



Digital Book on Motor Development in Sports Education at Sriwijaya University

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Abstract

This research aims to produce a Digital-Based Teaching Book on Motor Growth and Development in the Sports Education Program at FKIP Unsri. The method used is Research and Development (R&D), which aims to create a digital-based teaching book on motor growth and development. Sampling involved Physical Education students who had taken motor development courses. Data collection methods included validity tests, practicality tests, and effectiveness tests. Research instruments included validation sheets, questionnaires, and student learning outcome tests. Data analysis techniques involved validity, practicality, and effectiveness analysis. The findings revealed the book's high validity, as indicated by the research validator's results, with an average score of 4.27, classifying it as highly valid. According to student responses in the questionnaire, the book was considered highly practical, achieving a practicality score of 3.55, classified as very positive. Additionally, the student learning outcome test showed the digital-based teaching book on motor growth and development in the Sports Education Program at FKIP Unsri to be effective, with a high proficiency rate of 96.4%. In conclusion, this research confirms that the digital-based teaching book on motor growth and development in the Sports Education Program at FKIP Unsri is highly valid, practical, and effective for supporting learning activities, meeting high standards.

How to Cite

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INTRODUCTION

Education is a crucial aspect that significantly influences a country's growth. The progress of a nation is intricately tied to its knowledge base. Among the most impactful contributors to a nation's prosperity is education. The dynamic lives of individuals are shaped by education, impacting moral growth as well as physical, mental, and social development. Learning is an obligation for every individual to produce a valuable generation for the nation. Learning is the transformation of behavior, where an individual progresses from not knowing to knowing and from incapability to capability. Lessons are often taught in campuses or through direct interactions between lecturers and students, without using any intermediary media (Ramadhana et al., 2021).

In education, there is a process commonly known as Humanism. Humanism is at times referred to as the educational process to 'humanize' individuals. As a result, we must respect the fundamental rights of every individual. In other words, students are not machines that can be controlled as desired; rather, they are a generation that we should support and nurture as they develop into adults to create independent individuals capable of moral reasoning and sound judgment. Thus, education shapes individuals with different characters, enabling them to engage in activities such as eating, drinking, grooming, and having a place to live. This process is referred to as humanizing individuals (Pristiwanti et al., 2022). In the process of humanizing individuals, education is also significantly influenced by technological advancements in the era of globalization 4.0.

The era of globalization tightly intertwines education and technology. Schools, as formal educational institutions, play a vital role in preparing students to keep pace with technological advancements. Education is an effective means to support the development and enhancement of human resources towards a positive direction. Life has been influenced by the progress of technology and information, especially the use of digital gadgets. This demonstrates how the younger generation, raised in the millennial age, is undoubtedly influenced by digital technology. Children's lives have been affected by recent breakthroughs in technology and information, particularly the use of digital gadgets. This illustrates the influence of digital technology on children growing up in the millennial age. It's no wonder that today's children are considered

part of the digital generation. They are known as digital natives, growing up around electronic and digital media. Technological advancements are not only felt in the primary and secondary education sectors but also significantly impact and are observed in higher education.

The implementation of higher education is profoundly intertwined with the advancement of information technology. Information Technology is regarded as a critical component, prompting institutions to swiftly invest in online tools and platforms (Victorian et al., 2021). Higher education is vital to remain adaptive to changes across all aspects of life. Universities must constantly be prepared for structural, administrative, and academic program changes as they are agents of change (Hartati et al., 2016). Selecting and developing appropriate teaching techniques can help in delivering messages accurately, efficiently, and effectively, creating and enriching the learning experience, presenting an event as closely or realistically as possible, and enhancing student performance and skills (Aryanti et al., 2018). The implementation of learning in higher education is significantly influenced by the rapid development of information technology, particularly the advancement in communication technology. The progress of communication technology has enabled people to use the Internet more effectively. Accessing various information sources and downloading books for easy access has become possible. The trend of e-books is expected to expand in Indonesia in the next 5-10 years. This trend has redefined the concept of a book, which can now be read digitally or in print. The overall societal culture has changed with digital products altering how people create, read, purchase, and communicate information (Andina, 2011). Everything has become more convenient and rapid due to the rapid development of science and technology (Hartati et al., 2020). Technological development has made a significant impact on learning methods. One very important and impactful aspect of technological advancement is the use of textbooks. Textbooks are crucial in learning as they support and reinforce the delivery of material provided by teachers. Textbooks are essential learning tools that can translate abstract ideas into sophisticated information and clarify various challenging events. To encourage student learning, instructional materials must encompass the objectives, mission, context, substance, and self-process of the information conveyed. Additionally, effective instructional materials must be able to deliver content according to the

curriculum needs, keeping up with scientific and technological developments, and linking learning to achieve the planned competencies for desired learning objectives. The course on motor growth and development is part of the Sports Education program at FKIP Universitas Sriwijaya, carrying a weight of 2 credit hours. Based on interviews with the lecturer in charge of the motor growth and development course, prior to the Covid-19 pandemic, face-to-face teaching was conducted, and learning utilized printed books. However, during the COVID-19 pandemic, teaching and learning shifted online, requiring students to stay at home and not attend campus. This change rendered printed books less effective for use in the online learning process.

Higher education today is closely intertwined with the development of information technology. Information technology is seen as a crucial component, and institutions quickly invest in online tools and platforms (Victorian et al., 2021). Higher education is required to remain adaptive to changes in all aspects of life. Higher education institutions must be prepared for changes in structure, administration, and academic program content because they are agents of change (Hartati et al., 2016). Selecting and developing appropriate teaching techniques can help convey messages correctly, efficiently, and effectively, creating and enriching the learning experience, presenting events as closely or realistically as possible, and enhancing student performance and skills (Aryanti et al., 2018). The implementation of learning in higher education is greatly influenced by the rapid development of information technology, particularly in the field of communication technology. The advancement of communication technology has allowed people to use the Internet more effectively. Individuals can access various sources of information on the internet and easily download books to take home. The e-book trend will continue to expand in Indonesia over the next 5-10 years. This trend gives a new meaning to the definition of a book. Books can be read digitally or in print. The culture of society as a whole has changed, with digital products transforming the way people create, read, purchase, and communicate information (Andina, 2011). Everything has become easier and faster due to the rapid development of knowledge and technology (Hartati et al., 2020). Technological advancements have had a significant impact on the learning process, with one highly impactful aspect being the use of textbooks. Textbooks are essential in learning as they support and reinforce the delivery of material

by teachers. Textbooks are vital learning tools as they can translate abstract ideas into sophisticated information and explain various challenging events. To encourage student learning, teaching materials must encompass the objectives, mission, context, substance, and self-process of the information conveyed. Furthermore, effective teaching materials must be capable of delivering content in line with curriculum needs, following advancements in science and technology (STEM), and connecting learning to achieve the planned competencies for the desired learning objectives. The course on motor growth and development is one of the subjects in the Sports Education program at Sriwijaya University's Faculty of Education with a weight of 2 credit hours. Based on interviews with the lecturer responsible for the motor growth and development course, prior to the COVID-19 pandemic, teaching activities were conducted face-to-face, and learning still utilized printed textbooks. During the COVID-19 pandemic, teaching activities shifted to online or distance learning, requiring students to remain at home and not come to the campus. The changes that occurred made printed textbooks seem less effective for use in the online teaching process.

During online learning activities, it became evident that students paid less attention to the material provided by lecturers and there was minimal interaction during the teaching sessions. This was primarily due to the lack of learning resources available, a scarcity of teaching materials, and the absence of a digital textbook. Even though the COVID-19 pandemic has passed, the use of digital books remains highly effective as they are easily accessible and more efficient. One form of a digital book is an e-book. An e-book, or electronic book, is a digital book format that can be read on electronic devices such as computers, tablets, or smartphones. E-books are programmed into computers to visualize abstract content in visual and animated forms, aiding students in comprehending material more easily and capturing their attention during the learning process, thereby enhancing student learning success (W. Suryani & Sukarmin, 2012). If these existing issues are not promptly addressed, they could impact the development of students' soft skills, which will influence their readiness for the job market upon graduation. The outcome of this research will yield a digital book product. Most existing books are in printed form, which is considered less effective and efficient. Researchers will develop these books into a more effective and efficient digital format based on the Web. Currently, there is a lack of existing

digital textbooks at Sriwijaya University that align with the existing curriculum in the Sports Education program at Sriwijaya University. The aim is to provide more current sources and references. This research on the development of an interactive digital book also refers to a study conducted by (Ramadhana et al., 2021) entitled «Development of a Digital-Based Nutrition Science Fundamentals Teaching Book as a Learning Source for Physical Education Students at the Faculty of Teacher Training, Sriwijaya University.» The research results confirmed the high validity of the digital teaching book based on the validator's findings, with an average score of 4.19, classified as highly valid. The digital teaching book was found to be practical, with a student response questionnaire yielding an average response percentage of 3.67, classified as highly positive. Furthermore, the digital teaching book was considered effective, with an achievement rate of 86% falling into the high category. Another research titled «Development of Digital-Based Learning Media and Information Technology Teaching Books» found that the digital textbooks were validated based on material, language, and media validation, scoring 4.1, 3.86, and 3.65 respectively, with an average of 3.87 across these three aspects. The digital learning media and information technology textbooks were relatively easy to complete, achieving an 86.15% student completion rate. Self-accessible teaching books are highly necessary for students to maximize their learning process. Based on field observations and experiences while teaching motor growth and development courses, Physical Education students face difficulties in completing assignments due to the lack of specific motor growth and development teaching materials made by lecturers from various references. Hence, a digital teaching book is necessary to aid students in understanding the material.

Media can be utilized to stimulate various developmental aspects, including physical, motor, social, cognitive-emotional, creativity, and language, to facilitate the teaching and learning process. The media itself can act as a kind of internal dialogue between the information sender and the information receiver, as it can become complex within certain limitations. Media is crucial for the learning process as it supports and enhances the delivery of material provided by teachers.

METHOD

This research is a Research and Development (R&D) study. As stated by Sugiyono (2020),

Research and Development is a method used to produce a specific product and test its effectiveness. The research outcomes are utilized to design a new product, which is then systematically field-tested, evaluated, and refined to meet standards. The final outcome of this R&D is a product, specifically the development of an interactive digital book for the motor growth and development course. The researcher adopted the research steps according to Bord and Gall's seven steps, as this study adapted Sugiyono's opinion (2020:44), asserting that methodologically, level three of research and development reaches the product testing phase. This study produced a product design, subsequently internally validated by experts and practitioners, and externally trialed with research subjects. Hence, the researcher adapted only the seven steps of research and development for this current study.



Figure 1. Steps in Research and Development.

The researcher adapted Bord and Gall's seven-step research approach because methodologically, according to Sugiyono (2020:44), level three of research and development extends to the product testing phase. This study resulted in a product design, internally validated by experts and practitioners, and externally trialed with research subjects. Therefore, the researcher adapted only the seven steps of research and development for this study. The steps to be implemented in this research are as follows: 1. Research and information collection. 2. Planning. 3. Initial product development. 4. Initial testing. 5. Major revision. 6. Major trial. 7. Product revision. 8. Operational testing. 9. Final product revision. 10. Product implementation. This study was conducted in the Physical Education and Health Study Program, Faculty of Teacher Training and Education, Sriwijaya University, Cohort 2022, involving a total of 84 subjects, comprising 24 students from the Palembang class and 60 students from the Indralaya class. The data collection techniques used in this research include: 1. Validity testing data. 2. Practicality testing data. 3. Effectiveness testing data. The types of instruments needed to measure the validity, practicality, and effectiveness

of the developed learning tools are validation sheets, questionnaires, and student learning outcome tests.

RESULTS AND DISCUSSION

The Sports Education study program plays a crucial role in meeting the needs of society, government, and the private sector for experts in the field of sports education. According to Metzler, M. (2015), Sports Education is a systematic approach that focuses on teaching, learning, and the development of sports skills as well as knowledge related to physical activities, health, and recreation. The program aims to train middle-level, master's, and professional individuals who possess expertise in sports education. Additionally, the program aims to produce competent academic and professional experts in science and technology, providing them with broad insight, creative thinking abilities, and high skills. Hence, graduates from this program have the potential to pursue careers in various fields and offer effective support in development, aligning with the advancements in sports and education. Based on the Curriculum 13, the Sports Education study program at the Faculty of Teacher Training and Education, Sriwijaya University, offers a diverse range of courses. One of these is the motor growth and development course.

According to Gallahue, D.L. & Ozmun, J.C. (2015), motoric growth and development encompass the physical and functional changes in an individual's motor system throughout their lifetime. Growth refers to physical changes, such as height, weight, and the growth of body organs that affect motor abilities. Motor development refers to an individual's ability to acquire, control, and refine increasingly complex and skilled motor abilities throughout growth and experience. In the learning process, students face difficulties in achieving maximal learning outcomes due to the lack of digital-based teaching materials in the motor growth and development course. Based on data gathered through interviews with the lecturer of the Motoric Growth and Development course and the analysis of student needs, it's evident that there's a need to create a teaching book that aligns with the Semester Learning Plan (RPS) of the Sports Education Program at the Faculty of Teacher Training and Education, Sriwijaya University. In research conducted by Fuada (2017), learning innovation plays a significant role in stimulating student motivation. The use of various visual aspects in learning is considered more beneficial than relying solely on text narration. In

this context, digital teaching books are acknowledged as an innovation proven to effectively increase student motivation. According to Masnur (2018), digital pocket books as learning media are a form of Mobile Learning (M-Learning) development. The advantage of these digital pocket books lies in their user-friendliness, making them practical and easy to operate. Therefore, research is needed to understand how the development of digital-based teaching books can support learning for sports education students, particularly in the Motoric Growth and Development course. Asrizal (2017, p. 74) defines a teaching book as a learning material comprising information, discussion, and evaluation in a unified form. A systematically structured teaching book facilitates students' comprehension of the material, thereby supporting learning objectives, according to Hartati (2016). According to Tarigan (as cited in Laila & Yanti, 2019), eight criteria determine the quality of a teaching book, as follows:

- a. Systematics and Organization : Systematics refer to the rules or guidelines that need to be followed in a teaching book, while organization refers to the arrangement or structuring of material consisting of specific topics or components.
- b. Curriculum Suitability: The material or subject matter is a central component in the teaching and learning process as it is the focus of mastery for learners. Therefore, educators, particularly in curriculum development, need to consider the extent to which the topics or subject matter listed in the syllabus align with the future needs of the learners.
- c. Suitability of Material Development with Topics/Themes: The authors of teaching books develop learning materials by considering various learning topics in the curriculum.
- d. Cognitive Development: When writing and selecting teaching books, consideration should be given to the cognitive development of learners. To optimize the use of various learning materials supporting learners' abilities, it is advisable to choose material slightly above the average difficulty level during the teaching process.
- e. Compatibility of Illustrations with Reading Text/Discourse: Teaching books should be complemented with illustrations and pictures to make them appealing to learners.

The researcher developed a digital-based teaching book in this study. The steps taken in this research are similar to those explained by re-

searchers in the results of research, including definition, design, development, and dissemination. However, in this study, only the development stage could be completed due to time and cost limitations hindering the dissemination phase. In the define phase, initial and final analyses, student analyses, and the formulation of learning objectives were performed. The conclusions from these analyses indicated the necessity to develop a digital-based teaching book for motor growth and development according to the Semester Learning Plan (RPS). Based on the analysis of students, it was concluded that suitable teaching materials to be developed were digital-based. These materials would allow students to learn anywhere using advanced technology, as stated by Aryanti, Hartati, and Syafaruddin (2020:49). The advancement of digital technology is expected to address the issues in the current learning process. Therefore, for effective teaching and learning activities, sophisticated and online accessible learning resources are needed, such as digital teaching books. According to the analysis of learning objectives, the developed teaching book focuses on the subject of Motoric Growth and Development Based on Digital, in line with the Semester Learning Plan of the Sports Education Program, FKIP, Sriwijaya University. In the design phase, the preparation of reference tests, selection of learning media, choice of teaching book format, and the initial design of the teaching book were carried out. The preparation of reference tests involved the creation of research instruments such as questionnaires to assess the practicality of the teaching book and learning outcome tests to measure student abilities and the effectiveness of the digital-based teaching book for motor growth and development after its use. Suryani (2016) states that with the advancement of technology, digital-based books are more favored over printed books. Moreover, according to Alperi (2020), E-books in epub format are considered more dynamic as the font size, page number, images, and paragraphs can adjust to the reader's screen. In this context, validation of the digital teaching book was conducted through validation sheets for digital teaching books, questionnaire response validation sheets, and learning outcome test validation sheets to evaluate the validity level of the digital-based teaching book and the instruments used.

In the development stage, validation, revision, and limited testing of the digital-based teaching book were conducted. According to Saswulan (2020:80), products developed in research must pass through validation by experts and undergo testing before being deemed usable. The

initial product, the digital-based teaching book, and the prepared instruments were validated by three experts using assessment questionnaires. Based on the evaluation from the experts or validators, the Motor Growth and Development digital-based teaching book, aligned with the Semester Learning Plan (RPS) for the Motor Growth and Development course of the Sports Education Program, FKIP, Sriwijaya University, was considered suitable for limited testing after incorporating revisions following several suggestions for improvements as the basis for the digital-based teaching book's revision.

Table 1. Average Validator Assessment Results.

Validation	The assessment results	The category
Validation of content	4,8	Very valid.
Language validation	4	Very valid.
Media validation	4	Very valid.
Average	4,27	Very valid.

The validation results by several validators indicate that the average score of all assessment aspects is 4.19, categorizing it as highly valid. The detailed scores for each aspect are 4.3 for content, 3.75 for language, and 4.53 for media. Therefore, the digital-based Teaching Book for Motor Growth and Development aligned with the Semester Learning Plan (RPS) has been declared highly valid after evaluation across these three aspects. However, various recommendations for improvement should still be considered. These recommendations involve presenting the teaching book in line with the teaching model used. Furthermore, testing was carried out to assess the practicality and effectiveness levels of the digital-based Teaching Book for Motor Growth and Development according to the Semester Learning Plan in the Physical Education program. Practicality testing was conducted in a limited scope.

Table 2. Results of Practicality Testing

description	The assessment results	The category
Initial trial	3,44	Practical
Large-scale trial	3,59	Practical
Operational effectiveness test	3,55	Practical

The results of the practicality test were conducted in three phases. The initial test involved 24 students and yielded a score of 3.44. The main trial was performed with 60 students

and scored 3.59. The final practicality test, involving 84 students, scored 3.55. These results demonstrate that the digital-based Growth and Development of Motor Skills teaching material, aligned with the Semester Learning Plan (RPS), was deemed practical. According to Rohmawati (2015), effective learning is the outcome of the interaction between students and educators in an educational setting to achieve the learning objectives. An effective lecture is one that generates beneficial learning experiences, focusing on students through appropriate procedures. Learning becomes more meaningful when students comprehend the delivered material effectively.

Table 3. The results of the Effectiveness Test.

Student Completeness	Quantity	MCC
Students who passed	81	
Students who did not pass	3	75
Passing rate	96,4%	

The effectiveness test conducted by the researcher involved providing 20 test items for the students to answer. From the effectiveness test, the researcher obtained results showing that 96.4% of the 84 participating students, which accounts for 81 students, successfully completed the effectiveness test, with three of them not meeting the Minimum Completeness Criteria (MCC). The test results demonstrate that the students have a high level of knowledge and the motor development and growth teaching book is highly effective for the learning activities. Pujiningtyas (2014) has expressed that becoming an effective learner for students means: (1) Mastering the required theory and skills, enabling the enhancement of knowledge and understanding of the learning material easily, hence facilitating active learning. (2) Acquiring valuable new experiences. In this sense, learning is considered effective if it can improve students' knowledge and comprehension of the learning material and make it easier for them to receive and understand the content. Consequently, students can engage actively in learning and complete tasks within deadlines. Based on the conducted research regarding the book's suitability, practicality, and effectiveness, it can be concluded that the Digital-Based Motor Development and Growth Teaching Book at the Physical Education Study Program, Faculty of Teacher Training and Education, Sriwijaya University, is suitable for use.

CONCLUSION

Practical test, with three of them not meeting the Minimum Completeness Criteria (MCC).

The test results demonstrate that the students have a high level of knowledge and the motor development and growth teaching book is highly effective for the learning activities. Pujiningtyas (2014) has expressed that becoming an effective learner for students means: (1) Mastering the required theory and skills, enabling the enhancement of knowledge and understanding of the learning material easily, hence facilitating active learning. (2) Acquiring valuable new experiences. In this sense, learning is considered effective if it can improve students' knowledge and comprehension of the learning material and make it easier for them to receive and understand the content. Consequently, students can engage actively in learning and complete tasks within deadlines. Based on the conducted research regarding the book's suitability, practicality, and effectiveness, it can be concluded that the Digital-Based Motor Development and Growth Teaching Book at the Physical Education Study Program, Faculty of Teacher Training and Education, Sriwijaya University, is suitable for use. sis and discussion, it can be concluded that there is a significant influence between Body Language Gymnastics on Reducing visceral fat members of Pingky Pegandon Kendal Gymnastics. In this study, the sample decreased significantly with the average posttest being smaller than the pretest average ($12.5 < 13.1$). 19 members experienced a decrease in visceral fat and 3 members did not experience a change.

REFERENCES

- Alperi, M. (2020). Peran Bahan Ajar Digital Sigil Dalam Mempersiapkan Kemandirian Belajar Peserta Didik. *Jurnal Teknodik*, 0(1), 99–110. <https://doi.org/10.32550/Teknodik.V0i1.479>
- Andina, E. (2011). Buku Digital dan Pengaturannya. *Jurnal Aspirasi*, 2(2), 95. <https://doi.org/https://doi.org/10.22212/aspirasi.v2i1.429>
- Asrizal. (2017). Pengembangan bahan ajar sains untuk sekolah dasar. Padang: UNP Press.
- Aryanti, S., Victorian, A. R., & Yusuf, H. (2018). Pengembangan Teknik Pembelajaran Servis Forehand Bulutangkis Bagi Siswa Putra Sekolah Menengah Atas. *Sebatik*, 22(2), 181–187. <https://doi.org/10.46984/sebatik.v22i2.325>
- Aryanti, S., Hartati, R., & Syafaruddin. (2020). Pengembangan buku ajar badminton model animasi video pada mahasiswa pendidikan olahraga FKIP Universitas Sriwijaya. *International Journal of Human Movement and Sports Sciences*, 8(6A), 47-50.
- Fuada, & 2017. (2017). Pengembangan Buku Ajar IPS-Sejarah Digital SMP. *Journal.Uinjkt.Ac.Id*, 10(1). <https://doi.org/10.15408/Jti.V10i1.6969>

- Gallahue, D.L. & Ozmun, J.C. (2015). *Understanding Motor Development: Infants, Children, Adolescents, Adults*. 7th edition. New York, NY: McGraw-Hill Education.
- Hartati, Deatriana, & Aryanti, S. (2016). Multimedia development on sport health subject for third semester student of Penjaskes FKIP UNSRI. In 2nd Sriwijaya University Learning and Education International Conference (Vol. 2, Issue 1).
- Hartati, Deatriana, & Aryanti, S. (2016). Multimedia development on sport health subject for third semester student of Penjaskes FKIP UNSRI. In 2nd Sriwijaya University Learning and Education International Conference (Vol. 2, Issue 1).
- Hartati, Aryanti, S., & Victorian, A. R. (2020). Development of Physical Test Applications Basketball Sports Model in Regional Student Education and Training Center. <https://doi.org/10.2991/assehr.k.200323.115>
- Laila, R., & Yanti, Y. (2019). *Pengertian, Jenis-Jenis dan Karakteristik Bahan Ajar Cetak Meliputi Handout, Modul, Buku (Diktat, Buku Ajar, Buku Teks), LKS, Pamflet*.
- Masnur, H. (2018). Pengembangan media pembelajaran buku saku digital berbasis android untuk mata kuliah akuntansi dasar. *Jurnal Pendidikan Akuntansi Indonesia*, 16(2), 115-125.
- Metzler, M. (2015). *Instructional Models for Physical Education*. 3rd edition. New York, NY: Routledge.
- Pristiwanti, D., Badariah, B., Hidayat, S., & Dewi, R. S. (2022). Pengertian Pendidikan. In *Jurnal Pendidikan Dan Konseling (JPDK)* (Vol. 4, Issue 6).
- Pujiningtyas, L. R. (2014). Hubungan Penggunaan Media Sosial dengan Perilaku Seks Siswa di Surakarta. *Jurnal Psikologi Fakultas Psikologi Universitas Muhammadiyah Surakarta*, 2(1), 1-12.
- Ramadhana, R. D., Aryanti, S., Studi, P., Jasmani, P., & Kesehatan, D. (2021). Analisis kebutuhan pengembangan buku ajar dasar-dasar ilmu gizi berbasis digital Analysis of the needs of book development teaching the basics of digital-based nutrition science.
- Rohmawati, A. (2015). Efektivitas pembelajaran. *Jurnal pendidikan usia dini*, 9(1), 15-32. Saswulan. (2020). *Metode penelitian pengembangan*. Jakarta: PT Raja Grafindo Persada.
- Saswulan. (2020). *Metode penelitian pengembangan*. Jakarta: PT Raja Grafindo Persada.
- Suryani, N. (2016). Pengembangan media pembelajaran sejarah berbasis it. *Sejarah Dan Budaya: Jurnal Sejarah, Budaya, Dan Pengajarannya*, 10 (2), 186-196.
- Suryani, W., & Sukarmin. (2012). Pengembangan E-book Interaktif pada Materi Pokok Elektrokimia Kelas XII SMA. *Unesa Journal Of Chemical Education*, 1(2), 54–62.
- Sugiyono. (2020). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. 288.
- Victorian, A. R., Aryanti, S., Yusfi, H., Solahuddin, S., & Bayu, W. I. (2021). Perspektif Calon Guru Pendidikan Jasmani Terhadap Pembelajaran Online Selama Pandemi Covid-19. *JOSSAE : Journal of Sport Science and Education*, 6(1), 94. <https://doi.org/10.26740/jossae.v6n1.p94-106>