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ABSTRACT

Abstract is a brief summary of the paper to help readers quickly determine the main research problem, solutions to solving the problems encountered, research objectives and temporary research results which can be in the form of numbers/percentages according to research needs. Abstracts should be clear and informative, providing a statement for the problem under study and its solution. Abstract length between 100 to 200 words. Avoid unusual abbreviations and define all symbols used in the abstract. Using keywords related to the research topic is recommended. (Times New Roman, 10)

INTRODUCTION

The introduction should describe the background of the research, the solution offered and comparable related work. if there are citations in the article, MUST use (jinatan, 2023) and so on using Mendeley citation tool in APA format. Foreign language terms are italicized. In the initial paragraph describe what is the problem in the research (in the form of a paragraph description), also describe what is expected to be the solution to the problem in your research. Furthermore, describe related research similar to your research (at least 5) with a renewal of 5 years before, so that this related research can bring up the GAP Analysis of the research you are doing. At the end of the introduction describe the purpose of your research and the expectations you want to achieve from your research.

The introduction contains the background, theoretical basis, problem, problem solving plan and research objectives. The introduction is written using Cambria font, size 10, 1 space and 1 cm line spacing. The text is typed in the print area with margins from top, bottom, left, right made 2 cm. A4 paper size (Sulianto et al., 2019; Syukur et al., 2020).

Literature Review

Articles are original research results or reviews of previous articles. Articles can be written in Indonesian or English. The number of pages of the article is no more than 20 pages including the reference list (Wahyuni et al., 2018; Suparman, 2012). The systematic writing of the article consists of title, author's name, institution and correspondence address, abstract, keywords, introduction, methods, results and discussion, conclusions and suggestions, acknowledgments and reference list.

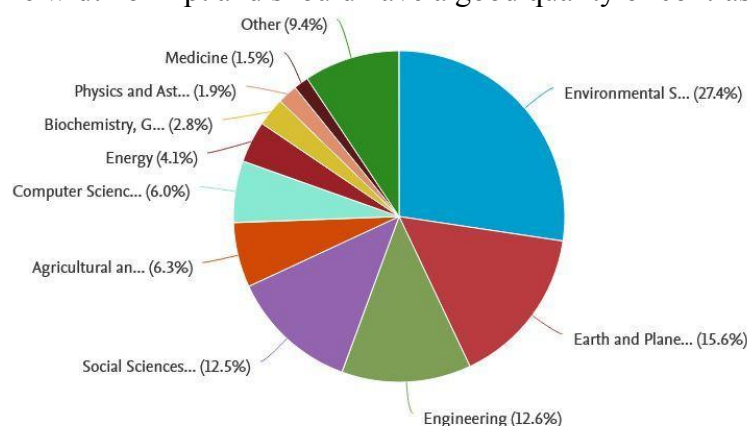
The title of the article is written using Arial font size 16, capitalized, bold, centered, consists of a maximum of 20 words and describes the contents of the manuscript. The author's name is written using Arial font size 10 without title, the author's name is not abbreviated. The names of authors from different institutions are marked using a superscript behind the name.

The manuscript is presented narratively (without numbering in front of subtitles) and presentation in the form of subtitles is avoided.

Formulas are written separately, not within a sentence, and are numbered on the right. Formulas are written using Microsoft Equation

$$x + y = 2 \quad (1)$$

The image is inserted in the text box and the figure caption is placed below the image. Figure captions are numbered and the figure must be referenced in the text. Figure captions begin with uppercase letters. Figure captions that are more than one line are written using 1 space. Figures are drawn with a line width of 1 pt and should have a good quality of contrast.

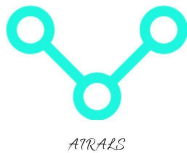


Gambar 1. Documents on flood disaster mitigation compiled by Subject Area

Method

Study Design

This section explains how the research was conducted, the research design, data collection techniques, instrument development, and data analysis techniques.



Contains an explanation of the stages of research that describe the sequence/stages in conducting research, how the stages of applying methods in research and testing methods in obtaining research results in accordance with expectations and research descriptions. It is better if there are figures and tables, they must be presented with the names of tables and figures accompanied by sequential numbers.

Basically, this section explains how the research was conducted. The main materials that should be written here are: (1) research design; (2) population and sample; (3) instruments; (4) procedures; (5) data analysis techniques. Specifications and types of tools and materials should be written if the research has been conducted using these tools and materials. Qualitative research, such as classroom action research, case studies, and so on, need to mention the presence of researchers, research subjects, and participating informants, as well as the methods used to extract data, research locations, research duration, and description of validation of research results. It is recommended that authors avoid organizing the content of the article into sections smaller than the second subheading in this section. However, if there are unavoidable factors, the writing style should follow the "Results and Discussion" section.

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RESULTS AND DISCUSSION

This section is the main part of the research article that presents the results of the improvement. The data analysis process, such as statistical computation and hypothesis testing, does not need to be done. The material reported is the analysis results and hypothesis test results. In addition, tables and graphs can also be displayed to verbalize the verbal narrative. Tables and figures should be commented or discussed. Details of qualitative research are written in several subtopics that are directly related to the focus category.

The discussion of the article aims to: (1) answering research problems and questions; (2) showing ways of obtaining findings; (3) interpreting findings; (4) connecting findings with established knowledge structures; (5) generating new theories or modifying existing theories. The research results must be clearly summarized in answering the research questions. Interpreting the findings must be done using existing logic and theory. Findings in the form of facts found in the research field are combined with previous research or existing theories. This must be supported by reliable references. If the researcher puts forward a new theory, the old theory can be justified or rejected, or modify the old theory. In some cases, it is inevitable to organize an article by creating sub-headings. This is the format for writing a Biosferjpb manuscript with subheadings. In this section there are special rules that cannot be overlooked.

Analysis

Results are the main part of a scientific article, containing : clean results without data analysis process, hypothesis testing results. Results can be presented with tables or graphs, to clarify verbal results.

Discussion

The discussion is the most important part of the entire scientific article. The purpose of the discussion is to answer the research problem, interpret the findings, integrate the findings of the research into the existing body of knowledge and develop new theories or modify existing theories.

Contoh untuk Tabel

Table 1

Increased Learning Motivation and Student Learning Outcomes between Cycle I and II.

	Learning Motivation Aspects	Cycle I	Cycle II	Escalation
Learning Motivation	Success Desire	85,34%	92,50%	7,16%
	Learning Need	78,28%	90,11%	11,84%
	Owning Expectation	89,93%	96,00%	6,07%
	Interest in problems	71,59%	88,97%	17,38%
	Learning Tenacity	82,62%	93,10%	10,48%
	Learning Motivation Average	81,55%	92,14%	10,59%
Biology Learning Outcomes		55,17	88,45	33,28

CONCLUSION

This section summarizes the results and discussion with reference to the research objectives. Thus, new main ideas, which are an important part of the research findings, are developed. Suggestions based on the discussed research findings are also written in this section. These should be based on practical activities, new theory development, and/or further research.

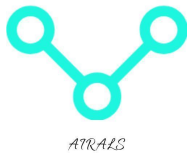
ACKNOWLEDGMENT

This section can be written if there are certain parties that need to be known, such as the research sponsor. Acknowledgments should be brief and clear. Also, avoid hyperbolic acknowledgments.

REFERENCES

References consist of the author's name, year of publication, article title, city name and publishing institution. The bibliography is sorted by the first letter of the author's name (A-Z). The second word in the name is agreed to be the surname. Authors can follow the APA 7th Publication Manual for writing references. All references referred to in the text must be written in the reference list. Preferred references are articles taken from journals / recent publications at least 10 years before paper submission.

All references cited in this article **MUST BE IN THE CONTENTS OF THE ARTICLE** and **MUST** use reference tools such as **MENDELEY** with **APA** format, **80% PRIMARY** literature (journals, proceedings, research reports, patents, standards, historical documents, research books) and **20% SECONDARY** literature (books, reliable websites) within at least the last 10 years.

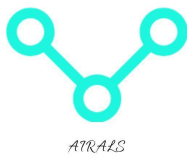


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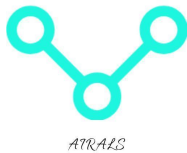
1. Number of references used Minimum 30 references
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An example of how to write a bibliography:

- Andini, N. A., & Saifuddin, M. F. (2023). Learning media of digital booklets for class VIII junior high school. *Biosfer: Jurnal Pendidikan Biologi*, 16(1), 1-12. <https://doi.org/10.21009/biosferjpb.25457>
- Abanikannda, & Oluwafemi, M. (2018). Effect of thecnology tools on students' interest in biology: A survey of Osun State High Schoools in Nigeria. *African Research Journal of Education and Social Sciences*, 5(3), 32-40. <https://arjess.org/education-research/effect-of-technology-tools-on-students-interest-in-biology-a-survey-of-osun-state-high-schools-in-nigeria.pdf>
- Abreu, A., Rocha, Á., Carvalho, J. V. d., & Pérez Cota, M. (2017). The electronic booklet on teaching-learning process: Teacher vision and parents of students in primary and secondary education. *Telematics and Informatics*, 34(6), 861-877. <https://doi.org/10.1016/j.tele.2016.08.011>
- Algiani, S. R., Artayasa, I. P., Sukarso, A. A., & Ramdani, A. (2023). Application of guided inquiry model using self-regulated learning approach to improve student's creative disposition and creative thinking skill in biology subject. *Jurnal Penelitian Pendidikan IPA*, 9(1), 221-230. <https://doi.org/10.29303/jppipa.v9i1.2836>
- Alyahya, D., & Nasser, R. (2019). Message design: Color impact and its effectiveness on designing instructional infographic. *International Journal of Learning, Teaching and Educational Research*, 18(2), 43-64. <https://doi.org/10.26803/ijlter.18.2.4>
- Arikunto. (2013). *Prosedur penelitian: Suatu pendekatan praktek*. Rineka Cipta.
- Azizah, N., & Astuti, B. (2020). Pengembangan bahan ajar fisika berbasis I-SETS (islamic, science, environment, technology, society) terkomentasi kearifan lokal dan muatan karakter. *UNNES Physics Education Journal*, 9(2), 164-177. <https://journal.unnes.ac.id/sju/index.php/upej/article/view/41924>
- Basar, A. M. (2021). Problematika pembelajaran jarak jauh pada masa pandemi Covid-19. *Edunesia : Jurnal Ilmiah Pendidikan*, 2(1), 208-218. <https://doi.org/10.51276/edu.v2i1.112>
- Bergström, G., Hujainah, F., Ho-Quang, T., Jolak, R., Rukmono, S. A., Nurwidyantoro, A., & Chaudron, M. R. V. (2022). Evaluating the layout quality of UML class diagrams using machine learning. *Journal of Systems and Software*, 192. <https://doi.org/10.1016/j.jss.2022.111413>
- Bourgault, A., Mayerson, E., Nai, M., Orsini-Garry, A., & Alexander, I. M. (2022). Implications of the COVID-19 pandemic: Virtual nursing education for delirium care. *J Prof Nurs*, 38, 54-64. <https://doi.org/10.1016/j.profnurs.2021.11.012>
- Chick, R. C., Clifton, G. T., Peace, K. M., Propper, B. W., Hale, D. F., Alseidi, A. A., & Vreeland, T. J. (2020). Using technology to maintain the education of residents during the COVID-19 pandemic. *J Surg Educ*, 77(4), 729-732. <https://doi.org/10.1016/j.jsurg.2020.03.018>
- de Oliveira, S. C., Lopes, M. V., & Fernandes, A. F. (2014). Development and validation of an



- educational booklet for healthy eating during pregnancy. *Rev Lat Am Enfermagem*, 22(4), 611-620. <https://doi.org/10.1590/0104-1169.3313.2459>
- Degner, M., Moser, S., & Lewalter, D. (2022). Digital media in institutional informal learning places: A systematic literature review. *Computers and Education Open*, 3. <https://doi.org/10.1016/j.caeo.2021.100068>
- Dikmenli, M. (2015). A study on analogies used in new ninth grade biology textbook. *Asia-Pacific Forum on Science Learning and Teaching*, 16(1), 1-20. <https://eric.ed.gov/?id=EJ1070739>
- Dyrberg, N. R., Treusch, A. H., & Wiegand, C. (2016). Virtual laboratories in science education: students' motivation and experiences in two tertiary biology courses. *Journal of Biological Education*, 51(4), 358-374. <https://doi.org/10.1080/00219266.2016.1257498>
- El Mhouti, A., Nasseh, A., & Erradi, M. (2013). How to evaluate the quality of digital learning resources? *International Journal of Computer Science Research and Application*, 3(3), 27-36.
- Falloon, G. (2020). From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Educational Technology Research and Development*, 68(5), 2449-2472. <https://doi.org/10.1007/s11423-020-09767-4>
- Frei-Landau, R., & Avidov-Ungar, O. (2022). Educational equity amidst COVID-19: Exploring the online learning challenges of Bedouin and Jewish Female Preservice Teachers in Israel. *Teach Teach Educ*, 111, 103623. <https://doi.org/10.1016/j.tate.2021.103623>
- Fuad, M., Ariyani, F., Suyanto, E., & Shidiq, A. S. (2020). Exploring teachers' TPACK: Are Indonesian language teachers ready for online learning during the COVID-19 outbreak? *Universal Journal of Educational Research*, 8(11B), 6091-6102. <https://doi.org/10.13189/ujer.2020.082245>
- Herawati, R., Tjahjono, H. K., Qamari, I. N., & Wahyuningsih, S. H. (2022). Teachers' willingness to change in adapting to online learning during the covid-19 pandemic. *Jurnal Cakrawala Pendidikan*, 41(2), 425-436. <https://doi.org/10.21831/cp.v41i2.43233>
- Kurniawan, W., Darmaji, D., Astalini, A., Kurniawan, D. A., Hidayat, M., Kurniawan, N., & Nur Farida, L. Z. (2019). Multimedia physics practicum reflective material based on problem solving for science process skills. *International Journal of Evaluation and Research in Education (IJERE)*, 8(4), 590-595. <https://doi.org/10.11591/ijere.v8i4.20258>
- Küsel, J., Martin, F., & Markic, S. (2020). University students' readiness for using digital media and online learning—Comparison between Germany and the USA. *Education Sciences*, 10(11). <https://doi.org/10.3390/educsci10110313>
- Lin, M.-H., Chen, H.-C., & Liu, K.-S. (2017). A study of the effects of digital learning on learning motivation and learning outcome. *EURASIA Journal of Mathematics, Science and Technology Education*, 13(7), 3553-3564. <https://doi.org/10.12973/eurasia.2017.00744a>
- Ma, H., & Li, J. (2021). An innovative method for digital media education based on mobile internet technology. *International Journal of Emerging Technologies in Learning (iJET)*, 16(13). <https://doi.org/10.3991/ijet.v16i13.24037>
- Mellisa, M., & Yanda, Y. D. (2019). Developing audio-visual learning media based on video documentary on tissue culture explant of *Dendrobium bigibbum*. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, 5(3), 379-386. <https://doi.org/10.22219/jpbi.v5i3.9993>
- Mulenga, E. M., & Marbán, J. M. (2020). Is COVID-19 the gateway for digital learning in mathematics education? *Contemporary Educational Technology*, 12(2).



<https://doi.org/10.30935/cedtech/7949>

- Owusu-Fordjour, C., Koomson, C. K., & Hanson, D. (2020). The impact of covid-19 on learning - the perspective of the Ghanaian student. *European Journal of Education Studies*, 7(3), 88-100. <https://oapub.org/edu/index.php/ejes/article/view/3000>
- Paramita, R., Panjaitan, R. G. P., & Ariyati, E. (2019). Pengembangan booklet hasil inventarisasi tumbuhan obat sebagai media pembelajaran pada materi manfaat keanekaragaman hayati. *Jurnal IPA & Pembelajaran IPA*, 2(2), 83-88. <https://doi.org/10.24815/jipi.v2i2.12389>
- Prameswati, K. H., & Saifuddin, M. F. (2022). Development of digital booklet for class X biodiversity materials. *Bioeduscience*, 6(3), 261-268. <https://doi.org/10.22236/j.bes/628760>
- Prasetya, D. D., Wibawa, A. P., & Hirashima, T. (2018). An interactive digital book for engineering education students. *World Transactions on Engineering and Technology Education*, 16(1), 54-59.
[http://www.wiete.com.au/journals/WTE&TE/Pages/Vol.16,%20No.1%20\(2018\)/09-Wibawa-A.pdf](http://www.wiete.com.au/journals/WTE&TE/Pages/Vol.16,%20No.1%20(2018)/09-Wibawa-A.pdf)
- Riduwan. (2006). *Belajar mudah penelitian untuk guru-karyawan dan peneliti pemula*. Alfabeta.
- Sarif, L., Syed-Abdullah, S. I. S., & Sufian Kang, E. K. M. (2022). Science education through Malaysian animation series. *International Research in Education*, 10(2), 28-46. <https://doi.org/10.5296/ire.v10i2.19682>
- Schneider, S., Krieglstein, F., Beege, M., & Rey, G. D. (2023). Successful learning with whiteboard animations - A question of their procedural character or narrative embedding? *Heliyon*, 9(2), e13229. <https://doi.org/10.1016/j.heliyon.2023.e13229>
- Schrenk, N., Alves, K., Schrenk, B., & Van Dam, D. (2021). Reflecting on best practices for online learning in a post-COVID-19 world. *Online Learning*, 25(4). <https://doi.org/10.24059/olj.v25i4.2460>
- Shabiralyani, G., Shahzad Hasan, K., Hamad, N., & Iqbal, N. (2015). Impact of Visual Aids in Enhancing the Learning Process Case Research: District Dera Ghazi Khan. *Journal of Education and Practice*, 6(19), 226-233. www.iiste.org
- Shorey, S., Chan, V., Rajendran, P., & Ang, E. (2021). Learning styles, preferences and needs of generation Z healthcare students: Scoping review. *Nurse Educ Pract*, 57, 103247. <https://doi.org/10.1016/j.nepr.2021.103247>
- Sirakaya, M., & Cakmak, E. K. (2018). The effect of augmented reality use on achievement, misconception and course engagement. *Contemporary Educational Technology*, 9(3), 297-314. <https://doi.org/10.30935/cet.444119>
- Sugiyono, S. (2012). *Metode penelitian kuantitatif, kualitatif dan R&D*. Alfabeta.
- Sukenda, D., Anjani, M., & Yustim, B. (2019). Learning media for biology subject based on multimedia in junior high school level. *Universal Journal of Educational Research*, 7(4A), 43-51. <https://doi.org/10.13189/ujer.2019.071407>
- Sumira, Yulastri, D., & Damaiyanti, M. (2021). *Challenges of online class amid the pandemic of the Covid 19* Proceedings of the International Conference on Applied Science and Technology on Social Science (ICAST-SS 2020),
- Tsai, C.-H., & Yen, J.-C. (2013). The development and evaluation of a kinect sensor assisted learning system on the spatial visualization skills. *Procedia - Social and Behavioral Sciences*, 103, 991-998. <https://doi.org/10.1016/j.sbspro.2013.10.423>
- Tumbel, F. M. (2018). Development of audio visual learning media using mitochondrial DNA



- analysis of fruit fly fromminahasa based saintific approach. *Journal of Advanced Educational Research*, 3(2), 352-356.
<https://www.educationjournal.org/archives/2018/vol3/issue2/3-2-92>
- Umarova, Z. A. q. (2020). Digital media educational environment: Media resources and their role. *Journal of Central Asian Social Research*, 01(01), 66-74.
<https://doi.org/10.37547/jcass/volume01issue01-a7>
- Wardono, Waluya, S. B., Mariani, S., & Candra D, S. (2016). Mathematics literacy on problem based learning with Indonesian realistic mathematics education approach assisted E-learning edmodo. *Journal of Physics: Conference Series*, 693, 012014.
<https://doi.org/10.1088/1742-6596/693/1/012014>
- Wurarah, M., & Samuel, M. Y. (2019). Development of audio visual learning media of biology on the concept of DNA, based on the results of molecular identification of Payangka Fish from Lake Tondano. *European Journal of Health and Biology Education*, 8(1), 1-17.
<https://doi.org/10.12973/ejhbe.8.1.1>
- Yulinda, M. F. F., & Saifuddin, M. F. (2022). Digital puzzle: Alternative media for cell learning in middle school. *BIO-INOVED: Jurnal Biologi-Inovasi Pendidikan*, 4(2), 230-234.
<https://doi.org/10.20527/bino.v4i2.12600>
- Zulfarina, Syafii, W., & Putri, D. G. (2021). E-Magazine based on augmented reality digestive as digital learning media for learning interest. *Journal of Education Technology*, 5(3), 417-424.
<https://doi.org/10.23887/jet.v5i3.36110>