Self-Concept, Logical Thinking Patterns, and Emotional Intelligence in Relation to Digital Literacy Ability

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Abstract

This study determines the relationship between self-concept, logical thinking patterns, and emotional intelligence with digital literacy abilities. This research is a correlational study on elementary education students at the University of West Java, which amounted to 12714 students. This study uses a proportional random sampling of 275 elementary school teacher education students. The data collection technique used a questionnaire instrument for all variables. The results of the research data analysis show that (1) the self-concept variable with the digital literacy abilities variable has a correlation coefficient value of 0.563, meaning that it is positively related to the "strong" category, and (2) the logical thinking pattern variable with the digital literacy abilities variable has a correlation coefficient value of 0.234 means that it is positively related to the "fragile" category, (3) the emotional intelligence variable with the digital literacy abilities variable has a correlation coefficient value of 0.651 which means it is positively related to the "strong" category (4) self-concept variables, logical thinking patterns and emotional intelligence overall together with digital literacy ability has a sig. F Change value of 0.000 means it is positively related, and the R-value (correlation coefficient) where the count is more significant than a table of 0.681 > 1.65 with the "firm "category. Based on the findings of this study, it is possible to conclude that there is a positive association between (1) self-concept and digital literacy abilities; (2) logical thinking patterns with digital literacy abilities; (3) emotional intelligence with digital literacy abilities; (4) self-concept, logical

thinking patterns, and emotional intelligence together with digital literacy abilities. Based on the results of this study, several suggestions were put forward as follows: (1) It is desired that Prospective teachers will improve their self-concepts by focusing on themselves, liking themselves, taking responsibility, making goals, and interacting with a positive social environment about improving their abilities. Digital literacy and taking advantage of advances in information and communication technology, (2) It is envisaged that future teachers will train themselves to think logically by learning to draw conclusions that make sense, think methodically, think with logical rules, be responsive to the problems faced, especially in digital literacy abilities, (3) It is envisaged that prospective teacher students will be able to control their emotional intelligence to develop The potential for digital literacy as a learning aid, increase academic achievements, and overcome social interaction challenges in everyday life.

Keywords: self-concept, logical thinking patterns, emotional intelligence, and digital literacy ability

Introduction

For a human being, education is a process of maturation and independence throughout his life. Educational institutions play an essential role in producing people who are ready to socialise and have high social attitudes, namely universities. By its function, universities should be able to prepare and form students willing to become agents of change in the community. The resulting students should have the capacity as part of the community that can contribute to building the community. However, students need to be aware that their roles and functions are not only studying and studying but must strive to increase their capacity and competence, including mastery of technology, which currently cannot be avoided as an ability that must be mastered well. As a student-teacher candidate, communicating is a vital competency to be learned. The challenges of the industrial revolution 4.0, currently underway, require prospective teacher students to be literate using various high-tech digital literacy tools and applications. Advances in information and communication technology cause digital literacy skills to be as crucial as other abilities that exist in every human being.

This condition has a considerable influence in the world of education, especially in universities which require the entire learning process to be carried out in a remote system (online) by utilising digital media. This is intended so that the knowledge transfer process can run well and by the targeted goals, even though it is not done face-to-face. Consequently, student teacher candidates are also required to have good digital literacy skills as a support for the learning that is carried out. Students are expected to develop independent and creative learning activities in the online learning process. Therefore, digital literacy skills can be a determinant of student learning success. Good digital literacy skills possessed by prospective teacher students will make it easier to find important information as material for knowledge and learning and support the emergence of positive ideas and creative ideas related to the knowledge learned in the learning process.

Digital literacy is a person's ability to utilise and use information and communication technology devices. Digital literacy skills must be possessed by prospective teacher students, especially in developing communication skills as part of developing self-concept values to prepare themselves to become teachers later. This is because teachers will often communicate with students, fellow teachers, principals, parents of students, and also the community in their environment. A teacher who has a good self-concept will be able to communicate well too.

Febliza & Okatariani (2020) explained that digital literacy is a "life skill that involves

the ability to use technology, information, and communication devices, as well as social skills, learning abilities, attitudes, critical thinking, creativity, and inspiration as digital competence". Leffler (2015), revealed that "Students that possess digital and information literacy skills will benefit from these talents in both their personal and professional lives in the future, making them more successful". Meanwhile, in current conditions, digital literacy is one of the references for the success of the learning process, so it can no longer be denied that this ability must be adequately mastered. Especially if the students in their daily life do not open up and interact effectively with their environment and social networks, the relationship between prospective teacher students and their territory is low. At the same time, these two conditions are essential for student-teacher candidates to develop their digital literacy skills.

The formation of digital literacy skills for prospective teacher students is also influenced by factors in themselves, namely self-concept. In this condition, students cannot understand their character to interact with their environment. This is in line with the self-concept expressed by Ivonne Douma et al., who revealed that "Self-concept can be understood as a set of cognitive beliefs that a person has about himself" (Douma et al., 2022). Students with positive self-concepts will respect themselves. He acknowledges and accepts both his strengths and weaknesses. Therefore, he knows when to speak and when not to speak and understands his capacity; if he masters the topic, he will appear confident, and if he is not so mastered will pay attention and listen to it as new knowledge for him and be optimistic about the life he faces, see challenges as an opportunity and do not give up easily.

Individuals with a positive self-concept can be more effective if supported by the ability to think logically. "The ability to think logically is the ability to employ multiple concepts meaningfully, to conclude by making recommendations, and to discuss with a focus on problem-solving to communicate the correct opinions" (Başerer, 2020). Someone must own the ability to think logically. That way, he can understand, criticise, evaluate, find alternative solutions, and evaluate the studied problem. Prospective teacher students who can think logically will be more careful in deciding something, not easily believe the news circulating before they witness and hear it themselves, have their judgment of others, and not only criticise but can provide solutions to a problem.

While the teacher with a negative self-concept does not have stable feelings of self-integrity, nor is he able to recognise his strengths and weaknesses, as well as his potential. Potter said that the crucial role of media literacy in this new form is also driven by the rapid development of media, which is not proportional to the human capacity to compensate (Potter, 2014). Teachers with a negative self-concept are pessimistic, worthless, and cannot stand criticism. Therefore, he becomes a teacher unable to optimally utilizeutilisegital literacy skills to interact with his environment, so the interaction process feels tedious, not varied, and even challenging.

The management of the digital literacy skills of a student-teacher candidate needs to be supported by the ability to manage emotions. It is undeniable that digital technology has affected almost all aspects of human life, including the world of education. All the information spilt over without a barrier spread across various internet sites and social media. This is where emotional management plays a role in monitoring their feelings and emotions in themselves and others. Through their emotional intelligence, prospective teacher students can control themselves, regulate moods, empathise with others, and build good and positive relationships. Attentive to others. Emotional intelligence is the ability to recognise and understand one's emotions, regulate oneself, understand the feelings of others, have empathy for others, and have good communication skills (HMM, 2020). Emotional intelligence is the basis for fostering a

positive attitude in the social interactions of student teacher candidates, both in the environment during their education in lectures and later when carrying out their profession as a professional teacher. For student teacher candidates who have self-disclosure, they will be able to mingle flexibly and quickly because he is willing to accept with an open heart every difference in characteristics between students. The ability to manage emotions is undoubtedly essential to be trained by prospective teacher students as a provision when later carrying out their profession as teachers and having to deal with various conditions of students, parents of students, and a dynamic work environment.

The ability to think logically and emotional intelligence will not work well if a student-teacher candidate does not understand his self-concept. A student teacher candidate who can make the right decisions is confident and confident in his choices; it can be ascertained that he has pretty much understood who he is. Thus, he can optimally explore his potential and show it to others through the learning content he creates or through digital information sources that he distributes on his social media accounts or other internet sites. His every action in the world of digital literacy is directed, focused, and transparent because when he uses it, he understands well that the information he shares must positively impact others.

We cannot escape digital technology; various digital media have been developed to become a learning tool and benchmark for improving education quality. A student-teacher candidate must learn how to use these technologies appropriately, continue to learn to interact with each other healthily and act wisely so that his relationship with technology runs in a balanced way.

Based on the background of the problem and the descriptions described above, the researchers are interested in conducting studies related to digital literacy skills for prospective teacher students, especially in the Elementary School Teacher Education study program. The topic of the problem is the relationship between three predictor variables, namely self-concept (X1), logical thinking patterns (X2), and emotional intelligence (X3), with one criterion variable, namely digital literacy ability (Y). variables and is expected to be able to solve the problems above and, at the same time, obtain valid answers.

Literature Review

Digital Literacy Ability

Based on the results of a poll conducted by APJII (Association of Indonesian Internet Service Providers) regarding the penetration of internet users in Indonesia in 2019-2020 (Q2), it was 73.3 per cent or 196.71 million users out of a total population of 266.91 million people. Compared with the results of the 2018 survey, which found 171.1 million internet users with a penetration rate of 64.8 per cent, this statistic increased significantly (Tim APJII, 2020). According to the Declaration of the World Summit on the Information Society (WSIS), "where everyone can create, access, use, and share information and knowledge, enabling individuals, communities, and peoples to achieve their full potential in promoting sustainable development and improving their quality of life." …." (Byrne, 2018). Digital literacy is a "complicated and interconnected structure of sub-disciplines of skills, ethics, knowledge, and output creativity" (Arono et al., 2022). Furthermore, Arono et al. (2022) demonstrated that the concept of literacy emphasises digital literacy as a tool. However, normative media education literacy emphasises disciplines and demands, such as language instruction, where digital literacy is related to language, information, connections, and design repetition.

Digital literacy is "several skills to understand and use information in various formats

sourced from various sources presented in computer media" (Rizal et al., 2019). Furthermore, Astuti et al. (2021) revealed that digital literacy emphasises the skills of digital media users in carrying out digital media mediation processes that are carried out productively. This means that a user with good digital literacy skills can operate the tool and use digital media responsibly. Digital literacy is "using technology to participate in and contribute to modern social, cultural, political and economic life" (Kuek & Hakkennes, 2020). This means that digital literacy is related to one's ability to use technology and how one can behave and utilise technology in aspects of life. Therefore, building a digital literacy culture requires the active participation of the entire community so that digital literacy can build a safe and conducive socio-cultural environment.

Durodolu & Mojapelo (2020) revealed that to avoid the dramatic effects of technological change throughout a career, teachers need digital literacy skills to access and use digital platforms and continuously make improvements. Information-literate individuals inevitably develop technological skills. Information literacy is related to information technology skills but has broader implications for the education system and society. Individuals with digital literacy skills can use computers, software applications, databases, and other technologies to achieve personal, professional, and academic goals. Digital literacy consists of information literacy skills such as finding and using needed information, communication, collaboration and teamwork, social awareness of the digital environment, electronic security, and creating new information (Reedy & Goodfellow, 2012). Thus, digital literacy competencies are needed that can be used as indicators to acquire skills in the fields of education and culture.

Based on the theory above, it is concluded that digital literacy skills are a set of cognitive and socio-emotional knowledge and skills to understand and use information in various formats from various sources that are obtained through a set of digital and network technologies that include the ability to access, manage, understand, integrate, communicate, evaluate, and create information accurately and securely.

Self-concept

Self-concept is one of the essential elements in the formation of one's personality. Self-concept becomes a benchmark in behaving and behaving to be accepted by the environment (Rusdha et al., 2022). Self-concept is a social construction, and the social environment influences self-perception. The family plays a fundamental role in their formation (Casino-García et al., 2021), which means that this individual's self-perception is based on life experiences with other people and the recognition of their behaviour alone. Thus, a person's perception of himself is thought to influence how he acts, and his actions influence how he perceives himself. Furthermore, Kang et al. (2021) revealed that self-concept is influenced by environmental or other significant reinforcement. That is, self-concept is "strongly influenced by social comparison". In school, for example, self-concept may be acquired through successful learning experiences, such as high scores in science subjects compared to other students.

Self-concept is very important for students because it is one of the factors that help students achieve their goals with a positive self-image, and students' confidence in their abilities will grow (Farah et al., 2019). Furthermore, Clem et al. (2021) revealed that self-concept is related to students ability to evaluate themselves in different subject domains. According to solid research evidence, a higher evaluation of a person's self-concept as a student predicts interest in school subjects, academic choices, success in school, and achievement and can even prevent dropouts. This is because self-concept is a supporting aspect that can help

students become better human beings, so self-concept must be strengthened more effectively through guidance or direction. Also, having a self-concept will make it easier for students to adjust their confidence (Juliyanti & Pujiastuti, 2020). Students will be more active in producing effective learning outcomes if they have a positive self-concept, which leads to critical thinking skills (Rohmat & Lestari, 2019).

There are five dimensions of self-concept: physical, academic, family, social, and emotional. The physical dimension describes the physical appearance, individual physical condition, sports training, and others. The academic dimension is the opinion that people hold of themselves regarding their abilities as students based on the judgments and credentials of teachers and their tools. The family dimension focuses on involvement and integration within the family, trust and affection, the person's happiness, how aided or supported they feel, and whether or not their parents are disappointed or critical. The social dimension addresses individuals' perceptions of their social performance: their network of relationships, the ease with which they can expand, and desired attributes connected with this dimension, such as cheerfulness or friendliness. Finally, the emotional component considers the perception of emotional states and specific responses to events involving someone of higher rank. (Casino-García et al., 2021).

Based on the above theory, it can be concluded that self-concept is a person's evaluation of himself, a picture of what and who he is, and his self-image in the eyes of others, which is determined by self-perception, self-reflection, and social comparison.

Logical Thinking Pattern

Thinking is a process in which the brain takes information from the senses, gathers it from experience, and follows a logical pattern. When a person thinks, he carries out a process to arrive at a conclusion or solution to the problem. Thinking patterns characterise differences in the ability to think between humans. One branch of thinking to seek information or knowledge, which must go through a specific sequence of patterns with other logic or certain logic, is called logical thinking. This ability is used to decide (Nugraha et al., 2017). This is in line with Habibah (2021) logical thinking is thinking according to specific patterns of rules or logical inferences, or logical principles to obtain a conclusion. Some essential things that must be considered by someone in logical thinking, among others; 1) that the person must have essential thinking, have concrete facts and concepts; 2) must be able to express opinions; 3) can conclude, lay the basis of thoughts and opinions into a reason (Arifin & Irawan, 2020).

Students' thinking ability produces valid conclusions based on logical rules and can prove that these conclusions are valid using prior knowledge, known as logical thinking skills (Julianto, 2021). The definition of logical thinking has been put forward by many other experts, such as Suryasumantri, Minderovic, and Sponias (Octaria, 2017). According to them, "logical thinking is thinking according to certain patterns or rules of logical inference or logical principles to arrive at conclusions". Based on the description above, logical thinking is closely related to reasoning, namely, thinking quickly according to patterns or rules for drawing logical conclusions to reach conclusions.

Logical thinking is a type of thinking that follows artificial rules and forms of thought. Logical thinking, often known as abstract thinking, is at a higher level. It is a mode of thinking in which people mirror reality in the process of cognition through concepts, judgments, and reasoning. It is a type of mental activity that involves setting aside specific images and revealing the essential characteristics of things. Logical thinking can be forward, backward, divergent, inductive, or deductive (Juan, 2021). Logical thinking is sophisticated thinking because it integrates cause and

effect, mental activity, and logic, which means that one can gather evidence that supports or negates the validity of any thought or point of view in order to follow and use logical information that leads to creativity and invention (Abbas & Abdullah, 2022).

Based on the above theory, it can be concluded that the logical thinking pattern is the ability to draw valid conclusions according to the rules of logic and can prove the conclusion is proper (valid) by the previously known knowledge.

Emotional Intelligence

Many believe brain intelligence is critical, but other skills are less necessary. Recently, the myth has been revealed with various pieces of evidence that emotional intelligence determines the success of a person's life. Social intelligence is critical in social life, where a person interacts with others. Without social intelligence, a person will have difficulty living his social life and constantly interacting with the surrounding environment. While brain intelligence is highly dependent on genetic characteristics and challenging to change, emotional intelligence can be enhanced to achieve success. Emotional intelligence is an essential factor that impacts a person's social and psychological well-being (Lea et al., 2018; Szczygieł & Mikolajczak, 2017). Furthermore, Moradian et al. (2022) revealed that emotional intelligence is the ability to recognise, understand, and regulate emotions and use them in life. In addition, emotional intelligence is recognised as a core variable that affects job performance (Nightingale et al., 2018).

According to research, people who develop emotional intelligence abilities may comprehend and express their feelings, recognise emotions in others, synchronise emotions, and use moods and emotions to inspire adaptive behaviour (Kalyan et al., 2022). In line with Killgore et al. (2022), who revealed that emotional intelligence (EI) is the ability to recognise and understand emotional information accurately, reason effectively about that information, and use that knowledge to guide thinking and behaviour in yourself and others adaptively. Emotional intelligence refers to how people manage, understand, and use; it also means that an individual's social intelligence enables them to recognise and distinguish their own emotions and those of others to make the right decisions and take responsive actions (Mohammad, 2019).

Emotional intelligence (EI) is a "significant area of psychology and an essential factor in students' academic life" (Jan & Anwar, 2019). It regulates emotional and social skills, converts negative emotional energy into sound energy, and deals with abnormal behaviour through self-awareness and self-motivation (Mattingly & Kraiger, 2019). Researchers have examined how emotional intelligence relates to other factors like stress management, exam anxiety, and problem-solving skills (Jan & Anwar, 2019). Emotional intelligence is "crucial in assisting pupils in understanding emotions and the feelings of others and themselves". This is because students who know about emotional intelligence can regulate using various techniques and alleviate stressful situations and emotions (Alonazi, 2020; Jing et al., 2021). In situations that are lacking, a person with a good level of emotional intelligence can handle others well to deal with vulnerable situations such as anxiety, stress, and fatigue (Iqbal et al., 2022).

Based on the description above, it can be concluded that emotional intelligence is the ability to recognise oneself and others, motivate oneself, and effectively regulate emotions in one's own life and relationships with others.

Method

This study's methodology is a survey method with correlational techniques

(connectedness), which is research that describes the link between research variables by correlating data from the field without providing therapy or manipulating research variables. The correlation coefficient between the independent factors of self-concept, logical thinking patterns, and emotional intelligence and the dependent variable of potential teacher students' digital literacy abilities illustrates the strength of this link. The graph below demonstrates the research design.
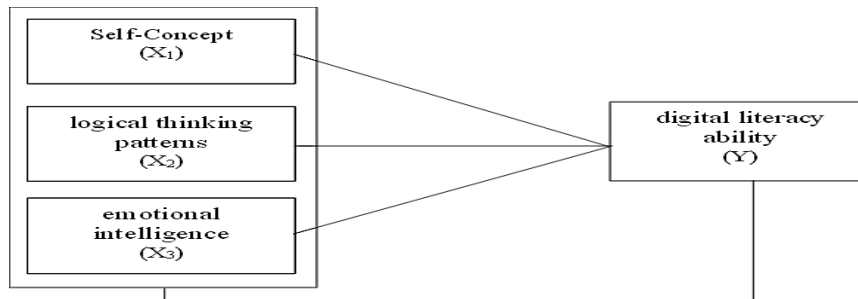
Figure 1: Relationship between Variables Chart for Constellation Research Design

Based on data from the university's database, the population of this study consisted of 12,714 undergraduate students enrolled in elementary school teacher preparation programs in the West Java region during the 2021–2022 academic year. The balanced approach is utilised in the sampling method. Random sampling is used in an elementary school teacher education degree program at a university in West Java., which is done with equal chances for each person to select a sample based on the proportions of each student.

Data measurement tools used in a study this consist of two types, namely (1) questionnaire and (2) test-shaped matter. The questionnaire was used to gather scores of variable self-concept (X1), variable emotional intelligence (X3), and inconsistent digital literacy ability (Y). The questionnaire's possible answers consist of 5 (five) choices: strongly agree, agree, undecided, no agreement, and strongly disagree agree. Quick test-shaped question for instrument variable logical thinking patterns (X2). Arranged test in a study this in the form of a test choice double with 4 (four) choices answers. Data analysis was performed using descriptive statistics and inferential statistics.

Results

Table 1. *Correlations Calculation Results*

		Ability Digital Literacy	Self-Concept	Logical Thinking Pattern	Emotional Intelligence
Pearson Correlation	Ability Digital Literacy	1,000	.563	.234	.651
	Self-Concept	.563	1,000	.072	.771
	Logical Thinking Pattern	.234	.072	1,000	.090
	Emotional Intelligence	.651	.771	.090	1,000
Sig. (1-tailed)	Ability Digital Literacy	.	.000	.000	.000
	Self-Concept	.000	.	.116	.000
	Logical Thinking Pattern	.000	.116	.	.068
	Emotional Intelligence	.000	.000	.068	.
N	Ability Digital Literacy	275	275	275	275
	Self-Concept	275	275	275	275
	Logical Thinking Pattern	275	275	275	275
	Emotional Intelligence	275	275	275	275

This is a correlational study testing the relationship between untied and tied variables. Self-concept, logical thinking patterns, and emotional intelligence are variables that are free to be studied. Still, the capacity to use digital literacy is a variable that must be related to the study of other variables.

According to the correlation test results utilising the Pearson method and the SPSS application, the significant value for self-concept with digital literacy abilities was less than 0.05. This indicates that the two variables are substantially correlated or have a meaningful relationship (significantly correlated). There is a positive link when the correlation value is "+" and is 0.563. This implies that a person's level of digital literacy tends to increase with their self-concept. The amount of correlation or the association between the two variables is in the "strong" category if the correlation is more excellent than 0.563 by a significant margin. Conclusion H_1 is approved, and H_0 is refused. Thus, it can be said that self-concept and computer literacy abilities have a favourable relationship.

According to the Pearson method correlation test results between logical thinking patterns and digital literacy abilities supported by the SPSS application, the significant value is less than 0.05. This indicates a relationship between the two variables or that they are significantly associated (significantly correlated). There is a positive connection, as noted in the "+" symbol next to the correlation value of 0.234. As a result, a person's capacity for logical thought tends to increase along with his level of digital literacy. The magnitude of the correlation, 0.234 0.5, denotes a "fragile" category for the level of correlation or relationship between the two variables. Conclusion H_1 is approved, and H_0 is refused. In summary, logical thinking patterns and digital literacy abilities are positively correlated.

The Pearson method and the SPSS application were used to analyse the correlation test findings between emotional intelligence characteristics and digital literacy ability. The significance level was below 0.05. This indicates that the two variables are substantially correlated or have a significant relationship (significantly correlated). There is a positive correlation with the correlation value of 0.651, denoted with a "+." Accordingly, a person's emotional intelligence and digital literacy are inversely correlated. Since there is a "high" correlation between the two variables, the correlation magnitude of 0.651 0.5 indicates this. H_0 is ultimately turned down, whereas H_1 is approved. This suggests that emotional intelligence and digital literacy abilities have a strong association.

Table 2. *Correlation Calculation Results in Multiple*

					Change Statistics			
Model	R	R Square	Adjusted R Square	Std. The error in the Estimate	R Square Change	F Change	df1df2	Sig. F Change
1	.681 [a]	.464	.458	13.12365	.464	78.095	3 271	.000

a. Predictors: (Constant), Intelligence Emotional, Logical Thinking Pattern, Self-Concept

According to the model summary table, the analysis above yields a significance value of 0.000 in the sig.F. column. Change that indicates that the value is less than 0.05 leads to the conclusion that there is a significant correlation between the self-concept variables (X1), the Logical Thinking Pattern (X2), and the emotional intelligence (X3) simultaneously (together) with the variable digital literacy ability (Y). The degree of relationship between self-concept variables (X1), logical thinking patterns (X2), and emotional intelligence (X3) simultaneously (together) with the variable digital literacy ability (Y) can be seen in the column R-value (correlation coefficient), where r count is more significant than r table of 0.681 > 1.65. It can

be deduced that the degree of the relationship falls into the "strong" relationship category.

Discussion

The findings of the hypothesis testing show that the suggested research hypothesis was accepted, whereas the four null hypotheses evaluated were rejected. This is evident from the estimated F-value, which, at a significant level of = 0.05, is higher than the F-table. The four proposed hypotheses are that 1) There is a positive relationship between self-concept and digital literacy ability, 2) logical thinking patterns and digital literacy ability, 3) emotional intelligence and digital literacy ability, and 4) there is a positive relationship between self-concept, logical thinking patterns, and emotional intelligence combined with digital literacy ability.

Self-concept and digital literacy abilities are related.

Digital literacy is a person's ability to utilise and use information and communication technology devices. Digital literacy skills must be possessed by a prospective teacher-student, especially in developing communication skills as part of developing self-concept values in order to prepare themselves to become teachers later. This is because teachers will often communicate with students, fellow teachers, principals, parents of students, and also the community in their environment. A teacher who has a good self-concept will be able to communicate well too.

Digital literacy is the skills, abilities, and tendencies needed to use digital technology to achieve personal, professional, and work goals (Reedy & Goodfellow, 2012). Therefore, high digital literacy skills are needed for a person's success in achieving his life goals. This digital literacy ability will be achieved if a person has a positive self-concept because he will be more confident in his ability to fulfil his life goals. This is in line with (Chaplin, 2016; Stuart & Sundeen, 2016; Waddington, 2019), which explain that self-concept is an essential aspect of personality that influences individual attitudes and behaviour. It can also be used to explain and predict how people will act or react so that they feel more confident and optimistic about whatever they are facing, value themselves, and see what can be done to help them succeed.

Advances in information technology and the internet today have resulted in very abundant digital information resources. On the other hand, the development of information technology is likened to two sides of a coin that has positive and negative effects on society. Digital literacy learning is inevitable (Anggraini, 2016). It takes understanding and user agency because technology is only a tool that does not determine how we should act (Koltay, 2011). A teacher's digital literacy skills can develop if he has a good self-concept. Teachers w with a positive self-concept will expand their learning success, while those with a negative self-concept will have difficulty" (Herawati, 2017). Teachers with a positive self-concept will be urged to know and understand themselves first. Teachers who have a positive self-concept can be warm, friendly, have an interest in others, have empathy, are sociable, feel cared for, have tolerance, and are active in various social activities, so that they can use their digital literacy skills to establish unified communication in their environment and be able to create an interactive and fun learning atmosphere. While the teacher with a negative self-concept does not have stable feelings of self-integrity, nor is he able to recognise his strengths and weaknesses, as well as his potential. Teachers with a negative self-concept are pessimistic, worthless, and cannot stand criticism. Therefore, he becomes a teacher unable to optimally utilise his digital literacy skills to interact with his environment, so the intention process feels tedious, not varied, and even challenging.

Self-concept correlates with digital literacy skills because self-concept is a person's perception of himself in terms of physical and non-physical abilities based on knowledge, experience, interpretation, and interaction with the social environment in the natural and digital world. This is in line with Thalib (2017), which states that "self-concept is not a factor that is brought from birth, but a factor that is learned and formed from individual experiences about other individuals. The self-concept in a person is usually formed by itself through interactions with other people or life experiences based on thoughts, feelings, and life goals. According to Pudjijogyanti (2008) states that self-concept is "made of two components, namely: 1) cognitive component, which is an individual's knowledge about himself, generating a self-image and self-image; 2) the affective component, which is an individual's assessment of oneself to form self-acceptance and individual self-esteem. So, to form a self-concept, one needs self-awareness and can learn from life experiences or learn through interaction with the environment to form self-acceptance that can be evaluated as a whole, then form self-esteem (self-esteem)".

Based on the above understanding, self-concept is vital in forming digital literacy skills for prospective teacher students. A good self-concept is formed by two components that influence knowledge and behaviour. The high level of self-concept possessed by prospective teacher students will control themselves in utilising information and communication technology, be proficient in using it in the online learning process that is still ongoing today, and be flexible in communicating and interacting with audiences in the digital social environment, as well as professional support teacher after graduating from college.

Relationship between logical thinking patterns and digital literacy skills

Selecting, understanding, and evaluating information obtained from the process of accessing the internet is an important step that must be done in analysing information. At this stage, a prospective teacher-student needs logical thinking. This thinking is a person's ability to think using common sense or rational, systematic, and appropriate thought processes. Teacher-candidate students with automatic logical thinking will be able to select sound or lousy content, practical or not helpful, and distinguish original or fake content, so they will avoid absorbing and spreading wrong and even misleading information. Cognitive, emotional and social skills have combined technical processes with digital literacy. This process requires the latest developments, especially in education, to be followed in our country and universally (Gündüzalp, 2021). Based on this statement, cognitive skills, in this case, the ability to think logically, are needed in digital literacy as the ability to understand information and filter and evaluate information so that readers do not get caught up in hoax issues.

Based on the analysis of logical thinking patterns, it is proven to correlate with digital literacy abilities. Teacher-candidate students with high logical thinking patterns will be able to think precisely, straightly, deeply, and directly in making conclusions and decisions, likewise, in acting by legal norms, rules, and rules that are by the logic of truth. Claro et al. (2018) stated that in using digital tools, critical thinking is needed. With a logical thinking pattern, a student is expected to be able to select all the information received, which can be used to make decisions before acting. This ability will undoubtedly be helpful, especially in today's technological era, where various information can be easily and quickly.

Digital literacy is an individual's ability to find, evaluate, utilise, share, and create content using information technology and the internet. Understanding digital practices, seeking and using information, endogenous motivation, creating information, exogenous motivation, using digital devices, searching, selecting, and creating information, engaging in digital activities, and supporting learning practices are all related to digital literacy skills (D. Yazon et

al., 2019; Soomro et al., 2018). A student teacher candidate who has logical thinking will always prioritise rationality, where all things must be reasoned well and can be proven true. Bloom revealed that the pattern of thinking is "the core of human thinking that uses the brain function as a pattern regulator. Applications and settings in everyday life guide patterns in how humans think, act, think, appreciate, and interact, which are called the basic functions of thinking" (Puspitasari & Munawi, 2010). Therefore, prospective teacher students with logical thinking patterns can distinguish and criticise monitored events, whether by science or not; they can analyse a problem, are not easily provoked, give and receive criticism well, and solve interpersonal problems.

The pattern of logical thinking allows prospective teacher students to think using common sense or, in other words, through the reasoning they use to examine, select, and selectively use information and communication technology tools correctly and systematically with the proper considerations and encourage them to form logic and can produce a better, more accurate understanding of a particular problem, especially in the learning process and social interaction. Logical thinking is a process in which a person uses reasoning consistently to conclude. Problems or situations that involve logical thinking require structure, relationships between facts, and a "reasonable" chain of reasoning. "Logical thinking is a process in which the use of consistent reasoning to conclude. Problems or situations involving logical thinking expect structures, relationships between facts, and linking "understandable" reasoning (Wahyuddin, 2017).

Thinking logically is a process of thinking using logic, rational and reasonable. In logical thinking, children will be able to distinguish and be critical of events that occur in children today, whether these events make sense and are by science or not. In its development, logical thinking is divided into two parts, the first is thinking deductively, and the second is guessing inductively. Deductive logical thinking is drawing conclusions drawn from general propositions to specific propositions. Logical thinking inductively is the opposite of deductively, simply thinking from clear to public requests. This logic is usually followed by reasoning based on experience and reality, so the conclusion is not necessarily correct if there is no evidence. Therefore, they will not believe in a decision that is not based on experience and reality through their senses (Sholihah, 2019).

Thinking logically is "the ability to use statements in the form of ideas which are then described systematically. Individuals who suppose logically will express their thoughts and ideas in structured words so that the reasons put forward become actual arguments (Diana, 2018). A person can be considered to think logically if he can explain ideas by arranging words structurally so that his arguments can be valid because a person who thinks logically can think based on systematic norms and rules so that it does not contain guilt and can produce correct conclusions (Andriani et al., 2019).

Based on some of the explanations above, it can be concluded that logical thinking patterns are the skills, abilities, and abilities of a person to think in particular patterns by inductive and deductive logic. This ability seeks to find and integrate existing thoughts and facts by using procedures carried out regularly, methodically, and systematically to arrive at the desired results.

Relationship between Emotional Intelligence and Digital Literacy Abilities

Emotional intelligence also has a strong correlation with digital literacy skills. The development of information and communication technology or digitalisation is no longer an option. However, it has become a reality that must be carried out by all human beings, including

prospective teacher students who will undoubtedly face the era of digitalisation, especially as a support for the learning process and social interaction with their environment. Therefore, along with advances in technology, it must be balanced with emotional intelligence in carrying it out because of the changes in social interactions that are faced, digital social interactions and directly, the essence is to continue to understand diversity, respect, and respect each other in order to maintain harmony and prioritise tolerance.

Prospective teacher students who have high emotional intelligence will be able to control themselves, so they do not fall into stupid actions which can harm themselves and others, especially in utilising advances in information and communication technology today, with advances in information and communication technology will be utilised as best as possible for positive interests such as learning facilities, looking for materials or references in doing assignments, as a source of information that increases knowledge, an effective means of interaction with the social environment through digital media platforms, because emotional intelligence does not only rely on feelings, emotional intelligence also requires learning to accept feelings both in oneself and in others so that they can be responded to and applied effectively by oneself appropriately in everyday life.

Suriá-Martínez et al. (2019) revealed that emotional intelligence refers to the processes involved in using, understanding, and managing the emotional states of oneself and others in solving problems and regulating behaviour. Emotional intelligence is the ability to manage and control oneself in thinking, feeling, and behaving. The interaction activity through digital media, whatever the medium, is a self-image of a user. Therefore, it is essential to understand and implement the ethics of behaving and behaving well in interacting using digital media. Emotional intelligence is the ability to manage and control oneself in thinking, feeling, and behaving. Because interaction activities through digital media, whatever the media, are a user's self-image, it is essential to understand and implement ethics, behave and behave well in interacting using digital media as a result of the development of information and communication technology. This is in line with Rosida (2015), which states that emotional intelligence rests on the relationship between feelings, character, and moral instincts, which include self-control, enthusiasm and perseverance, the ability to adapt, the ability to solve personal problems, control anger and the ability to motivate oneself alone. Especially in the learning process. In the learning process, there is a change in the abilities possessed by students in various fields, and these abilities are obtained because of the learning effort. Emotional intelligence is a person's ability to develop self-awareness, the ability to manage emotions, the ability to develop self-motivation, the ability to develop self-regulation, the ability to develop empathy, and with good criteria (Sugiarti, 2016).

Therefore, emotional intelligence is vital for students, not least for prospective teacher students, because it can help stabilise their mood and mental state to be productive in learning activities through genuine efforts to achieve maximum academic value and especially when later working as a teacher. Teacher. Emotional intelligence needs to be trained to equip and improve student intelligence. Especially in the era of disruption like today, emotional intelligence has a crucial role in a person's success and success in improving digital literacy skills.

Based on the above understanding, emotional intelligence has a vital role in the digital literacy skills of prospective teacher students. This is because emotional intelligence is an ability or intelligence in which there is the ability to understand the feelings of oneself and others, and one can also manage one's own emotions in interacting with the environment both in absolute and in a digital environment. With the superior emotional intelligence possessed by

prospective teachers, students can maintain and regulate their self-control and attitude in using information technology in everyday life.

The Relationship of Self-Concept, Logical Thinking Patterns, Emotional Intelligence, and Dbetweenital Literacy Ability

Understanding and using information from numerous sources obtained online through digital devices can be characterised as having literacy abilities. Claro et al. (2018) state that a digitally literate person can recognise, access, manage, integrate, assess, and synthesise digital materials. Someone, especially student-teacher candidates, must have strong computer literacy abilities to manage these capabilities. He not only knows how to use his equipment but also how to control his thought processes.

Martin stated that digital literacy is "the awareness, attitude, and ability of individuals to use digital tools and facilities appropriately, to identify, access, manage, integrate, evaluate, analyse and synthesise digital resources, build new knowledge, create media of expression, and communicate." with others in specific life contexts to enable constructive social action and to reflect on these processes" (Lankshear & Knobel, 2008). Based on this, in carrying out digital literacy activities, there are at least three intellectual processes that prospective teacher students can carry out, namely, starting from finding digital information sources, creating and distributing digital information sources, and using digital information sources. For student teacher candidates looking for digital information sources is a necessity, both for learning materials and for learning materials in the classroom if he later undergoes his profession as a teacher. Therefore, student teacher candidates need to develop skills in finding, understanding, and using digital information sources available on the internet.

Aspects of digital literacy cannot be separated from the attitude and ability to be involved in a constructive social life. Yusminar argues that attitude is an internal ability that plays a role in taking action, which is influenced by an assessment of profit and loss, good or bad, satisfactory or not, for an action he takes. Attitude is a learning tendency to choose something (Yusnimar, 2014). In finding and using digital information materials, prospective teacher students need to ensure the correctness of the information source before using it. Thinking logically in this case, reasoning and understanding are essential elements for prospective teacher students to use in validating and verifying the digital information sources that will be used. All these elements of logical thinking will benefit a student teacher candidate in deciding which digital information source to use, why it will be used, whether it needs to be redistributed, and so on.

Self-concept plays a vital role in determining one's attitude to learning and capital for prospective teacher students to use and utilise advances in information and communication technology in the learning process and everyday life. Prospective teacher students with a high self-concept will be aware of themselves. They can measure their ability to act consciously and strive to take care of themselves using information and communication technology and interacting with their environment to avoid things that can harm them. Moreover, other people can easily and quickly access materials and learning resources to complete coursework assignments in achieving high learning achievements and maintain self-image with complete awareness to become a good person.

Likewise, logical thinking patterns have an essential role in digital literacy skills because, with logical thinking patterns, one can connect one's thoughts, map out logical and systematic lines of thinking, and always observe and analyse reality so that it can produce a conclusion based on the knowledge he has. Saragih (2006) reveals that logical thinking is the

ability to understand understanding (can understand) and evaluation ability to form skills (a process). Therefore, a logical thinking pattern must filter what is accepted by thinking sensibly and logically and being able to see from various points of view. The higher the logical thinking pattern of prospective teacher students, the easier it will be to find solutions to the problems.

In addition to self-concept and logical thinking patterns, emotional intelligence also relates to digital literacy skills because emotional intelligence is the ability possessed by a person to feel emotions and produce emotions that can ease the mind in understanding emotions and knowledge. In line with Goleman (2015), individuals with high emotional intelligence tend to have a calm attitude in dealing with something, not anxious, not worried, not easily afraid, and always think carefully before acting to do something. However, individuals with low levels of emotional intelligence tend to be easily anxious because they cannot control their emotions and cannot read the situation well. Emotional intelligence is the ability to recognise, assess, and control one's emotions and the emotions of others and make it an essential source of information to understand oneself and others to achieve a goal, besides that emotional intelligence can make a person more flexible, adaptable, and emotionally mature (Chapin, 2015; Hadiwijaya, 2017).

Emotional intelligence is a person's potential to adapt to his environment. Therefore, if a person can manage, supervise, control, and regulate his emotions appropriately, whether that person is dealing with his personality, dealing with other people, parents, friends or society, dealing with work or other problems that appears, then the person can already be said to have emotional intelligence. Having high emotional intelligence will help us be practical when facing a problem.

Conclusion

Self-concept and digital literacy abilities are correlated significantly. This implies that a person's capacity to use technology effectively tends to increase with their level of self-concept. Logical thought processes and computer literacy abilities are significantly correlated. This implies that a person's capacity for digital literacy tends to increase along with their level of logical reasoning. Emotional intelligence and digital literacy abilities are strongly correlated. This implies that an individual's capacity for digital literacy tends to increase with increasing levels of emotional intelligence. Self-concept (X_1), logical thinking patterns (X_2), and emotional intelligence (X_3) are positively correlated with digital literacy ability (Y). The greater one's self-concept, logical thinking patterns, and emotional intelligence, the greater one's capacity for digital literacy.

Implication

The following implications can be made in light of the study's findings. Student-teacher candidates should continue to enhance their self-concept, evaluate and reflect on themselves, become better people, and receive explicit acknowledgement from others. To avoid developing into someone who can hurt themselves or others, these efforts can be undertaken by maintaining their attitudes, conduct, knowledge, and understanding.

As a future teacher-student, I recognise the urgent need for improved digital literacy abilities in the modern world while maintaining a focus on logical thought processes. The learning process can be aided by this habit, making student teachers more selective in the information they choose to filter regarding the efforts created by educators and lecturers to

develop the logical thought processes of future teachers' students, among others, by fostering a meaningful learning environment through the use of contextualised learning that makes use of modern information and communication technology as a learning resource.

While emotional intelligence also contributes to the development of one's abilities, literacy proficiency is one of the critical skills that must be had. By giving guidance, mentoring, and encouraging students to use digital literacy as a tool for learning and social interaction with others in the real world and the wider world, educators and lecturers can work to improve students' emotional intelligence while enhancing their digital literacy abilities. Digitally while preserving, controlling, and having the capacity to handle emotions.

References

Abbas, R. M. A., & Abdullah, A. M. D. K. M. (2022). The Effect Of The Strategy (Form-Share-Liste-Innovate) Strategy In The Logical Thinking Of The Fifth Grade Female Students In Science. *Journal of Positive School Psychology*, *6*(5), 3020–3028.

Alonazi, W. B. (2020). The Impact of Emotional Intelligence on Job Performance During COVID-19 Crisis: A Cross-Sectional Analysis. *Psychology Research and Behavior Management*, *Volume 13*, 749–757. https://doi.org/10.2147/PRBM.S263656

Andriani, S., Nurlaelah, E., & Yulianti, K. (2019). The effect of process oriented guided inquiry learning (POGIL) model toward students' logical thinking ability in mathematics. *Journal of Physics: Conference Series*, *1157*, 042108. https://doi.org/10.1088/1742-6596/1157/4/042108

Anggraini, S. (2016). Budaya Literasi dalam Komunikasi. *WACANA*, *15*(3), 181–279. https://doi.org/https://doi.org/10.32509/wacana.v15i3.51

Arifin, R., & Irawan, E. (2020). The Effectiveness of Discovery Learning with Truth or Dare Technique in Improving Students' Logical Thinking Ability. *INSECTA: Integrative Science Education and Teaching Activity Journal*, *1*(2). https://doi.org/10.21154/insecta.v1i2.2388

Arono, A., Arsyad, S., Syahriman, S., Nadrah, N., & Villia, A. S. (2022). Exploring the Effect of Digital Literacy Skill and Learning Style of Students on Their Meta-Cognitive Strategies in Listening. *International Journal of Instruction*, *15*(1), 327–346. https://doi.org/10.29333/iji.2022.15130a

Astuti, S. I., Prananingrum, E. N., Ratri, L., Rahmiaji, Nurhajati, L., Lotulung, L. J. H., & Kurnia, N. (2021). *Budaya Bermedia Digital*. Kementerian Komunikasi dan Informatika.

Başerer, D. (2020). Logical Thinking Levels of Teacher Candidates. *Educational Policy Analysis and Strategic Research*, *15*(4), 176–190. https://doi.org/10.29329/epasr.2020.323.10

Byrne, A. (2018). *Encyclopedia of Library and Information Science, Fourth Edition; World Summit on the Information Society (WSIS)* (J. D. McDonald & M. Levine-Clark (eds.)). CRC Press. https://doi.org/10.1081/E-ELIS4

Casino-García, A. M., Llopis-Bueno, M. J., & Llinares-Insa, L. I. (2021). Emotional Intelligence Profiles and Self-Esteem/Self-Concept: An Analysis of Relationships in Gifted Students. *International Journal of Environmental Research and Public Health*, *18*(3), 1006. https://doi.org/10.3390/ijerph18031006

Chapin, K. (2015). The Effect of Emotional Intelligence on Student Success. *Journal of Adult Education*, *44*(1), 25–31.

Chaplin, D. (2016). *Empowerment zones and e-rate application rates*. Ther Service.

Claro, M., Salinas, A., Cabello-Hutt, T., San Martín, E., Preiss, D. D., Valenzuela, S., & Jara, I. (2018). Teaching in a Digital Environment (TIDE): Defining and measuring teachers'

capacity to develop students' digital information and communication skills. *Computers & Education*, *121*, 162–174. https://doi.org/10.1016/j.compedu.2018.03.001

Clem, A.-L., Hirvonen, R., Aunola, K., & Kiuru, N. (2021). Reciprocal relations between adolescents' self-concepts of ability and achievement emotions in mathematics and literacy. *Contemporary Educational Psychology*, *65*, 101964. https://doi.org/10.1016/j.cedpsych.2021.101964

D. Yazon, A., Ang-Manaig, K., Buama, C. A. C., & Tesoro, J. F. B. (2019). Digital Literacy, Digital Competence and Research Productivity of Educators. *Universal Journal of Educational Research*, *7*(8), 1734–1743. https://doi.org/10.13189/ujer.2019.070812

Diana, N. (2018). Mengembangkan Kemampuan Berpikir Kreatif dan Berpikir Logis Mahasiswa dengan Adversity Quotient dalam Pemecahan Masalah. *Seminar Nasional Matematika Dan Pendidikan Matematika*, 101–112.

Douma, I., de Boer, A., Minnaert, A., & Grietens, H. (2022). The I of students with ID or SEBD: A systematic literature review of the self-concept of students with ID or SEBD. *Educational Research Review*, *36*, 100449. https://doi.org/10.1016/J.EDUREV.2022.100449

Durodolu, O. O., & Mojapelo, S. M. (2020). Contextualisation of the Information Literacy Environment in the South African Education Sector. *Electronic Journal of E-Learning*, *18*(1). https://doi.org/10.34190/EJEL.20.18.1.005

Farah, M., Suharsono, Y., & Prasetyaningrum, S. (2019). Konsep diri dengan regulasi diri dalam belajar pada siswa SMA. *Jurnal Ilmiah Psikologi Terapan*, *7*(2). https://doi.org/10.22219/jipt.v7i2.8243

Febliza, A., & Okatariani, O. (2020). Pengembagan Instrumen Literasi Digital Sekolah, Siswa dan Guru. *Jurnal Pendidikan Kimia Universitas Riau*, *5*(1), 1. https://doi.org/10.33578/jpk-unri.v5i1.7776

Goleman. (2015). *Emotional Intelligence : Kecerdasan emosional mengapa EI lebih penting daripada IQ, Jakarta: PT. Gramedia Pustaka Utama*.

Gündüzalp, S. (2021). 21 st Century Skills for Sustainable Education: Prediction Level of Teachers' Information Literacy Skills on Their Digital Literacy Skills. *Discourse and Communication for Sustainable Education*, *12*(1), 85–101. https://doi.org/10.2478/dcse-2021-0007

Habibah, S. M. (2021). Penguatan Kemampuan Berpikir Logis pada Guru-Guru PPKn di Mgmp Magetan. *Jurnal ABDI: Media Pengabdian Kepada Masyarakat*, *7*(1), 50. https://doi.org/10.26740/ja.v7n1.p50-59

Hadiwijaya, H. (2017). Effect of Emotional Intelligence on Student Learning Achievement. *GUIDENA: Jurnal Ilmu Pendidikan, Psikologi, Bimbingan Dan Konseling*, *7*(1), 29–39. https://doi.org/10.24127/gdn.v7i1.663

Herawati, M. (2017). Konsep Diri Guru dapat Mempengaruhi Kinerja Guru di Sekolah Dasar Negeri Sawah 2 Ciputat. *Research and Development Journal Of Education*, *4*(1), 63–74. https://doi.org/http://dx.doi.org/10.30998/rdje.v4i1.2069

HMM, D. A.-F. (2020). Emotional Intelligence and Emotional Stability in Crises. *Journal of Psychiatry and Psychiatric Disorders*, *04*(02). https://doi.org/10.26502/jppd.2572-519X0090

Iqbal, J., Asghar, M. Z., Ashraf, M. A., & Yi, X. (2022). The Impacts of Emotional Intelligence on Students' Study Habits in Blended Learning Environments: The Mediating Role of Cognitive Engagement during COVID-19. *Behavioral Sciences*, *12*(1), 14. https://doi.org/10.3390/bs12010014

Jan, S. U., & Anwar, M. A. (2019). Emotional Intelligence, Library Use and Academic achievement of University Students. *Journal of the Australian Library and Information Association*, *68*(1), 38–55. https://doi.org/10.1080/24750158.2019.1572482

Jing, X., Meng, H., Li, Y., Lu, L., & Yao, Y. (2021). Effects of Psychological Capital, Coping Style and Emotional Intelligence on Self-Rated Health Status of College Students in China During COVID-19 Pandemic. *Research Square*, 1–14. https://doi.org/https://doi.org/10.21203/rs.3.rs-141892/v1

Juan, C. (2021). A Cultural and Functional Approach to the Assessment of Logical Thinking Ability in English Writing. *Scientific Programming*, *2021*, 1–9. https://doi.org/10.1155/2021/1783384

Julianto, N. (2021). Evaluating Learning Media on Mathematical Literacy Through Student's Logical Thinking Skill: Mobile Learning Integrated Ethnomathematics as Strategy to Improve Student's Logical Thinking Skill. *International Journal of Social Science and Human Research*, *04*(12). https://doi.org/10.47191/ijsshr/v4-i12-75

Juliyanti, A., & Pujiastuti, H. (2020). Pengaruh Kecemasan Matematis dan Konsep Diri Terhadap Hasil Belajar Matematika Siswa. *Prima: Jurnal Pendidikan Matematika*, *4*(2), 75. https://doi.org/10.31000/prima.v4i2.2591

Kalyan, A., Sharma, K., & Srivastava, D. (2022). Emotional intelligence. *International Journal of Health Sciences*, 5261–5273. https://doi.org/10.53730/ijhs.v6nS2.6329

Kang, J., Keinonen, T., & Salonen, A. (2021). Role of Interest and Self-Concept in Predicting Science Aspirations: Gender Study. *Research in Science Education*, *51*. https://doi.org/10.1007/s11165-019-09905-w

Killgore, W. D. S., Vanuk, J. R., Persich, M. R., Cloonan, S. A., Grandner, M. A., & Dailey, N. S. (2022). Sleep quality and duration are associated with greater trait emotional intelligence. *Sleep Health*, *8*(2). https://doi.org/10.1016/j.sleh.2021.06.003

Koltay, T. (2011). The media and the literacies: media literacy, information literacy, digital literacy. *Media, Culture & Society*, *33*(2), 211–221. https://doi.org/10.1177/0163443710393382

Kuek, A., & Hakkennes, S. (2020). Healthcare staff digital literacy levels and their attitudes towards information systems. *Health Informatics Journal*, *26*(1), 592–612. https://doi.org/10.1177/1460458219839613

Lankshear, & Knobel, M. (2008). *Digital Literacies: Concepts, Policies and Practices*. Peter Lang Publishing.

Lea, R. G., Qualter, P., Davis, S. K., Pérez-González, J.-C., & Bangee, M. (2018). Trait emotional intelligence and attentional bias for positive emotion: An eye-tracking study. *Personality and Individual Differences*, *128*, 88–93. https://doi.org/10.1016/j.paid.2018.02.017

Leffler, M. E. (2015). *Digitally divided in Jackson: Are students getting the digital literacy skills they need to succeed?* Jackson State University.

Mattingly, V., & Kraiger, K. (2019). Can emotional intelligence be trained? A meta-analytical investigation. *Human Resource Management Review*, *29*(2), 140–155. https://doi.org/10.1016/j.hrmr.2018.03.002

Mohammad, S. (2019). Investigation of EFL Student Teachers' Emotional Responses to Affective Situations during Practicum. *European Journal of Educational Research*, *8*(4), 1201–1215. https://doi.org/10.12973/eu-jer.8.4.1201

Moradian, S. T., Movahedi, M., Rad, M. G., & Saeid, Y. (2022). Emotional intelligence of nurses caring for COVID-19 patients: A cross-sectional study. *Archives of Psychiatric Nursing*, *36*. https://doi.org/10.1016/j.apnu.2021.10.011

Nightingale, S., Spiby, H., Sheen, K., & Slade, P. (2018). The impact of emotional intelligence in health care professionals on caring behaviour towards patients in clinical and long-term care settings: Findings from an integrative review. *International Journal of Nursing Studies*, *80*, 106–117. https://doi.org/10.1016/j.ijnurstu.2018.01.006

Nugraha, A. J., Suyitno, H., & Susilaningsih, E. (2017). Analisis Kemampuan Berpikir Kritis

Ditinjau dari Keterampilan Proses Sains dan Motivasi Belajar melalui Model PBL. *Journal of Primary Education*, *6*(1), 35–43. https://doi.org/https://doi.org/10.15294/jpe.v6i1.14511

Octaria, D. (2017). Kemampuan Berpikir Logis Mahasiswa Pendidikan Matematika Universitas Pgri Palembang Pada Mata Kuliah Geometri Analitik. *Jurnal Pendidikan Matematika RAFA*, *3*(2), 181–194. https://doi.org/https://doi.org/10.19109/jpmrafa.v3i2.1740

Potter, W. J. (2014). *Media Literacy, 7th Edition* (7th ed.). Sage Publications.

Pudjijogyanti, C. R. (2008). *Konsep Diri dalam Pendidikan*. Arcan.

Puspitasari, M. D. M., & Munawi, H. A. (2010). Perubahan Pola Berpikir Mahasiswa Pada Fenomena Perpindahan Panas Secara Konveksi. *Berkala Ilmiah Pendidikan Fisika*, *6*(2), 142–156. https://doi.org/http://dx.doi.org/10.20527/bipf.v6i2.4909

Reedy, K., & Goodfellow, R. (2012). *Session 5: digital and information literacy framework*. The Open University. http://www.open.edu/openlearn/educationdevelopment/succeeding-postgraduate-study/content-sectionoverview%0A%0A

Rizal, R., Setiawan, W., & Rusdiana, D. (2019). Digital literacy of preservice science teacher. *Journal of Physics: Conference Series*, *1157*, 022058. https://doi.org/10.1088/1742-6596/1157/2/022058

Rohmat, A. N., & Lestari, W. (2019). Pengaruh Konsep Diri dan Percaya Diri terhadap Kemampuan Kemampuan Berpikir Kritis Matematis. *JKPM (Jurnal Kajian Pendidikan Matematika)*, *5*(1), 73. https://doi.org/10.30998/jkpm.v5i1.5173

Rosida, V. (2015). Pengaruh Kecerdasan Emosional Terhadap Hasil Belajar Matematika Siswa Kelas VII2 SMP Negeri 1 Makassar. *Jurnal Sainsmat*, *4*(2), 87–101. https://doi.org/https://doi.org/10.35580/sainsmat4218362015

Rusdha, D. M., Lestari, I., & Sapriati, A. (2022). Hubungan Konsep Diri dan Kemampuan Berpikir Kritis dengan Hasil Belajar IPA. *Pedagogi: Jurnal Penelitian Pendidikan*, *9*(1), 1–12. https://doi.org/10.25134/pedagogi.v9i1.4766

Saragih, S. (2006). Menumbuhkembangkan Berpikir Logis dan Sikap Positif terhadap Matematika Melalui Pendekatan Matematika Realistik. *Jurnal Pendidikan Dan Kebudayaan Departemen Pendidikan Nasional. Badan Penelitian Dan Pengembangan*, 1–21.

Sholihah, K. (2019). Meningkatkan Kemampuan Berpikir Logis pada Anak Usia Dini dengan Menggunakan Media Puzzle Angka. *CERIA (Cerdas Energik Responsif Inovatif Adaptif)*, *1*(5), 13. https://doi.org/10.22460/ceria.v1i5.p13-22

Soomro, K. A., Kale, U., Curtis, R., Akcaoglu, M., & Bernstein, M. (2018). Development of an instrument to measure faculty's information and communication technology access (FICTA). *Education and Information Technologies*, *23*(1), 253–269. https://doi.org/https://psycnet.apa.org/doi/10.1037/t73211-000

Stuart, G. W., & Sundeen. (2016). *Principles and practice of psychiatric nursing*. Elsevier\'s Health Sciences.

Sugiarti. (2016). Analisis Kecerdasan Emosional Siswa Kelas VII SMP Negeri 2 Bangun Purbatahun Pembelajaran 2015/2016. *Jurnal Ilmiah Mahasiswa FKIP Prodi Biologi*, *1*(1). http://103.28.220.26/index.php?ref=browse&mod=viewarticle&article=399609

Suriá-Martínez, R., Ortigosa Quiles, J. M., & Riquelme Marin, A. (2019). Emotional Intelligence Profiles of University Students with Motor Disabilities: Differential Analysis of Self-Concept Dimensions. *International Journal of Environmental Research and Public Health*, *16*(21), 4073. https://doi.org/10.3390/ijerph16214073

Szczygieł, D., & Mikolajczak, M. (2017). Why are people high in emotional intelligence happier? They make the most of their positive emotions. *Personality and Individual*

Differences, *117*, 177–181. https://doi.org/10.1016/j.paid.2017.05.051

Thalib, S. B. (2017). *Psikologi Pendidikan Berbasis Analisis Empiris Aplikatif* (Revisi). Prenada Media.

Tim APJII. (2020, November). Survei Pengguna Internet APJII 2019-Q2 2020: Ada Kenaikan 25,5 Juta Pengguna Internet Baru di RI. *APJII*.

Waddington, J. (2019). Developing primary school students' foreign language learner self-concept. *System*, *82*, 39–49. https://doi.org/10.1016/j.system.2019.02.012

Wahyuddin, W. (2017). The Analysis of the Problem of Economic Mathematical Problems Reversed from the Ability of Logic Thinking in Students. *International Electronic Journal of Mathematics Education*, *12*(3), 585–598. https://doi.org/10.29333/iejme/635

Yusnimar. (2014). E-book dan pengguna perpustakaan perguruan tinggi di Jakarta. *Al-Maktabah*, *13*(1), 34–39.