THE IMPACT OF DIGITAL LITERACY ON STUDENTS' MENTAL WELL-BEING: AN APPROACH TO HEALTHIER EDUCATION

Ettyani
PGRI Delta Sidoarjo University
ettya99@gmail.com

Abstract

Integrating digital literacy into education is important in the digital age, but its impact on students' mental health is not fully understood. This study examines the relationship between digital literacy and mental health among senior high school students, highlighting the benefits and challenges of digital learning environments. Using a qualitative approach, including questionnaires and interviews, the study assessed digital literacy levels, usage patterns, and self-reported mental health. Findings showed a complex relationship between higher digital literacy improving self-confidence and academic performance and reducing anxiety. However, excessive screen time and pressure to engage with digital devices can increase stress, fatigue, and social isolation. Students who balance digital and offline activities tend to have better mental health. This study underscores the importance of promoting healthy digital habits and offline interactions in educational settings to ensure that digital literacy contributes positively to students' overall mental health. Educational institutions are encouraged to adopt a balanced approach and provide support systems that encourage digital competence and mental health.

Keywords: *digital literacy; mental well-being; education; student health; screen time*

Abstrak

Mengintegrasikan literasi digital ke dalam pendidikan merupakan hal yang penting di era digital, namun dampaknya terhadap kesehatan mental siswa belum sepenuhnya dipahami. Penelitian ini mengkaji hubungan antara literasi digital dan kesehatan mental di kalangan siswa sekolah menengah atas, dengan menyoroti manfaat dan tantangan dari lingkungan belajar digital. Dengan menggunakan pendekatan kualitatif, termasuk kuesioner dan wawancara, penelitian ini menilai tingkat literasi digital, pola penggunaan, dan kesehatan mental yang dilaporkan sendiri. Temuan menunjukkan adanya hubungan yang kompleks antara literasi digital yang lebih tinggi dapat meningkatkan kepercayaan diri dan kinerja akademik serta mengurangi kecemasan. Namun, waktu di depan layar yang berlebihan dan tekanan untuk terlibat dengan perangkat digital dapat meningkatkan stres, kelelahan, dan isolasi sosial. Siswa yang menyeimbangkan aktivitas digital dan offline cenderung memiliki kesehatan mental yang lebih baik. Penelitian ini menggarisbawahi pentingnya mempromosikan kebiasaan digital yang sehat dan interaksi offline di lingkungan pendidikan untuk memastikan bahwa literasi digital berkontribusi positif terhadap kesehatan mental siswa secara keseluruhan. Institusi pendidikan didorong untuk mengadopsi pendekatan yang seimbang dan menyediakan sistem pendukung yang mendorong kompetensi digital dan kesehatan mental.

Kata kunci: *literasi digital; kesehatan mental; pendidikan; kesehatan siswa; waktu penggunaan gawai*

1. INTRODUCTION

The use of digital technology has become an integral part of everyday life, especially for students in this digital age. However, the use of digital technology also brings challenges to students' mental well-being. Digital literacy, which is the ability to access, evaluate, and use information from digital devices, plays an important role in maintaining students' mental well-being. With good digital literacy, students can optimize the benefits of digital

technology while reducing its negative impacts, such as digital addiction and stress caused by excessive screen use (Menyan., 2023).

Recent research has shown that digital literacy not only increases access to mental health resources but also reduces stigma towards mental health by providing accurate and educative information. In addition, digital literacy can also help students develop skills to navigate digital spaces responsibly, reduce stress, and achieve balanced use of technology (Ardhiyansyah et al, 2023). Therefore, it is important to understand the influence of digital literacy on students' mental well-being and develop healthier education to face these digital challenges.

The use of digital technology has increased significantly among students in recent years. Digital technologies such as smartphones, laptops, and tablets have become commonly used learning tools in schools. With easy internet access, students can access various online learning resources, interact with friends and teachers through social media, and perform academic tasks more efficiently. However, overuse of digital technology can also lead to problems such as digital addiction, sleep disorders, and increasingly serious stress among students (Smartwork, 2024).

The increasing use of digital technology among students also requires more serious attention from schools and parents. Therefore, it is important to develop educational programs that prioritize digital literacy to help students optimize the benefits of digital technology while reducing its negative impacts. Thus, students can use digital technology more balanced and responsibly, thereby improving their learning quality and mental well-being (Daulay et al, 2023).

Digital literacy is an essential skill in the modern era as it enables individuals to access, evaluate and use information from digital devices effectively. Digital literacy does not only mean having knowledge about technology, but also the ability to sort out relevant and accurate information, develop critical thinking skills, and hone strong arguments related to certain topics (Athabryna, 2024).

In an educational context, digital literacy is very important because it helps students select valid information, actively participate in online discussion forums, and explore a topic in greater depth. Digital literacy also helps students develop skills to communicate and collaborate effectively, as well as understand the risks and safety of using digital technologies. Thus, students can use digital technology as an effective and balanced learning tool (Evotianus, 2024).

The issue of mental well-being among students has received increasing attention in recent years. Excessive use of digital technology can lead to increasingly serious stress, digital addiction, and sleep disorders among students. In addition, social comparison through social media can also increase stress and depression among students (Menyan, 2023).

To address these mental well-being issues, it is important to develop educational programs that prioritize digital literacy and mental health. These programs could include training to reduce digital addiction, raising awareness about the dangers of cyberbullying, and providing accurate and educational mental health resources. This will enable students to use digital technology more balanced and responsibly, thereby improving their learning and mental well-being.

Digital literacy has a complex impact on students' mental well-being. On the one hand, digital literacy can increase access to mental health resources, such as meditation apps and online support forums, which can help students manage stress and depression. However, on the other hand, digital addiction and social comparison through social media can lead to stress and depression. Therefore, it is important to understand how digital literacy can be geared towards improving students' mental well-being. Education plays an important role in optimizing digital literacy to support students' mental health by teaching students to access,

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evaluate, and use digital information wisely. Thus, students can develop skills to manage time, reduce stress, and achieve a balanced use of technology.

This study aims to analyze the effect of digital literacy on students' mental health and identify educational approaches that can support mental well-being through digital literacy. As such, this study is expected to provide insights for educators and policymakers on the importance of digital literacy in supporting students' mental well-being. This research is expected to provide insights for educators and policymakers on the importance of digital literacy in supporting students' mental well-being. As such, educators can develop curricula that are more relevant to students‘ needs in the digital age, while policymakers can make more informed decisions to improve students’ mental wellbeing.

Digital literacy is defined as the ability to access, evaluate and use information obtained from digital devices wisely. UNESCO outlines that digital literacy involves the ability to use technology, information, and communication tools, as well as the ability for social learning, critical thinking, creative, and inspirational attitudes as digital competition. The components of digital literacy include, Information access, the ability to find and access relevant information through the internet and social media. Information evaluation, the ability to evaluate the quality and accuracy of information obtained. Information utilisation, the ability to use information effectively and efficiently in various situations. Content Creation, the ability to express oneself clearly and respectfully in online spaces, as well as create relevant content (Widokarti and Rizkie., 2019).

Digital literacy is an important skill in 21st century education as it helps students optimise the benefits of digital technology while reducing its negative impacts. With good digital literacy, students can access online learning resources, interact with friends and teachers through social media, and perform academic tasks more efficiently. Digital literacy also helps students develop skills to navigate digital spaces responsibly, reduce stress, and achieve balanced use of technology (Basyiroh, 2017).

Mental well-being in students can be defined as an optimal psychological condition, where students can manage stress, depression, and other problems effectively. Factors affecting students' mental well-being include overuse of digital technology, social comparison through social media, and awareness of the dangers of cyberbullying and mental health-related stigma. The challenge of mental well-being among students in the digital age is increasingly serious as overuse of digital technology can lead to problems such as digital addiction, sleep disorders, and stress (Yuliana, 2022).

The challenge of mental well-being among students in the digital age is increasingly serious. Overuse of digital technology can lead to problems such as digital addiction, sleep disorders, and stress. In addition, social comparison through social media can also increase stress and depression. Therefore, it is important to develop educational programs that prioritize digital literacy and mental health. When a child's psychological well-being is optimal and screen use is minimal, the likelihood of online abuse can be reduced (Sit, 2017).

Previous research has shown that the use of digital technology can have both positive and negative impacts on mental health. Positive impacts include access to mental health resources and support networks, while negative impacts include digital addiction and stress caused by excessive screen use (Solichah et al, 2022).

Related studies have shown that digital literacy can improve students' mental well-being by reducing the negative impact of digital technology use. With good digital literacy, students can optimize the benefits of digital technology while reducing the risk of digital addiction and stress. In addition, digital literacy also helps students develop skills to navigate digital spaces responsibly, reduce stress, and achieve balanced technology use (Safitri et al., 2021).

2. RESEARCH METHODS

This research used a qualitative case study approach to analyse the influence of digital literacy on students' mental well-being and identify educational approaches that can support mental well-being through digital literacy. The participants were students from three high schools in Sidoarjo, totalling 60 students aged between 16 years and 18 years. The selection of schools and ages was based on the school and students' activeness in using digital literacy in the education process. This research instrument is a questionnaire and online interviews distributed using Google Form which will be used to collect data. The data collection techniques used are through online surveys in the form of questionnaires and structured interviews distributed through Google Form to collect data on the use of digital technology and students' mental well-being. This data will be analysed to find the percentage as well as the relationship between digital literacy and mental well-being. Data analysis uses descriptive statistics by calculating frequencies to find out how often students experience mental health problems related to the use of digital technology.

3. RESULT AND DISCUSSION

This section presents the results of research on ‘the influence of digital literacy on students’ mental well-being’, and discusses the findings in the context of healthier education. This research focuses on the relationship between students' ability to use digital technology wisely and how it impacts their mental health. Data collected through questionnaires and interviews were analyzed to identify significant patterns that indicate the extent to which digital literacy can affect students' stress levels, anxiety, and emotional well-being. The discussion will elaborate on the results, relate them to previous literature, and explore the practical implications of better digital literacy in supporting students' mental well-being in educational settings.

Figure 1.
Questionnaire Results

This pie chart is titled, ‘Do you feel stressed or anxious when you have to use technology for schoolwork?’, and divides the responses as very often 7.5% (represented by blue color), often 7.5% (represented by red color), sometimes 39.6% (represented by orange color), rarely 32.1% (represented by green color), never 20.8% (represented by purple color).

By analysis, the largest group (39.6%) felt stress or anxiety ‘sometimes’ when using technology for schoolwork. Another large proportion (32.1%) reported that they ‘rarely’ felt stressed or anxious. About 20.8% ‘never’ felt stressed or anxious in this context. A small

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percentage (7.5%) felt stressed or anxious ‘very frequently’ or ‘frequently’ when using technology for schoolwork.

The majority of respondents appeared to experience some level of stress or anxiety when using technology for schoolwork, with the most common response being ‘sometimes.’ However, most respondents (over 50%) reported rarely or never feeling anxious. Although most students experience some level of stress or anxiety when using technology for schoolwork, the majority of them do not feel this constantly. A total of 39.6% of students felt ‘sometimes’ stressed or anxious, which suggests that technology is not an ongoing source of anxiety, but rather occurs in specific situations. In contrast, 32.1% of students felt stressed or anxious ‘rarely’, and 20.8% ‘never’ experienced these feelings. This suggests that a large group of students are quite comfortable using technology for their schoolwork. However, it is important to note that 15% of the respondents (the ‘very often’ and ‘often’ categories combined) faced higher anxiety in using technology. This could signify challenges in their ability or understanding of technology, or perhaps a lack of adequate access, leading to higher stress compared to the other groups. Overall, while most students seem to be able to manage using technology for schoolwork well, some students may need additional support to reduce the stress and anxiety they feel. This could be in the form of more in-depth technology skills training, increased access to appropriate devices, or emotional support related to technology use.

Figure 2.
Questionnaire Results

This pie chart is titled ‘How often do you feel tired after using social media or digital technology?’ and divides the responses as very often 4.7% (represented by blue color), often 24.5% (represented by red color), sometimes 45.3% (represented by orange color), rarely 24.5% (represented by green color), never 1% (represented by purple color).

With the analysis, the largest percentage (45.3%) felt fatigued ‘sometimes’ after using social media or digital technology. A total of 24.5% of respondents felt tired ‘very often’ and another 24.5% felt tired ‘often’. Only a small percentage of respondents, 4.7%, ‘rarely’ felt tired. Almost no one ‘never’ felt tired, with only 1% reporting this.

The majority of respondents, 69.8% (combined ‘very often’ and ‘often’), often felt tired after using social media or digital technologies. This suggests that the use of social media or digital technology has quite an impact on many people's energy levels. While most others feel tired only ‘sometimes’, very few rarely or never experience it. This data could be

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an indicator that the use of social media or digital technology, although very common, can cause mental or physical fatigue in users, especially if used excessively.

From the data, it is clear that the use of social media and digital technology can contribute to fatigue for most respondents. The combined 24.5% who feel fatigue ‘very often’ and 24.5% who feel fatigue ‘often’ shows that almost half of the respondents experience fatigue on a regular basis. This could indicate that long-term use of technology or social media may have a negative impact on physical or mental well-being. In contrast, 45.3% of respondents who felt ‘sometimes’ tired after using digital technology indicate that although tiredness is felt, the frequency is not very high for them. However, they still feel the impact at some point, which may depend on the duration and intensity of the technology use. Only 4.7% felt fatigued ‘rarely’, and very few, 1%, ‘never’ felt fatigued after using digital technology. This suggests that almost everyone experiences fatigue at some point, although it varies in intensity.

This data provides important insights for both digital technology users and policymakers. To minimise the effects of fatigue, it is worth promoting healthier and more balanced use of digital technology, such as taking regular breaks, regulating screen time, and raising awareness about digital health. Tech users, especially students and workers who use digital media for long periods of time, can be more proactive in maintaining a balance between work, entertainment and rest. In addition, it is important for educational institutions or workplaces to be aware of these impacts and consider ways to reduce digital load, either by providing education on digital health or setting schedules that allow less screen time.

Figure 3.
Diagram of Questionnaire Results

This bar chart is titled ‘Was there a specific experience that made you feel stressed or anxious?’. The diagram outlines several answer options and the distribution of respondents to each option, namely ‘Yes’ 2 respondents (3.8%), ‘When working on...’ 1 respondent (1.9%), ‘Some’ 1 respondent (1.9%), ‘None so far’ 1 respondent (1.9%), ‘No’ 8 respondents (15.1%) (the largest category), ‘Unusual exams’ 3 respondents (5.7%), ‘Some’ 4 respondents (7.5%), ‘Many’ 1 respondent (1.9%), ‘Probably none’ 5 respondents (9.4%), ‘No’ 7 respondents (13.2%).

With this analysis, most respondents (15.1%) stated that they had ‘no’ specific experiences that made them feel stressed or anxious. 13.2% of respondents also chose the answer ‘no’ for experiences that made them stressed or anxious. 9.4% of respondents felt that there was probably a ‘no’ experience that clearly triggered stress or anxiety. However,

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there were 7.5% who felt stress or anxiety due to a specific experience, and 5.7% mentioned ‘unusual exams’ as a source of stress. A small number of respondents mentioned reasons such as ‘When doing...’ and ‘Adaa’, but these seem to be more informal or less detailed answers.

From this data, the majority of respondents do not appear to have had any specific experiences that caused them to feel stressed or anxious. The largest group indicated that they ‘did not’ feel distressed by a specific experience. However, some respondents (7.5% to 15.1%) indicated that exams or other experiences could trigger stress or anxiety in certain contexts. This data suggests that most individuals may not face specific challenges that cause stress, but certain exams or situations can still cause anxiety for some.

From the results of this diagram, we can see that while most respondents did not have specific experiences that made them feel stressed or anxious, there were still a number of respondents who felt that certain situations could be a source of pressure. Categories such as ‘unusual exam’ (5.7%) show that academic situations that are uncommon or challenging can trigger anxiety for some students. In addition, respondents who chose ‘any’ (7.5%) may be referring to other experiences beyond the categories already mentioned.

Interestingly, there were some informal answers such as ‘There is’ and ‘When doing...’, which may indicate that a small proportion of respondents felt stress but did not specify the specific experience. These answers, although vague, may represent that for them, stress arises in certain situations for no apparent reason, or it is difficult for them to pinpoint the source of stress.

On the other hand, 9.4% of respondents stated that they ‘probably don't’ face specific stressful situations, which could indicate that they feel pressure in some situations, but cannot identify a specific experience as the cause. This could indicate that their anxiety is more generalized or related to internal conditions or feelings.

From these results, it seems important for educators and school administrators to understand that while most students may not feel distressed by specific experiences, there are still a handful who experience anxiety especially when facing specific exams or assignments. This can be addressed by providing more support in exam preparation, or a personalized approach for students who feel distressed by unfamiliar situations. In addition, some respondents seemed to experience anxiety for no apparent reason or had difficulty explaining stressful situations. This may be an indication that some students could benefit from more in-depth mental health support, such as counseling or stress management programs, to help them identify and address factors that cause anxiety more effectively. Overall, although the majority of students did not experience significant stress from the specific experience, there was a subset that needed more attention and support to deal with situations that were stressful for them.

The question in this diagram is: ‘Do you feel that the use of digital technology affects your mood? If yes, how does it affect it?’. This graph presents the results of the questionnaire regarding the effect of using digital technology on one's mood. The answers given by the respondents are quite diverse, but we can see some common patterns: the majority (8.4%) of respondents feel that the use of digital technology greatly affects their mood. This answer shows that many people recognise the strong connection between digital activities and their emotions. Some respondents (5.7%) felt that digital technology sometimes makes them feel happy. This shows that there are positive sides to using technology, such as entertainment and social connectivity. Others gave more specific answers, such as ‘yes, because it's there’, ‘yes, it makes me feel less confident’, or ‘yes, because if...’. These answers indicate that the influence of digital technology on mood can be complex and dependent on individual situations.

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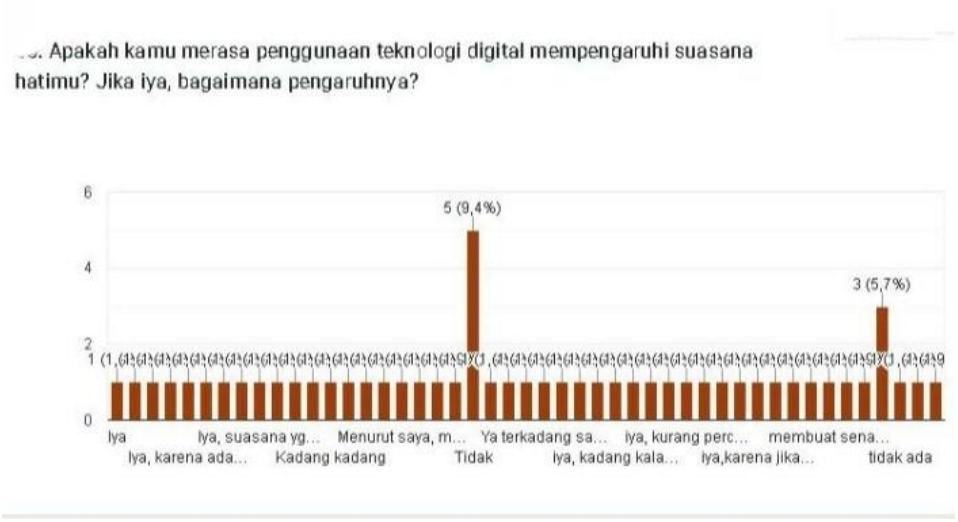

Figure 4.
Diagram of Questionnaire Results

This graph provides an initial snapshot of people's perceptions of the impact of digital technology on mental health. While the sample may be limited, the results of this survey are in line with previous research which suggests that overuse of gadgets can trigger various psychological problems such as stress and anxiety, constant notifications, demands to be connected, and exposure to negative information can increase stress and anxiety levels. Depression and excessive use of social media can trigger feelings of envy and inadequacy, which in turn can trigger depression. Loneliness, while technology allows us to connect with others, excessive use can isolate us from real social interactions. For sleep disorders, the blue light emitted by screens can disrupt the production of melatonin, a hormone that regulates sleep cycles.

From this graph, we can conclude that the use of digital technology has a significant impact on one's mood. Therefore, it is important for us to use technology wisely and balance it with other activities, such as exercising, socializing in person, and getting enough rest.

4. CONCLUSION

Based on the results of this study, ‘digital literacy’ has a significant influence on ‘student mental well-being’. While most students were able to use digital technologies without experiencing persistent negative impacts, the survey results showed that a number of students experienced levels of stress, anxiety, and burnout due to technology use, especially social media and schoolwork-based apps. These findings highlight the importance of good digital literacy to support students' mental health, especially in the face of digital demands in education.

Most respondents reported that they only occasionally felt stressed or anxious when using digital technologies for schoolwork. However, almost half of them admitted to often feeling exhausted after using technology or social media. This suggests that overuse of technology could be a risk factor affecting students' mental well-being.

These conclusions emphasize the need for educational strategies that focus on improving ‘digital literacy’ and supporting students' mental health. Better technology training and an understanding of how to manage screen time wisely can help reduce the negative impact of technology use. In addition, educational institution policies that support a balance between technology use and mental well-being are needed to create a healthier educational environment for students.

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