

Needs Analysis of Instructional Materials in the Contextual Teaching Course

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Abstract

This study focuses on the importance of teaching materials in the lecture process, particularly in the contextual teaching course at Universitas Negeri Makassar. Using a qualitative descriptive approach, data were collected through observation and questionnaires. The subjects of this study were students enrolled in the contextual teaching course, consisting of 69 students. The results of the study indicate that the majority of students do not have textbooks as learning resources for the contextual teaching course; the learning resources they commonly use are sourced from the internet. The findings also reveal that the application of biological concepts in contextual teaching is still limited, with few examples of its implementation available. Based on the results, information was obtained regarding subtopics that are difficult to understand in the contextual teaching course, particularly in the subtopic of assessment in contextual learning within the psychomotor domain. On the other hand, material that students find easy to understand is the application of contextual teaching in direct instruction. The results also show that 98.6% of students agree on the need to develop a teaching module. The preferred form of the teaching module among students is both print and electronic versions. Therefore, the development of a comprehensive teaching module is considered necessary to support the learning process. This study is expected to serve as a basis for the development of more effective teaching materials to support contextual teaching lectures.

Keywords: Analysis, teaching materials, contextual teaching.

1. Introduction

Education is the primary means of shaping a nation's character (Wati et al., 2020). Education is a form of human effort to develop their potential through a learning process (Malina et al., 2021). The learning process that takes place in the classroom requires innovations to achieve learning objectives effectively (Maharani, 2022).

The learning process in classroom lectures requires various learning resources, one of which is teaching materials, which help students deepen their understanding (Malahayati & Zunaidah, 2021). Teaching materials, or instructional content, are core components of the curriculum that must be understood and mastered by learners in every subject at all educational levels (Hasanah et al., 2019). Teaching materials are all materials used by educators to support the teaching and learning process, systematically arranged to facilitate learning (Dimas et al.). The use and selection of appropriate teaching materials should match the needs and characteristics of the students (Yudistira et al., 2021).

Teaching materials are one of the factors that influence the success of the learning process, as they help students better understand the course content. Therefore, teaching materials are essential to be created and developed by teachers or lecturers (Sholihah & Sofiyana, 2019).

The development of teaching materials that align with students' environment and characteristics greatly impacts both the learning process and learning outcomes (Rosilia et al., 2020). Needs analysis of teaching materials should be conducted by educators to ensure that the selected materials align with students' conditions and learning needs (Libiawati et al., 2020). Educators, whether teachers or lecturers, need to develop teaching materials that can enhance students' learning motivation—one example being the development of instructional modules (Husnita & Saputri, 2023). The content within teaching materials or learning resources should be optimally packaged to ensure effective usage (Siska, 2015).

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One of the efforts educators can undertake to address educational challenges is by developing teaching materials that align with students' needs (Harti et al., 2022). Teaching materials are part of learning resources that contain content which students can use during the learning process (Magdalena et al., 2020). Teaching materials include the substance of competencies that students must master and understand (Rezeqi et al., 2020). Proper use of teaching materials by lecturers can optimize instructional time and support their role as facilitators in the teaching and learning process (Fitriani & Susanti, 2022). A needs analysis of teaching materials for the Contextual Teaching course is necessary to ensure the materials developed by lecturers are appropriate to the students' needs.

The content of the Contextual Teaching course is essential for pre-service education students, as it includes concepts and their applications that will be vital when they enter the teaching profession. Instructional content should be designed to meet the learning needs of students (Muliana & Anugra, 2023).

A needs analysis of teaching materials can serve as the foundation for developing instructional content that matches field needs, aiming to produce high-quality and effective teaching materials (Putri, 2019). Such needs analysis can be carried out by distributing questionnaires to gather the necessary information for developing relevant teaching materials (Rahmawati & Irawati, 2023). To ensure effective and engaging learning, it is important for educators to align the teaching materials used with students' needs and characteristics (Muliana & Irfan, 2024).

This study aims to describe and evaluate the results of a questionnaire on the need for teaching materials as a primary learning resource for students. The findings are expected to provide an initial overview of the teaching materials students require, so that lecturers can further develop them.

2. Research Method

This study employed a descriptive qualitative method. Descriptive qualitative research aims to identify events and facts related to the research object or subject (Sugiyono in GH & Arsal, 2022). Qualitative research is conducted in specific real-life (natural) contexts with the aim of investigating and understanding phenomena: what happens, why it happens, and how the process occurs (Adlini et al., 2022). The steps in descriptive qualitative research include: determining the research topic, conducting a literature review, collecting data and research findings, processing and analyzing the data, and drawing conclusions (Astuti, 2019).

Data were collected through observation and questionnaires. Observation is a data collection technique conducted through direct observation activities (Libiawati et al., 2020). This study presents data obtained from a questionnaire regarding the analysis of teaching material needs for the Contextual Teaching course. The objective of this research is to describe and analyze the results of the questionnaire as one of the primary sources of learning for students.

The research subjects are individuals or groups who provide information or serve as sources of the data needed in the research (Hajar et al., 2021). The subjects in this study were biology students from the Biology Education Study Program who had enrolled in the Contextual Teaching course. The total number of research subjects was 69 students from three different classes.

The research instrument used was a questionnaire for analyzing the needs of teaching materials in the Contextual Teaching course. The questionnaire was distributed through the Google Forms platform to facilitate wider and more efficient dissemination. The questionnaire included the following questions: 1). Do you like the course "Contextual Teaching"?; 2). What is your opinion about the Contextual Teaching course?; 3). What books do you use in learning the Contextual Teaching course?; 4). Are there any other learning resources you use for this course?; 5). Is the book you use borrowed or purchased?; 6). What do you think about the learning resources you currently use for the course?; 7). Do the current learning resources include practice questions and explanations that are easy to understand?; 8). Do the current learning resources provide examples of the material's application in biological sciences?; 9). Are the current learning resources aligned with your learning needs in this course?; 10). Do you find it difficult to study the material from those learning resources?; 11). What causes the difficulty in understanding the material from those learning resources?; 12). Do you agree that a textbook should be developed to support the Contextual Teaching course?; 13). In your opinion, if a textbook were to be developed for this course, should it be in printed or electronic format?; 14). Which subtopics do you find easy in the Contextual Teaching course?; 15). Which subtopics do you find difficult to understand in the Contextual Teaching course?

3. Results and Discussion

Based on the results of the analysis of student needs for teaching materials in the Contextual Teaching course at the Biology Department, Biology Education Study Program, UNM, the following information was obtained:

1. Students' Interest in the Contextual Teaching Course

Based on the results of the analysis of student interest in the Contextual Teaching course, it was found that students are interested in and enjoy this course. The analysis results are illustrated in Figure 1.



Figure 1. Analysis Results of Student Interest in the Contextual Teaching Course (in Indonesia)

According to Diagram 1, 53.6% of students like the Contextual Teaching course, 40.6% of students really like it, and 5.8% of students moderately like it.

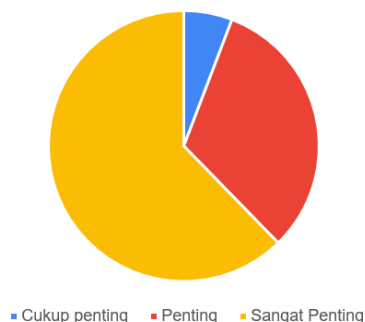


Figure 2. The Importance of the Contextual Teaching Course for Prospective Teachers (in Indonesia)

The analysis of the questionnaire on Figure 2 shows that 62.5% of students consider the Contextual Teaching course very important, 31.9% consider it important, and 5.8% consider it moderately important.

From the data obtained and analyzed, information was gathered about the types of books used by students when studying this course. Most students do not have a specific textbook; they widely use the internet to support their learning, while others rely solely on materials provided by lecturers in the form of PowerPoint slides. Learning resources in PPT format have several limitations, including being static and lacking interactivity, as they are confined to the displayed slides (GH & Pratiwi, 2023).

Figure 3 shows the learning resources used by students to study the Contextual Teaching course. Generally, 79.7% of students use journal articles as their learning source, 10.1% use YouTube, 7.2% use modules, and 2.9% use papers. The results indicate that students primarily use journal articles because they present updated research findings and are easy to access and download (Supriadi, 2015). The appropriate use of learning resources can support students in understanding material delivered by lecturers as well as material obtained through independent study (Malahayati & Zunaidah, 2021).

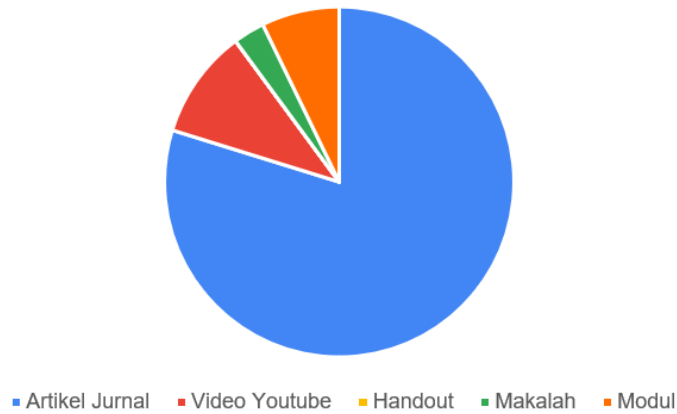


Figure 3. Learning Resources Used in the Contextual Teaching Course (in Indonesia)

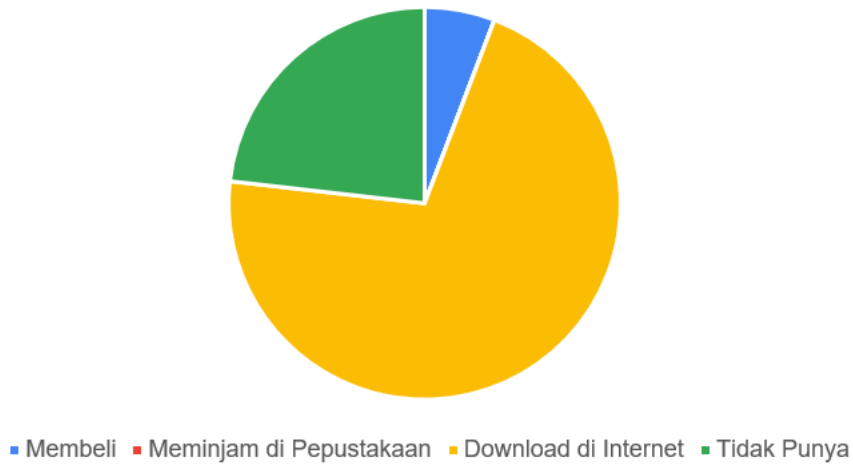


Figure 4. Books Used in the Contextual Teaching Course (in Indonesia)

Figure 4 presents findings on students' possession of books as learning resources. Downloaded learning materials constitute the primary resource used by students (71%). About 23.2% of students do not have any book as a learning resource, while 5.8% own personal reference books they purchased.

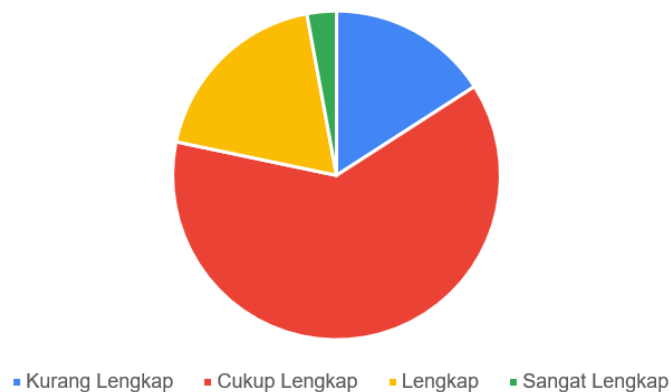


Figure 5. Completeness of Learning Resources in the Contextual Teaching Course (in Indonesia)

Figure 5 shows that 62.3% of students feel their learning resources are fairly complete, 18.8% feel they are complete, 15.9% feel their resources are lacking, and only 2.9% feel they have very complete learning resources for this course.

Data analysis revealed that 55.1% of students have learning resources for the Contextual Teaching course and find them easy to understand, 30.4% do not have any learning resources, and 14.5% have resources but find them difficult to understand.

The study also found that 58.8% of the learning resources currently used include examples of applications in biology, 30.4% of students reported that their resources contain no such examples, and 11.6% said their resources include complete examples related to biology.

The data also show the level of difficulty in understanding materials in the available learning resources. Most students (66.7%) do not experience learning difficulties, while 33.3% do face challenges when using their resources to study contextual teaching.



Figure 6. Causes of Learning Difficulties in Contextual Teaching (in Indonesia)

As shown in Figure 6, the main cause of difficulty in learning contextual teaching concepts is limited student understanding (34.8%). Meanwhile, 29% struggle due to the complexity of the material, 18.8% due to a lack of interest and motivation, and 17.4% due to external factors.

The research results show that 98.6% of students agree with the development of a teaching module to support contextual teaching. Regarding the preferred format, 76.8% want both printed and digital modules, 13% prefer printed modules, and 10.1% prefer digital modules (e-modules).

The data analysis also identified which subtopics students find easiest and most difficult in the Contextual Teaching course. The easiest subtopic is direct instruction in contextual teaching, while the most difficult is the assessment of psychomotor learning.

Teaching modules play an important role in helping lecturers design learning processes (GH & Aarsal, 2022). These modules assist students in managing their independent study, as they contain the necessary instructional materials along with evaluation questions for self-assessment (Pratita et al., 2021). Based on their form, teaching modules are divided into printed and digital modules.

Research shows that students need both printed and digital modules. One advantage of digital modules is their accessibility anytime and anywhere (Oktariani, 2023), supporting students' learning needs. Sari & Atmojo (2021) state that digital learning materials positively influence both the learning process and student outcomes. In the 21st century, educational development should ideally be oriented toward the use and integration of ICT (Yuliana & Atmojo, 2021), in line with students' need for digital-based teaching modules as part of ICT utilization in instructional development.

Mayasari, as cited in Ruslan & Hamid (2024), highlights that using digital learning media significantly improves students' understanding and learning outcomes. The availability of digital teaching modules simplifies access and usage for students. One benefit of digital materials is that they are not limited by time or space (Trinaldi et al., 2022).

Appropriate learning materials facilitate smooth teaching and learning activities (Irawati & Saifuddin, 2018). One of the factors that can influence the effectiveness of the learning process is the learning materials used (Nisak, 2021).

Educators need innovative teaching materials that attract student interest and enable them to understand lessons in a fun and engaging way (Nurjannah et al., 2022).

Developing teaching materials based on research findings can provide a more scientific foundation for the learning process (Supriadi, 2015). Needs analysis of instructional materials can serve as a reference or guideline for educators in selecting or developing materials that can be optimally used by students (Septiani & Wardhani, 2022).

4. Conclusion

There is a need for instructional materials for the contextual teaching course that align with students' learning needs. This study found that most students do not have a textbook for the contextual teaching course and generally rely on internet-based learning resources. The research also indicates that the application of biological concepts in contextual teaching remains limited and lacks sufficient examples. The findings reveal that the most difficult topic for students to understand in the contextual teaching course is the assessment of contextual learning in the psychomotor domain. On the other hand, the easiest material to comprehend is the application in direct learning. Furthermore, 98.6% of the students agreed with the development of a teaching module. They expressed a preference for the module to be available in both print and electronic formats. Therefore, it is necessary to develop a comprehensive and in-depth teaching module for the contextual teaching course to support the learning and lecture process.

References

- Adlini, M. N., Dinda, A. H., Yulinda, S., Chotimah, O., & Merliyana, S. J. (2022). Metode penelitian kualitatif studi pustaka. *Edumaspul: Jurnal Pendidikan*, 6(1), 974-980. DOI: <https://doi.org/10.33487/edumaspul.v6i1.3394>
- Astuti, D. (2019). Analisis kebutuhan bahan ajar educational statistics berbasis cooperative learning. *FIBONACCI: Jurnal Pendidikan Matematika Dan Matematika*, 5(2), 183-188. DOI: <https://doi.org/10.24853/fbc.5.2.183-188>
- Dimas, A., Cari, C., Suparmi, A., Sarwanto, S., & Handhika, J. (2017). Profil analisis kebutuhan bahan ajar mahasiswa materi dinamika gerak pada mata kuliah fisika dasar. In *Prosiding SNFA (Seminar Nasional Fisika dan Aplikasinya)* (Vol. 1, pp. 42-45). DOI: <https://doi.org/10.20961/prosidingsnfa.v1i0.4502>
- Fitriani, R., & Susanti, S. (2022). Analisis Kebutuhan Bahan Ajar Pada Mata Kuliah Kalkulus Untuk Mendukung Merdeka Belajar Kampus Merdeka. *Jurnal Pendidikan dan Konseling (JPDK)*, 4(4), 1240-1247. <https://doi.org/10.31004/jpdk.v4i4.5444>
- GH, Muliana & Aarsal, A. F. (2022). Analisis Kebutuhan Bahan Ajar Mahasiswa pada Mata Kuliah Ekologi Tumbuhan. *Jurnal Ilmiah Wahana Pendidikan*, 8(23), 434-441. DOI: <https://doi.org/10.5281/zenodo.7417545>
- GH, M., & Pratiwi, A. (2023). Analysis of the Needs of Teaching Materials in Plant Anatomy Courses. *Jurnal Ilmiah Wahana Pendidikan*, 9(10), 740-745. <https://doi.org/10.5281/zenodo.7991235>
- Hajar, S. S., Sofyan, S., & Amalia, R. (2021). Analisis Kemampuan Penalaran Matematis Siswa Dalam Menyelesaikan Soal Open-Ended Ditinjau Dari Kecerdasan Emosional. *Jurnal Ilmiah Matematika Realistik*, 2(2), 32-36. DOI: <https://doi.org/10.33365/ji-mr.v2i2.1413>
- Harti, L., Mana, L. H. A., & Ahadiat, E. (2022). Analisis Kebutuhan Bahan Ajar Sastra Berbasis Konteks Lingkungan di Sekolah Dasar. *Lectura: Jurnal Pendidikan*, 13(2), 164-176. DOI: <https://doi.org/10.31849/lectura.v13i2.10019>
- Hasanah, D. U., Kurniasih, D., & Agustina, T. (2019). Analisis Kebutuhan Bahan Ajar Keterampilan Membaca pada Mahasiswa BIPA Tingkat Dasar di IAIN Surakarta. *Dialektika: Jurnal Bahasa, Sastra, dan Pendidikan Bahasa dan Sastra Indonesia*, 6(2), 114-125. DOI: <https://doi.org/10.15408/dialektika.v6i2.10559>
- Husnita, L., & Saputri, W. (2023). Analisis Kebutuhan Bahan Ajar Untuk Meningkatkan Keterampilan Berpikir Kritis. *Diklabio: Jurnal Pendidikan dan Pembelajaran Biologi*, 7(1), 21-29. <https://doi.org/10.33369/diklabio.7.1.21-29>
- Irawati, H., & Saifuddin, M. F. (2018). Analisis kebutuhan pengembangan bahan ajar mata kuliah pengantar profesi guru biologi di pendidikan biologi universitas ahmad dahlan yogyakarta. *Bio-Pedagogi: Jurnal Pembelajaran Biologi*, 7(2), 96-99. DOI: <https://doi.org/10.20961/bio-pedagogi.v7i2.27636>

- Libiawati, D., Indihadi, D., & Nugraha, A. (2020). Analisis Kebutuhan Penyusunan Buku Ajar Mata Pelajaran Bahasa Indonesia Berbasis Menulis Teks Eksplanasi. *PEDADIDAKTIKA: Jurnal Ilmiah Pendidikan Guru Sekolah Dasar*, 7(2), 77-82. DOI: <https://doi.org/10.17509/pedadidaktika.v7i2.25231>
- Magdalena, I., Sundari, T., Nurkamilah, S., Nasrullah, N., & Amalia, D. A. (2020). Analisis bahan ajar. *Nusantara*, 2(2), 311-326. <https://ejournal.stitpn.ac.id/index.php/nusantara/article/view/828>
- Maharani, N. (2022). Analisis kebutuhan bahan ajar video berbasis pen tablet dalam pembelajaran topik integral selama pandemi covid-19. *PENDIPA Journal of Science Education*, 6(1), 41-48. <https://doi.org/10.33369/pendipa.6.1.41-48>
- Malahayati, E. N., & Zunaidah, F. N. (2021). Analisis kebutuhan bahan ajar mata kuliah kurikulum. *Jurnal Basicedu*, 5(6), 6218-6226. DOI: <https://doi.org/10.31004/basicedu.v5i6.1802>
- Malina, I., Yuliani, H., & Syar, N. I. (2021). Analisis kebutuhan e-modul fisika sebagai bahan ajar berbasis PBL di MA muslimat NU. *Silampari Jurnal Pendidikan Ilmu Fisika*, 3(1), 70-80. DOI: <https://doi.org/10.31540/sjpif.v3i1.1240>
- Muliana, G. H., & Anugra, N. (2023). Analisis Kebutuhan Bahan Ajar Mata Kuliah Morfologi Tumbuhan. *Jurnal Biotek*, 11(2), 170-181. DOI: <https://doi.org/10.24252/jb.v11i2.40106>
- Muliana, G. H., & Irfan, M. (2024). Analisis Kebutuhan Bahan Ajar Mata Kuliah Biologi Dasar. *BIOMA: Jurnal Biologi dan Pembelajarannya*, 6(1), 105-118. <https://doi.org/10.31605/bioma.v6i1.3598>
- Nisak, N. Z. (2021). Analisis kebutuhan bahan ajar biologi untuk siswa SMA ditinjau dari tingkat kesulitan materi, keterampilan berpikir tingkat tinggi, dan keaktifan belajar siswa. *EduBiologia: Biological Science and Education Journal*, 1(2), 128-133. DOI: <http://dx.doi.org/10.30998/edubiologia.v1i2.9629>
- Nurjannah, N., Susanti, R., & Jaenudin, R. (2022). Analisis Kebutuhan Bahan Ajar E-LKPD menggunakan Aplikasi Liveworksheet pada Mata Pelajaran IPA SMP. *Syntax Literate; Jurnal Ilmiah Indonesia*, 7(12), 16734-16744. DOI: <https://doi.org/10.36418/syntax-literate.v7i12.10333>
- Oktariani, Mutiya. (2023). Analisis Kebutuhan Mahasiswa Terhadap Bahan Ajar Sebagai Acuan Untuk Mengembangkan E-Module Pembelajaran Koperasi. *Jurnal Riset Rumpun Ilmu Pendidikan*, 2(1), 196–202. <https://doi.org/10.55606/jurripen.v2i1.1046>
- Pratita, D., Amrina, D. E., Djahir, Yulia. (2021). Analisis Kebutuhan Mahasiswa Terhadap Bahan Ajar Sebagai Acuan Untuk Mengembangkan E-Modul Pembelajaran Digital. *Jurnal PROFIT: Kajian Pendidikan Ekonomi dan Ilmu Ekonomi*, 8(1), 69-74. <https://doi.org/10.36706/jp.v8i1.13129>
- Putri, A. E. (2019). Analisis Kebutuhan Bahan Ajar Berbasis Literasi Digital Nilai-Nilai Kearifan Lokal pada Tradisi Saprahan di Pontianak. *Yupa: Historical Studies Journal*, 3(1), 1-7. <https://doi.org/10.30872/yupa.v3i1.132>
- Rahmawati, H., & Irawati, R. K. (2023). Analisis Kebutuhan Bahan Ajar Kimia Organik yang Berorientasi Higher Order Thinking Skills. *Edukasi: Jurnal Pendidikan*, 21(1), 68-82. DOI: <https://doi.org/10.31571/edukasi.v21i1.5323>
- Rezeqi, S., Brata, W. W. W., Handayani, D., & Gani, A. R. F. (2020). Analisis kebutuhan bahan ajar taksonomi organisme tingkat rendah terhadap capaian pembelajaran berbasis KKNI. *Jurnal Pelita Pendidikan*, 8(2), 126-133. <https://jurnal.unimed.ac.id/2012/index.php/pelita/index>
- Rosilia, P., Yuniawatika, Y., & Murdiyah, S. (2020). Analisis kebutuhan bahan ajar siswa di kelas III SDN Bendogerit 2 Kota Blitar. *Premiere Educandum: Jurnal Pendidikan Dasar Dan Pembelajaran*, 10(2), 125. DOI: <https://doi.org/10.25273/pe.v10i2.6306>
- Ruslan, Z. A., & Hamid, M. G. (2024). Meta Analisis: Pengaruh Berbagai Jenis Media Pembelajaran Terhadap Hasil Belajar Sains Siswa. *Dalton: Jurnal Pendidikan Kimia dan Ilmu Kimia*, 7(1), 62-69. DOI: <http://dx.doi.org/10.31602/dl.v7i1.14212>
- Sari, F. F. K., & Atmojo, I. R. W. (2021). Analisis kebutuhan bahan ajar digital berbasis flipbook untuk memberdayakan keterampilan abad 21 peserta didik pada pembelajaran IPA sekolah dasar. *Jurnal Basicedu*, 5(6), 6079-6085. DOI: <https://doi.org/10.31004/basicedu.v5i6.1715>

- Septiani, D. E., & Wardhani, S. (2022). Analisis Kebutuhan Bahan Ajar Untuk Meningkatkan Keterampilan Pemecahan Masalah. *Diklabio: Jurnal Pendidikan dan Pembelajaran Biologi*, 87-92. <https://doi.org/10.33369/diklabio.6.1.87-92>
- Sholihah, M. A., & Sofiyana, M. S. (2019). Analisis kebutuhan bahan ajar mikrobiologi untuk mahasiswa Program Studi Pendidikan Biologi. *Bioma: Jurnal Biologi dan Pembelajaran Biologi*, 4(2), 123-132. DOI: <https://doi.org/10.32528/bioma.v4i2.3162>
- Siska, Y. (2015). Analisis Kebutuhan Bahan Ajar Sejarah Lokal Lampung Untuk Sekolah Dasar. *Mimbar Sekolah Dasar*, 2(2), 199-211. DOI: <https://doi.org/10.53400/mimbar-sd.v2i2.1330>
- Supriadi. (2015). Pemanfaatan Sumber Belajar Dalam Proses Pembelajaran. *Lantanida Journal* 3(2), 127–39. DOI: <http://Dx.Doi.Org/10.22373/Lj.V3i2.1654>
- Trinaldi, A., Bambang, S. E. M., Afriani, M., Rahma, F. A., & Rustam, R. (2022). Analisis Kebutuhan Penggunaan Bahan Ajar Berbasis Teknologi Infomasi. *Jurnal Basicedu*, 6(6), 9304-9314. DOI: <https://doi.org/10.31004/basicedu.v6i6.4037>
- Wati, I. F., Yuniawatika, Y. Y., & Murdiyah, S. (2020). Analisis kebutuhan terhadap bahan ajar game based learning terintegrasi karakter kreatif. *Jurnal Pendidikan Karakter*, 10(2). <https://doi.org/10.21831/jpk.v10i2.31880>
- Yudistira, O. K., Syamsurizal, S., Helendra, H., & Attifah, Y. (2021). Analisis kebutuhan pengembangan booklet sistem imun manusia sebagai suplemen bahan ajar biologi kelas XI SMA. *Journal for Lesson and Learning Studies*, 4(1), 39-44. DOI: <https://doi.org/10.23887/jlls.v4i1.34289>
- Yuliana, Y., & Atmojo, I. R. W. (2021). Analisis kebutuhan bahan ajar digital interaktif untuk pembelajaran ilmu pengetahuan alam abad 21. *Jurnal Basicedu*, 5(6), 6034-6039. DOI: <https://doi.org/10.31004/basicedu.v5i6.1733>