MEDIA LITERACY AND TECHNOLOGY SKILLS
OF PHYSICAL EDUCATION STUDENTS

Fika Ulandari[1], Andika Triansyah[2], Fitriana Puspa Hidasari[3], Wiwik Yunitaningrum[4], Muhammad Fachrurrozi Bafadal[5]

Universitas Tanjungpura[12345]
fikaulandari@student.untan.ic.id

Abstract

The era of the industrial revolution 4.0 provides changes and affects various aspects of life. The development of media and technology in the midst of social life is increasingly rapid, resulting in increasingly difficult control over them. Therefore, society needs alternatives in order to balance and avoid the negative effects of media and technology development. Media and technology literacy is the right concept in overcoming the rapid development of media and technology. Media literacy and technology play a role in preparing the community side by side and the impact of media and technology developments. This study aims to determine the media and technological literacy skills of students of the Physical Education Study Program, Faculty of Teacher Training and Education, Tanjungpura University and to determine whether gender and student level factors affect media and technology literacy. The method used in this study is a survey method with data collection tools in the form of questionnaires and data analysis using descriptive-comparative analysis. The population in this study were all 100 students of Physical Education, Tanjungpura University and the sample of this study was 100 students who were taken using a probability sampling technique , namely total sampling. The results of the study show that media and technology literacy is at a moderate level (medium). In this study, it is known that there is no significant difference in media literacy and technology based on the level of students. Meanwhile, based on gender, there is a significant difference in technological literacy but there is no significant difference in media literacy, where the technological literacy level of male students is higher than the female group.

Keywords: students, ability; physical education; media literacy; technological literacy

INTRODUCTION

The era of the industrial revolution 4.0 brought changes and affected various aspects of life. The development of media and technology in the midst of social life is increasingly rapid, resulting in increasingly difficult control over

them. Society finds it difficult to keep up with the rapid development of media and technology, so negative effects are difficult to avoid. Therefore, society needs alternatives in order to balance and avoid the negative effects of media and technology development. Media and technology literacy is the right concept in overcoming the rapid development of media and technology. Media literacy and technology play a role in preparing the community side by side and the impact of media and technology developments (Rijal & Lubis, 2015, p.2).

Educational media is a tool used in the context of the teaching and learning process to obtain the desired learning objectives. This is then formulated in the concept of learning media used in educational institutions. Likewise, the information media is a tool to provide complete information with the aim of the recipient of the information understanding the meaning of the information received without any difference in meaning. Educational media acts as a tool used in the context of the teaching and learning process in order to achieve the desired learning objectives. Then applied to the concept of learning media in educational institutions. Likewise, information media is a tool to provide complete information with the aim that readers or recipients of information understand the meaning of the information received without any other meaning or difference in meaning (Ainiyah, 2017, p.67)

The development of media and technology, followed by media functions. The function of the media is to provide information, educate, influence (persuasion), and entertain (Lestari & Dwijayanti, 2020, p.48). In addition, the development of television and the internet has brought anxiety, namely from the content of themedia, it is believed that there are still many broadcast programs that are not educational. Interactive media that is getting cheaper and more widespread also gives its own anxiety. Pornography sites, online games, social media have taken time and attention in learning. Therefore, media literacy is needed as self control (Pambudi & Novianti, 2019, p.187). The media itself has an important meaning in the world of formal education in school. Teachers as

educators no longer doubt the ability of a learning media. Mainly instilling attitudes and expecting changes in behavior as expected, which is in accordance with learning objectives (Ainiyah, 2017, p.67).

The development of technology and media not only has a positive impact but also has many negative impacts in the educational environment. Media literacy is the ability of the audience to the media and mass media messages in the context of mass communication. The media literacy movement is known as "media literacy" which is designed to increase individual control over the media used (Lestari & Dwijayanti, 2020, p.50). Understanding media literacy or media literacy is simply how the audience is able to select or filter the content of messages that come from a media. Audiences are able to distinguish what is considered important or good, and which is considered not good. The audience is expected to be intelligent, active and critical in sorting out information, so that they are not easy to believe in messages from a media. For this reason, education in the context of media literacy is needed. There are three categories where the audience is vulnerable to the bad influence of the media, namely children, adolescents and mothers. Media literacy is a necessity in this century, so thatoutputs make agents more polite, ethical and moral (Novianti & Fatonah, 2018, p.3). Technological literacy is involvement from start to finish and knowledge in finding solutions or solutions to a problem and increasing the ability to use, organize, understand, and evaluate innovations. Technology is one of the supporters of the learning process in the industrial revolution 4.0 era, the development of technology and other infrastructure, improving the quality of learning through the use of technology in digital learning where everything is automated and digitalized (Fatmawati & Safitri, 2020, p.216).

The COVID-19 pandemic has had a significant impact on various aspects of life, including the world of education, especially in the learning process at Tanjungpura University, Pontianak. This of course has an impact on the learning process in the Physical Education Study Program, Faculty of Teacher Training

and Education. The impact that is felt is the change in the learning process, from the face-to-face process to online learning, this causes difficulties for both lecturers and students because most lecture activities in the Physical Education Study Program involve physical activity directly. Various studies have been carried out related to learning during the Covid-19 pandemic, the results of which concluded that improvements were needed to the online learning process (Dinata, 2021, p106). Online learning during the COVID-19 pandemic makes it easier and helps teachers in carrying out learning that is facilitated by access to information technology (Bafadal & Triansyah, 2021, p.175).

Distance learning (PPJ) is an indirect learning system in a room and there is no direct face-to-face interaction between teachers and students (Zam, 2021, p.9). In the implementation of PPJ during the Covid-19 pandemic, it provides challenges not only on the limitations of technology support facilities and internet networks. Other obstacles to distance learning during the Covid-19 pandemic include the readiness of human resources, unclear government directives and the absence of an appropriate PPJ curriculum. The readiness of human resources is an important part in the successful implementation of distance learning, this readiness is related to the ability of teachers and students to use and process all technological systems used in the distance learning process. The ability to use and process technology, information and communication systems is often called technology, information and communication literacy (Zam, 2021, p.10).

In relation to standardization, the International Technology Education Association (ITEA) released technology literacy standards covering various competencies and abilities of learners from 2 to 12 years of age. This standard relates to ICT (Technology, Information and Communication) which must be demonstrated by learners in the use of information and communication technology (ICT) to support the learning process. On the other hand, the International Society for Technology in Education (ISTE) also released 7 aspects related to technology mastery standards that must be mastered by learners in dealing with the digital

world. The competency standards and capabilities of ICT and ITEA and ISTE are related to the use of technology in supporting the learning process. If it is related to the context of implementing distance learning during the Covid 19 pandemic, the ICT literacy standards developed by ITEA and ISTE can be a reference for teachers and students in utilizing technology for the smooth implementation of PPJ (Latip, 2020, p.108-109).

The online learning process or commonly referred to as distance learning (PPJ) requires students to study independently. In order to be able to carry out independent learning, facilities that are able to support learning success can be realized through the use of ICT. This is because one of the determining factors in successful learning is the ability to find the information needed at the digital/internet level (Dinata, 2021, p.106).

Technological literacy is expected to be able to implement technology in the field of education in order to provide an understanding of technology itself. Technological literacy is related to campus efforts in developing reforms in the field of education. The following campus activities can be used as an effort to build and develop technological literacy skills, including through the selection of new ICT-based students, managing an online library with the campus academic system and processing of electronic journals and blended learning or technology-based learning (Helaludin, 2019, p.52).

In addition, literacy in the field of ICT also needs to be mastered by teachers, this is because ICT has penetrated into the field of education. The importance of ICT literacy has a positive effect on the learning process in schools (Sulistiyarini & Sabirin, 2018). This is because ICT literacy plays an important role in the learning process where many ICT products are used for educational activities(Correos, Hamidi, Efl, Catanaoan, & Tian Chow CCorreos, 2014, p.2). Meanwhile, media literacy is needed by teachers as a means to disseminate, produce, and demonstrate information (Meehan et., 2015, p.85.)

Seeing the importance of the role of media literacy and ICT for a teacher, universities in the field of teaching and education, especially physical education programs. Physical education it self is an important part of the Indonesian education system, through which physical education can realize educational goals through physical or physical activity. So that it is not only developing physical aspects but also developing cognitive aspects which include critical thinking and reasoning abilities as well as affective aspects which include social skills, self-character such as caring and cooperation (Triansyah, Moh Kusuma Atmaja, Abdurrochim, & Bafadal, 2020, p.146). So it is necessary to equip physical education students with adequate media literacy and technology to support the teaching and learning process on campus.

Students who have good media and technology literacy skills can facilitate and facilitate lecture activities such as doing assignments and research and other daily life activities (Zhang, Li, & Zhang, 2019, p.89). Then for teacher education students, media and technology literacy will have an impact on students so that they can become effective educators and are sensitive to media and technology developments in carrying out learning and teaching activities (Ahmad et al., 2016, p.153).

This also applies to physical education students as prospective teachers, with good media and technology literacy will help these students gain knowledge and form habits in using technology in completing college assignments or daily tasks that will later be useful as educators. In addition, in higher education learning is certainly supported by the use of good teaching media and technology, but despite the fact that in the field, facilities such as reading rooms are still minimal so that reading resources that can be used as learning media are limited, besides that the use of equipment in the computer lab has not been carried out. maximally. Students as prospective teachers must have good media and technology literacy skills. With good media and technology literacy skills, it will not only have a positive impact in shaping technological knowledge and skills that

will be useful when teacher education students become educators and reduce the negative impact of technology.

Research on media literacy and technology has been carried out by Sulistiyarini & Sabirin (2018) with the title "21st Century Literacy Skill of Information Technology and Computer Education Students". In this study, Dewi Sulistiyarini and Febrianto Sabirin conducted a study with the aim of knowing students' perceptions of media and technology literacy in the Information and Computer Technology Education Program (ICT Education) and comparing them to media and technology literacy based on the level and gender of students where the respondents were Education Informatics students. Technology and Computers with a total sample of 236 people from a total population of 696 people. The results showed that there were significant differences in media and technology literacy based on gender, while based on student level there were significant differences in media literacy but no differences in technological literacy.

Seeing the importance of media and technology literacy to make the world of education an authoritative and honorable scientific forum apart from various interests that try to make the world of education as an imaging tool and the power of a handful of elites. Given the importance of media and technology literacy as one of the determinants of student learning success, media and technology literacy skills need to be improved in order to prepare themselves to face the challenges of the industrial revolution era 4.0. This is important related to the continuous flood of technological developments, information and communication, making it difficult to balance and control them. Media literacy and technology are a necessity in this century, so that the output of education becomes more polite, ethical and moral agents. Based on the problems that have been described, the purpose of this research is to determine the ability of media literacy and technology of students of the Physical Education Study Program, Faculty of Teacher Training and Education, Tanjungpura University and to determine whether gender and student level factors affect media and technology literacy.

METOD

The research method used is a survey method with the form of research used is descriptive-comparative research. This research was conducted on physical education students at Tanjungpura University in the city of Pontianak. The research population was 132 students with a research sample of 100 students. The sample selection in this study used a probability sampling technique , namely total sampling.

In order to obtain good research results, procedures are needed in accordance with the principles of quantitative research, particularly survey research. The procedures carried out in this study are: (1) formulating problems raised from supporting phenomena in research related to media literacy and technology; (2) formulating hypotheses; (3) create a valid data collection tool; (4) classifying data that has characteristics that are of concern to research; (5) collect data related to the variables studied; (6) perform data analysis using descriptive statistical analysis and inferential statistical analysis in the form of independent t-test and one-way ANOVA; and (7) interpreting the data results is done by taking into account the results of the data analysis used to answer the problem formulation.

Techniques and data collection tools used in this study through indirect communication with a technique in the form of a questionnaire. The research questionnaire used to collect data is a closed questionnaire with five alternative answers based on a Liket scale related to media literacy and technology skills of Physical Education students at Tanjungpura University. The media literacy questionnaire uses indicators developed based on the Individual Competences Frameworkby Ayu Rahmawati (2020) which has been adapted for this research with indicators consisting of Use (Technical Skill), Critical Understanding, and Communicative Abilities. Meanwhile, questionnaire technology literacy uses indicators as a result of the modification of the Educational Testing Service by Maulana Noor Fajri AL Hajar (2020) which consists of (1) Determining and

accessing information; (2) Evaluating information; (3) Managing and integrating information, (4) Creating information; (5) Communicating information. Before being used in research, the questionnaire was first tested for validity and reliability. Validity tests were carried out on content, construction, and prediction. The content and predictive validity were carried out using product-moments. Based on the validity test that has been carried out, there are 20 media literacy statement items and 20 technology literacy. The reliability test uses Cronchbach Alpha.

RESULT AND DISCUSSION

Media Literacy Level of Physical Education Study Program Students at Tanjungpura University

Based on the results of questionnaire data analysis, a description of media literacy can be seen in tables and visual models in Figure 1.

Table 1. Media Litercy Description of Physical Education Students

Variastion	Mean	Median	Mode	Std. Dev	Min	Max	Sum
Media Literacy	85,16	84,5	100	11,04145	54	100	8516

Based on table 1, it is known that the descriptive analysis of media literacy has 100 students with an average value of media literacy levels for Physical Education Students at Tanjungpura University based on individual competences framework, namely the media literacy questionnaire has the highest score of 100 and the lowest was 54, the average was 85.16, with a range of values between 54-100. Calculation at the mean of 84.5. while the calculation of the standard deviation is 11.04145 and the variance is 121.9135.

After knowing the descriptive statistics of media literacy above, it can be seen that the level of media literacy is between low, medium, and high by using interval calculations according to (Rahmawati, 2018, p.70) as follows:

Interval = $\dfrac{Xt - Xr}{3}$ + 1

Interval = (100 -54) / 3 + 1
Interval = 16
The percentage of overall answers is as shown in table 2 below:

Table 2 Frequency Distribution of Media Literacy Level of Physical Education Students

Interval	category	Total	Percentage
54 - 70	Low	7	7%
71 - 87	medium	49	49%
88 -104	High	44	44%
Total		100	

Based on table 2 it can be concluded that Tanjungpura University Physical Education Students batch 2019, 2020, and 2021 are at the moderate level or in the sufficient category with between 71-87 achieved by 49 respondents with 49%. Meanwhile, 44 people out of 100 respondents have a high level of media literacy, or around 44% with a score between 88-104. Then for the low literacy level, only 7 people out of 100 respondents or 7% have a score of 54-70. To find out the differences in media literacy based on gender and student level factors, then testing was carried out using an independent t-test to measure differences based on sex. and analysis of variance to measure differences by student level. The test results can be seen in table 3 below.

Table 3. Differences in Media Literacy of Physical Education Students

Factor	Sig.	Conclusion
Gender	0,165	Ho1 Acceped
Student-level	0,095	Ho2 Acceped

Based on table 3 above, it is known that difference in media literacy based on gender have a significance value of 0.165 or less than a significance level of 0.05 ($0.165 > 0.05$) so that the null hypothesis (Ho1) is accepted which means there is no significant difference in media literacy between man and woman. Meanwhile, differences based on media literacy at the student level are known to have a significance value of 0.095 or greater than a significance level of 0.05 ($0.095 > 0.05$) so that the null hypothesis (Ho2) is accepted which means there is no significant difference in media literacy based on student level.

Technology Literacy Level of Physical Education Study program Students at Tanjungpura University
Based on the questionnaire data analysis, an overview of technological literacy can be seen in table 4 and figure 2 below.

Table 4. Technological Literacy Description of Physical Education Students

variation	Mean	Median	Mode	Std. Dev	Min	Max	Sum
Technology Literacy	82,09	81,5	100	12,338	53	100	8209

Based on table 4, it is known that there are 100 students in the descriptive analysis of technological literacy with an average value of the technological literacy level of Physical Education Students at Tanjungpura University, which is 82.09, with a range of values between 53-100. The media literacy questionnaire has the highest score of 100 and the lowest score of 54, the calculation at the mean is 81.5, while the standard deviation calculation is 12,338 and the variance is 152,224. After knowing the descriptive statistics of technological literacy above, it can be seen that the level of technological literacy is between low, medium, and high by using the calculation according to (Rahmawati, 2018, p.70) as follows:

$$\text{Interval} = \frac{Xt - Xr}{3} + 1$$

Interval = (100- 53) / 3 + 1
Interval = 17

The overall percentage of respondents' answers can be seen in table 5 as follows:

Table 5. Frequency Distribution of Technology Literacy Level of Physical Education Students

Interval	Category	Total	Percentage
53-70	Basic	19	19%
71-88	Medium	51	51%
89-106	Advanced	30	31%
Total		100	

Based on table 5, it can be concluded that the technological literacy of Tanjungpura University Physical Education Students batch 2019, 2020, and 2021 is at a moderate level with between 71-88 achieved by 51 respondents with 51%. Meanwhile, 30 people out of 100 respondents have a high level of Technology Literacy, or around 30% with a score between 89-106. Then for low Technology Literacy level, only 19 people out of 100 respondents or 19% with a value of 53-

70. To find out differences in technology literacy based on gender and student level factors, then a test is carried out using an independent t-test to measure differences based on sex. and analysis of variance to measure differences by student level. The test results can be see in table 6 below.

Table 6. Differences in Media Technology of Physical Education Students

Factor	Sig.	Conclusion
Gender	0,011	Ha1 Acceped
Student-level	0,302	Ho2 Acceped

Based on table 6 above, it is known that the difference in technological literacy based on gender has a significance value of 0.01 or less than a significance level of 0.05 (0.01 < 0.05) so that the alternative hypothesis (Ha1) is accepted which means there is a significant difference. technological literacy between male and female groups. Meanwhile, differences based on technological literacy at the student level are known to have a significance value of 0.302 or greater than a significance level of 0.05 (0.302 > 0.05) so that the null hypothesis (Ho2) is accepted which means there is no significant difference in technological literacy based on student level. . Because there are differences based on gender, further testing is carried out to see how big the differences are between each group, while for groups based on student levels there will be no further testing because there are no differences at each level.

Table 7. Average in technological literacy of Physical Education Students

Group	sample	Mean	Mean Difference
Male	75	83,89	7,21
Female	25	76,68	

Based on table 7 above, technological literacy in the male group is 83.89 and technological literacy in the female group is 76.68 so there is a difference of 7.21 between groups. men and women, or the average technological literacy of the male group is 7.21 higher than the average technological literacy of the female group.

Discussion

The Media Literacy Level of Physical Education Study Program Students at Tanjungpura University

Based on the results of the descriptive analysis above, the results of the media literacy research for Physical Education Students at Tanjungpura University based on the results of the individual competences framework are at a moderate level, with a percentage of 49%. As for the individual competences of moderate level, the average technical skills is 38.97 or 57% and critical understanding has an average of 29.65 or 63%. While on social competences or communicative abilities with an average acquisition of 16.54 or around 74%. From the predetermined sample, Physical Education Students at Tanjungpura University have a good level of media literacy, which is at a moderate level with an acquisition of 65%. Referring to the individual competences framework, it means that if the media literacy level is at a moderate level, someone is able to know how to obtain and evaluate the information obtained. In addition, at this level, a person is also considered to be active in using the media and participating socially in using the media.

Furthermore, after the inferential test was carried out using an independent t-test to measure differences based on gender and analysis of variance to measure differences based on student levels, the results of the analysis of the significance level based on gender and student force showed that Ho was accepted, this indicates that the level of media literacy there is no influence either by gender or generation. So that there is no difference in the effect of gender and class on the level of media literacy ability of Physical Education Students at Tanjungpura University.

The Technological Literacy Level of Physical Education Study Program Students at Tanjungpura University

Based on the results of the descriptive analysis above, the results of the technological literacy research for Physical Education Students at Tanjungpura University are at a moderate level, with a percentage of 49%. The results of the analysis show that there are 19 students who have low literacy levels; 51 students have media literacy level in the medium category; 30 students who have a high

level of literacy category. This shows that most students have media literacy skills in the fairly good/medium category.

Furthermore, after an inferential test was carried out using an independent t-*test* to measure differences in technological literacy abilities based on gender and analysis of variance to measure differences based on student levels, the results of the analysis of the significance level based on gender were that Ha1 was accepted, this indicates that there is an influence of gender. by gender. While the results of the analysis of the level of the student force show that Ho2 is accepted, this indicates that the student force has no effect on students' technological literacy. So that there is a difference in the influence between gender and student force on the level of media literacy ability of Physical Education Students at Tanjungpura University. Where technological literacy in the male group is 83.89 and technological literacy in the female group is 76.68 so that there is a difference of 7.21 between the male and female groups, or the average technological literacy of the male group is higher 7 ,21 of the average technology literacy group of women.

CONCLUSION

Based on the results of the study and the results of data analysis from this study, it can be concluded that the average level of media and technology literacy of Physical Education students at Tanjungpura University is quite good. Based on gender, it is known that there are differences in technological literacy between male students and female students, where male students have a better literacy level than female students. Meanwhile, based on the level of students, there is no difference in technological literacy based on the three levels of students consisting of students in 2019, 2020, and 2021. Meanwhile, there is no difference in media literacy based on gender and student level, so this shows that gender and student level have no effect on literacy skills. Physical Education student media Tanjungpura university. With the rapid development of media and information technology as well as computers, improving media and technology literacy skills

need to be a concern to improve student competencies related to student readiness to become teacher candidates. Efforts that can be made to improve media and technology literacy are by integrating teaching and learning activities with technology tools, group learning and projects that prioritize the use of media and technology. With good media and technology literacy skills, students not only understand and use media and technology, but are able to analyze, evaluate, and even create or create a media or technology.

REFERENCES

Ahmad, M., Badusah, J., Mansor, A. Z., Karim, A. A., Khalid, F., Daud, M. Y., … Zulkefle, D. F. (2016). The application of 21st century ict literacy model among teacher trainees. *Turkish Online Journal of Educational Technology*, *15*(3).

Ainiyah, N. (2017). Membangun Penguatan Budaya Literasi Media dan Informasi dalam Dunia Pendidikan. *Jurnal Pendidikan Islam Indonesia*, *2*(1). https://doi.org/10.35316/jpii.v2i1.63

Bafadal, M. F., & Triansyah, A. T. (2021). Persepsi Guru Pendidikan Jasmani Olahraga dan Kesehatan Terhadap Pembelajaran Via Daring di Sekolah Menengah Atas Negeri (Sma) Di Kota Pontianak. *SNHRP*, 169–176.

Correos, C., Hamidi, H., Efl, in T., Catanaoan, H., & Tian Chow CCorreos, C. (2014). Teachers' ICT Literacy and Utilization in English Language Teaching, 'ICT & Innovations in Education. *International Journal International Electronic Journal "ICT & Innovations in Education" International Journal International Electronic Journal | ISSN 2321-7189 | www.ictejournal.com*, *2*(1).

Dinata, K. B. (2021). Analisis Kemampuan Literasi Digital Mahasiswa. *Edukasi: Jurnal Pendidikan*, *19*(1). https://doi.org/10.31571/edukasi.v19i1.2499

Fatmawati, E., & Safitri, E. (2020). Kemampuan Literasi Informasi Dan Teknologi Mahasiswa Calon Guru Menghadapi Pembelajaran Di Era Revolusi Industri. *Edukasi: Jurnal Pendidikan*, *18*(2). https://doi.org/10.31571/edukasi.v18i2.1863

Helaludin. (2019). Peningkatan Kemampuan Literasi Teknologi dalam Upaya Mengembangkan Inovasi Pendidikan di Perguruan Tinggi. *Pendais*, *I*(skor 403).

Latip, A. (2020). Peran Literasi Teknologi Informasi Dan Komunikasi Pada Pembelajaran Jarak Jauh Di Masa Pandemi Covid-19. *EduTeach : Jurnal Edukasi dan Teknologi Pembelajaran*, *1*(2).

https://doi.org/10.37859/eduteach.v1i2.1956

Lestari, C. A., & Dwijayanti, R. I. (2020). Kecakapan Literasi Media di Kalangan Generasi Milenial. *Jurnal Ilmu Komunikasi*, *18*(1). https://doi.org/10.31315/jik.v18i1.2781

Meehan, J., Ray, B., Walker, A., Wells, S., & Schwarz, G. (2015). Media Literacy in Teacher Education: A Good Fit across the Curriculum. *Journal of Media Literacy Education*, *7*(2).

Novianti, D., & Fatonah, S. (2018). Literasi Media Digital di Lingkungan Ibu-Ibu Rumah Tangga di Yogyakarta. *Jurnal Ilmu Komunikasi*, *16*(1). https://doi.org/10.31315/jik.v16i1.2678

Pambudi, S. T., & Novianti, D. (2019). Model Literasi Media di Lingkungan Rumah Panti Asuhan. *Jurnal Ilmu Komunikasi*, *16*(2). https://doi.org/10.31315/jik.v16i2.2694

Rahmawati, A. (2018). *Kemampuan Literasi Informasi Dan Teknologi Mahasiswa Calon Guru Menghadapi Pembelajaran Di Era Revolusi Industri*. Fakultas Ilmu dakwah dan Ilmu Komunikasi Universitas Islam Negeri Syarif

Rijal, M. N., & Lubis, E. E. (2015). Tingkat Kemampuan Literasi Media Baru Mahasiswa Universitas Riau. *Jom FISIP*, *2*(1).

Sulistiyarini, D., & Sabirin, F. (2018). Analisis Perancangan Sistem Informasi Administrasi Program Studi Pendidikan Teknologi Informasi dan Komunikasi. *Jurnal Penelitian dan Pengembangan Sains dan Humaniora*, *2*(1). https://doi.org/10.23887/jppsh.v2i1.14006

Triansyah, A., Moh Kusuma Atmaja, N., Abdurrochim, M., & Bafadal, F. (2020). Peningkatan karakter kepedulian dan kerjasama dalam pembelajaran mata kuliah atletik. *Jurnal Pendidikan Jasmani Indonesia*, *16*(2).

Zam, E. M. (2021). Implementasi Literasi Media Dalam Proses Pembelajaran Pendidikan Agama Islam Dan Budi Pekerti. *EDUTECH : Jurnal Inovasi Pendidikan Berbantuan Teknologi*, *1*(1). https://doi.org/10.51878/edutech.v1i1.176

Zhang, X., Li, S., & Zhang, H. (2019). Media and Information Literacy of University Students in China : Status Quo , Issues , and Improvement. *Improvement. American Journal of Information Science and Technology*, *2*(4).