Digital Literacy as an Indicator of Adolescent Mental Health and Implementation for the Role of School Counselor: A Systematic Literature Review

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KEYWORDS

Digital literacy, adolescent, mental health, school counselor, guidance and counseling

ABSTRACT

The impact of problematic social media leads to mental health tendencies experienced by teenagers. One of the skills that teenagers are pioneering in using social media is digital literacy skills. The tendency for low levels of digital literacy among teenagers is very likely to be correlated with the mental health conditions of teenagers. This research aims to describe the correlation of digital literacy as an indicator of adolescent mental health and how role of school counselors. This research method is a systematic literature review with the search keywords "digital literacy"; "adolescent mental health"; "digital literacy and mental health" on the ScienceDirect, Sage, Taylor and Francis platforms. The results of the identification resulted in 14 articles which were studied in depth and resulted in the finding that digital literacy skills contributed to the mental health conditions of teenagers. Digital literacy is a link between teenagers and the digital world which will have an impact on mental health. Implementation of prevention and intervention is carried out by school counselors to prevent the impact of adolescent mental health problems.

1. Introduction

Social media is part of technological development which has become a basic need that must be met for everyone, one of which is students (Fanreza, 2018; Ulvi, O., Karamehic-Muratovic, A., Baghbanzadeh, M., Bashir, A., Smith, J., & Haque, 2022; Usmani, Sharath, & Mehendale, 2022). The use of social media makes it easy for students to search for information and communication in various places and unlimited times (Reid & Weigle, 2014). However, if the use of social media is not done wisely it will have a negative impact on students (Beeres, Andersson, Vossen, & Galanti, 2021; Hamadi, El-Den, Azam, & Sriratanaviriyakul, 2022). Problems related to the use of social media that occur today include cyberbullying, hate speech, the spread of hoaxes, hate speech, racism and even intolerant behavior related to SARA (ethnicity, religion, race, and inter-group) issues (Beddiar, Jahan, & Oussalah, 2021; Muslihati et al., 2023; Ramli, Hidayah, Eva, Saputra, & Hanafi, 2022; Shin & Choi, 2021; Vandebosch & Green, 2019). Data shows that the majority of children in Indonesia have been victims of bullying on social media. A search conducted by UNICEF found that 45% of 2,777 teenagers aged 14-24 years had been victims of cyberbullying (UNICEF Indonesia, 2020). Apart from that, in the 2018-2020 period, the Ministry of Communication and Information explained that there were 3,640 cases related to hate speech on social media related to SARA and it is predicted that this number will increase every year (Setu, 2021). With an index of 100%, Indonesia's digital literacy is 62%, which is a low level when compared to the average for countries in ASEAN which has an average of 70%, while the results of measurements by the Director General of Information Applications (Kominfo) on a scale of 1-5 obtained the average index. 3.54 in 2022 (Kemenkominfo, 2022). However, if this condition is not addressed seriously, it will continue and have a significant impact on the nation's future generations (Florang, 2020; Utami & Baiti, 2018).

This negative behavior occurs because, among other things, it is easy to access, obtain information and

disseminate it freely without strict supervision of students (Muslihati et al., 2022; Utomo, Hanurawan, Muslihati, & Ramli, 2020). This condition is supported by the development trend of students at the junior high school level who are still in the transition period from children to early teens (Santrock, 2011). Middle school students who are in the early teenage phase have the characteristics of trying new things, are unstable and emotional and are at a critical period in their lives (Bhakti, Kumara, Astuti, & Suwarjo, 2018; Jufrida, Basuki, Kurniawan, Pangestu, & Fitaloka, 2019; Lampropoulou, Georgakakou-Koutsonikou, Hatzichristou, & Roussos, 2023). This condition will have an impact on the mental health conditions of teenagers in Indonesia (Hulloli et al., 2021). Currently, teenagers' mental health conditions tend to be affected by their behavior on social media.

Mental health is very important in relation to teenagers, because poor mental health conditions will have an influence on teenagers in their daily lives and will even have an impact on the learning and learning process at school (Boulden & Goodman-Scott, 2023). Therefore, this requires special attention, especially as teenagers today are the Z generation group who are accustomed to using technology, especially social media, in their daily lives (Jaciow & Wolny, 2021; Maulina, Abdurrahman, Sukamto, Kartika, & Nurulsari, 2020; Wang, Yuan, Shi, Tang, & Shi, 2022). Excessive and continuous use of social media will have the impact of social media addiction on teenagers which will certainly contribute to teenagers' mental health conditions (Lemay et al., 2020). One of the skills needed by teenagers is digital literacy skills (Pala & Başıbüyük, 2023; Razzak, 2015; Tinmaz, Lee, Fanea-Ivanovici, & Baber, 2022). Digital literacy is defined as an individual's knowledge, attitudes and behavior in using digital media.

Apart from that, the challenges that occur in the world today include the ethics of using digital media, relevant skills in accessing digital media and the complexity of problems related to mental health caused by the use of digital media (Sasaki, 2012). These points are the achievements that are expected to be achieved in the sustainable development goals (SDGs) in the points of good health and prosperity; quality education (Aydın et al., 2021). Therefore, it is necessary to conduct a systematic literature review regarding whether digital literacy skills are an indicator of mental health for adolescents. Research questions in carrying out this research include:

What is the relationship between the level of digital literacy of teenagers and the mental health of teenagers, and how does digital literacy contribute to the mental health conditions of teenagers?

What themes and domains are indicators of digital literacy that have an influence on the mental health conditions of adolescents?

What are the implications of the research results between digital literacy as an indicator of mental health and the implementation of interventions by school counselors, and what are the future research directions?

2. Methodology
Research design

This research is a study with a systematic literature review and meta-analysis (PRISMA) design which uses guidelines for carrying out a systematic literature review with a focus on in-depth studies related to whether digital literacy is an indicator of mental health in adolescents using the stages in Figure 1 (Mengist, Soromessa, & Legese, 2020; Paul & Barari, 2022). In the source investigation process the library uses the PRISMA flowchart depicted in Figure 2 to find relevant and comprehensive library sources in accordance with studies related to "digital literacy"; "mental health" and "digital literacy and

mental health" use reference sources from reputable journals.

Figure 1. Systematic Literature Review Process

Participants

Keywords used in the process of exploring articles originating from reputable journals include digital literacy, mental health and adolescent mental health during the 2015-2024 period. In the research search process, we succeeded in finding 14 articles that were selected and selected from the 892 articles that we found, then we described the sources of the selected articles in table 1.

Table 1. Results of identification of selected articles

No	Source	Number of Articles
1.	ScienceDirect	6
2.	SAGE	4
3.	Taylor and Francis	4
	Total	14

Data collection

The research carries out an article search process using the help of a search engine that can find articles that match the research objectives. The search sources used to obtain articles are directly focused on publishers or journals that have a global or international reputation. The process of searching for articles from reputable journals starts from the process of identification, article screening, article eligibility, and review of appropriate or included articles, the overall process of selecting articles to be reviewed is presented in Figure 2.
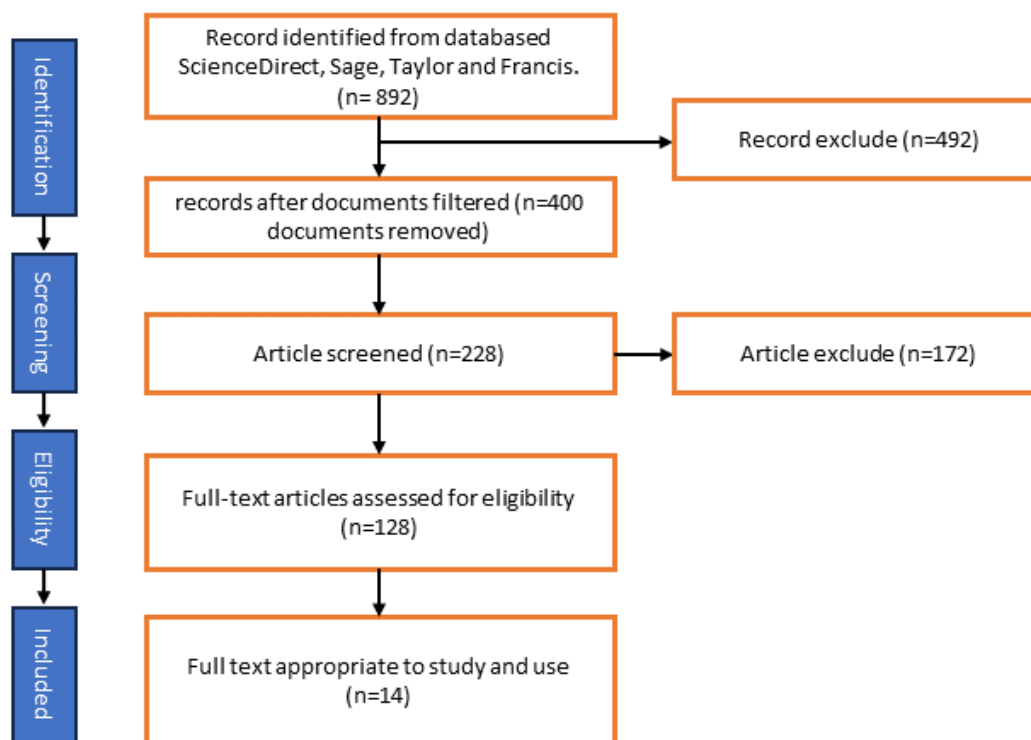
Figure. 2. PRISMA process flow diagram in SLR

Data analysis

In this process, the research carried out in-depth identification of each selected article to be able to examine how digital literacy can be an indicator that influences the mental health conditions of teenagers. The analysis process requires accuracy and interpretation of each article source that falls within the selected criteria which then becomes a new discovery regarding the results of the study that has been carried out. As has been shown by researchers regarding the results of a comprehensive search of related sources. Especially to answer the questions that have been asked, namely (1) the relationship between the level of digital literacy of teenagers and the mental health of teenagers, and how digital literacy contributes to the mental health conditions of teenagers; (2) The themes and domains that are indicators of digital literacy have an influence on the mental health conditions of adolescents; and (3) Implications of research results between digital literacy as an indicator of mental health and the implementation of interventions by school counselors, as well as future research directions.

3. Result and Discussion

The results of the study obtained were based on the systematic literature review research stage carried out by researchers through an in-depth study of fourteen inclusive articles selected to answer the three problem formulations related to the topic of digital literacy as an indicator of adolescent mental health. Articles that have been selected and carried out in-depth studies then produce new research findings that provide explanations regarding digital literacy as an indicator of mental health among teenagers. Furthermore, these findings will later contribute to how guidance and counseling services provided by school counselors improve students' digital literacy skills so that they can have good mental health or avoid mental health problems. The results of the study obtained were based on the systematic literature review research stage carried out by researchers through an in-depth study of fourteen inclusive articles selected to answer the three problem formulations related to the topic of digital literacy as an indicator of adolescent mental health. Articles that have been selected and carried out in-depth studies then produce new research findings that provide explanations regarding digital literacy as an indicator of mental health among teenagers. Furthermore, these findings will later contribute to how guidance and

counseling services provided by school counselors improve students' digital literacy skills so that they can have good mental health or avoid mental health problems.

Table 1. Results of identification of selected articles

No	Author	Design	Result & Implication	Novelty
1.	(Guo et al., 2024)	Qualitative	Separation between parents has an impact on children's digital literacy skills	The need for assistance for children and teenagers whose parents are separated to increase digital literacy
2.	(Pretorius, McCashin, & Coyle, 2022)	Quantitative	Social media makes it easy to access mental health literacy but its credibility is not yet known so it requires careful attention when accessing it	The use of social media can be an alternative in disseminating information related to mental health awareness
3.	(Li, Li, & Du, 2024)	Quantitative	Digital literacy can prevent individuals' vulnerability to losses due to fraud	Individuals who have digital literacy skills have a low risk of being exposed to online fraud which of course has an impact on mental health
4.	(Ha & Kim, 2024)	Qualitative	The study results show how digital literacy works in a comprehensive framework on digital platforms	Digital literacy framework in digital platforms
5.	(Deschênes, 2024)	Quantitative	The research results show that digital literacy has an important role in the collaborative use of technology and social relations with the surrounding environment	Findings related to the importance of digital literacy in fostering relationships with the surrounding environment
6.	(Purnama, Wibowo, Narmaditya, Fitriyah, & Aziz, 2022)	Quantitative	The research results show that parenting that has an authoritarian style will have an impact on children's digital literacy and have an influence on children's behavior.	This research finds new things in the study of parental care which is influenced by religious beliefs and parenting patterns that contribute to

				children's digital literacy
7.	(Kumpulainen, Sairanen, & Nordström, 2020)	Qualitative	The study results show that children's digital literacy skills depend on the activities and rules that apply in the family	It is necessary to maintain stability so that children have critical skills in digital literacy skills
8.	(Arslantas, Yaylacı, & Özkaya, 2023)	Quantitative	The results of the research show that there is a positive correlation between digital literacy and internet addiction, a negative correlation between digital literacy and cyberloafing and a unidirectional/positive relationship between cyberloafing and internet addiction.	Increasing digital literacy skills can overcome cyberloafing
9.	(Gunathilaka, Wickramasinghe, & Jais, 2022)	Quantitative	Digital literacy competency contributes to how the crisis process in students is related to students' mental health and social capital.	There is a need to use digital literacy competencies for teachers and students to overcome the mental health crisis that is occurring
10.	(Smeaton, 2023)	Quantitative	The study results show the need for mental health literacy and digital literacy	There are two literacies that must coexist, namely mental health literacy and digital literacy
11.	(Keum, 2024)	Quantitative	Social media literacy is closely related to increased social support and a lower likelihood of mental health problems	Social media literacy skills can prevent problems related to mental health
12.	(Meng, Yan, Abbas, Shankar, & Subramanian, 2023)	Quantitative	Digital literacy in children contributes to school readiness and children's mental condition	Children's psychological resilience is influenced by digital literacy which is related to school readiness
13.	(Özkan, Sungur, & Özer, 2022)	Quantitative	The research results show that women's cyberchondria levels are influenced by income and education.	There is a need for training for digital literacy as cyberchondria awareness

14.	(Statti & Torres, 2020)	Qualitative	The research results show that there are many challenges to implementing technology in schools, but the focus on digital literacy is an opportunity for students	Digital literacy competency is closely related to individual students in the 21st century

Overview of Included Studies

Digital literacy is one of the skills that teenagers in the 21st century must have (Çetin, 2021; Churchill, 2020). Ease of free access to information and communication does not always have a good impact on teenagers. The impact felt due to technological advances will have a negative impact on teenagers if social media is not used wisely (Bozyiğit, Utku, & Nasibov, 2021; Milosevic, 2018). As the function and aim of technological advances, especially social media, is to make it easy for users to access information and communication without time and distance limitations (Pang, Wang, & Hu, 2021). Digital literacy itself is an individual ability consisting of the ability to (a) access; (b) manage; (c) understand; (d) integrate; (e) communicate; (f) evaluate; and (f) creating information (UNESCO, 2018). Based on aspects of Kominfo, digital literacy consists of (a) digital skills, (b) digital culture, (c) digital ethics, and (d) digital safety *(Kemenkominfo, 2022).*

The balance in acquiring new information and knowledge through social media or other online media must be balanced with providing related values and the ability to select valid information. (Muannas & Mansyur, 2020; Suryahadikusumah & Nadya, 2020). This includes the formation of student character in the process of searching, obtaining, selecting and determining the information obtained. The importance of digital literacy as individual capital to explore social media and its continuity in the lives of the wider community, especially in exploring the virtual world (online) (Morgan, Sibson, & Jackson, 2022; Purnama, Ulfah, Machali, Wibowo, & Narmaditya, 2021). This skill is not only related to individual needs in communicating but also how to control and process other information in the online scope. Digital literacy skills are one of the skills needed in 21st century education which functions to increase social inclusion and individual employability. Although today's teenagers are generation Z which is considered digital natives, not all individuals have high digital literacy (Kominfo, 2021). There are several factors that influence a person's digital literacy abilities, including (1) the individual's level of activeness in using social media; (2) level of achievement at school; (3) the role of the surrounding environment (parents or family); (4) reading habits; and (5) ability in literacy (Syah, Darmawan, & Purnawan, 2019). The use of digital media contributes to the mental health conditions experienced by teenagers. Problems related to mental health experienced by teenagers related to the use of digital media include online game addiction, social media addiction, low self-control, emotional and even being influenced by actions that are dangerous for themselves. (Moretta, Buodo, Santucci, Chen, & Potenza, 2023; Raj, Segrave, Tiego, Verdéjo-Garcia, & Yücel, 2022). This shows that in general the identification of the level of digital literacy skills with the mental health conditions of adolescents is related. This shows that in general the identification of the level of digital literacy skills with the mental health conditions of adolescents is related.

Identify the relationship between digital literacy and adolescent mental health

Topics related to mental health in adolescents have recently become a topic that is widely discussed and studied comprehensively (Mulawarman et al., 2021; Wu et al., 2020; Yamamoto, Nishinaka, & Matsumoto, 2023). This is of course related to the vision of each country in the future which is related to the golden generation for the sustainable development of every country in the world. The increasingly rapid development of the world is contributing to the mental health conditions experienced by teenagers. Teenage habits that cannot be separated from using digital media or the internet have an

impact on conditions of addiction or excessive use (addiction) (D'Arienzo, Boursier, & Griffiths, 2019; Kiatsakared & Chen, 2022; Nugraha, Awalya, & Mulawarman, 2021; Zarate, Hobson, March, Griffiths, & Stavropoulos, 2023). Of course, this condition is a sign that the individual has problems with his mental health condition. This condition is the common thread in the relationship between the level of digital literacy competency and the mental health conditions of teenagers today (Ayalon & Aharony, 2024). Digital literacy skills are the ability possessed by individuals to understand, evaluate and use information obtained on social media or other online media critically and effectively. (Mollah, Choi, Hwang, & Shin, 2023). Digital literacy in the 21st century is a skill that individuals must have when they explore the digital environment (Livingstone, Mascheroni, & Stoilova, 2023). If it is related to the elements of digital literacy which consist of digital skills, it is how individuals have an understanding of tools and software; digital culture is how individuals understand the insights of cultural differences that exist in the digital world; Digital ethics is part of how individuals can have ethics and think rationally when in the digital world and digital safety is an understanding of how data is protected and secured. The scope of digital literacy skills is broad enough that it can prevent or even help individuals overcome problems when in the digital space *(Arafah et al., 2023).*

> *Therefore, the level of digital literacy competency possessed by individuals when in the digital world or digital environment will contribute to the mental health conditions of adolescents as an output of the process. (Keum, 2024; Widyanty et al., 2024).*

The results of the study show that the mental health conditions that individuals currently have are closely related to their level of digital literacy (Smeaton, 2023). As in Figure 3, teenagers need digital literacy skills when exploring digital environments such as social media, online games and others so that they can avoid mental health problems caused by addictive and negative digital environments.
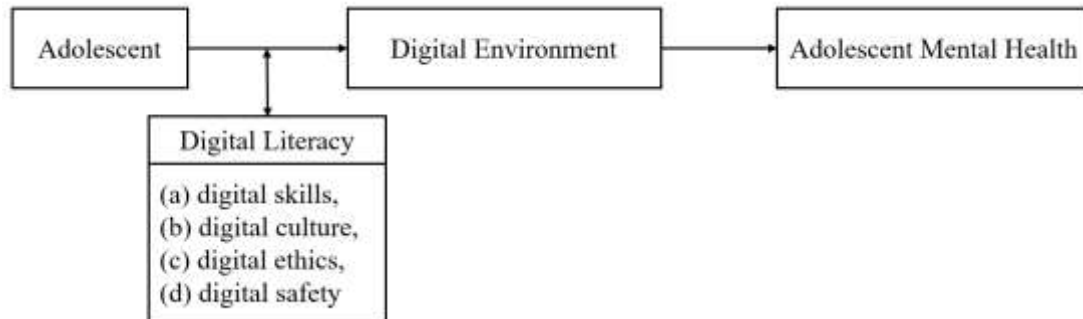
Figures. 3. Study Framework

The role of school counselor: interventions or programs for digital literacy and mental health

School counselors are one of the components responsible for current teenage issues when they are in the school environment (N. M. A. Saputra & Ramli, 2024; W. N. E. Saputra, Handayani, et al., 2024). Based on the results of a comprehensive study, it show that there is a need for action from school counselors to provide prevention and intervention services related to digital literacy and adolescent mental health conditions. The provision of services by school counselors is carried out comprehensively and collaboratively to achieve the expected goals (Suryahadikusumah & Kurniasari, 2020). In this case, counselors act as teachers, mentors, motivators, trainers and agents to help students improve their digital literacy skills so that they can avoid or overcome the mental health problems they experience (W. N. E. Saputra, Rohmadheny, & Suryanto, 2024). Figure 4 shows a chart of the role of school counselors in improving digital literacy and adolescent mental health.
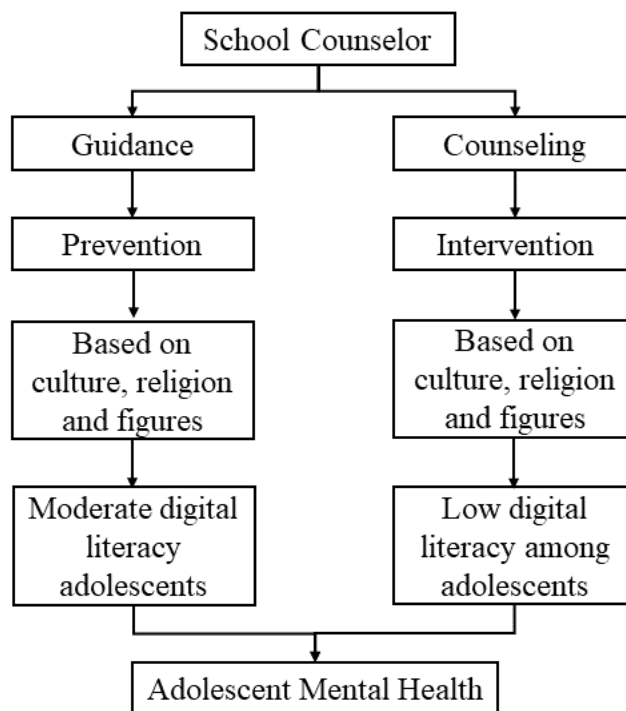
Figures 4. Flowchart of the counselor's role

Furthermore, school counselors focus on two services that will be provided to teenagers, namely (1) guidance or psychoeducation services for teenagers who have not experienced mental health problems as a result of a tendency to have low digital literacy skills; and (2) counseling services for teenagers who are already experiencing mental health problems caused by low digital literacy skills. The intervention process provided can be adjusted based on the context in Indonesia, such as the use of cultural values, certain figures and the values of certain religions to facilitate the service implementation process (Habsy, Hidayah, Lasan, Muslihati, & Hanafi, 2020; Purwadi et al., 2022; Saputra, Hidayah, Ramli, & Atmoko, 2022; Zamroni, Hanurawan, Muslihati, Hambali, & Hidayah, 2022). In addition, the use of information technology in the service delivery process is necessary to adapt it to the context of digital literacy and the characteristics of generation Z in addition, the use of information technology in the service delivery process is necessary to adapt it to the context of digital literacy and the characteristics of generation Z (Ramli, Hanafi, Hidayah, Atmoko, & Fitriyah, 2023; Ramli, Hidayah, Eva, Saputra, & Hanafi, 2021).

4. Conclusion and Suggestion

Every individual in this world cannot fight the developments that occur and tends to follow developments so as not to be left behind. One of them is the rapid development in the digital world, individuals need to protect themselves with digital literacy so that they are not affected by mental health problems. The level of digital literacy possessed by an individual correlates with the level of mental health of adolescents. Patterns of connectedness exist when individuals with low or high levels of literacy search on digital media which will then have an impact on teenagers' mental health as a result of this process. In particular, this needs serious attention because the characteristics of today's teenagers are a generation that is very closely connected to the use of digital media or the internet. The role of school counselors is needed through guidance and counseling services at schools to prevent and carry out intervention actions for students. In addition, further research is needed to strengthen commitment and specific strategies to face this challenge.

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Conflict of interest

There is no conflict of interest in writing this article

Reference

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