DIROSAT
Journal of Islamic Studies
Volume 10, No. 1 Januari-Juni 2025
ISSN: 2541-1667 (print); 2541-1675 (online)

THE CORRELATION OF DIGITAL LITERACY COMPETENCE AND LEARNING MOTIVATION WITH SOCIAL ATTITUDES AND SELF-EFFICACY IN INDONESIAN TEACHER CANDIDATES FOLLOWING THE COVID-19 PANDEMIC

Moh. Rifqi Rahman
Institut Al Azhar Menganti Gresik
Email: rifqir93@gmail.com

Abstract: This study is critical because it looks at digital literacy in Indonesian education, especially post the challenges of the COVID-19 pandemic which forced schools to use more technology. It also examines motivation, social attitudes, and self-confidence, which are all important parts of digital literacy. The main goal is to find out how digital literacy skills and the motivation to learn affect the attitudes and self-confidence of future teachers in Indonesia after the pandemic. To do this, the study surveyed prospective elementary school teachers across Indonesia, with 331 participants from various islands like Java, Kalimantan, Maluku, Nusa Tenggara and Bali, Papua, and Sumatra. An online questionnaire was used to collect data, and the analysis included descriptive statistics, Pearson correlation, and linear regression. The results showed that digital literacy has a 43% impact on social attitudes and a 33% impact on self-confidence. Motivation affects social attitudes by 57% and self-confidence by 42%. This suggests that being good at digital literacy doesn't automatically mean someone will have positive social attitudes online. Therefore, the study highlights the importance of having skills in independent learning, creativity, and using technology effectively to develop positive attitudes in digital spaces.

Keywords: Digital literacy; Motivation; Social attitudes; Self-efficacy; Teacher candidates; Post Covid-19.

Introduction

The Covid-19 pandemic has exerted a profound impact on the transformation of educational systems worldwide (UNICEF, 2020). This shift occurred at an unprecedented pace, where virtually overnight, numerous schools and educational frameworks began to implement distance learning modalities (Kamenetz, 2020; Sun et al., 2020). Although such a rapid transformation does not inherently assure effectiveness, it is incontrovertible that the Covid-19 crisis has significantly propelled massive innovation within the educational sector.

In Indonesia itself, during the Covid-19 pandemic, schools were compelled to collectively transition to online learning (Azhari & Fajri, 2022; Utomo et al., 2021; Wijaya et al., 2020), leveraging technology to facilitate the continuity of education and minimize the spread of the Covid-19 pandemic (Utomo et al., 2021). However, it should be noted that sudden changes are invariably associated with sudden preparations, which is both understandable and logical.

Consequently, several issues have been identified amidst distance or online learning, such as teachers' inability to directly utilize various Information and Communication Technology (ICT) devices and other online learning platforms, due to teachers' capabilities, parents' economic factors, limited internet access, and lack of guidance (Azhari & Fajri, 2022). The encouraging news is that over time, teachers in Indonesia have been able to independently adapt to distance learning operational activities (Lie et al., 2020; Liu et al., 2022).

The post-Covid-19 question arises as to whether the significant transformations in the education system are indeed essential for long-term advancement within the educational framework itself. Is distance learning still imperative, or is it merely temporary, serving short-term interests, or perhaps highly deserving of continuation?

In general, the significant changes during Covid-19 tend to focus more on addressing urgent and temporary needs. According to Zhao & Watterston (2021), the extensive changes made during Covid-19 may not contribute significantly to long-term educational improvement. They emphasize the need for specific changes in education, particularly in the curriculum. They suggest that the curriculum should equip students with new skills relevant to the contemporary era, which is defined by advanced technology and globalization. Therefore, education should focus on nurturing students' creativity in a global setting and teaching them to use technology wisely in the digital age (Zhao, 2012).

Up to this point, two noteworthy aspects deserve attention. Firstly, the encouraging news regarding the adaptability of teachers in Indonesia to distance learning operational activities due to the accustomedness during the pandemic period. Secondly, the demand for curricula to steer towards technology-based creative learning. These two ultimately point towards a definite direction, highlighting the importance of teachers' digital literacy skills.

On the other hand, the present era undeniably marks the digital age, where educators and students are consistently engaged in practices related to digital literacy (Rusydiyah et al., 2020). In this context, teachers must be proficient in digital literacy to effectively translate curricula, which are increasingly digitized, to

students in their learning processes. Several studies have underscored the importance of digital literacy skills. For instance, Reddy et al. (2022) highlighted that if digital literacy is fully prioritized, supported, and advocated by all stakeholders, and successfully implemented in higher education, individuals, communities, and regions will reap tangible benefits in the future.

Moreover, digital literacy has the potential to enhance economic prosperity as the current utilization of digital platforms in sectors such as healthcare, governance, banking, education, and employment is at its peak (E. Reddy et al., 2016; P. Reddy et al., 2020; Sharma et al., 2015). Being digitally literate enables an individual or community to overcome many challenges in their daily lives.

Hence, Borthwick & Hansen (2017) advocate for educational institutions to concentrate on preparing prospective teachers who are committed to four principles: (1) Emphasizing active utilization of technology to facilitate learning and teaching through creation, production, and problem-solving; (2) Establishing a sustainable professional learning system throughout programs for higher education instructors to enhance and consistently update their ability to employ technological tools for transformative learning and teaching; (3) Ensuring pre-service teachers' exposure to educational technology; and (4) Aligning endeavors with recognized research-based standards, frameworks, and credentials across disciplines.

Thus, digital literacy is paramount for prospective teachers. Digital literacy encompasses both independent and dependent abilities. Independently, these skills can function autonomously, without requiring additional elements for validation. Conversely, they also rely on external factors to fortify their efficacy. Hobbs & Coiro (2019) assert that cultivating digital literacy proficiency necessitates individuals to first contemplate their motivations. In essence, motivation serves as the pivotal factor.

Motivation in this study acts as a crucial factor, ensuring individuals effectively apply digital literacy skills. The research mainly focuses on learning motivation, aiming to ensure individuals engage in learning with genuine motivation and effectively use digital tools (digital literacy skills). This aligns with Anthonysamy et al.'s (2020) findings, suggesting that motivation linked to digital literacy skills can guide individuals in three aspects: technological efficacy, performance value, and goal orientation in learning.

Based on this background, this study aims to explore the relationship between digital literacy skills and learning motivation with social attitudes and self-efficacy among prospective Indonesian teachers post-Covid-19 pandemic. Social attitudes and self-efficacy in this study serve as the focal points stemming from digital literacy skills and motivation. In other words, it is hoped that when an individual possesses proficient digital literacy skills and strong motivation, their attitudes will also lean towards positivity and their self-efficacy will flourish. Specifically, this research seeks to investigate the hypothesis that digital literacy skills and motivation should influence the development of an individual's attitudes and self-efficacy.

The aspect of attitude in this study pertains to social attitudes. This aspect is indeed of great importance and warrants further attention. The digital era has profoundly impacted social interactions today. Social interactions have expanded,

transitioning from primarily physical to digital or virtual realms. Consequently, various new deviations have emerged, including cyberbullying (Seçkin-Kapucu et al., 2021), digital violence and crime (Bjelajac & Filipović, 2021), misinformation (Vosoughi et al., 2018), digital abuse, trauma related to digital device usage, internet safety, cyber risks for adolescents (Paat & Markham, 2021), and other deviations. Thus, research investigating the relationship or influence of digital literacy skills and motivation on social attitudes is essential.

In addition to social attitudes, another aspect closely related to digital literacy skills is self-efficacy. In the educational context, strengthening self-efficacy is identified as a primary goal for teachers (Prior et al., 2016). High self-efficacy is associated with feelings of autonomy and the ability to self-regulate in the learning process (Bernard et al., 2004). Shen et al. (2013) even suggest that self-efficacy is a better predictor of academic performance than other cognitive or affective processes in identifying one's quality. In the learning context, if a student has low self-efficacy towards a task, they are likely to exert less effort. Therefore, this research aims to explore the relationship between digital literacy skills and motivation in self-regulation. The study will investigate whether individuals with good digital literacy skills and motivation also exhibit effective self-regulation.

This study specifically aims to explore the relationship between digital literacy skills and motivation towards the social attitudes and self-efficacy of prospective Indonesian teachers post-Covid-19 pandemic. In this study, prospective teachers refer to prospective teachers of Madrasah Ibtidaiyah (MI) in Indonesia. The reason for selecting MI prospective teachers as research subjects is because: (1) MI teachers possess distinctive characteristics such as a paradigm of technology use based on Islamic teachings, (2) there are several subjects, including creed (akidah), which are challenging to implement using digital technology, and (3) digital literacy in the context of religious teachings is susceptible to misconceptions, thus necessitating caution in its use within the madrasah context.

Several similar studies to this one exist, such as the research by Karagözoğlu & Gezer (2022), which investigates the connection between the digital literacy levels of prospective social studies teachers and their attitudes towards distance education. Kuo & Belland (2019) aim to examine the relationship between computers, the internet, and the academic self-efficacy of adult African American students, as well as their attitudes towards computers in technology-rich environments. Additionally, Prior et al. (2016) delve into the impact of attitudes, digital literacy, and self-efficacy on online learning behaviors. However, there has yet to be a specific study attempting to explore the relationship between digital literacy skills, motivation, social attitudes, and self-regulation among prospective MI teachers.

This study offers insights into how digital literacy skills and motivation should be interconnected to reinforce social attitudes and self-regulation.

Methods

This study is a survey conducted among 311 prospective MI teachers distributed across various islands in Indonesia, including Java, Kalimantan Nusa

Tenggara and Bali, Papua, and Sumatra. The breakdown of respondent composition can be observed in the following Table 1.

Table 1. Composition of survey respondents

	N	%
Jawa	221	66,8%
Kalimantan	20	6,0%
Maluku	18	5,4%
Nusa Tenggara & Bali	15	4,5%
Papua	12	3,6%
Sulawesi	15	4,5%
Sumatera	30	9,1%
Sum	**331**	**100%**

The distribution of respondents in Table 1 does not require an equal representation, as this study does not aim for a comparative analysis among teachers based on regions (islands). Java Island predominantly contributes to the survey respondents because the concentration of prospective teachers in Java is considerably higher compared to other islands.

This study employed an online questionnaire through Google Form to gather research data. It consisted of four variables related to the research theme: digital literacy, motivation, social attitudes, and self-efficacy. The development of instruments for each variable drew upon or adopted findings from other research. Consequently, expert validation was not deemed necessary as part of the content validation process for these instruments.

The instruments for the digital literacy variable are based on materials supporting digital literacy in the Indonesian national literacy movement (Nasullah, 2017). There are eight indicators of digital literacy: cultural, cognitive, constructive, communicative, confidence, creative, critical, and responsible.

The instruments for the motivation variable are drawn from the research findings of Anthonysamy et al. (2020). There are three motivation indicators in the context of alignment with digital literacy: autonomy, value, and orientation. The instruments for the social attitude variable are adapted from the research of Sung & Mayer (2012). There are five indicators: social respect, social sharing, open-mindedness, social identity, and intimacy. Lastly, the instrument for the self-efficacy variable refers to the research by Van der Bijl & Shortridge-Baggett (2001), which presents three indicators including performance achievement more directed towards practicing and learning from one's own experiences, reflecting on the experiences of others, and physiological information.

Table 2 below details the research instrument based on indicators for each variable.

Table 2. Research Instruments

	Indicators	Questions
Digital Literacy	Cultural	As a teacher, I understand well that the context of the digital world can come in various forms.

	Indicators	Questions
	Cognitive	As a teacher, I am accustomed to assessing digital content while observing/consuming it.
	Constructive	As a teacher, I am accustomed to utilizing digital content as a foundation for developing better lesson plans.
	Communicative	As a teacher, I am accustomed to communicating the sources of content where I have previously tracked their origins.
	Confidence	As a teacher, I am accustomed to confidently and responsibly sharing digital content.
	Creative	As a teacher, I am capable of utilizing digital content to create new innovations.
	Critical	As a teacher, I am accustomed to critiquing the digital content that I consume.
	Responsible	As a teacher, I am accustomed to considering the social impact when disseminating specific digital content.
Motivations	Autonomy	As a teacher, I feel that the use of technology can help me enhance my self-sufficiency in learning something new.
	Value	As a teacher, I feel that the use of technology can make my work outcomes more meaningful or valuable.
	Orientation	I feel that the use of technology always helps me achieve learning goals more effectively and efficiently.
Social Attitude	Social respect	I am accustomed to expressing 'appreciation' when interacting in the digital world.
	Social sharing	I am accustomed to sharing information responsibly to foster relationships with others.

	Indicators	Questions
	Open-mindedness	Through the digital world, I am accustomed to expressing agreement/ disagreement, positive views, and expressing myself with full awareness and responsibility.
	Social identity	I am accustomed to displaying my identity as a form of my social responsibility in the digital world.
	Intimacy	I am accustomed to expressing personal expressions responsibly in the digital world.
Self-efficacy	Performance achievement	I tend to reflect on previous experiences to achieve further performance achievements.
	Reflecting on the experiences of others	I am accustomed to formulating other people's experiences as lessons to become better in the future.
	Physiological information	I am accustomed to self-evaluating both my performance and emotions.

This study employs a Likert scale ranging from 1 to 5 to assess each statement, with 1 indicating strong disagreement and 5 indicating strong agreement. Furthermore, the data analysis techniques utilized in this research encompass descriptive statistics for the purpose of presenting data systematically and visibly regarding the achievement or distribution of scores for each variable (George & Mallery, 2018). Additionally, Pearson correlation is employed to determine the presence of linear relationships among specific variables (Cleophas & Zwinderman, 2018), while linear regression is utilized to predict the extent of influence of particular variables on others (Kumari & Yadav, 2018).

Results and Discussion

Initially, this study may seem somewhat predictable, positing that a prospective educator with strong digital literacy competencies and adequate motivation likely also exhibits positive attitudes and self-efficacy. However, this research primarily underscores the realm of social attitudes, which encompass facets such as social recognition, sharing, openness, identity transparency, and intimacy (Sung & Mayer, 2012).

It is acknowledged that not all individuals proficient in digital literacy possess the sensitivity to engage in acts of recognition, sharing, openness, and the like. This dimension remains susceptible to various interpretations. Consequently, this study endeavors to scrutinize whether digital literacy and motivation serve as significant determinants in shaping these social attitudes and self-efficacy.

1. Average Score

The research findings indicate that prospective MI teachers in Indonesia have a relatively high awareness (mean = 4.03) that digital content can take various

forms. However, among the indicators listed in the research instrument, prospective MI teachers still exhibit weakness in utilizing digital content as material for lesson planning (mean = 3.66).

These results are quite understandable and reasonable. This is because teachers in Indonesia, including prospective teachers, have only been intensively using technological devices for learning purposes since the Covid-19 pandemic (Sulasmi, 2022). Hence, teachers in Indonesia have primarily interacted with digital content that is still relatively basic, such as PowerPoint, Canva, Zoom, Google Meet, Classroom, and others.

Additionally, teachers in Indonesia encounter challenges in using digital resources for teaching, including uneven internet access, lack of teacher professional development, and limited school system support (Soepriyanti et al., 2022). Nevertheless, this study suggests that prospective MI teachers in Indonesia demonstrate adequate digital literacy skills, albeit with areas needing improvement, such as utilizing digital content for lesson planning.

Table 3. The average score of digital literacy competence for prospective MI teachers.

Indicators	Average
Cultural	4,03
Cognitive	3,75
Constructive	3,66
Communicative	3,79
Confidence	3,59
Creative	3,57
Critical	3,53
Responsible	3,67

On the motivational aspect, prospective MI teachers in Indonesia also believe that technology can enhance their learning independence (3.82), although some of them express that teachers lack sufficient knowledge to utilize technology to provide value to their own work outcomes (3.63).

Table 4. The average score of motivations for prospective MI teachers.

Indicators	Average
Autonomy	3,82
Value	3,62
Orientation	3,72

The average scores on the social attitude variable indicate that not all teachers have the competence to socially display their authentic identities (3.46). Implicitly, this finding suggests that prospective teachers still lack full confidence in presenting themselves in the digital world. Certainly, several factors need to be explored to review this finding.

Table 5. The average score of social attitudes for prospective MI teachers.

Indicators	Average
Social respect	3,69
Social sharing	3,65
Open-mindedness	3,58

DIROSAT
Journal of Islamic Studies
Volume 10, No. 1 Januari-Juni 2025
ISSN: 2541-1667 (print); 2541-1675 (online)

Indicators	Average
Social identity	3,46
Intimacy	3,56

The self-efficacy condition of these prospective MI teachers achieves an average score that is almost the same as the previous motivation variable. In other words, prospective MI teachers still do not fully possess the ability to reflect upon, formulate, and evaluate themselves. Although the average scores fall within the range of 3 to 4, which can be categorized as sufficient, such a condition does not guarantee the claim that prospective MI teachers are truly confident in their self-efficacy.

2. Score Distribution

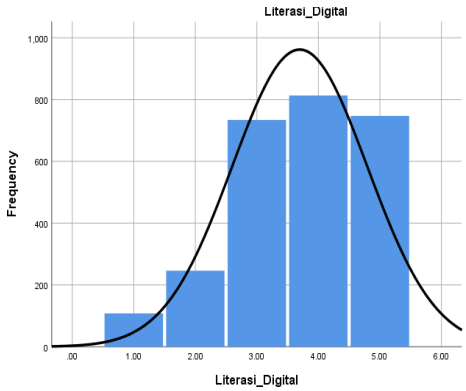

Figure 1. Distribution of digital literacy scores of prospective MI teachers

Figure 1 shows a symmetrical distribution of digital literacy scores among prospective MI teachers. The histogram demonstrates a balanced spread, with scores of 3, 4, and 5 having nearly equal frequencies. In essence, prospective MI teachers predominantly agree or strongly agree that they are aware of various forms of digital content, can evaluate it, utilize it responsibly, and consider its impact.

Furthermore, what recommendations exist for the digital literacy competence of Indonesian teachers, especially these prospective MI teachers? Basilotta-Gómez-Pablos et al. (2022) suggest various solutions to enhance this competence, with a primary emphasis on implementing ongoing training programs. Essentially, prospective teachers should receive continuous training to enhance their teaching competence across all dimensions of development, including digital literacy. Additionally, these training programs should be structured to prioritize the personal development of teachers (Cabero-Almenara et al., 2021).

These solutions remain inadequate. Lie et al. (2020) propose government involvement to enhance teachers' digital literacy skills. Top-down interventions by educational authorities are crucial for promoting digital literacy, especially in addressing issues of digital equality or reducing disparities, as previously noted by Soepriyanti et al (2022).

DIROSAT
Journal of Islamic Studies
Volume 10, No. 1 Januari-Juni 2025
ISSN: 2541-1667 (print); 2541-1675 (online)

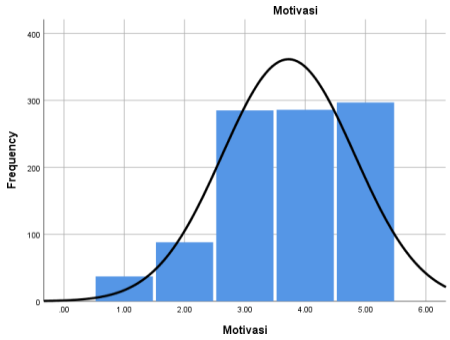

Figure 2. Distribution of motivations scores of prospective MI teachers

The motivation scores among prospective MI teachers are quite balanced, with scores of 3, 4, and 5 showing a similar distribution. The only difference is that score 5 is slightly higher compared to scores 3 and 4. This indicates that these teachers strongly believe they are generally motivated to use technology, which they see as helpful for improving their effectiveness and efficiency in their future roles.

Motivation is crucial for teachers. Whether it comes from within or from external sources, motivation drives teachers to enhance their skills, innovate in teaching, and fulfill their duties with dedication. Conversely, a lack of motivation can greatly diminish a teacher's enthusiasm in carrying out their responsibilities (Muflihan et al., 2024).

Similarly, Taryana et al. (2023) suggest that motivation impacts a teacher's performance. Motivation plays a role in successful teaching and helps teachers manage their classrooms effectively. It's easy to see that a teacher without motivation can be dull in class (Anwar et al., 2021).

As Taryana et al. (2023) note, motivation affects how well teachers perform. Without motivation, teachers can quickly become boring because there's no driving force (Anwar et al., 2021). This study's results suggest that prospective MI teachers in Indonesia have sufficient motivation, especially in using digital technology to improve their teaching effectiveness and efficiency.

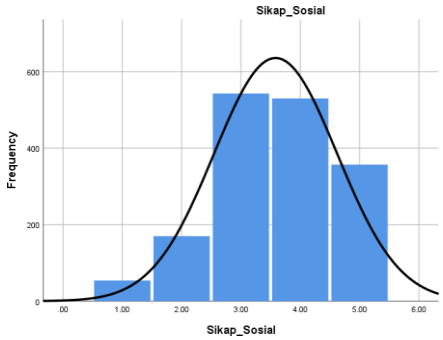

Figure 3. Distribution of social attitudes scores of prospective MI teachers

A key observation from the distribution of social attitude scores among prospective MI teachers is that a score of 5 isn't too common. Most scores fall between 3 and 4, suggesting that their social attitudes are generally decent. This means they show appreciation, share responsibly, express themselves consciously,

DIROSAT
Journal of Islamic Studies
Volume 10, No. 1 Januari-Juni 2025
ISSN: 2541-1667 (print); 2541-1675 (online)

and display their identity reasonably well in digital spaces. Social attitudes are important here because they could improve with better digital literacy or motivation. Although this might seem predictable, it's crucial to focus on how digital literacy and motivation affect social attitudes online.

Issues like cyberbullying, digital violence, and misinformation are always present in digital spaces. So, even though we might expect digital literacy and motivation to influence social attitudes, it's still important to understand exactly how much they do.

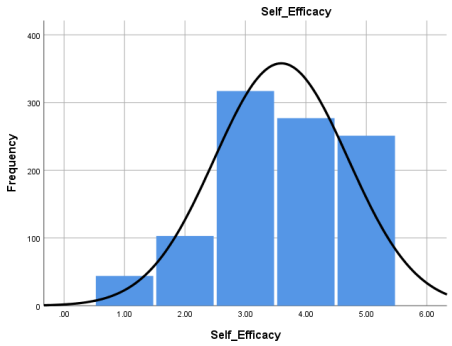

Figure 4. Distribution of self-efficacy scores of prospective MI teachers

Looking at the distribution, the distribution of self-efficacy scores among prospective MI teachers is slightly more dominant in the score range of 3 (sufficient). The range between scores 3 and 4 represents a range from sufficient to good. Therefore, it can be simplistically said that the ability of prospective MI teachers to reflect, formulate experiences, and evaluate is predominantly at a sufficient level.

3. Correlation and Regression

Based on the results of the Pearson correlation test, digital literacy is closely related to social attitudes. This means that the more proficient prospective MI teachers are in digital literacy, the more mature their social attitudes tend to be.

Table 6. The result of the Pearson correlation test for digital literacy and social attitudes

		Social attitudes
Digital literacy	Pearson correlation	0.655**
	Sig. (2-tailed)	0.000

**Correlation is significant at the 0.01 level (2-tailed)

Nevertheless, the subsequent inquiry pertains to the extent of digital literacy's contribution to the social attitudes of prospective MI teachers. Hence, presented below are the detailed outcomes of the linear regression statistical analysis.

Table 7. The results of the linear regression statistical test on the influence of digital literacy on social attitudes

Model	**R**	**R^2**	**Adjusted R^2**	**RMSE**
H_0	0.000	0.000	0.000	1.037
H_1	0.655	0.429	0.429	0.784

Noted: $p < 0.001$ (ANOVA)

DIROSAT
Journal of Islamic Studies
Volume 10, No. 1 Januari-Juni 2025
ISSN: 2541-1667 (print); 2541-1675 (online)

According to the statistical table provided, digital literacy significantly ($p < 0.001$) influences social attitudes. However, regrettably, this impact appears to be somewhat limited, as evidenced by the relatively modest R^2 value for H_1, which stands at 0.429 or merely 43%. This suggests that the digital literacy proficiency of prospective MI teachers can only explain approximately 43% of their social attitudes.

Samani et al. (2020) posit that the positive influence of digital literacy proficiency on the social attitudes of prospective teachers necessitates practical implementation within pedagogical frameworks, particularly those involving direct student engagement. Additionally, insights from Castellví et al. (2020) advocate for prospective teachers' active participation in digital fora to discuss pertinent social issues, aiming to enhance their empathetic capacities and establish actionable guidelines for fostering positive social attitudes in both virtual and real-world contexts.

Remarkably, Martinovic et al. (2019) unveil compelling research outcomes suggesting that individuals with heightened digital prowess and active digital engagement may exhibit paradoxical potentials, either fostering increasingly favorable social attitudes or, conversely, exacerbating negative ones. Consequently, practical implications such as promoting structured academic and formal digital interactions are imperative for mitigating the proliferation of deleterious social attitudes within digital spheres.

Despite the research's indication of a modest 43% impact of digital literacy on social attitudes, proposals such as the implementation of flexible, innovative, and inclusive digital platforms for educators and learners warrant meticulous consideration to cultivate constructive behavioral norms within digital landscapes.

Subsequently, the correlation between digital literacy and self-efficacy was examined. According to the Pearson correlation test results, digital literacy exhibits a significant correlation with self-efficacy. This implies that increased proficiency in digital literacy among prospective MI teachers corresponds to higher levels of self-efficacy.

Table 8. The result of the Pearson correlation test for digital literacy and self-efficacy

		Self-efficacy
Digital literacy	Pearson correlation	0.573**
	Sig. (2-tailed)	0.000

**Correlation is significant at the 0.01 level (2-tailed)

Table 9. The results of the linear regression statistical test on the influence of digital literacy on self-efficacy

Model	**R**	**R^2**	**Adjusted R^2**	**RMSE**
H_0	0.000	0.000	0.000	1.105
H_1	0.573	0.328	0.327	0.906

Noted: $p < 0.001$ (ANOVA)

Based on the aforementioned statistical table, it is evident that digital literacy significantly influences self-efficacy ($p < 0.001$). However, the observed effect size is relatively modest, as reflected by an R^2 value of merely 0.328 or 33% in H_1.

Consequently, the digital literacy proficiency of prospective MI teachers appears to contribute only to a limited extent, accounting for 33% of their self-efficacy.

These empirical insights find resonance with prior research endeavors. Aslan (2021) posits that the determination of individuals' self-efficacy levels in digital literacy is contingent upon multifaceted factors, such as gender, academic discipline, and the presence of home computing facilities. Consequently, the intricate interplay between digital literacy and self-efficacy underscores the notion that their correlation cannot be simplistically construed, as numerous extraneous variables intercede.

Further corroborating this notion, Cosby et al. (2023) elucidate that individuals endowed with proficient digital literacy may paradoxically exhibit diminished confidence in analyzing digital content. They advocate for the transformation of digital literacy practices into collaborative team environments to foster self-assurance among participants.

A noteworthy synthesis derived from the literature review is the conceptual fusion of digital literacy and self-efficacy into a unified construct termed "digital literacy self-efficacy" (Aslan, 2021; Çetin & İşçi, 2022; Olur & Ocak, 2021; Rodriguez & Liu, 2023) This amalgamation underscores the inseparability of digital literacy and self-efficacy, positing that their confluence is contingent upon a myriad of external determinants transcending their individual domains.

Based on the findings of the Pearson correlation analysis, there exists a significant association between learning motivation and the social attitudes of prospective MI teachers. In essence, heightened levels of motivation among prospective MI teachers correlate positively with elevated levels of social attitudes.

Table 10. The result of the Pearson correlation test for motivation and social attitudes

		Social Attitudes
Motivation	Pearson correlation	0.754**
	Sig. (2-tailed)	0.000

**Correlation is significant at the 0.01 level (2-tailed)

Table 11. The results of the linear regression statistical test on the influence of motivatios on social attitudes

Model	**R**	**R^2**	**Adjusted R^2**	**RMSE**
H_0	0.000	0.000	0.000	1.036
H_1	0.754	0.569	0.568	0.681

Noted: $p < 0.001$ (ANOVA)

Based on the statistical analysis provided, it is evident that motivation holds a significant influence on the social attitudes of prospective MI teachers, with a p-value < 0.001 in the ANOVA test. Notably, the magnitude of this influence is substantial, as reflected by an R^2 value of 0.569 for H_1, signifying that motivation accounts for 57% of the variance observed in social attitude implementation.

Motivation emerges as a critical factor, as indicated by empirical studies (Bas, 2022; Ginsberg & Wlodkowski, 2019; Gobena, 2018). However, the scholarly exploration of the nexus between motivation and the social attitudes of aspiring educators remains relatively scant. Nonetheless, an intriguing insight emerges: the

motivational drive of a teacher can contribute substantially, up to 63.20%, to the enhancement of educational quality (Gobena, 2018). This underscores the pivotal role of motivation in shaping the educational landscape autonomously. Furthermore, in light of the finding that motivation contributes to 57% of their social attitudes in the digital sphere, it is envisaged that the cultivation of enhanced social attitudes, catalyzed by motivation, may concurrently engender positive ramifications on the pedagogical processes undertaken by prospective educators.

Based on the Pearson correlation test, learning motivation also correlates closely with the self-efficacy of prospective MI teachers. This means that the higher the motivation of an MI prospective teacher, the higher their self-efficacy tends to be.

Table 12. The result of the Pearson correlation test for motivation and self-efficacy

		Self-efficacy
Motivation	Pearson correlation	0.645**
	Sig. (2-tailed)	0.000

**Correlation is significant at the 0.01 level (2-tailed)

Table 13. The results of the linear regression statistical test on the influence of motivatios on self-efficacy

Model	**R**	**R^2**	**Adjusted R^2**	**RMSE**
H_0	0.000	0.000	0.000	1.105
H_1	0.644	0.415	0.414	0.846

Noted: $p < 0.001$ (ANOVA)

Based on the statistical analysis presented in the table, it is evident that motivation significantly influences self-efficacy among prospective MI teachers ($p < 0.001$). However, the magnitude of this effect is somewhat modest, as reflected by an R^2 value of 0.415 or 42% for H_1. This suggests that motivation among prospective MI teachers can account for approximately 42% of the variability in self-efficacy.

These research findings pose an intriguing observation, considering that self-efficacy is fundamentally rooted in internal motivational processes (Schunk & DiBenedetto, 2021). Consequently, the nexus between self-efficacy and motivation appears inherently intertwined. Hence, the research's assertion regarding the substantial influence of prospective MI teachers' motivation on their self-efficacy, to the tune of 42%, merits further scrutiny and exploration.

Addressing this equivocation, Voica et al. (Voica et al., 2020) elucidate the necessity for prospective educators to harness motivational emotions in pedagogical practices, fostering an understanding, anticipation, and adept handling of students' ideas. Such emotional engagement, they contend, serves to bolster self-assurance and competence in facilitating successful learning outcomes.

Within the research's purview, the motivation exhibited by prospective MI educators toward integrating digital technology must imbue them with the confidence to perceive themselves as competent and proficient educators capable of orchestrating digitally-enhanced pedagogical experiences upon assuming their professional roles.

DIROSAT
Journal of Islamic Studies
Volume 10, No. 1 Januari-Juni 2025
ISSN: 2541-1667 (print); 2541-1675 (online)

4. The Influence Between Variables of Digital Literacy, Motivation, Social Attitude, and Self-Efficacy

Table 14 illustrates significant interrelations among the study variables, including digital literacy, motivation, social attitude, and self-efficacy. Moreover, this table delineates bidirectional associations. In essence, the correlation between digital literacy (for instance) and motivation indicates mutual connectivity. Digital literacy correlates with motivation, and vice versa. This pattern extends to other variables; digital literacy correlates with social attitude and self-efficacy, and vice versa.

Table 14. Correlation among research variables

		Digital literacy	Motivation	Social Attitude	Self-efficacy
Digital Literacy	Pearson correlation	1	.645**	.655**	.573**
	Sig. (2-tailed)		.000	.000	.000
Motivation	Pearson correlation	.645**	1	.754**	.645**
	Sig. (2-tailed)	.000		.000	.000
Social Attitude	Pearson correlation	.655**	.754**	1	.680**
	Sig. (2-tailed)	.000	.000		.000
Self-efficacy	Pearson correlation	.573**	.645**	.680**	1
	Sig. (2-tailed)	.000	.000	.000	

In simple logical terms, this correlation analysis may not strongly indicate evidence that variable x significantly influences variable y. Therefore, it's necessary to conduct linear regression tests to examine the influence between variables. The following figure provides detailed results of the linear regression test.

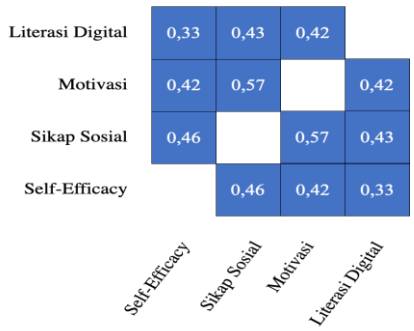

Figure 5. Linear regression test among variables

Based on the outcomes of the linear regression analysis depicted in Figure 5, it is evident that the motivation variable exhibits the most substantial impact on social attitudes, with a notable contribution of 57%. Conversely, the influence of the digital literacy variable on self-efficacy appears to be comparatively modest, contributing merely 33%.

This finding is particularly intriguing, as the initial premise of this study posited that a prospective MI teacher endowed with proficient digital literacy skills would inherently possess commendable self-efficacy. However, the empirical evidence contradicts this assumption, revealing that digital literacy only explains 33% of the variance in self-efficacy among prospective MI teachers. Consequently, there remains a significant proportion, namely 67%, wherein self-efficacy may be influenced by other unaccounted variables.

DIROSAT
Journal of Islamic Studies
Volume 10, No. 1 Januari-Juni 2025
ISSN: 2541-1667 (print); 2541-1675 (online)

Delving further into the analysis, it is pertinent to scrutinize each indicator within every variable. In this study, there are eight indicators for digital literacy, three for motivation, five for social attitudes, and three for self-efficacy. The subsequent illustration elucidates the interrelationships among these indicators across different variables.

The preceding exposition delineates that motivation delineates for 57% of the variance in the social attitudes of prospective MI teachers. Figure 6 furnishes nuanced insights into the robust and statistically significant interrelationships between specific facets of motivation and social attitudes. Upon scrutinizing Figure 6, it becomes apparent that the primary indicator (SS1) of social attitudes exerts a substantial and noteworthy influence on all three dimensions of motivation (M1, M2, and M3). This denotes that the motivation of prospective MI educators, characterized by their belief in the transformative potential of technology usage to augment self-directed learning (captured by M1), engender meaningful scholarly output (reflected in M2), and facilitate the attainment of pedagogical objectives with efficacy and efficiency (reflected in M3), collectively exerts a discernible and statistically significant impact on the manifestation of 'appreciation' during their digital interactions.

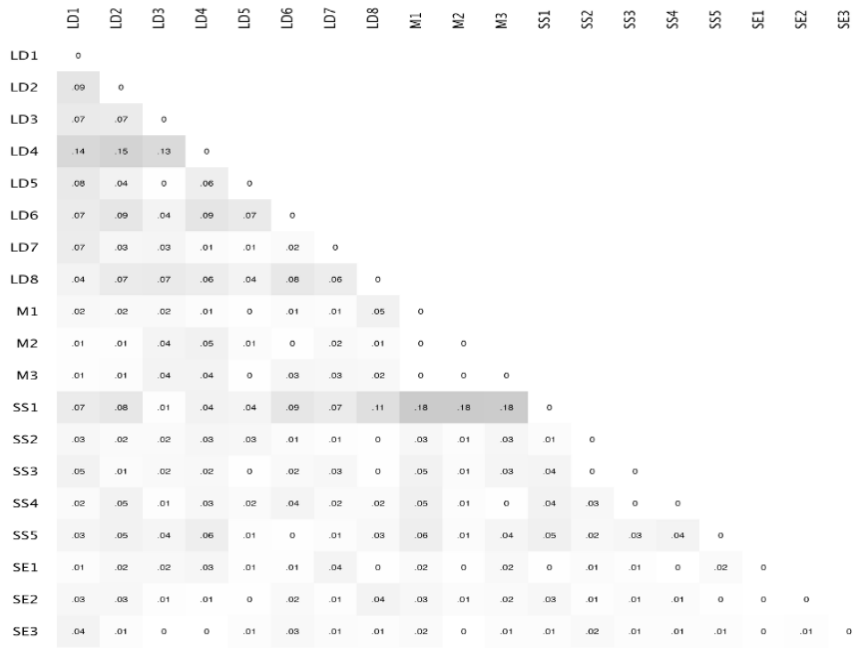

Figure 6. The interrelationship among the item indicators of each research variable

In essence, to cultivate an ethos of appreciation within the digital sphere, individuals must first cultivate a robust foundation in self-directed learning, creative expression, and adept utilization of technological resources.

Conclusion

The research outcomes reveal a constructive correlation between digital literacy proficiency and learning motivation among prospective educators. A heightened level of digital literacy proficiency correlates with increased learning

motivation within this cohort. This underscores the pivotal role of mastering digital literacy competencies in bolstering learning motivation, particularly within the contemporary digital landscape.

Furthermore, digital literacy proficiency and learning motivation significantly impact the social dispositions of prospective educators. Those with elevated levels of digital literacy proficiency and robust learning motivation tend to exhibit more favorable social attitudes. This underscores the multifaceted nature of digital literacy, emphasizing its role not only as a technical skill but also as a facilitator of positive social interaction dynamics.

Moreover, digital literacy proficiency and learning motivation exert a favorable influence on the self-efficacy perceptions of prospective educators. Individuals adept at navigating digital literacy competencies and possessing heightened learning motivation tend to manifest stronger self-assurance in executing their roles as educators.

Nevertheless, certain variables demonstrate an influence on others, albeit at levels below 50%, such as motivation vis-à-vis self-efficacy (42%) or digital literacy in relation to self-efficacy (33%). These variables warrant further exploration to discern the factors that may exert significant and dominant influences upon them.

References

Anthonysamy, L., Koo, A. C., & Hew, S. H. (2020). Self-regulated learning strategies in higher education: Fostering digital literacy for sustainable lifelong learning. *Education and Information Technologies*, *25*(4), 2393–2414. https://doi.org/10.1007/s10639-020-10201-8

Anwar, K., Widyanti, R., Adawiah, R., & Triyuliadi, U. (2021). The Effect of Work Motivation and Commitment on Teacher Performance | International Journal of Science and Society. *International Journal of Science and Society (IJSOC)*, *3*(4), 106–118.

Aslan, S. (2021). Analysis of Digital Literacy Self-Efficacy Levels of Pre-Service Teachers. *International Journal of Technology in Education*, *4*(1), 57–67.

Azhari, B., & Fajri, I. (2022). Distance learning during the COVID-19 pandemic: School closure in Indonesia. *International Journal of Mathematical Education in Science and Technology*, *53*(7), 1934–1954. https://doi.org/10.1080/0020739X.2021.1875072

Bas, G. (2022). Effect of student teachers' teaching beliefs and attitudes towards teaching on motivation to teach: Mediating role of self-efficacy. *Journal of Education for Teaching*, *48*(3), 348–363. https://doi.org/10.1080/02607476.2021.2006043

Basilotta-Gómez-Pablos, V., Matarranz, M., Casado-Aranda, L.-A., & Otto, A. (2022). Teachers' digital competencies in higher education: A systematic literature review. *International Journal of Educational Technology in Higher Education*, *19*(1), 8. https://doi.org/10.1186/s41239-021-00312-8

Bernard, R. M., Abrami, P. C., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., Wallet, P. A., Fiset, M., & Huang, B. (2004). How Does Distance Education Compare With Classroom Instruction? A Meta-Analysis of the Empirical Literature. *Review of Educational Research*, *74*(3), 379–439. https://doi.org/10.3102/00346543074003379

Bjelajac, Ž., & Filipović, A. (2021). Specific characteristics of digital violence and digital crime. *Pravo - Teorija i Praksa*, *38*(4), 16–32. https://doi.org/10.5937/ptp2104016B

Borthwick, A. C., & Hansen, R. (2017). Digital Literacy in Teacher Education: Are Teacher Educators Competent? *Journal of Digital Learning in Teacher Education*, *33*(2), 46–48. https://doi.org/10.1080/21532974.2017.1291249

Cabero-Almenara, J., Barroso-Osuna, J., & Palacios-Rodríguez, A. (2021). Estudio de la competencia digital docente en Ciencias de la Salud. Su relación con algunas variables. *Educación Médica*, *22*(2), 94–98. https://doi.org/10.1016/j.edumed.2020.11.014

Castellví, J., Díez-Bedmar, M.-C., & Santisteban, A. (2020). Pre-Service Teachers' Critical Digital Literacy Skills and Attitudes to Address Social Problems. *Social Sciences*, *9*(8), Article 8. https://doi.org/10.3390/socsci9080134

Çetin, M., & İşçi, T. G. (2022). Relationship between Social Studies Teacher Candidates' Digital Literacy Self-Efficacy Levels and Information and Communication Technology Competencies. *International Journal of Education and Literacy Studies*, *10*(2), 71–80. https://doi.org/10.7575/aiac.ijels.v.10n.2p.71

Cleophas, T. J., & Zwinderman, A. H. (2018). Bayesian Pearson Correlation Analysis. In T. J. Cleophas & A. H. Zwinderman (Eds.), *Modern Bayesian Statistics in Clinical Research* (pp. 111–118). Springer International Publishing. https://doi.org/10.1007/978-3-319-92747-3_11

Cosby, A., Fogarty, E. S., & Manning, J. (2023). Digital Literacy and Digital Self-Efficacy of Australian Technology Teachers. *Education Sciences*, *13*(5), Article 5. https://doi.org/10.3390/educsci13050530

George, D., & Mallery, P. (2018). Descriptive Statistics. In *IBM SPSS Statistics 25 Step by Step* (15th ed.). Routledge.

Ginsberg, M. B., & Wlodkowski, R. J. (2019). Intrinsic Motivation as the Foundation for Culturally Responsive Social-Emotional and Academic Learning in Teacher Education. *Teacher Education Quarterly*, *46*(4), 53–66.

Gobena, G. A. (2018). Factors Affecting In-Service Teachers' Motivation: Its Implication to Quality of Education. *International Journal of Instruction*, *11*(3), 163–178.

Hobbs, R., & Coiro, J. (2019). Design Features of a Professional Development Program in Digital Literacy. *Journal of Adolescent & Adult Literacy*, *62*(4), 401–409. https://doi.org/10.1002/jaal.907

Kamenetz, A. (2020, March 19). "Panic-gogy": Teaching Online Classes During The Coronavirus Pandemic. *NPR*. https://www.npr.org/2020/03/19/817885991/panic-gogy-teaching-online-classes-during-the-coronavirus-pandemic

Karagözoğlu, N., & Gezer, U. (2022). An Investigation of the Relationship Between Digital Literacy Levels of Social Studies Teacher Candidates and Their Attitudes Towards Distance Education. *Educational Policy Analysis and Strategic Research*, *17*(1), 218–235. https://doi.org/10.29329/epasr.2022.248.11

Kumari, K., & Yadav, S. (2018). Linear Regression Analysis Study. *Journal of the Practice of Cardiovascular Sciences*, *4*(1), 33. https://doi.org/10.4103/jpcs.jpcs_8_18

Kuo, Y.-C., & Belland, B. R. (2019). Exploring the relationship between African American adult learners' computer, Internet, and academic self-efficacy, and attitude variables in technology-supported environments. *Journal of Computing in Higher Education*, *31*(3), 626–642. https://doi.org/10.1007/s12528-019-09212-3

Lie, A., Mina Tamah, S., Gozali, I., Retno Triwidayati, K., Sari Diah Utami, T., & Jemadi, F. (2020). Secondary School Language Teachers' Online Learning Engagement during the Covid-19 Pandemic in Indonesia. *Journal of Information Technology Education: Research*, *19*, 803–832. https://doi.org/10.28945/4626

Liu, Y., Zhao, L., & Su, Y.-S. (2022). The Impact of Teacher Competence in Online Teaching on Perceived Online Learning Outcomes during the COVID-19 Outbreak: A Moderated-Mediation Model of Teacher Resilience and Age. *International Journal of Environmental Research and Public Health*, *19*(10), 6282. https://doi.org/10.3390/ijerph19106282

Martinovic, D., Freiman, V., Lekule, C. S., & Yang, Y. (2019). The Roles of Digital Literacy in Social Life of Youth. In *Advanced Methodologies and Technologies in Library Science, Information Management, and Scholarly Inquiry* (pp. 103–117). IGI Global. https://doi.org/10.4018/978-1-5225-7659-4.ch009

Muflihan, Y., Prasetyaningtyas, W., Fajri, N., & Sari, N. (2024). Meta-Analysis Study: The Influence of Motivation on Teacher Performance in Indonesia. *Formosa Journal of Science and Technology*, *3*(2), Article 2. https://doi.org/10.55927/fjst.v3i2.8143

Nasullah, R. (2017). *Materi Pendukung Literasi Digital; Gerakan Literasi Nasional*. Kementrian Pendidikan dan Kebudayaan.

Olur, B., & Ocak, G. (2021). Digital Literacy Self-Efficacy Scale: A Scale Development Study. *African Educational Research Journal*, *9*(2), 581–590.

Paat, Y.-F., & Markham, C. (2021). Digital crime, trauma, and abuse: Internet safety and cyber risks for adolescents and emerging adults in the 21st century. *Social Work in Mental Health*, *19*(1), 18–40. https://doi.org/10.1080/15332985.2020.1845281

Prior, D. D., Mazanov, J., Meacheam, D., Heaslip, G., & Hanson, J. (2016). Attitude, digital literacy and self efficacy: Flow-on effects for online learning behavior. *The Internet and Higher Education*, *29*, 91–97. https://doi.org/10.1016/j.iheduc.2016.01.001

Reddy, E., Reddy, P., Sharma, B., Reddy, K., & Khan, M. G. M. (2016). Student Readiness and Perception to the Use of Smart Phones for Higher Education

in the Pacific. *2016 3rd Asia-Pacific World Congress on Computer Science and Engineering (APWC on CSE)*, 258–264. https://doi.org/10.1109/APWC-on-CSE.2016.049

Reddy, P., Sharma, B., & Chaudhary, K. (2020). Digital Literacy: A Review of Literature. *International Journal of Technoethics*, *11*(2), 65–94. https://doi.org/10.4018/IJT.20200701.oa1

Reddy, P., Sharma, B., & Chaudhary, K. (2022). Digital literacy: A review in the South Pacific. *Journal of Computing in Higher Education*, *34*(1), 83–108. https://doi.org/10.1007/s12528-021-09280-4

Rodriguez, M., & Liu, L. (2023). A Case Study of the Caregiver Digital Literacy Self-Efficacy During Distance Learning. *Journal of School Administration Research and Development*, *8*(2), Article 2. https://doi.org/10.32674/jsard.v8i2.5815

Rusydiyah, E. F., Purwati, E., & Prabowo, A. (2020). How to Use Digital Literacy as A Learning Resource for Teacher Candidates in Indonesia. *Jurnal Cakrawala Pendidikan*, *39*(2), 305–318. https://doi.org/10.21831/cp.v39i2.30551

Samani, E., Bagheripour, R., & Noordin, N. (2020). Effect of a Course on Educational Tools on Students' Attitude and Digital Literacy Skills. *International Journal of Educational Technology and Learning*, *8*, 38–46. https://doi.org/10.20448/2003.81.38.46

Schunk, D. H., & DiBenedetto, M. K. (2021). Chapter Four—Self-efficacy and human motivation. In A. J. Elliot (Ed.), *Advances in Motivation Science* (Vol. 8, pp. 153–179). Elsevier. https://doi.org/10.1016/bs.adms.2020.10.001

Seçkin-Kapucu, M., Özcan, H., & Karakaya-Özyer, K. (2021). The Relationship Between Middle School Students' Digital Literacy Levels, Social Medıa Usage Purposes and Cyberbullying Threat Level. *International Journal of Modern Education Studies*, *5*(2), Article 2.

Sharma, B., Jokhan, A., Kumar, R., Finiasi, R., Chand, S., & Rao, V. (2015). Use of Short Message Service for Learning and Student Support in the Pacific Region. In Y. Zhang (Ed.), *Handbook of Mobile Teaching and Learning* (pp. 1–18). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-41981-2_9-1

Shen, D., Cho, M.-H., Tsai, C.-L., & Marra, R. (2013). Unpacking online learning experiences: Online learning self-efficacy and learning satisfaction. *The Internet and Higher Education*, *19*, 10–17. https://doi.org/10.1016/j.iheduc.2013.04.001

Soepriyanti, H., Waluyo, U., Sujana, M., & Fitriana, E. (2022). An Exploratory Study of Indonesian Teachers' Digital Literacy Competences. *Technium Social Sciences Journal*, *28*, 116.

Sulasmi, E. (2022). Primary School Teachers' Digital Literacy: An Analysis On Teachers' Skills In Using Technological Devices. *Journal of Innovation in Educational and Cultural Research*, *3*(2), Article 2. https://doi.org/10.46843/jiecr.v3i2.81

Sun, L., Tang, Y., & Zuo, W. (2020). Coronavirus pushes education online. *Nature Materials*, *19*(6), Article 6. https://doi.org/10.1038/s41563-020-0678-8

Sung, E., & Mayer, R. E. (2012). Five facets of social presence in online distance education. *Computers in Human Behavior*, *28*(5), 1738–1747. https://doi.org/10.1016/j.chb.2012.04.014

Taryana, T., Riniati, W. O., Haddar, G. A., Sembiring, D., & Mutmainnah, M. (2023). The Influence of Teacher Certification and Teaching Motivation on Teacher Performance. *Journal on Education*, *5*(3), Article 3. https://doi.org/10.31004/joe.v5i3.1455

UNICEF. (2020, August 24). *'What will a return to school during COVID-19 look like?'* UNICEF for Every Child. https://www.unicef.org/coronavirus/what-will-return-school-during-covid-19-pandemic-look

Utomo, M. N. Y., Sudayanto, M., & Saddhono, K. (2021). *Tools and Strategy for Distance Learning to Respond COVID-19 Pandemic in Indonesia* (SSRN Scholarly Paper No. 3795853). https://papers.ssrn.com/abstract=3795853

Van der Bijl, J., & Shortridge-Baggett, L. (2001). The theory and measurement of the self-efficacy construct. *Scholarly Inquiry for Nursing Practice*, *15*, 189–207.

Voica, C., Singer, F. M., & Stan, E. (2020). How are motivation and self-efficacy interacting in problem-solving and problem-posing? *Educational Studies in Mathematics*, *105*(3), 487–517. https://doi.org/10.1007/s10649-020-10005-0

Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, *359*(6380), 1146–1151. https://doi.org/10.1126/science.aap9559

Wijaya, T. T., Zhou, Y., Purnama, A., & Hermita, N. (2020). Indonesian students learning attitude towards online learning during the coronavirus pandemic. *Psychology, Evaluation, and Technology in Educational Research*, *3*(1), Article 1. https://doi.org/10.33292/petier.v3i1.56

Zhao, Y. (2012). Flunking Innovation and Creativity. *Phi Delta Kappan*, *94*(1), 56–61. https://doi.org/10.1177/003172171209400111

Zhao, Y., & Watterston, J. (2021). The changes we need: Education post COVID-19. *Journal of Educational Change*, *22*(1), 3–12. https://doi.org/10.1007/s10833-021-09417-3