

## The Impact of Digital Skills Training on Increasing the Competitiveness of Educators

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### ABSTRACT

**Background.** Digital skills training to increase the competitiveness of teaching staff is related to the development of digital pedagogical skills that are relevant to 21st century learning. Digital skills training can be provided to educational staff, such as teachers and lecturers, through vocational education programs and digital skills courses.

**Purpose.** This research was conducted with the aim of finding out how much impact digital skills training has on increasing the competitiveness of teaching staff to find out and analyze how digital skills training affects the competence and competitiveness of teaching staff in the digital era. This research aims to support the development of relevant and effective digital skills training programs to improve the competence of teaching staff, so that they can help create a workforce that is ready to face the challenges of the digital economy.

**Method.** The method used in this research is a quantitative method. This method is a way of collecting numerical data that can be tested. Data was collected through distributing questionnaires addressed to students. Furthermore, the data that has been collected from the results of distributing the questionnaire will be accessible in Excel format which can then be processed using SPSS.

**Results.** From the research results, it can be seen that Digital skills training is one way to increase the competitiveness of teaching staff. To increase the competitiveness of teaching staff, it shows that this training can influence the competency and competitiveness of teaching staff in the digital era. Digital skills training can help educators develop relevant digital pedagogical skills, which will help them adapt to increasingly sophisticated learning needs and integrate digital technologies in teaching.

**Conclusion.** Digital skills training can help educators develop digital pedagogical skills that are relevant to twenty-first century learning. This will help them adapt to increasingly sophisticated learning needs and integrate digital technology in teaching.

### KEYWORDS

Digital, Educator, Training

### INTRODUCTION

Activities carried out to help a person or group of people acquire the skills necessary to achieve certain goals are called skills training (Bartlett et al., 2019). Skills training can be provided both traditionally and digitally (Jain et al., 2020). Skills training can be provided to workers, teachers, students, or other people who want to

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acquire the skills needed to achieve certain goals. Skills training can help someone develop skills that are relevant to their needs, so they can perform tasks more efficiently and effectively (Bernacki et al., 2020). Digital literacy is an urgent need that must be met immediately, and after that, education will follow. To increase Indonesia's digital competitiveness with other countries, digital literacy training is a necessity.

Digital skills training is a type of training that helps a person or group of people acquire the skills needed in the digital era (Seifert et al., 2021). This training can take the form of practical exercises, seminars, courses or workshops. This training can be done traditionally or digitally (Aditi et al., 2023). Digital skills training can be provided to workers, teachers, pupils, students or other people who want to acquire the skills needed in the digital era (Hanelt et al., 2021). Digital skills training can cover various topics, such as the use of computers, applications and digital platforms to support educational activities, human resource development and village development.

Digital skills training can also help adapt to growing learning needs and integrate digital technology in teaching (Norhasyimah Hamzah et al., 2024). Facing the challenges of globalization and taking advantage of existing opportunities, increasing the competitiveness of teaching staff is a way to strengthen the economic stability of educational institutions (Al-Haddad et al., 2024). In a competitive world, educational institutions must be flexible, innovative and creative. They must also have a competitive advantage to continuously improve performance and maintain a profitable position. The strategy of increasing competitiveness through Islamic education-based learning programs can give educational institutions a competitive advantage, increasing community loyalty as customers.

Increasing the competitiveness of teaching staff in the digital era can be achieved through education digitalization programs, such as encouraging digital learning and building collaboration through various tools and facilities, improving infrastructure, increasing productivity, and increasing export performance (Y. Li et al., 2024). The process of acquiring and developing one's knowledge, abilities, and character is known as education (Cojorn & Sonsupap, 2024). Education can be provided formally through institutions such as schools and universities, or informally through various daily activities. Examples of informal activities include moral education, Islamic education, higher education, digital skills education, and so on.

Education aims to produce people who think critically, are insightful, and have the courage to do good things for themselves and society (Cheshire et al., 2023). Digital skills training can increase the competitiveness of educators in several ways (Zhang et al., 2024). For example, digital skills training can help educators gain digital literacy, which is an important skill to face challenges in an increasingly connected and technology-based world (Evelyn et al., 2024). Digital skills training can also help educators gain the ability to understand, evaluate, and use technology effectively (Smažinka et al., 2024). Digital skills training can also help teachers learn to use various media such as simulations, videos and game-based platforms.

These media can enhance learning, encourage teamwork and personal contact between students and teachers, and prioritize the well-being and healthy development of children and young people (Feng et al., 2024). Increasing the competitiveness of teaching staff can be achieved through various efforts, including increasing students' knowledge and skills, improving infrastructure, increasing productivity, and improving export performance (Junious, 2024). In the modern era, increasing the competitiveness of teaching staff can also be achieved through education digitalization programs, such as the development of internet-based learning, which allows professionals to improve their qualifications without leaving their jobs.

This research uses quantitative methods. This method is used to obtain clear and precise final results from processed data about how digital skills training improves the competitiveness of teaching staff. Researchers get data from respondents' answers. Researchers created a questionnaire consisting of ten questions and then distributed it via Goggle. Once the data is collected, percentages will be calculated and presented in a table. Researchers use the SPSS program to process research data, which is intended to make the data processing process easier and the results more relevant.

From the results of the explanation above, researchers think that the impact of digital skills training on increasing the competitiveness of teaching staff can be one of the factors to help teaching staff develop pedagogical skills. This research also aims to determine the superiority of the impact of digital skills training on the process of increasing the competitiveness of staff so that they are able to adapt to increasingly sophisticated learning needs and integrate digital technology in teaching. In this research, the researcher also used quantitative methods, the data obtained came from the results of the questionnaire that the researcher submitted. Furthermore, the researcher really hopes that the next researchers will research and study more deeply the impact of digital skills training on increasing the competitiveness of teaching staff.

## **RESEARCH METHOD**

### **Research design**

This research uses a quantitative research design, which uses statistical processes to present data in the form of numbers. Researchers created twenty questions to collect information about the research to find out the results. Researchers will ask respondents to answer the questions asked, which will be presented in the form of tables and percentages. The purpose of processing this data with the SPSS application is to compare the results of respondents' answers. After this comparison, researchers can provide solutions for any information they obtain about the impact of digital skills training on increasing the competitiveness of teaching staff.

### **Research procedure**

In this research, researchers investigated the impact of digital skills training on increasing the competitiveness of teaching staff. The aim of the researcher is to investigate this matter so that the researcher can collect, analyze and provide understanding of the data that has been collected. In creating questions, researchers use good language that is easy for teachers and students to understand. This aims to ensure that teachers and students who respond to questions asked by researchers can be answered quickly. That way, it will be easier for researchers to test the data being investigated regarding the impact of digital skills training on increasing the competitiveness of teaching staff.

### **Research subject**

In researching the impact of digital skills training on increasing the competitiveness of teaching staff, The researcher certainly determines the subject for his research. In this research, the subject of this research is aimed at teachers from various educational institutions. Before the questionnaire was distributed by the researcher, the researcher asked the respondents first to be able to spend their time filling out the questionnaire that the researcher would distribute. The questionnaire each contains 10 questions about the impact of digital skills training on increasing the competitiveness of teaching staff.

### **Research Ethics**

After the researcher carried out several stages as previously explained, in conducting research, the researcher also paid close attention to ethics and manners in research. Researchers

believe that ethics needs to be considered whenever and wherever, including in the research being conducted. This aims to gain trust and readiness from the respondents or those who are the objects of this research. Furthermore, in this research, the researcher also explains information related to the research, one of which is information in filling out the questionnaire. This information was explained by the researcher so that the respondents were ready and willing to voluntarily provide responses and answers to the questions asked by the researcher.

### Data Collection and Analysis

Data collected by researchers in researching the impact of digital skills training on increasing the competitiveness of teaching staff, will be processed into the SPSS application. Then the data that has been obtained will be presented by researchers in the form of tables and diagrams. The purpose of presenting it in table and diagram form is to be able to see a comparison of the research results that have been carried out by researchers regarding the impact of digital skills training on increasing the competitiveness of teaching staff. Next, the obtained data results are converted into percentages or averages. Then the data results will be tested again using the T-test.

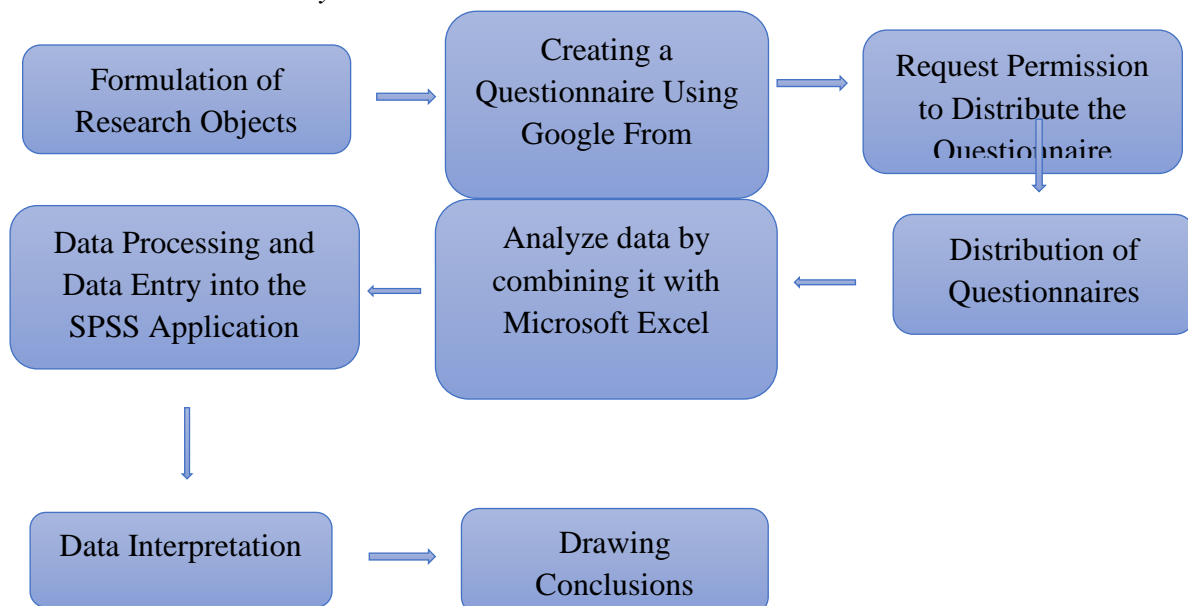
**Table 1**

*Impact Category Digital Skills Training to Increase the Competitiveness of Educators*

No	Earning Category	Level of education	Percentage (%)
1	Strongly agree	Student	>90%
2	Agree	Student	40-80%
3	Disagree	Student	15-35%
4	Don't agree	Student	5-15%

**Figure 1**

*Data Collection and Analysis Flow*



## RESULTS

The impact of digital skills training can refer to the use of digital technology in the educational process. Digital skills training is the ability to understand, study, evaluate, organize and assess information using digital technology. This understanding is needed so that every teacher can

understand various digital technologies and how to use them, as well as knowing the impact of digital technology on increasing the competitiveness of teaching staff in a healthy manner. In digital training, a teacher must have the ability to use technology, understand digital content, assess digital credibility and accuracy, and create, review and communicate content using the right tools.

**Table 2**

*Summary of Percentage Results from Respondents' Answers*

No.	Question	Strongly agree	Agree	Disagree	Don't agree
1	Digital skills training can help educators build more interactive classes	60%	40%	0%	0 %
2	Digital skills training can help teaching staff develop creativity in education	55%	40 %	5 %	0%
3	With digital skills training, it can increase the competitiveness of teaching staff	90%	10%	0%	0 %
4	Digital skills training can provide educators with an understanding of using technology	45%	35%	10%	10%
5	Digital skills training can increase collaboration between teaching staff	20%	72%	6%	2%
6	The impact of digital skills training can help teaching staff manage more structured classes	30%	68%	2%	0%
7	The impact of digital skills training can help educators build more comprehensive skills	50%	50%	0%	0%
8	With digital skills training for teaching staff, learning materials can be made more diverse	55%	39%	3%	3%
9	There is digital skills training for teaching staff, teaching staff are able to face technological challenges in the digital era	70%	30%	0 %	0%
10	Digital skills for teaching staff are really needed in today's technological developments	66%	30%	4%	0%

Table 2 above is a distribution of questionnaires that researchers have conducted regarding the impact of digital skills training on increasing the competitiveness of educators. In this table, there are 10 questions along with their percentage results. Apart from that, in the table there are also four options provided by the researcher, namely strongly agree, agree, disagree and disagree. The questions asked by the researcher contain the topic of this research, then the researcher can compare the research results and draw conclusions about this research. The first question asked by researchers regarding digital skills training can help educators in building more interactive classes, obtained a percentage result of 60% strongly agreeing.

Furthermore, in the second question about digital skills training can help teaching staff develop creativity in education, the results were 55% of the options strongly agree. The third question is that With digital skills training, it can increase the competitiveness of teaching staff, with the highest number of strongly agree options being 90%. For the fourth question about Digital skills

training can provide teaching staff with understanding in using technology, getting results of 45% strongly agreeing. The fifth question was that digital skills training could increase collaboration between teaching staff, as many as 72% agreed. Sixth question about The impact of digital skills training can help teaching staff manage more structured classes, as many as 68% agreed.

The seventh question regarding the impact of digital skills training can help teaching staff build more comprehensive skills, getting balanced percentage results of 50% for the strongly agree and agree options. The eighth question is that With digital skills training for teaching staff, learning materials can be created that are more diverse, with 55% strongly agreeing. The ninth question concerns There is digital skills training for teaching staff, teaching staff are able to face technological challenges in the digital era, as many as 70% strongly agree. And the final question about digital skills for teaching staff is really needed in today's technological developments, also found in the strongly agree option as much as 66%.

**Table 3**

*Summary of Percentage Results from Respondents' Answers*

No.	Question	Strongly agree	Agree	Disagree	Don't agree
1	The impact of digital skills training can provide great benefits for the progress of teaching staff	70%	30%	0%	0%
2	The existence of digital skills can make it easier for teaching staff to evaluate learning	30%	59%	7%	4%
3	There are many online platforms that educators can use to learn digitally nowadays	50%	50%	0%	0%
4	With digital skills, teaching staff are able to create a variety of learning videos	40%	60%	0%	0 %
5	The impact of digital skills training for teaching staff cannot be separated from the challenges in its use	72%	28%	0%	0%
6	With digital skills, teaching staff can also add important information related to education	25%	70%	5%	0%
7	With digital skills, the learning process can also be done online	80%	20%	0%	0%
8	Digital skills are also able to change the way educators view teaching	59%	33%	4%	4%
9	Educators must be able to keep up with digital developments in order to remain relevant with the times	66%	30%	2%	2%
10	The impact of digital training is being able to enable teaching staff to use various digital technologies and tools to support learning	50%	50%	0%	0%

Based on the statement in the table above, it can be seen in the first question section, regarding the impact of digital skills training which can provide great benefits to the progress of teaching staff, getting a percentage gain of 70% strongly agree. Question number two: The presence



of digital skills can make it easier for teaching staff to evaluate learning, getting a percentage of 59% who agree. The third question is that there are many online platforms that can be used by educators to learn digitally nowadays, getting the same percentage gain of 50% for the strongly agree and agree options.

Next, fourth. With digital skills, teaching staff are able to create a variety of learning videos, as many as 60% agree. Fifth question about The impact of digital skills training for teaching staff cannot be separated from the challenges in its use, with 72% of the strongly agree option. For number six that With digital skills, teaching staff can also add important information related to education, getting a percentage result of 70% agreeing. The seventh question asked by researchers was that with digital skills, the learning process can also be done online, getting a percentage gain of 80% strongly agree.

The eighth question regarding digital skills is also able to change the way educators view teaching, as many as 59% strongly agreed. For number nine regarding teaching staff must be able to keep up with digital developments in order to remain relevant with current developments, 66% strongly agreed. And for the final question regarding the impact of digital training, being able to enable teaching staff to use various digital technologies and tools to support learning, obtained the same percentage results of 50% for the strongly agree and agree options.

**Diagram 1**

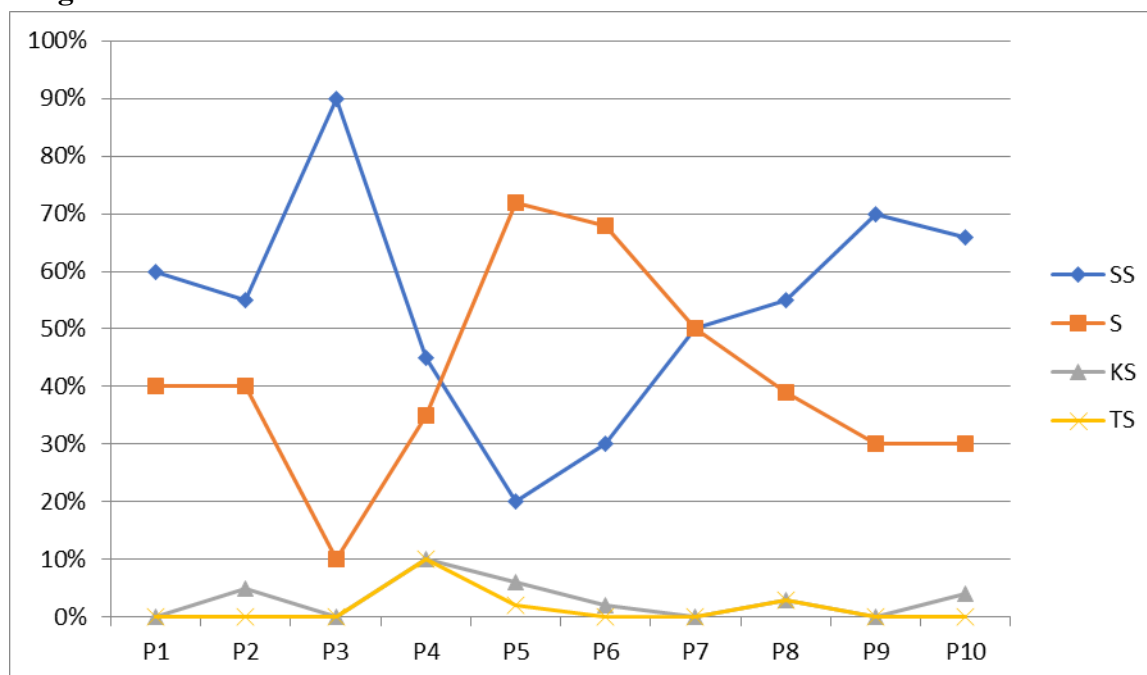
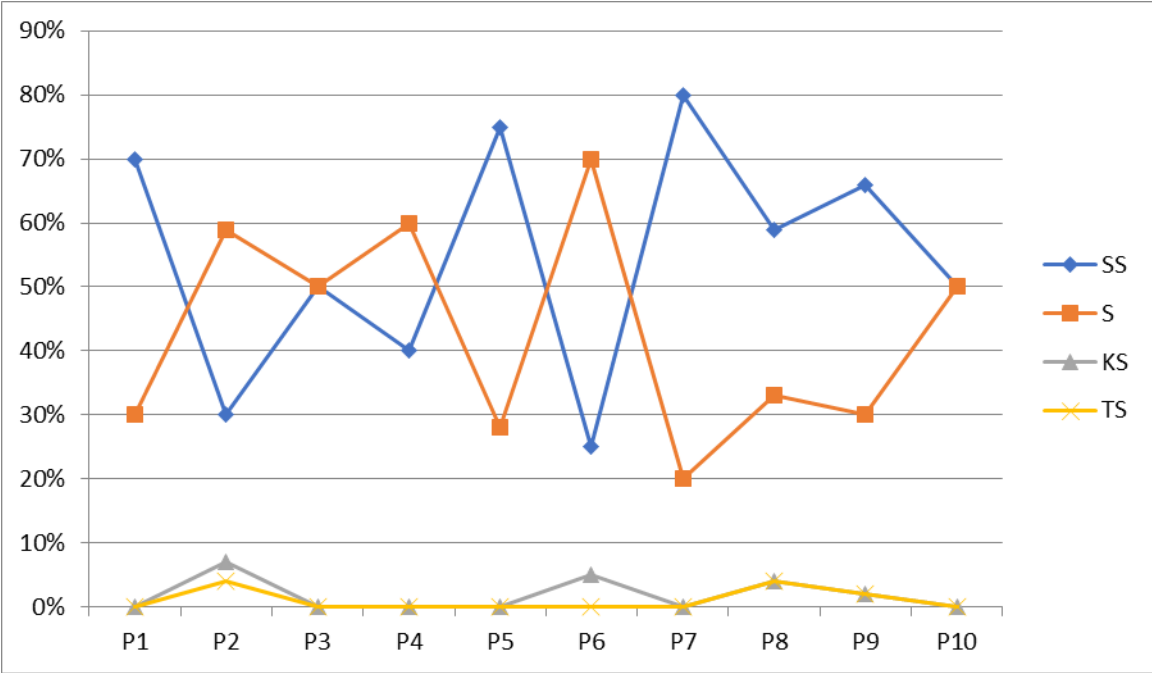


Diagram 2



**Table 3**  
*T-test Regarding the Impact of Digital Skills Training on Increasing the Competitiveness of Educators*

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error
Pair 1	PRE TEST	54.1500	20	18.68372	4.17781
	POST TEST	42.2000	20	17.15441	3.83584

Paired Samples Correlations						
				N	Correlation	Sig.
Pair 1	PRE TEST & POST TEST			20	-.962	,000

Paired Samples Test					
Paired Differences					
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference
					Lower Upper



Pair 1	PRE TEST - POST TEST	11.95000	35.49867	7.93774	-4.66389	28.56389
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Based on the results of table 3 above, it is a T-test using the SPSS application. From the research results, the researcher can conclude that the T-test in the first output section explains the mean as the average. In the Pre Test the average number produced was 54.1500, while in the Post Test section the result was 42,2000. Based on these results, it can be formulated that there are differences in the results of the respondents' answers. Next, in the Paired Samples Correlations section, you get a Correlation of -962, and the sign size is 000. Next, in the Paired Samples Test section, you get a result of 35.49867 in the Std section. Deviation, while in the Std. Error Mean obtained a result of 7.93774. Based on these results, the impact of digital skills training on increasing the competitiveness of teaching staff must really be studied and must be developed by teaching staff. This aims to improve the quality of education.

**Table 4**

*T-test Regarding the Impact of Digital Skills Training on Increasing the Competitiveness of Educators*

**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error
Pair 1	PRE TEST	2,4000	20	2.98064	.66649
	POST TEST	1,2500	20	2.48945	.55666

**Paired Samples Correlations**

		N	Correlation	Sig.
Pair 1	PRE TEST & POST TEST	20	,773	,000

**Paired Samples Test**

		Paired Differences		Std. Error	95% Confidence Interval of the Difference	
		Mean	Std. Deviation		Lower	Upper
Pair 1	PRE TEST - POST TEST	1.15000	1.89945	.42473	.26103	2.03897

Furthermore, in table 4, there are also the results of research using the T-test. It can be seen in the first output section that the Pre Test results were 2.4000, and the Post Test results were 1.2500. In the Paired Samples Correlations section, we obtained a Correlation of 773, with a Sign result of 000. Meanwhile, in the Paired Samples Test section, we obtained a result of 1.89945 in the

Std section. Diviation, and Std. The mean error is 42473. Based on the results of this research, it can be seen that there are differences between each respondent's answers regarding the impact of digital skills training on increasing the competitiveness of teaching staff.

## DISCUSSION

Training is an important part of the human resources division and will bring better performance, especially in the field of education(Mohamad et al., 2023). With training, higher performance results can be achieved. In the digital era, education staff performance management strategies must consider technology, competence, motivation and organizational culture(Akrami et al., 2023). Educators must have sufficient technological skills to exploit digital potential to improve administration and learning(Bursch et al., 2023). Developing additional skills relevant to the digital era is also important so that teaching staff can adapt to changes and new demands that arise.

PowerEducators are important human resources that create competitiveness for schools and educational institutions. Increasing the competitiveness of teaching staff is a process to improve and enhance the quality of teaching staff so that they can support better and superior education(Silva Júnior et al., 2023). Increasing the competitiveness of teaching staff also aims to obtain high competencies that can be used in carrying out their duties as educators and education staff, so that schools can improve the quality of education provided and become superior in providing educational services compared to other schools.(Sharma et al., 2023).

The impact of Digital Skills Training for teaching staff is very important in facing the rapid development of information and communication technology(Fisher et al., 2023). Digital can make education more accessible and effective. In presenting learning materials, educators can use digital technology to provide an interactive and interesting online education platform that allows students to access lessons anytime and anywhere(Lonsdale et al., 2023). The impact of Digital Skills Training for teaching staff, enables teaching staff to understand the importance of digital skills in educational programs(Briola, 2023). Digital literacy includes basic technical skills to use computers and other media effectively, as well as the ability to think critically, assess, and design communication content.

However, in digital skills training for teaching staff there are also several challenges. First, the biggest obstacle in managing the performance of teaching staff is a lack of understanding of digital technology and inadequate skills(Ibitomi & Iyamu, 2021). Many teaching staff do not know how to use digital technology in administration and learning. Another obstacle is that Islamic educational institutions do not have adequate infrastructure, such as unstable internet connections(Das et al., 2023). Bearing in mind that not all teaching staff have access to digital technology in their homes, especially in remote areas. The use of digital technology in learning may worry some teachers, educators may not be happy with the change and choose a traditional approach(Thuot-Dube, 2022).

The government and educational institutions must build adequate digital infrastructure and ensure that all education personnel have equal access to digital technology(Puron-Cid & Villaseñor-García, 2023). This aims to provide digital skills training more evenly to teaching staff. So that teaching staff can understand the use of digital and can improve the competitiveness of teaching staff(T. Li et al., 2023). As leaders of educational institutions, you must socialize well, by providing an understanding or invitation to teaching staff about the advantages and benefits of digital technology, which is useful for helping and supporting students in overcoming challenges and changes in the learning process.(Choi et al., 2023).

## CONCLUSION

In the world of education, one program that must be promoted is digital literacy. With good digital developments, teaching staff are expected to be able to analyze, retrieve and use various types of information simultaneously. In the 5.0 era, information systems based on information and communication technology (ICT) have become very important, with a focus on educational services for parents and students. A good education management system can regulate the use of existing human and administrative resources. This includes the delivery and reception of information to students, teaching and learning activities, and how students complete their education. All of this can be stored and managed digitally with a technology-based management system.

Educators who use digital are defined as educators who are able to use digital technology in their learning process. These educators have the ability to use technology such as computers, smartboards, and educational applications to make learning more interesting and effective. The aim of this for teaching staff in using digital technology is to change conventional learning into digital learning, which makes learning more interactive and easier. Educators also use this technology to gain access and use the resources needed during the learning process.

## REFERENCES

- Aditi, IGA, Husni, L., Haq, LMH, & Sabardi, L. (2023). Reexamination of the Concept of Justice in the Inheritance System: A Study on Women's Inheritance in the Traditional Society of Bali in Lombok, West Nusa Tenggara, Indonesia. *IUS Journal of Law and Justice Studies*, 11(3), 602–622. <https://doi.org/10.29303/ius.v11i3.1322>
- Akrami, L., Malekpour, M., Faramarzi, S., & Abedi, A. (2023). Effect of training program on sexual knowledge and social skills of adolescents with high-functioning autism in puberty. *Advances in Autism*, 9(4), 309–321. <https://doi.org/10.1108/AIA-07-2020-0045>
- Al-Haddad, M., Berger-Estilita, J., & Nielsen, N.D. (2024). The ESICM's digital revolution: Academy Critical Care Education (ACE) courses. *Journal of Anesthesia, Analgesia and Critical Care*, 4(1), 2. <https://doi.org/10.1186/s44158-023-00128-0>
- Bartlett, L., Martin, A., Neil, A.L., Memish, K., Otahal, P., Kilpatrick, M., & Sanderson, K. (2019). A systematic review and meta-analysis of workplace mindfulness training randomized controlled trials. *Journal of Occupational Health Psychology*, 24(1), 108–126. <https://doi.org/10.1037/ocp0000146>
- Bernacki, M.L., Vosicka, L., & Utz, J.C. (2020). Can a brief, digital skills training intervention help undergraduates “learn to learn” and improve their STEM achievement? *Journal of Educational Psychology*, 112(4), 765–781. <https://doi.org/10.1037/edu0000405>
- Briola, L. (2023). Real Presence Amid the Shallows: Eucharist and Friendship in a Digital Age. *Horizons*, 50(2), 293–324. <https://doi.org/10.1017/hor.2023.40>
- Bursch, B., Walshaw, P.D., Mogil, C., Babayan, T., & Lester, P. (2023). Innovation: Behavioral Health Skills Training for Families of Space Travelers. *Space Policy*, 66, 101576. <https://doi.org/10.1016/j.spacepol.2023.101576>
- Chesire, F., Kaseje, M., Ochieng, M., Ngatia, B., Mugisha, M., Ssenyonga, R., Oxman, M., Nsangi, A., Semakula, D., Rose, C.J., Nyirazinyoye, L., Dahlgren, A., Lewin, S., Sewankambo, N.K., Rosenbaum, S., & Oxman, A.D. (2023). Effects of the informed health choices secondary school intervention on the ability of students in Kenya to think critically about health choices: A cluster-randomized trial. *Journal of Evidence-Based Medicine*, 16(3), 275–284. <https://doi.org/10.1111/jebm.12556>
- Choi, H., Chung, C., & Cho, Y. (2023). Changes in planning approach: A comparative study of digital government policies in South Korea and Denmark. *European Planning Studies*, 31(5), 905–924. <https://doi.org/10.1080/09654313.2022.2132787>

- Cojorn, K., & Sonsupap, K. (2024). A collaborative professional development and its impact on teachers' ability to foster higher order thinking. *Journal of Education and Learning (EduLearn)*, 18(2), 561–569. <https://doi.org/10.11591/edulearn.v18i2.21182>
- Das, M., Ostrowski, A.K., Ben-David, S., Roeder, G.J., Kimura, K., D'Ignazio, C., Breazeal, C., & Verma, A. (2023). Auditing design justice: The impact of social movements on design pedagogy at a technology institution. *Design Studies*, 86, 101183. <https://doi.org/10.1016/j.destud.2023.101183>
- Evelyn, Yusnimar, Iwan Fermi, M., Saputra, E., Utami, SP, Komalasari, Rahmi, SW, & Ohi, H. (2024). Cellulose and lignin purified from Metroxylon sago palm fronds by a new technology with 2-methylantraquinone cooking and peroxymonosulfuric acid bleaching. *Journal of Wood Science*, 70(1), 16. <https://doi.org/10.1186/s10086-024-02130-8>
- Feng, L., He, Y., Li, X., Zhou, M., & Wang, C. (2024). Analysis of genes related to xylem cell wall development based on transcriptomics in *Populus alba* 'Berolinensis' tension wood. *Journal of Forestry Research*, 35(1), 68. <https://doi.org/10.1007/s11676-024-01709-7>
- Fisher, HM, Check, DK, Somers, TJ, Kelleher, SA, Majestic, C., Yu, JA, Reed, SD, Li, Y., Olsen, MK, Lerebours, R., Keefe, FJ, Steinhauser, KE, Breitbart, W.S., & Winger, J.G. (2023). Meaning-centered pain coping skills training for patients with metastatic cancer: Protocol for a randomized controlled efficacy trial. *Contemporary Clinical Trials*, 135, 107363. <https://doi.org/10.1016/j.cct.2023.107363>
- Hanelt, A., Bohnsack, R., Marz, D., & Antunes Marante, C. (2021). A Systematic Review of the Literature on Digital Transformation: Insights and Implications for Strategy and Organizational Change. *Journal of Management Studies*, 58(5), 1159–1197. <https://doi.org/10.1111/joms.12639>
- Ibitomi, R.A., & Iyamu, T. (2021). A Model for Selecting Information Technology Solutions in Banking Institutions: A Case of a Developing Country. *International Journal of Sociotechnology and Knowledge Development*, 14(1), 1–18. <https://doi.org/10.4018/IJSKD.289037>
- Jain, S., Ortigo, K., Gimeno, J., Baldor, D.A., Weiss, B.J., & Cloitre, M. (2020). A Randomized Controlled Trial of Brief Skills Training in Affective and Interpersonal Regulation (STAIR) for Veterans in Primary Care. *Journal of Traumatic Stress*, 33(4), 401–409. <https://doi.org/10.1002/jts.22523>
- Junious, D. L. (2024). A guide to overcoming the experience of imposter phenomenon in African American academic nurse educators. *Journal of Professional Nursing*, 51, 35–39. <https://doi.org/10.1016/j.profnurs.2024.02.005>
- Li, T., Zhu, J., Luo, J., Yi, C., & Zhu, B. (2023). Breaking Triopoly to Achieve Sustainable Smart Digital Infrastructure Based on Open-Source Diffusion Using Government–Platform–User Evolutionary Game. *Sustainability*, 15(19), 14412. <https://doi.org/10.3390/su151914412>
- Li, Y., Kang, L., Li, Z., Jiang, F., Bi, N., Du, T., & Abiri, M. (2024). Time-aware outlier detection in health physique monitoring in edge-aided sport education decision-making. *Journal of Cloud Computing*, 13(1), 73. <https://doi.org/10.1186/s13677-024-00636-6>
- Lonsdale, M.D.S., Baxter, M., Yao, Q., Yu, L., & Chapman, S.J. (2023). Testing the effectiveness of a supportive digital information tool for patients recovering from bowel surgery, their surgeons and nurses. *Information Design Journal*, 28(3), 231–274. <https://doi.org/10.1075/idj.23002.lon>
- Mohamad, NI, Rahman, IA, Sanusi, S., Abdullah, S., & Ibrahim, N. (2023). An Empirical Study of the Relationship Between Leadership Practice in Training Programs and Skill Development: Motivational Climate as Mediating. *TEM Journal*, 2112–2122. <https://doi.org/10.18421/TEM124-22>
- Norhasyimah Hamzah, Normah Zakaria, Arihasnida Ariffin, & Siti Nur Kamariah Rubani. (2024). The Effectiveness of Collaborative Learning in Improving Higher Level Thinking Skills and Reflective Skills. *Journal of Advanced Research in Applied Sciences and Engineering Technology*, 42(1), 191–198. <https://doi.org/10.37934/araset.42.1.191198>

- Puron-Cid, G., & Villaseñor-García, E. A. (2023). Applying neural networks analysis to assess digital government evolution. *Government Information Quarterly*, 40(3), 101811. <https://doi.org/10.1016/j.giq.2023.101811>
- Seifert, A., Cotten, S. R., & Xie, B. (2021). A Double Burden of Exclusion? Digital and Social Exclusion of Older Adults in Times of COVID-19. *The Journals of Gerontology: Series B*, 76(3), e99–e103. <https://doi.org/10.1093/geronb/gbaa098>
- Sharma, A., Kathuria, L.M., & Kaur, T. (2023). Analyzing relative export competitiveness of Indian agricultural food products: A study of fresh and processed fruits and vegetables. *Competitiveness Review: An International Business Journal*, 33(6), 1090–1117. <https://doi.org/10.1108/CR-03-2022-0039>
- Silva Júnior, C.R., Siluk, J.C.M., Neuenfeldt Júnior, A., Francescato, M., & Michelin, C. (2023). A competitiveness measurement system of Brazilian start-ups. *International Journal of Productivity and Performance Management*, 72(10), 2919–2948. <https://doi.org/10.1108/IJPPM-02-2022-0098>
- Smažinka, D., Kavan, Š., & Hrinko, M. (2024). Evaluation of the current technologies used for the physical security and safety of selected railway tunnel portals as a case study in the Czech Republic. *Journal of Transportation Security*, 17(1), 6. <https://doi.org/10.1007/s12198-024-00275-7>
- Thuot-Dubé, M. (2022). Les institutions culturelles, l'éducation, le numérique et la cocréation: Entre médiation culturelle et médiation pédagogique. *Digital Studies / Le Champ Numérique*, 12(0). <https://doi.org/10.16995/dscn.8112>
- Zhang, L., Carter, R.A., Bloom, L., Kennett, D.W., Hoekstra, N.J., Goldman, S.R., & Rujimora, J. (2024). Are Pre-Service Educators Prepared to Implement Personalized Learning?: An Alignment Analysis of Educator Preparation Standards. *Journal of Teacher Education*, 75(2), 219–235. <https://doi.org/10.1177/00224871231201367>

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