



**Jurnal Ilmiah Iqra'**

2541-2108 [Online] 1693-5705 [Print]

<http://journal.iain-manado.ac.id/index.php/JII>

## **Facing the Digital Era: CBT-Assisted HOTS Questions Experiment To Improve Digital Literacy Capability**

**Istri Romawanti**

Program Studi Pendidikan Dasar PPs Universitas Negeri Malang, Malang, Indonesia

wantiistri@gmail.com

**Alif Mudiono**

Program Studi Pendidikan Dasar PPs Universitas Negeri Malang, Malang, Indonesia

mudionoalif@gmail.com

**Oktaviani Adhi Suciptaningsih**

Program Studi Pendidikan Dasar PPs Universitas Negeri Malang, Malang, Indonesia

adhioktaviani@gmail.com

### **Abstract**

The challenges of the ever-growing digital world require students to have digital literacy skills. However, students do not yet possess this ability, especially at the elementary school/Madrasah Ibtidaiyah level. Therefore, efforts are needed to improve digital literacy skills at the Elementary School/Madrasah Ibtidaiyah level. This research aims to determine whether giving HOTS questions based on CBT can improve students' digital literacy skills at MI Perwanida, Blitar City. The research type used is quasi-experimental or quasi-experiment with a pretest-posttest control group design. The population in this study were all class IV students at MI Perwanida, Blitar City. Samples were taken using a side random technique. Data collection techniques used questionnaires and tests, then analyzed using the independent t-test. The research results show that the experimental class taught using HOTS questions assisted by CBT had better digital literacy skills than the control class.

Keywords: higher-order thinking Skills; Computer Based Test; Digital Literacy

## Introduction

In the ever-growing digital era, digital literacy skills are one of the skills the younger generation needs. Gilster (1997) states that digital literacy utilizes information in various forms. In this case, digital literacy is not just about operating hardware or accessing the internet. However, it involves a deep understanding of information, critical thinking, and managing and evaluating digital resources.

Digital literacy skills are critical because almost every aspect of life cannot be separated from digital technology, including education. Prensky(2010) states that children are used to technology before they enter elementary school. This aligns with research studies conducted by Lindriany et al. (2022)that the urgency of digital literacy for early childhood accompanied by parents can train children's intelligence, psychology, language skills, cognitive, emotional, social, academic, and critical. Therefore, elementary schools need to integrate digital literacy into the curriculum so that students understand technology from an early age.

Meanwhile, Tony Wagner (2010), in his book entitled "The Global Achievement Gap," emphasizes the importance of developing 21st-century skills, including collaboration, communication, and creativity. Developing 21st-century skills is closely related to higher-order thinking Skills (HOTS). Nurul (2022) defines HOTS as the ability to think complexly, which includes analyzing material, criticizing, and creating solutions to problem-solving. So, Higher Order Thinking requires thinking at a higher level than just memorizing facts or telling someone something exactly as told (Wismayani Pratiwi et al., 2019). This is none other than because Higher Order Thinking Skills require the ability to analyze (C4), evaluate (C5), and create (C5) (Anderson & Krathwohl, 2001b). It was further explained that based on the results of a research study by Utami et al. (2019), giving higher-order thinking Skills (HOTS) questions improved students' critical thinking abilities in class V Indonesian language learning. This finding also proves that students given higher-order thinking Skills (HOTS) have high-level thinking abilities because they are used to analyzing, evaluating, and creating(Anderson & Krathwohl, 2001b).

Referring to the explanation above, apart from digital literacy skills, the urgency of Higher Order Thinking Skills (HOTS) needs to be implemented at the elementary school level. This is in line with the National Research Council (US) stating that higher-order thinking Skills are critical to be given to students, especially at the elementary school level (Razak et al., 2021). This aims to get students used to

sharpening their minds, finding new ideas, solving problems, and creating the best solutions based on their abilities. Using HOTS questions will encourage students to actively seek and construct knowledge so they are accustomed to thinking higher. Thus, digital literacy integrated with higher-order thinking Skills (HOTS) is an essential concept in designing learning that not only pursues mastery of the material but also invites students to think at a higher level.

However, a research study by Schulz and FitzPatrick (2016) found that teachers showed uncertainty about the HOTS concept and were not prepared to teach or assess HOTS. This is accompanied by the minimal use of technology in learning activities, resulting in minimal digital literacy skills. The findings obtained by Tuna (2021) state that digital literacy implemented in elementary schools is still at the extracurricular learning stage. Hence, it still needs to be encouraged again as an effort to improve the quality of teachers and students. Meanwhile, based on data from the Ministry of Communication and Information, Indonesia's digital literacy index 2022 will be at level 3.54 points on a scale of 1-5 or medium level. It was further explained that basic digital literacy skills must be improved primarily to prevent the spread of harmful content and create a productive digital space.

Previous studies recommend higher-order thinking Skills (HOTS) learning activities to improve digital literacy skills. The following are some previous research conducted by Sari et al. (2022) regarding the influence of HOTS questions on the historical literacy abilities of class XI IPS students at SMA Negeri 1 Krian. By learning HOTS questions based on building knowledge, students can think critically and analytically about historical sources to increase their historical literacy skills. It was further explained that using HOTS questions positively and significantly affected the historical literacy abilities of class XI IPS students at SMA Negeri 1 Krian in history subjects.

The success of using HOTS questions to improve literacy skills means that researchers want to use the same stimulus, namely, providing HOTS questions. This aims to find out whether there is an influence on the digital literacy abilities of the group of class IV students who were taught with Higher Order Thinking Skills (HOTS) questions assisted by Computer Based Test (CBT) with the group of students who were studied with Lower Order Thinking Skills (LOTS) questions.

## Theoretical review

### *High Order Thinking Skills (HOTS)*

Hanifah (2022) quoted Resnick as defining higher-order thinking skills as a complex thinking process that breaks down material, makes conclusions, draws representations, analyses, and builds relationships by involving the most basic mental activities. Meanwhile, Anderson and Krathwohl (2001a) defined high-order thinking skills (HOTS) as the extensive use of the mind to face new challenges through critical and creative thinking. Both necessary and innovative thinking are teachable and learnable when establishing HOTS. On the other hand, Marzano revealed eight components in HOTS: comparing, classifying, inducing, deducing, analyzing, constructing, analyzing perspectives, and abstracting. Marzano's eight components of HOTS are closely similar to the term used in Bloom's taxonomy in the cognitive domain: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation (Hanifah et al., 2022).

The development of learning-oriented to higher-order thinking skills (HOTS) is a program developed as an effort of the Indonesian Ministry of Education and Culture through the Directorate General of Teachers and Education Personnel to improve the quality of learning and improve the quality of graduates (Hanifah et al., 2022). Higher-order thinking skills require a more complex thought process in dealing with or solving a problem. Higher-order thinking skills can prepare students to face challenges in academics, work, and adult responsibilities in everyday life (Driana et al., 2021).

### *Digital Literacy*

The concept of media literacy acquired its original definition in no small measure thanks to the work of Dieter Baacke. In his work, Baacke sees media literacy as the foremost skill that individuals must acquire, as it constitutes the basis for gaining a solid understanding of media-based communication and interaction (Reilly, 2011). Over the last three decades, the concept has been developed further, adapted to accommodate new technological and social developments, and refined. Media literacy is constructed upon communicative competence and seeks to empower media users to deal confidently with the opportunities presented to them by media and feel comfortable operating in a media-centric world – Dieter Baacke speaks in this context of media empowerment.

Critical media literacy encompasses a person's ability to understand social processes analytically and use their newly acquired knowledge to self-reflect and apply it to their actions. The ethical sub-dimension of critical media literacy includes back-referencing one's analytical thinking and reflections to one's sense of responsibility towards society and fellow human beings. To question media developments and social processes critically, it is essential to have a sound knowledge of media structures and possess relevant background knowledge. The media knowledge dimension was initially used to refer to knowledge about media. Media knowledge is subdivided into informative and instrumental qualification-based dimensions (Knaus, 2022).

## Method

This research uses a quasi-experimental quantitative approach with a pretest-posttest control design. Quasi-experimental research aims to see the causal relationship between the control and experimental classes (Creswell, 2014). In this case, the power and experimental courses were given a pretest. Furthermore, the experimental class was given treatment through higher-order thinking Skills (HOTS) questions assisted by Computer Based Test (CBT). In contrast, the control class was not given treatment (using conventional methods). In the final stage, both groups were tested by conducting a posttest.

Table 1. Research Design

Group	Pre-test	Treatment	Post-test
Experiment	O <sub>1</sub>	X	O <sub>2</sub>
Control	O <sub>3</sub>	-	O <sub>4</sub>

Source: (Creswell, 2014)

Information

O<sub>1</sub>: Experimental class pretest results

O<sub>3</sub>: Control class pretest results

O<sub>2</sub>: Experimental class posttest results

O<sub>4</sub>: Control class posttest results

X: Learning in the experimental class uses Higher Order Thinking Skills questions

The population is all class IV students for the 2023/2024 academic year at MI Perwanida Blitar, totaling 178 students. The sampling technique uses simple random sampling, namely that sample members are taken randomly without paying attention to the strata in the population (Bloor et al., n.d.). Thus, each population element has the same opportunity to be selected as a sample. The samples used were classes IV Yahya and IV Sulaiman, with 25 students each. In this case, class IV Yahya was the control class, while class IV Sulaiman was the experimental class.

Data collection techniques use tests and questionnaires. Meanwhile, the research instrument uses higher-order thinking skills (HOTS) test questions and questionnaire sheets that have been tested by experts and field test validation. Descriptive statistical testing techniques and analysis prerequisite tests, including normality and homogeneity tests, are used to analyze it. Meanwhile, the t-test is used to test the hypothesis.

## Results

Results of students' digital literacy abilities were obtained through a questionnaire using 3 Instant Digital Competence Assessment (iDCA) indicators, which were developed into 18 question items. Each question has alternative answers SS (Strongly Agree), S (Agree), TS (Disagree), and STS (Strongly Disagree). The range of scores using the Linkert scale is around 1-4, so the highest score is 72 (4 x 18), and the lowest score is 18 (1 x 18).

Next, descriptive analysis is used to describe the data. Statistical techniques were used to describe the pretest and posttest data in the control and experimental classes, consisting of average, midpoint, mode, minimum, and maximum scores. The descriptive analysis of digital literacy skills can be seen in Table 2. Furthermore, it can be seen in the bar diagram to make it easier to compare the average maximum and minimum scores (figures 1 and 2).

Table 2 Description of Digital Literacy Ability Data for Experimental and Control Classes

Information	Pretest		Posttest	
	Experimental group	Control group	Experimental group	Control group
Mean	49.32	51.6800	62.4000	51.8400
Median	48.00	53.0000	63.0000	53.0000

Std. Deviation	5.536	4.39431	4.90748	5.29685
Minimum	40	42.00	46.00	42.00
Maximum	64	59.00	72.00	59.00
The number of students	25	25	25	25

Source: Processed Data

Figure 1. Diagram of the average results eds

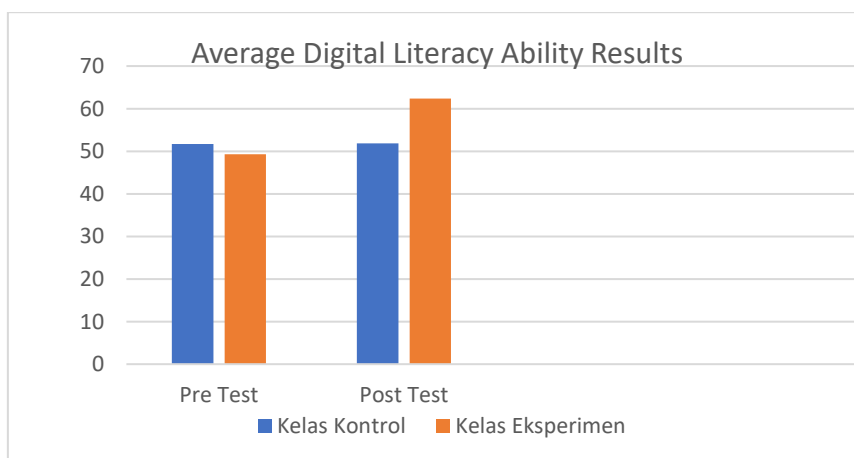
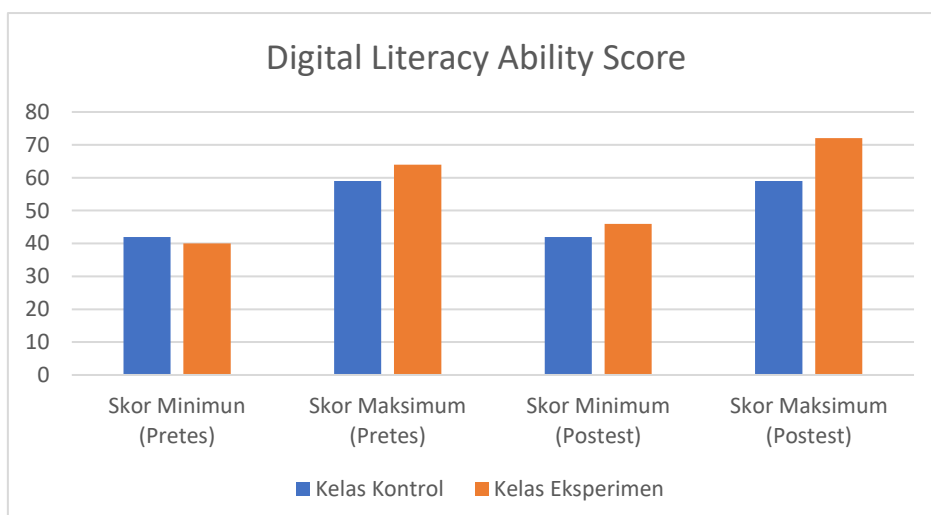


Figure 2. Digital literacy ability score diagram



In Table 2, the average score (mean) for digital literacy skills in the control class during the pretest was 51.68, while in the experimental class, it was 49.32. This shows that the initial digital literacy abilities between the control and experimental courses are relatively similar. However, after treatment in the form of higher-order thinking Skills (HOTS) questions assisted by Computer Based Test (CBT) in the experimental class, there was a significant increase to 62.4. Meanwhile, the average score in the control class was almost the same as the score during the pretest of 51.84. Referring to this score, it can be said that the control class experienced an increase, but it was small, namely 0.16, or it could be said that there was no significant increase compared to the experimental class.

Meanwhile, Figure 2 shows a diagram of the minimum and maximum scores during the pretest and posttest. In the control class, the minimum pretest score was 42, while the maximum score was 59. Meanwhile, in the experimental class, the minimum score was 40, and the maximum score was 64. However, after treatment, there was an increase in higher-order thinking skills (HOTS) questions, which were assisted by Computer Based Test (CBT). The minimum score was 42, while the maximum score was 72. A different thing happened in the control class where the score was the same as during the pretest, namely 42 on the minimum score and 59 on the maximum score. This means that there was no change in scores in the control class.

Next, to find out the distribution of digital literacy ability scores, the data is presented in Table 3 below:

Table 3 Categorization of digital literacy ability scores for Experimental and Control Class students

Category	Pretest		Posttest	
	Frequency		Frequency	
	Experimental class	Control class	Experimental class	Control class
Low	4	3	1	4
Midle	16	17	22	15
High	5	5	2	6
Total of students	25	25	25	25

Source: Processed Data



Table 3 explains the trends in digital literacy abilities of each class, experimental and control, divided into three categories: low, medium, and high. In this case, the maximum score obtained from the digital literacy skills questionnaire results was 72, while the minimum score was 18. Referring to the data above, the experimental class was categorized as low with four students, medium with 16 students, and high with five students during the pretest. This result is not much different from the categorization of the control class, namely low three students, medium 17 students, and high five students. This shows that the initial digital literacy abilities between the experimental and control classes are relatively similar. Different things happened in the post-test results. In the experimental class, the frequency of students in the medium category was 22 or 88%. Meanwhile, in the control class, the post-test results showed that 15 students, or 60%, were in the medium category. Thus, the digital literacy ability variable in the experimental class tends to be higher than the control class's.

The next stage is carrying out prerequisite tests, namely the normality and homogeneity tests in each class. The normality test uses the Kolmogorov-Smirnov test using SPSS 24 for Windows software. The hypothesis proposed to measure data normality is:

Ho: Data comes from a normally distributed population

H1: The data does not come from a normally distributed population.

Meanwhile, the test criteria are if the significance value is  $> 0.05$ , then Ho is accepted, and conversely, if the significance value is  $< 0.05$ , then Ho is rejected. The results of the normality test are presented below in Table 4.

Table 4. Normality Test Results

Variable	Significance of Kolmogrov-Smirnov			Keterangan
	Control class	Experimental class	$\alpha$	
Digital Literacy Skills				
Pre-test	0.064	0.200	0,05	Normal
Post-test	0.079	0.060	0,05	Normal

Source: Processed Data

According to Table 4, the normality test results show that the pre-test and post-test data on students' digital literacy abilities in the control and experimental classes have a significance value more significant than the alpha value (0.05). Thus, Ho is accepted, meaning the data comes from a normally distributed population. So,

the data obtained from the pretest and posttest of digital literacy skills in both classes, both the experimental class and the control class, were usually distributed.

The second prerequisite is a homogeneity test using the Levene Statistics test, which is assisted by the SPSS 24 for Windows program. The results of the homogeneity test for digital literacy abilities are presented in the table below:

Table 5. Results of Homogeneity Test Analysis

Variable	Levene Statistic	df	Sig.	Information
Digital Literacy Skills				
Pretest	1.168	48	0.285	Homogen
posttest	1.712	48	0.197	Homogen

Source: Processed Data

The results of the homogeneity test analysis show that the significance value of Levene's Test results for the digital literacy ability variable in the experimental class and control class has a significance value greater than 0.05. This means that all digital literacy ability research subjects are homogeneous.

The final stage is hypothesis testing using the independent sample T-test. This t-test is used to test the hypothesis about whether there is an influence of Higher Order Thinking Skills (HOTS) questions assisted by Computer Based Test (CBT) on digital literacy abilities. The following table summarizes the results of the independent sample t-test analysis of the post-test results for the experimental and control classes.

Table 6. Hypothesis Test Results with Independent T-test

Class	$t_{hitung}$	df	Sig.	Information
Experimental class and Control class	7.312	48	.000	There is a difference

Source: Processed Data

Based on the SPSS Output Independent Samples Test calculation results above, it can be interpreted that the results of Sig. (2-sided) is 0.000. Because of the Sig value.  $0.000 < \text{absolute level } (\alpha = 0.05)$ , then  $H_0$  is rejected, and  $H_a$  is accepted, which means there is an influence of Higher Order Thinking Skills (HOTS) questions assisted by Computer Based Test (CBT) on digital literacy abilities.

## Discussion

Based on the results of data analysis using the SPSS 24.00 for Windows program, it is known that the independent variable regarding higher-order thinking Skills (HOTS) questions assisted by the Computer Based Test (CBT) affects students' digital literacy abilities at MI Perwanida, Blitar City. In this case, students' digital literacy abilities are measured using a questionnaire instrument. Using the Instant Digital Competence Assessment (iDCA) indicators, the digital literacy questionnaire was created. According to Calvani (2010), Instant Digital Competence Assessment (DCA) is an instrument that has a wide range of various types of knowledge (linguistic and conceptual skills), which can be measured with structured tests. The Instant Digital Competence Assessment assesses digital literacy skills using technological, cognitive, and ethical dimensions.

After the data was collected, it was processed using SPSS 24.00 for Windows, and the result was that the  $t_{count}$  value was 7.312 with sig. 0,000. Because the accompanying significance is smaller than 0.05,  $H_a$  stated that "there is an influence of Higher Order Thinking Skills (HOTS) questions assisted by Computer Based Test (CBT) on digital literacy skills at MI Perwanida Blitar City" was accepted.

Referring to the results of the analysis above, there is a significant difference between classes taught using Higher Order Thinking Skills (HOTS) questions assisted by Computer Based Test (CBT) and classes taught using Lower Order Thinking Skills (LOTS). The class taught using higher-order thinking Skills (HOTS) assisted by the Computer Based Test (CBT) had higher digital literacy skills than the control class; the average score was 62.40 out of a maximum score of 72. This proves that using Higher Order Thinking Skills (HOTS) questions assisted Computer Based Test (CBT) effectively improves students' digital literacy skills.

Digital literacy skills are one of the components that students must prepare and possess, especially in the current era of digitalization. Gilster(1997) states that everyone must equip themselves with skills in using and understanding information obtained from various digital sources. Thus, applying Higher Order Thinking Skills (HOTS) questions based on the Computer Based Test (CBT) is feasible even at the elementary school level.

Based on theoretical studies, higher-order thinking Skills (HOTS) questions applied with the help of Computer Tests (CBT) can improve students' digital literacy skills. The analysis is as follows. First, there is the application of technology. Using the

Computer Based Test (CBT), students have directly interacted with digital technology in answering Higher Order Thinking Skills (HOTS) questions. This helps students understand the use and functionality of technology, which aligns with the concept of digital literacy. In line with this, Doug Belshaw (2012) emphasizes that digital literacy is about technical knowledge and the ability to manage and use technology wisely. Thus, when students can answer higher-order thinking Skills (HOTS) questions with the help of Computer Based Test (CBT), then the students are digitally literate.

Second, navigation and information capabilities. Higher-order thinking Skills (HOTS) questions operated through a Computer Test (CBT) can indirectly test students' ability to navigate digital interfaces so they can find information efficiently. This aligns with Gilster's (1997) view that the ability to navigate and assess digital information is essential. In this case, Computer Based Tests (CBT) can help students hone these skills.

Third, critical skills towards digital media. Applying higher-order thinking skills (HOTS) questions, assisted by computer-based tests (CBT), helps students develop essential digital media skills. Therefore, teaching students to critically evaluate, analyze, and synthesize digital information is critical. (Hobbs & Jensen, 2009) In this case, Higher Order Thinking Skills (HOTS) questions can be designed to test essential abilities of digital media in the context of technology use.

Fourth, the development of digital collaboration skills. Using Higher Order Thinking Skills (HOTS) questions involves collaboration via digital platforms. This can help students develop digital collaboration skills. According to Henry Jenkins, digital collaboration skills are critical, and Computer Based Test (CBT) is one platform that can build these skills.

Fifth, build awareness of digital ethics. Implementing Higher Order Thinking Skills (HOTS) questions can provide an opportunity to discuss and test students' digital ethical awareness. Ohler, J. B.(2013) emphasizes the importance of understanding and practicing ethics in the use of technology. In this case, giving Higher Order Thinking Skills (HOTS) questions can be designed to test students' understanding of social responsibility and ethics.

Thus, integrating Higher Order Thinking Skills (HOTS) questions with Computer Based Tests (CBT) in education can provide a learning experience that is more contextual and relevant to the digital world. This not only improves students' digital literacy skills but also prepares them to face the demands of the world of work.

Increasing digital literacy abilities in experimental classes includes understanding the basic concepts of digital literacy, skills in evaluating information sources, and the ability to apply knowledge in real-world situations. This shows that integrating HOTS questions assisted by CBT can make students better prepared to face the complexities of digital literacy. So, the findings of this research have positive implications for curriculum development and teaching strategies at the school level. Learning that focuses on HOTS using CBT can be used as a model to improve students' overall digital literacy skills.

## Conclusion

Research conducted at MI Perwanida, Blitar City shows that the experimental use of Higher Order Thinking Skills (HOTS) questions assisted by Computer Based Test (CBT) positively improves students' digital literacy skills. This research also confirms that using Higher Order Thinking Skills (HOTS) questions can stimulate higher level thinking and improve students' ability to apply digital literacy knowledge. In addition, the effectiveness of the Computer Based Test (CBT) as a tool in applying higher-order thinking Skills (HOTS) questions found that technology is a valuable partner in efforts to increase students' digital literacy so that students' learning experiences become more interactive, relevant and adaptive according to the demands of the times.

## Reference

- Anderson, L. W., & Krathwohl, D. R. (2001a). *A taxonomy for learning teaching and assessing\_ a revision of Bloom`s taxonomy of educational objectives*. Longman.
- Anderson, L. W., & Krathwohl, M. C. (2001b). *A Taxonomy for Learning, Teaching, and Assessing*. Longman.
- Belshaw, D. (2012). *What is' digital literacy'? A Pragmatic investigation* [Doctoral Dissertasion]. Durham University.
- Bloor, M., Frankland, J., Thomas, M., & Robson, K. (n.d.). *Focus Groups in Social Research*.
- Calvani, A., & Fini, A. (2010). Digital Competence In K-12. Theoretical Models, Assessment Tools, and Empirical Research. *Anàlisi*, 40.
- Creswell, J. W. (2014). **RESEARCH DESIGN** *Qualitative, Quantitative, and mixed methods approaches* SECOND EDITION. Routledge.

- Driana, E., Susilowati, A., Ernawati, E., & Ghani, Abd. R. A. (2021). Assessing Students' Higher-Order Thinking Skills: Knowledge and Practices of Chemistry Teachers in Vocational Senior Secondary Schools. *Jurnal Pendidikan Teknologi Dan Kejuruan*, 27(1), 37–47. <https://doi.org/10.21831/jptk.v27i1.32882>
- Fakhomah, D. N., & Utami, M. S. (2019). Pre-Service English Teacher Perception About Higher Order Thinking Skills (HOTS) In The 21ST Century Learning. *IJET (International Journal of Indonesian Education and Teaching)*, 3(1), 41–49. <https://doi.org/10.24071/ijiet.v3i1.1676>
- Gilster, P., & Glister, P. (1997). *Digital literacy (p. 1)*. Wiley Computer Pub.
- Hanifah, I. R., Setyarini, S., & Rodliyah, R. S. (2022). EFL Teacher's Cognition and Practices of Higher Order Thinking Skill in the Indonesian Context. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 5. <https://doi.org/10.33258/birci.v5i1.3731>
- Hobbs, R., & Jensen, A. (2009). The Past, Present, and Future of Media Literacy Education. *Journal of Media Literacy Education*, 1, 1–11. [www.jmle.org](http://www.jmle.org)
- Knaus, T. (2022). Making in media education: An activity-oriented approach to digital literacy. *Journal of Media Literacy Education*, 14(3), 53–65. <https://doi.org/10.23860/JMLE-2022-14-3-5>
- Lindriany, J., Hidayati, D., & Muhammad Nasaruddin, D. (2022). Urgensi Literasi Digital Bagi Anak Usia Dini Dan Orang Tua. *Journal of Education and Teaching (JET)*, 4(1), 35–49. <https://doi.org/10.51454/jet.v4i1.201>
- Nurul Sakinah, R. (2022). Urgensi Penerapan Pembelajaran Berbasis HOTS di Sekolah Dasar. *Jurnal Pendidikan Tambusai*, 6.
- Ohler, J. B. (2013). *Digital storytelling in the classroom: New media pathways to literacy, learning, and creativity*. Corwin Press.
- Prensky, M. R. (2010). *Teaching digital natives: Partnering for real learning*. Corwin Press.
- Razak, A., Apra Santosa, T., Pendidikan Biologi Universitas Negeri Padang, M., & Hamka Air Tawar, J. (2021). Meta-Analysis: Pengaruh Soal HOTS (Higher Order Thinking Skill) Terhadap Kemampuan Literasi Sains dan Lesson Study Siswa Pada Materi Ekologi dan Lingkungan Pada Masa Pandemi Covid-19 Meta-Analysis: The Effect of HOTS (Higher Order Thinking Skill) Questions on Students' Science Literacy Skills and Lesson Study on Ecology and Environmental Materials During the Covid-19 Pandemic. *Jurnal Pendidikan Biologi*, 6(1), 2021. <https://doi.org/10.37058/bioed.v6i1.2930>

- Reilly, E. (2011). Participatory Learning Environments and Collective Meaning Making Practice. *Journal of Media Literacy Education*, 3, 6–7. [www.jmle.org](http://www.jmle.org)
- Rohmah Hufnita Sari, N., Pendidikan Sejarah, J., & Ilmu Sosial dan Hukum, F. (2022). Pengaruh Soal Higher Order Thinking Skills Terhadap Kemampuan Literasi Sejarah Siswa Kelas XI IPS SMA Negeri 1 Krian Pada Mata Pelajaran Sejarah. *Journal Pendidikan Sejarah*, 12(4).
- Schulz, H., & Fitzpatrick, B. (2016). Teachers' Understandings of Critical and Higher Order Thinking and What This Means for Their Teaching and Assessments. *Alberta Journal of Educational Research*, 62, 61–86.
- Tuna, Y. (2021). Literasi Digital Dalam Pembelajaran di SD Sebagai Upaya Peningkatan Kualitas Pendidik. *Prosiding Seminar Nasional Pendidikan Dasar*.
- Wagner, T. (2010). *The global achievement gap: Why even our best schools do not teach the new survival skills our children need and what we can do about it*. Tony Wagner.
- Wismayani Pratiwi, N. P., Sulistia Dewi, N. L. P. E., & Paramartha, A. A. G. Y. (2019). The Reflection of HOTS in EFL Teachers' Summative Assessment. *Journal of Education Research and Evaluation*, 3(3), 127–133. <https://ejournal.undiksha.ac.id/index.php/JERE>