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## DEVELOPMENT OF DIGITAL LITERACY MODULES FOR STUDENTS WITH VISUAL IMPAIRMENTS AT MAKASSAR STATE UNIVERSITIES

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### Abstrak:

Penelitian bertujuan untuk mengidentifikasi kebutuhan mahasiswa difabel netra, mendesain, mengukur tingkat validitas dan kepraktisan modul literasi digital untuk mahasiswa difabel netra di Universitas Negeri Makassar. Penelitian ini menggunakan model yang dikembangkan oleh Borg & Gall. Analisis data digunakan terdiri dari analisis deskriptif kualitatif dan analisis statistik deskriptif. Hasil identifikasi tingkat kebutuhan mahasiswa difabel netra berada pada kualifikasi sangat dibutuhkan. Selanjutnya pada tahap validasi ahli materi berada pada kualifikasi sangat baik dan pada ahli media menyatakan berada pada kualifikasi sangat baik. Hasil uji coba lapangan awal berada pada kualifikasi baik dan hasil uji coba lapangan berada pada kualifikasi baik. Kesimpulan dari hasil penelitian ini tingkat analisis kebutuhan berada pada kualifikasi dibutuhkan serta produk modul literasi digital dinyatakan valid dan praktis.

### Abstract:

The research aims to identify the needs of blind students, and design, and measure the level of validity and practicality of digital literacy modules for blind students at Makassar State University. This study uses a model developed by Borg & Gall. The data analysis used consisted of qualitative descriptive analysis and descriptive statistical analysis. The results of the identification of the level of needs of students with visual disabilities are in the qualifications needed. Furthermore, in the validation stage, the material experts are in very good qualifications and the media experts say they are in very good qualifications. The results of the initial field trial were in good qualification and the results of the field trial were in good qualification. The conclusion from the results of this study is that the level of needs analysis is at the required qualifications and the digital literacy module product is declared valid and practical.

### Keywords:

**Module, Digital Literacy, Blind Disabled**

## INTRODUCTION

The development of technology, information, and communication in this era is growing rapidly, this requires people of this era to develop the ability to understand, use and take advantage of existing technology. Education is one of those affected by technological developments so education at this time must adapt to using technology in the educational process to support the quality of education. There is a need to improve the quality of human resources in order to support the quality of education, as well as to support the ability to use technology. Quality education is the initial capital to realize

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quality education, to realize the ideals of this country and this nation. One of the efforts to realize this, every individual needs to have literacy skills as one of the initial capital to improve the quality of quality education. This is in line with the Law on the National Education System Number 3 of 2017 Article 1 which states: "Literacy is the ability to interpret information critically so that everyone can access science and technology as an effort to improve their quality of life."

Education currently has to control its information, especially during a pandemic, where classrooms have moved to virtual. Mastery of information and communication technology should be balanced with digital literacy competencies. As stated (Kurnia & Astuti, 2017) that the high number of internet users and the frequency of accessing information content and social media in Indonesia do not guarantee the maturity of Indonesian netizens in using the internet. Because of the widespread abuse of the internet, violations of privacy, reality bias, and most often the spread of hoaxes. A number of these cases are based on the low digital literacy of the Indonesian people. Of course, digital literacy competence is needed to prevent these cases from happening. Especially in the education sector, the use of technology in learning is something that cannot be avoided, because technology can help the nation's next generation get an education.

At present and in the future, everyone is required to have expertise in using technology. That's because it can be used as a foundational skill in enhancing 21st-century skills. The success or failure of a person's continuity in the future can be seen from how much ability a person has in using technology and the role of technology is very important at this time (Rizaldi, Nurhayati, & Fatimah, 2020). Accordingly, the younger generation in this era needs to be equipped with skills hard skills and soft skills sufficient to prepare a quality generation. One of the skills that are important in increasing knowledge and ability to overcome every problem is literacy skills (Ariana, Situmorang, & Krave, 2020) Literacy ability is very important for every student to have, especially in dealing with the development of science and technology (IPTEK) at this time. In this all-digital world, digital literacy is a skill that must be learned by every student, especially students in tertiary institutions before completing their studies at the tertiary level.

Currently, every student is required to develop digital literacy as well including students with visual impairments (blind) who must have digital literacy even while studying at home at this time (Rizaldi et al., 2020). The digital literacy movement for students with visual disabilities in tertiary institutions has not been seen compared to students who are not disabled. The needs and skills of students with visual disabilities in accessing information or looking for references in digital media are the same as students in general, it's just that they haven't been touched, like the general public of students. Even the disabled group, including the visually impaired, is a group that needs special attention for digital literacy (Monggilo et al., 2021). This is in line with the Law of the Republic of Indonesia Number 8 of 2016 concerning Persons with Disabilities Article 1 paragraph 2 reads as follows: "Equal Opportunity is a condition that provides

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opportunities and/or provides access to Persons with Disabilities to channel their potential in all aspects of administering the state and society".

Blind people do not refer to those who are blind but also include those who are able to see but are very limited and underutilized for the benefit of everyday life, especially in learning (Widiyawati, 2019). Based on this, students with visual disabilities must have a competency that can support learning at this time. Digital literacy competence is an important target of competence that must be possessed by students in this century.

Based on the results of initial data collection conducted by researchers regarding digital literacy in 8 students with visual disabilities at Makassar State University (UNM) which was carried out online using Google form. It was found that 3 students with visual disabilities did not know about digital literacy, 5 students with visual disabilities already recognized digital literacy and as many as 5 students with visual disabilities also experienced problems in using digital-based technology while the remaining 3 students with visual disabilities were proficient in using digital-based technology. and 8 students with visual disabilities need digital literacy modules. In this regard, there is a need for learning modules that can be used to help students with visual disabilities recognize digital literacy, and can assist in wisely utilizing digital-based technology. The availability of modules can provide convenience and opportunities for students to understand the contents of existing material. This is in line with Awalludin dan Lestari (2017) who also stated that module development is expected to guide and direct all activities and evaluate the success of students and lecturers in carrying out the teaching and learning process. A module that discusses digital literacy, of course, can be a reference in recognizing digital literacy when using digital media.

The opinion of Tabusum dkk. (2014) defines digital literacy as the ability to find, organize, understand, evaluate and analyze information using digital technology. it agrees with the opinion of Common Sense Media (Irhandayaningsih, 2020) defines "digital literacy as the ability to utilize technology, interpret and understand, and assess the credibility of information contained in digital content". From the definition above, it can be seen that digital literacy is a competency that must be possessed in order to make it easier to use digital-based technology or access digital content appropriately. Based on this, digital literacy is important to be learned by every student in tertiary institutions, especially students with visual disabilities at Makassar State University. Departing from the results of initial data collection, researchers focused on developing digital literacy modules for students with visual disabilities to introduce and make a reference or road map in recognizing digital literacy when using digital media.

## **RESEARCH METHOD**

The research used by researchers is research development or Research and Development (R&D), while this research uses the Borg & Gall model because it has high validity which goes through 10 stages, but researchers carry out up to 8 stages because it is adjusted to the needs of researchers, including research and data collection, planning, initial product

development, preliminary field testing, main product revision, main field testing, operational product revision, dissemination (Sukmadinata, 2016). The subjects in the study were content/learning material experts, learning media experts, and students with visual disabilities, totaling 7 students. The data collection techniques used are questionnaires and documentation. The instrument used by researchers is a questionnaire. The data collected through the implementation of validity tests are in the form of data from content/material expert tests and media expert tests to determine the validity level of digital literacy module products as well as data from the results of initial field tests and main field tests on students with visual disabilities to determine the practicality of digital literacy module products. Data from the trials of content/material experts, media experts, and blind disabled students were then analyzed. Data analysis used in this research is the descriptive qualitative analysis and descriptive statistics. The formula used to calculate the percentage of each subject is:

$N \times \text{Highest weight}$

$$\text{Percentage} = \frac{\sum (\text{Answer} \times \text{Weight of each choice})}{N \times \text{Highest weight}} \times 100\%$$

Information:

$\sum$  = Amount

N = Total number of questionnaire items

Furthermore, to calculate the percentage of all subjects, the formula is used:

Percentage = F: N

Description: F = Total percentage of all subjects

N = Many subjects

**Table 1.** Need Level Conversion with a Scale of 5

Achievement Level	Qualification
81%-100%	Very needed
61%-80%	Needed
41%-60%	Simply Needed
21%-40%	Less Needed

Source: Adapted from Maryuliana et al., (2016)

**Table 2.** Conversion of Validity Level and Practicality Achievement with a Scale of 5

Achievement Level	Qualification	Information
90%-100%	Very good	No Revision Needed
75%-89%	Well	No Revision Needed
65%-74%	Enough	Revised
55%-64%	Less	Revised
0%-54%	Very less	Revised

Source: (Arikunto, 2010)

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## RESULTS AND DISCUSSION

### Research and Data Collection

Research and data collection were carried out to obtain data related to the level of digital literacy needs of blind disabled students at Makassar State University. Analysis of the level of need for digital literacy modules for students with visual disabilities at Makassar State University is at the percentage level of 100% (much needed). The following is data related to the level of digital literacy needs of students with visual disabilities at Makassar State University:

**Table 3. Identification of Needs**

No	Question	Respondent	
		Yes	No
1.	Have you ever heard of the word digital literacy?	7	1
2.	Do you know what digital literacy is?	5	3
3.	Is digital literacy important to you?	7	1
4.	Are there any obstacles to you using digital-based technology?	5	3
5.	Do you know the ethics of using digital media?	7	1
6.	Does your lecturer use teaching materials in the form of modules in the learning process?	7	1
7.	Can you use teaching materials in the form of modules in the learning process?	8	0
8.	Do you agree with the existence of teaching materials in the form of digital literacy modules for students with visual impairments?	8	0
9.	Do you agree with the creation of teaching materials in the form of digital literacy modules for students with visual impairments?	8	0
<b>Amount</b>		<b>62</b>	<b>10</b>

After being converted with the conversion table, the percentage results of 100% are in the much-needed qualification.

### Planning for Blind Students' Digital Literacy Module

The digital literacy module product was chosen to be a product developed by researchers after concluding an analysis of the needs of students with visual disabilities. The steps taken at the planning stage are as follows: (1) create a storyboard and Prototypes of digital literacy module products developed. (2) drafting Digital Literacy material in accordance with the Competency Indicators adapted from the digitally capable Indonesian module which has been modified and adapted to the needs of students with visual disabilities. (3) looking for literature that supports and relates to "digital literacy" in digital media that suits the needs of blind people. (4) making instructions for using the module and designing digital literacy module media designs using software (Inkscape). (5) making video tutorials in the form of links that can be accessed via YouTube contained in the digital module material "digital literacy of students with visual disabilities".

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### Initial Product Development of the Digital Literacy Module

The initial product development stages of the digital literacy module are guided by storyboards and prototypes that have been made and compiled beforehand to make it easier to make digital modules and create illustrations using Inkscape software, as well as draft digital literacy materials as a reference in gathering sources and data related to the material using Microsoft Word software. Making covers and background modules using Inkscape software. After that, the video is made using VN software and Microsoft PowerPoint, then the video results are embedded in the Youtube link. The output of the product being developed is a digital module with the .pdf file format, measuring 21 cm x 29.7 cm and using 2 types of fonts, Roboto and Calibri.

### The Validity of the Blind Students' Digital Literacy Module

The following data relates to product validation and trials that have been developed:

**Table 4. Content/Material Expert Validation Results**

No	Question	Score
1.	The material contained in the module refers to digital literacy for students with visual disabilities	5
2.	Module material supports the achievement of digital literacy competency indicators for students with visual disabilities	5
3.	The description of the material in the module is complete and clear for students with visual disabilities	5
4.	Systematic consistency in presenting digital literacy material for students with visual disabilities	5
5.	Modules are developed according to the needs of students with visual disabilities	5
6.	This developed module can provide opportunities for blind students to study according to their respective knowledge abilities	5
7.	Language suitability with Indonesian rules for students with visual disabilities	5
8.	Communicative digital literacy material for students with visual disabilities	5
9.	The modules developed can motivate independent learning	5
10.	The Clarity in the order of presentation of digital literacy material for students with visual disabilities	
11.	Conformity of evaluation questions with the material	
	<b>Amount</b>	<b>55</b>
	<b>Percentage</b>	<b>100%</b>

After being converted with the conversion table, the percentage results of 100% are in very good qualifications.

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**Table 5. Media Expert Validation Results**

No	Question	Score
1.	Readability of digital literacy materials for students with visual disabilities	4
2.	The use of letter variations (font) is not excessive for students with visual disabilities	5
3.	Resolution layout narrative typing for students with visual disabilities	5
4.	The use of language is easy to understand	4
5.	Module media capabilities can encourage independent learning	5
6.	The capability of media module is able to increase knowledge of blind people	5
7.	Language suitability with Indonesian rules for students with visual disabilities	5
8.	The operation of the module is easy for students with visual disabilities	5
<b>Amount</b>		<b>33</b>
<b>Percentage</b>		<b>94%</b>

After being converted with the conversion table, the percentage results of 94% are in very good qualifications.

### Initial Field Test

**Table 6. Preliminary Field Test Results**

No	Rated aspect	Score
1	The material presented in this module is easy to understand	80%
2	Sentences and paragraphs in this module are clear and easy to understand	80%
3	This media module motivates me to study	70%
4	The language used is communicative and interactive	80%
5	I can study actively with this module	80%
6	The digital literacy module material is easy to understand	80%
7	Clarity of module usage instructions	80%
8	The material in the module can be read by a screen reader application (Screen Reader)	100%
<b>Percentage</b>		<b>81,25%</b>

After being converted with the conversion table, the percentage results of 81.25% are in good qualification.

### Initial Product Revision

Initial product revisions were carried out for blind students at Makassar State University, the digital literacy module product for blind students received a "good" score of 81.25%. However, there are comments or suggestions from research subjects regarding the digital literacy module, therefore it needs improvement so that the resulting product is better. Comments and suggestions regarding the media digital literacy module for students with visual disabilities, namely: correction of writing errors or typos.

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## Main Field Test

**Table 7. Results of the Main Field Test Assessment Questionnaire**

No	Rated aspect	Score
1	The material presented in this module is easy to understand	88
2	Sentences and paragraphs in this module are clear and easy to understand	80
3	This media module motivates me to study	76
4	The language used is communicative and interactive	80
5	I can study actively with this module	92
6	The digital literacy module material is easy to understand	84
7	Clarity of module usage instructions	80
8	The material in the module can be read by a screen reader application (Screen Reader)	84
<b>Persentase</b>		<b>83%</b>

After being converted with the conversion table, the percentage results of 83% are in good qualification.

## Operational Product Revision

The results of the revised operational product stated that the digital literacy module product for students with visual disabilities was "good" at 83% and was suitable for use by students with visual disabilities in recognizing digital literacy. So the researchers did not revise the digital literacy module product for students with visual disabilities.

## Dissemination

Digital literacy module products that have gone through the process of the main field test stage will then be distributed in a limited manner due to the limitations of the researchers. Researchers distribute digital literacy module products to students with visual disabilities and libraries at Makassar State University and publish the results of this research in accredited journals.

## Discussion

This research produces a product in the form of a digital literacy module that is used by students with visual disabilities in recognizing digital literacy. This digital literacy module product is based on the results of a needs analysis that was carried out as a basis for media development. Where at the data collection stage it shows that some students with visual disabilities are still unfamiliar with digital literacy and are constrained by using digital technology, and students with disabilities agree to use digital literacy module products as a learning resource or teaching material in recognizing digital literacy. As explained by Bhowmick & Hazarika (2017) states that blind people can develop like other people who are not disabled by utilizing current technological assistance in terms of digital literacy. In line with the research of Said et al., (2022) also stated "students with visual disabilities need adequate understanding and literacy for the proper use of search engines, ethics and safety in social media and maintaining digital



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footprints". Based on the percentage results from the accumulation of all questions in the digital literacy module product, it is a much-needed qualification. This is the reason for researchers to design and develop media in the form of digital literacy modules. As Setiyadi, Ismail dan Gani (2017) argue that modules are also called media for independent learning because they are equipped with instructions for self-study. In accordance with the opinion (Nurhikmah H, Arnidah, & Febrianti, 2009) that modules can be studied by students who have one particular theme and contain complete information. This is reinforced by (Chairunisa & Zamhari, 2022) also states that the module is a source of information that can be used to increase knowledge and motivation to learn from students.

At the validation stage content/digital literacy material experts by Zulfitriah, S.Pd., M.Pd. obtained results with very good qualifications. As for the results of comments and suggestions from the content/material validator, namely: "adjustment of the terms used and adjustments to typo errors". The percentage results of the content/material validation test questionnaire are very good qualifications. With a record of making improvements according to comments or suggestions from content/material experts with digital literacy modules the product development produced is better.

The results of the validation stage from media experts by Hartoto, S.Pd., M.Pd. obtained results in very good qualifications. As for the results of the comments and suggestions from the media validator, namely: "Consistent greeting words, use auditory spoken language, remove parts that add to the burden of cognition and minor revisions to writing and layout errors." The results of the percentage of media expert validity test questionnaires are very good qualifications. With data records making improvements according to comments and suggestions from media experts with digital literacy modules so that the resulting module development is better. Furthermore, based on the validation results of content/material experts and media experts, the product developed was declared valid.

The validity level of this digital literacy module is based on the characteristics or characteristics of the module as expressed by Anwar in S.Sirate dan Ramadhana (2017: 320) which states that the characteristics of the learning module are: Self-instructional, Self-contained, Standalone, adaptive, User friendly, and Consistency. The digital literacy module being developed adheres to the principle of self-instructional because it allows students with visual disabilities to easily understand and learn the contents of the material without the help of others. The digital literacy module developed here adheres to the self-contained principle, because it does not only contain material but contains study instructions, competency indicators, exercises, and evaluations, all in one complete package. The digital literacy module adheres to the principles standalone, because it can be studied independently without the help of other media, anytime, anywhere, according to the speed of each student with visual disabilities. The digital literacy module developed adheres to adaptive principles, because the flexible module is used by students with visual disabilities and can adapt to developments in science and technology at this time, and and can be used for a certain period. The digital literacy

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module developed adheres to the principles friendly, because it makes it easier for students with visual disabilities to access screen readers to read the contents of the module. And the digital literacy module developed adheres to the principle of consistency because it is consistent in the use of fonts, spacing, and layout in the digital literacy module.

The stages of the practicality test of the digital literacy module product being developed, namely, the initial field test of this study which became the subject of the trial were 2 students with visual disabilities. The results of the trial are at a good qualification level so no revision is needed. However, there are comments or suggestions related to digital literacy module products that need to be revised so as to produce a better product. Then it was continued, in the main field test which consisted of 5 blind disabled students. The main field test results are at a good qualification level. So there is no need to revise. Based on the results of the trial assessment, the digital literacy module product developed is declared practical. The level of practicality of this digital literacy module is based on the explanation (Nieveen, 1999) which explains "products resulting from development, it is concluded that it is practical if practitioners state that theoretically the product can be applied in the field and the level of product implementation is in a good category".

Based on the results of the validity and practicality tests that have been carried out, the digital literacy module product for students with visual disabilities is declared valid and practical. It is hoped that this can be utilized by students with visual disabilities as a reference and road map in recognizing digital literacy. As well as having a digital literacy module that can be accessed digitally can certainly make it easier for students with visual disabilities as users to access it and study it with their own learning styles. In accordance with the opinion (Astuti et al., 2022) states that the existence of a module that is integrated with digital technology will certainly be easier to use or more flexible compared to conventional modules. In line with that, Sholikha et al., (2022) also stated that digital modules can help create independent learning for students and effectiveness in technology-based learning. In addition, according to (Nuraini, Praherdhiono, & Adi, 2022) digital modules can also accommodate differences in the learning styles that each student has. This is reinforced by the opinion (Aminuddin, Nurhikmah, Haling, & Rosihan, 2021) stating that digital-based teaching materials have been packaged in a complete and systematic manner in which they contain a collection of planned learning experiences and are designed to help students understand specific learning objectives.

## **CONCLUSION**

Based on the results of the research and discussion, it is concluded that the results of the identification of needs analysis show that the digital literacy module for students with visual disabilities is urgently needed, the digital literacy module is a digital module that was developed based on competency indicators adapted from the digitally capable Indonesian module. The results of the digital literacy module product test on students with visual disabilities were declared valid and practical.

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The hope is that this digital literacy module can be used and utilized by students with visual disabilities, in recognizing digital literacy independently or by other people who want to know about the digital literacy of students with visual disabilities. Suggestions, this module can be developed with different materials related to digital literacy and implemented for students with visual disabilities in tertiary institutions.

## REFERENCES

- Aminuddin, H., Nurhikmah, Haling, A., & Rosihan. (2021). Pengembangan Bahan Ajar Digital Pada Mata Pelajaran Ekonomi Kelas X Sma Negeri 12 Makassar. *Patria Artha Technological Journal*, 5(1), 58–63. <https://doi.org/10.33857/patj.v5i1.402>.
- Ariana, D., Situmorang, R. P., & Krave, A. S. (2020). Pengembangan Modul Berbasis Discovery Learning Pada Materi Jaringan Tumbuhan Untuk Meningkatkan Kemampuan Literasi Sains Siswa Kelas Xi Ipa Sma. *Jurnal Pendidikan Matematika Dan IPA*, 11(1), 34–36. <https://doi.org/10.26418/jpmipa.v11i1.31381>.
- Arikunto, S. (2010). *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.
- Astuti, B., Purwanta, E., Lestari, R., Bhakti, C. P., Anggela, E., & Herwin, H. (2022). The effectiveness of digital module to improve career planning of junior high school students. *World Journal on Educational Technology: Current Issues Junior High School Students*, 14(3), 940–950. <https://doi.org/https://orcid.org/0000-0002-8688-6783>.
- Awalludin, A., & Lestari, Y. (2017). Pengembangan Modul Menulis Makalah Pada Mata Kuliah Pengembangan Keterampilan Menulis. *Jurnal Bindo Sastra*, 1(2), 121–130. <https://doi.org/10.32502/jbs.v1i2.762>.
- Bhowmick, A., & Hazarika, S. M. (2017). An insight into assistive technology for the visually impaired and blind people: state-of-the-art and future trends. *Journal on Multimodal User Interfaces*, 11(2), 149–172. <https://doi.org/10.1007/s12193-016-0235-6>.
- Chairunisa, E. D., & Zamhari, A. (2022). Pengembangan E-Modul Strategi Pembelajaran Sejarah dalam Upaya Peningkatan Literasi. *Criksetra: Jurnal Pendidikan Sejarah*, 11(1), 84–96. <https://doi.org/https://doi.org/10.36706/jc.v11i1.16047>.
- Irhandayaningsih, A. (2020). Pengukuran literasi digital pada peserta pembelajaran daring di masa pandemi covid-19. *Anuva*, 4(2), 231–240.
- Kurnia, N., & Astuti, S. I. (2017). Peta Gerakan Literasi Digital Di Indonesia: Studi Tentang Pelaku, Ragam Kegiatan, Kelompok Sasaran Dan Mitra Yang Dilakukan Oleh Japelidi. *Informasi*, 47(2), 149. <https://doi.org/10.21831/informasi.v47i2.16079>.
- Maryuliana, Subroto, I. M. I., & Haviana, S. F. C. (2016). Sistem Informasi Angket Pengukuran Skala Kebutuhan Materi Pembelajaran Tambahan Sebagai Pendukung Pengambilan Keputusan Di Sekolah Menengah Atas Menggunakan Skala Likert. *Jurnal Transistor Elektro Dan Informatika*, 1(2), 1–12. <https://doi.org/http://dx.doi.org/10.30659/ei.1.1.1-12>.
- Monggilo, Z. M. Z., Kurnia, N., Wirawanda, Y., Desi, Y. P., Sukmawati, A. I., Anwar, C. R., ... Astuti, S. I. (2021). *Cakap Bermedia Digital*. Jakarta: Direktorat Jenderal Aplikasi Informatika.

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- Nieveen, N. (1999). *Prototyping to Reach Product Quality BT - Design Approaches and Tools in Education and Training* (J. van den Akker, R. M. Branch, K. Gustafson, N. Nieveen, & T. Plomp, eds.). Dordrecht: Springer Netherlands. [https://doi.org/10.1007/978-94-011-4255-7\\_10](https://doi.org/10.1007/978-94-011-4255-7_10).
- Nuraini, B. L., Praherdhiono, H., & Adi, E. P. (2022). PENGEMBANGAN MODUL DIGITAL DENGAN KULIAH PENGEMBANGAN BAHAN BELAJAR. *Jurnal Kajian Teknologi Pendidikan*, 5(3), 254–264. <https://doi.org/10.17977/um038v5i32022p254>.
- Nurhikmah H, N. H., Arnidah, A., & Febrianti, F. (2009). PENGEMBANGAN MODUL PEMBELAJARAN SOSIOLOGI PENDIDIKAN BERBASIS E-LEARNING DENGAN MODEL PEMBELAJARAN WEB CENTRIC COURSE. *EDUKASI: Jurnal Pemikiran Dan Penelitian Pendidikan*, 10(2), 45–53. Retrieved from <http://eprints.unm.ac.id/15778/>.
- Rizaldi, D. R., Nurhayati, E., & Fatimah, Z. (2020). The Correlation of Digital Literation and STEM Integration to Improve Indonesian Students' Skills in 21st Century. *International Journal of Asian Education*, 1(2), 73–80. <https://doi.org/10.46966/ijae.v1i2.36>.
- S.Sirate, S. F., & Ramadhana, R. (2017). Pengembangan Modul Pembelajaran Berbasis Keterampilan Literasi. *Inspiratif Pendidikan*, 6(2), 316–335. <https://doi.org/10.24252/ip.v6i2.5763>.
- Said, M., Hn, W., Azizah, S., Darmawan, D., & Anwar, C. R. (2022). Digital Skills of Blind College Students in the Educational Process during a Pandemic. *Journal of ICSAR*, 6(1), 67–77. Retrieved from <http://journal2.um.ac.id/index.php/icsar/article/view/25243>.
- Setiyadi, M. W., Ismail, & Gani, H. A. (2017). Pengembangan Modul Pembelajaran Biologi Berbasis Pendekatan Saintifik Untuk Meningkatkan Hasil Belajar Siswa. *Journal of Educational Science and Technology (EST)*, 3(2), 102–112.
- Sholikha, S. M., Farid, M. M., & Andriansyah, E. H. (2022). PENGGUNAAN MODUL DIGITAL DALAM MENINGKATKAN PRESTASI BELAJAR PESERTA DIDIK PROGRAM PERCEPATAN SKS DI WILAYAH SURABAYA Siti. *Jurnal Ekonomi Pendidikan Dan Kewirausahaan*, 10(1), 73–82. <https://doi.org/10.26740/jepk.v10n1.p73-82>.
- Sukmadinata, N. S. (2016). *Metode Penelitian Pendidikan*. Bandung: PT REMAJA ROSDAKARYA.
- Tabusum, S. S. Z., Saleem, A., & Sadik Batcha, M. (2014). Digital Literacy Awareness among Arts and Science College Students in Tiruvallur District: A Study. *International Journal of Managerial Studies and Research*, 2(4), 61–67. Retrieved from [www.arcjournals.org](http://www.arcjournals.org).
- Law of the Republic of Indonesia Number 3 of 2017 concerning the Bookkeeping System.
- Law of the Republic of Indonesia Number 8 of 2016 concerning Persons with Disabilities.
- Widiyawati, A. T. (2019). Kajian Literasi Media Digital Library Universitas Brawijaya (Studi Kasus Pada Mahasiswa Tuna Netra Universitas Brawijaya). *Tik Ilmeu: Jurnal Ilmu Perpustakaan Dan Informasi*, 3(1), 1–25. <https://doi.org/10.29240/tik.v3i1.617>.
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