20527/quantum.v13i2.13416

Karademir, T., Alper, A., Soğuksu, A. F., & Karababa, Z. C. (2021). The development and evaluation of self-directed digital learning material development platform for foreign language education. *Interactive Learning Environments*, *29*(4). https://doi.org/10.1080/10494820.2019.1593199

Kimmig, J., Zechel, S., & Schubert, U. S. (2021). Digital Transformation in Materials Science: A Paradigm Change in Material's Development. In *Advanced Materials* (Vol. 33, Issue 8). https://doi.org/10.1002/adma.202004940

Kurniawan, K., & Djajalaksana, Y. M. (2022). Development of Digital Marketing Materials in the Culinary Business. *Jurnal STRATEGI*

Kusen, K. (2022). Rasch Test for Digital Learning Material Development Based on MOOCS. *Tadbir : Jurnal Studi Manajemen Pendidikan*, *6*(1). https://doi.org/10.29240/jsmp.v6i1.4621

Kusumadewi, N. L. W., Gunartha, I. W., & Ariawan, P. W. (2022). Development of Digital Mathematics Comic Media for Learning Fraction Material in Elementary Schools. *Jurnal Ilmiah Pendidikan Citra Bakti*, *9*(1). https://doi.org/10.38048/jipcb.v9i1.660

Latifah, S., & Rukmana, D. (2022). Development of digital teaching materials based on Google Sites Oriented to Student Learning Independence. *Jurnal Ilmiah Ilmu Pendidikan*, *13*(2).

Malina, I., Yuliani, H., & Syar, N. I. (2021). Analysis of the Need for Physics E-Modules as PBL-Based Teaching Materials at MA Muslimat NU. *Silampari Jurnal Pendidikan Ilmu Fisika*, *3*(1). https://doi.org/10.31540/sjpif.v3i1.1240

Momang, H. D. (2021). Development of a digital textbook model for listening skills based on an authentic approach. *Kembara Journal of Scientific Language Literature and Teaching*, *7*(1). https://doi.org/10.22219/kembara.v7i1.16202

Ningsih, A. G., Indriyani, V., & Rachman, A. (2023). Student Perceptions of Using Prezi Media in General Indonesian Courses. *Al-Ishlah: Jurnal Pendidikan*, *15*(2). https://doi.org/10.35445/alishlah.v15i2.3719

Ningsih, A. G., Nursaid, N., Hafrison, M., Indriyani, V., & Kurniawan, K. (2023). Training on Using Prezi as an Innovative Learning Media. *Dinamisia : Jurnal Pengabdian Kepada Masyarakat*, *7*(3). https://doi.org/10.31849/dinamisia.v7i3.13456

Nugraha, D. (2022). Development of Motion Graphic-Based Digital Media for Deepening Elementary School Social Sciences Material. *Jurnal Basicedu*, *6*(3). https://doi.org/10.31004/basicedu.v6i3.2642

Nuraeni, N. (2019). Development of Dollar Media with High School German Listening Skills Learning Materials. *Laterne*, *8*(2).

Özel, A. E. (2021). A digital material development recommendation for Turkish music instruments: The case of Kemençe learning. *Darulfunun Ilahiyat*, *29*(1). https://doi.org/10.26650/di.2018.29.1.0100

Ramdani, S. D., El Islami, R. A. Z., Pratiwi, H., Fawaid, M., Abizar, H., & Maulani, I. (2021). Developing digital teaching material on Basic Electricity based on problem-based learning in vocational education. *Jurnal Pendidikan Vokasi*, *11*(1), 78–91. https://doi.org/10.21831/jpv.v11i1.38894

Rosdiana, R., Raupu, S., & Hilma, H. (2022). Developing a STEM-Based Digital Pocket Book on Flat Side Building Materials. *Aksioma: Jurnal Program Studi Pendidikan Matematika*, *11*(3). https://doi.org/10.24127/ajpm.v11i3.5664

Rusli, R., Rahman, A., Ahmar, A. S., Musa, H., & Lince, R. (2021). Development of teaching materials for digital higher education in the industrial revolution 4.0 era. *Linguistics and Culture Review*, *5*(1). https://doi.org/10.21744/lingcure.v5n1.1692

Sariyatun, Joebagio, H., & Akhyar, M. (2018). Teachers' perception on digital teaching material development in social science education. *Journal of Turkish Science Education*, *15*(Special Issue).

Sudarsana, W., Sarwanto, S., & Marzuki, A. (2021). Development of Physics e-Modules Based on Website Integrated Discovery Learning as an Alternative

Learning Due to the Covid 19 Pandemic. *Eduproxima : Jurnal Ilmiah Pendidikan IPA*, *3*(2). https://doi.org/10.29100/eduproxima.v3i2.2085

Tambunan, L. R., & Sundari, E. (2020). Development of a Digital Book on Equations of Tangents to Circles. *Aksioma: Jurnal Program Studi Pendidikan Matematika*, *9*(4). https://doi.org/10.24127/ajpm.v9i4.3084

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