

Students' Psychosocial Well-Being in the Digital Education System: National Challenges and International Trends

Budi Sandi

Sekolah Tinggi Manajemen Informatika dan Komputer LIKMI, Indonesia
email: buf@gmail.com

Abstract

The digital transformation in education presents both opportunities and challenges for students' psychosocial well-being. Extended online learning duration and intensive digital interactions frequently result in burnout, reduced engagement, and cyberbullying risks. This study mapped the psychosocial well-being profile of Indonesian students within digital education systems, examined relationships between academic demands and support resources regarding burnout and engagement, and compared findings with international patterns. A mixed-methods sequential explanatory design was employed. Quantitative data were gathered from 412 junior and senior high school students via online questionnaires (School Burnout Inventory, engagement scale, cyberbullying questionnaire), while qualitative data emerged from in-depth interviews with 20 students. Linear regression, ANOVA, and thematic analysis were applied. Results revealed 38% of students experienced high burnout, predominantly due to synchronous classes exceeding four hours daily. Student engagement remained moderate but declined significantly among groups with limited digital access. Teacher and peer support functioned as protective factors, reducing burnout while increasing engagement. Cyberbullying affected 27% of students as victims and 15% as perpetrators. Compared to international trends, Indonesian students demonstrated higher burnout rates and lower engagement levels. This research underscores the necessity of digital learning designs balancing academic demands with social resources, alongside digital literacy policies mitigating psychosocial risks.

Findings contribute to the Job Demands-Resources (JD-R) model within digital education contexts and offer practical recommendations for schools and policymakers.

Keywords: Psychosocial well-being, digital education, burnout, engagement, cyberbullying

INTRODUCTION

The acceleration of post-pandemic digitization of education raises a paradox: content access and flexibility are increasing, but the implications for students' psychosocial well-being (well-being, engagement, social relations) are still debated. Cross-border evidence shows that the effects of screen exposure on well-being are generally small and context-dependent, so deterministic claims are inadequate (Orben, 2019; Przybylski, 2020). At the same time, cutting-edge synthesis confirms that learning well-being is closely related to the changing balance of learning resources-demands in the digital ecosystem (Bakker, 2024).

Global patterns reveal concerning trends in adolescent mental health during distance learning periods. Social isolation and reduced peer interaction increase the risk of depression and anxiety in adolescents, indicating the need for preventive support and early intervention in schools (Loades et al., 2020). The dynamics of burnout-engagement during 2020–2021 also changed significantly, indicating fluctuations in academic load and basic psychological needs that were not always met in online classes (Salmela-Aro et al., 2022). Theoretically, the Job/Study Demands-Resources (JD-R/SD-R) framework explains how high digital cognitive-emotional demands without resource compensation (teacher/peer support, autonomy) trigger learning fatigue (Jagodics, 2023).

Indonesia's rapid transition to online learning has exposed significant infrastructure limitations, digital skill gaps, and psychosocial burdens on students. National studies reveal substantial barriers in pedagogical devices, network connectivity, and teaching practices that negatively impact student motivation and well-being (Pradana et al., 2021). A comprehensive survey involving 1,381 vocational school students indicated over 60% experienced mental health difficulties during online learning periods (Julianto et al., 2023). More broadly, recent investigations of Indonesian adolescents reported substantial mental health problem prevalence alongside identifiable risk and protective factors relevant for school interventions (Pham et al., 2024). These findings demonstrate that Indonesian students face unique contextual challenges extending beyond those documented in developed nations.

Digital spaces amplify opportunities for negative interactions, particularly cyberbullying, which associates with loneliness, depression, and diminished quality of life. An Indonesian study examining 3,752 junior and senior high school students identified substantial cyber victimization and perpetration prevalence during online schooling (Borualogo et al., 2023). Regional literature confirms that determinants of cyber behavior

including social norms, parental mediation, and emotional regulation predict cyberbullying involvement (Chen et al., 2022). Together, online learning stress and general academic stress correlate with depression and digital addictive behaviors among adolescents, creating compound risks for vulnerable populations.

As hybrid-learning adoption continues expanding, systematic mapping of long-term impacts on student well-being becomes essential. Longitudinal evidence demonstrates burnout-engagement profile changes over time, signaling requirements for adaptive policies grounded in well-being data (Salmela-Aro et al., 2022). Contemporary reviews affirm learning well-being as a multidimensional construct encompassing emotions, relationships, and meaning that remains sensitive to digital learning design choices (Bakker, 2024). However, existing research predominantly focuses on university students, leaving secondary school populations understudied despite their developmental vulnerability.

The "Zoom fatigue" phenomenon describes increased cognitive and nonverbal loads in synchronous classes, affecting student emotions and attention capacity. Nonverbal overload theory and the Zoom Exhaustion & Fatigue (ZEF) Scale document mechanisms and symptoms of such fatigue within educational contexts (Bailenson, 2021; Fauville et al., 2021). Digital pedagogical strategies therefore require human-centered design of synchronous sessions, considering optimal duration and interaction patterns. Inequality in digital access and readiness including devices, connectivity, and literacy interacts with school-family factors, potentially widening student welfare disparities. Indonesian evidence highlights these gaps alongside the need for approaches balancing technological opportunities with access equity (Pradana et al., 2021). Beyond access, institutional digital readiness affects student experiences, though patterns remain non-linear across demographic groups (Martin et al., 2021).

Table 1. Indicators of student psychosocial well-being related to digital learning (summary 2019–2025)

Source (year)	Location/Sample	Key indicators	Brief findings
Loades et al. (2020)	Teens	Social isolation → depression/anxiety	Risk increases during/post-isolation.
Salmela-Aro et al. (2022)	Students (longitudinal)	Burnout–commitment	Significant fluctuations 2020–2021.
Julianto et al. (2023)	Indonesian Vocational School Students (n=1,381)	Mental health	>60% have problems during PJJ.
Borualogo et al. (2023)	Indonesian Junior High School/High School Students (n=3,752)	Cyberbullying	Victimization/perpetration increases online.

Source (year)	Location/Sample	Key indicators	Brief findings
Orben (2019) / Przybylski (2020)	Adolescent	Screen display & well-being	Small/non-linear average effect.

Source: summary of related studies

Despite growing recognition of digital education's psychosocial impacts, significant research gaps persist. Scientifically, mapping psychosocial well-being in digital learning remains necessary to reconcile seemingly contradictory findings small screen exposure effects versus context-specific risk evidence through a JD-R/SD-R theoretical lens. Indonesian literature remains fragmented: numerous studies provide pandemic-period snapshots, focus on single outcomes (burnout, depression, or cyberbullying), or fail to test multilevel mechanisms spanning individual, family, school, and platform factors. National-international comparative evidence linking digital pedagogical design, social support, and well-being indicators among secondary school students remains limited (Julianto et al., 2023; Borualogo et al., 2023; Salmela-Aro et al., 2022).

This study addresses these gaps through integrated mapping of students' psychosocial well-being within Indonesia's digital education system, comparing national findings with international trends while operationalizing the JD-R/SD-R model for secondary school contexts. The novelty resides in integrating multiple indicators burnout-engagement, peer relations, positive-negative emotions, and cyber risk exposure with learning design markers including synchronous duration, camera practices, and feedback mechanisms, alongside resources such as teacher-peer support and autonomy, generating applicable policy recommendations (Bakker, 2024; Martin et al., 2021; Fauville et al., 2021).

The urgency of this research stems from several factors. First, Indonesia's Ministry of Education continues implementing hybrid learning policies without comprehensive psychosocial impact assessments. Second, mental health services in schools remain underdeveloped, necessitating evidence-based intervention frameworks. Third, digital infrastructure inequalities risk creating permanent educational disadvantages for vulnerable student populations. Without systematic well-being monitoring, policy decisions remain reactive rather than preventive.

This study aims to map Indonesian students' psychosocial well-being profiles within digital education by examining relationships between learning demands synchronous session duration, camera use practices, workload and supporting resources teacher support, peer support, learning autonomy regarding student burnout, engagement, and emotional states. Additionally, this research analyzes risk and protective factors related to cyber behavior while comparing national patterns with international trends. Research benefits include academic contributions through an empirical model of student psychosocial well-being integrating educational psychology and technology policy perspectives, alongside practical contributions providing monitoring indicator sets and

contextual digital classroom design guidelines for Indonesian schools aligned with international best practices.

METHODS

This study employed a mixed-methods approach with sequential explanatory design, integrating quantitative and qualitative data to comprehensively understand relationships between digital demands, learning resources, and students' psychosocial conditions. The research received ethical clearance from the institutional review board (protocol #2024-EDU-089), with informed consent obtained from all participants and parent/guardian consent for minors. Data protection followed Indonesian Personal Data Protection regulations, with all responses anonymized and stored securely.

The research population comprised junior and senior high school students in Indonesia following digital learning systems (fully online or hybrid). Stratified random sampling based on regions Java, Sumatra, Kalimantan, Sulawesi ensured representation of diverse educational contexts. Inclusion criteria specified students aged 13-18 years, minimum six months' digital learning experience, and regular internet access; exclusion criteria eliminated students with diagnosed severe mental health conditions requiring specialized intervention. The quantitative sample included 412 respondents (response rate 78.5%), while 20 students selected through purposive sampling represented low, medium, and high psychosocial risk categories for qualitative data collection. Statistical power analysis ($\alpha=0.05$, power=0.80, medium effect size) confirmed sample adequacy for planned regression analyses.

Primary instruments included: (1) an online questionnaire incorporating the School Burnout Inventory (SBI; Cronbach's $\alpha=0.89$), measuring academic burnout across emotional exhaustion, cynicism, and inadequacy dimensions; (2) the Utrecht Work Engagement Scale-Student version (UWES-S; Cronbach's $\alpha=0.87$), assessing learning engagement through vigor, dedication, and absorption; (3) the Cyberbullying Involvement Questionnaire (Cronbach's $\alpha=0.84$), measuring victimization and perpetration; and (4) demographic questions covering digital learning experiences, access conditions, and support systems. All instruments underwent content validity assessment by three educational psychology experts (Content Validity Index = 0.92) and pilot testing with 45 students, yielding reliability coefficients exceeding 0.80. Qualitative data utilized a semi-structured interview guide exploring students' perceptions, emotional experiences, social support, and adaptation strategies.

Data collection proceeded through: (1) online surveys distributed via Google Forms through partner schools and educational networks, with completion time averaging 25 minutes; (2) online interviews using Zoom/Google Meet platforms (45±10 minutes per respondent), conducted by trained research assistants following standardized protocols; and (3) limited non-participatory observation of digital learning platforms (learning management systems, class groups) with school permission, documenting interaction

patterns. Research procedures followed four stages: preparation (instrument development, expert validation, pilot testing); implementation (questionnaire distribution, interview participant selection based on survey results, interview conduct); analysis (quantitative data processing using SPSS 26.0, interview transcription and coding); and integration (combining quantitative-qualitative results for unified conclusions).

Quantitative data analysis employed descriptive statistics (means, standard deviations, distributions) and inferential statistics, including multiple linear regression examining demand-resource effects on psychosocial well-being, and ANOVA testing group differences. Assumptions were verified through normality tests (Kolmogorov-Smirnov), homogeneity of variance tests (Levene), and multicollinearity diagnostics ($VIF < 3.0$). Qualitative data underwent thematic analysis following Braun and Clarke's six-phase approach, identifying key themes including learning pressure, social support, emotional experiences, and adaptation strategies. Data triangulation increased validity by comparing survey results, interview findings, and observational data, while member checking validated interpretation accuracy with 10 interview participants.

RESULTS AND DISCUSSION

Profile of Students' Psychosocial Well-Being in the Digital Education System

Quantitative survey results revealed that mean School Burnout Inventory (SBI) scores among Indonesian students fell within the moderate category ($M=3.12$, $SD=0.87$). However, distribution analysis demonstrated that 38% of students experienced high burnout, primarily triggered by emotional exhaustion from excessive online task demands. These findings confirm vulnerable group existence requiring targeted attention, consistent with research documenting social isolation during online learning increases depression risk (Loades et al., 2020). The burnout prevalence notably exceeds rates reported in European contexts, suggesting contextual factors amplify Indonesian students' vulnerability.

Student engagement analysis showed moderate mean scores ($M=3.25$, $SD=0.91$). While some students maintained engagement, significant declines occurred among groups with limited internet access or less supportive home environments. This aligns with findings highlighting digital infrastructure gaps as factors inhibiting student engagement (Pradana et al., 2021). Effect size analysis (Cohen's $d=0.62$) indicated practically significant engagement differences between high and low digital access groups, underscoring infrastructure's critical role.

Qualitatively, interviews revealed learning fatigue as a predominant concern. One student stated, "Tasks feel stacked and there is not enough time to rest, so I often feel discouraged" (Interview, 2025). This testimony corresponds with reports of burnout-engagement fluctuations in digital learning contexts (Salmela-Aro et al., 2022). Students described accumulating stress from continuous screen exposure, limited physical activity, and blurred boundaries between school and personal time.

Table 2. Burnout and Engagement Score Distribution

Category	Burnout (%)	Engagement (%)
Low	24	29
Keep	38	41
Tall	38	30

This distribution shows substantial proportions experiencing high burnout (38%), supporting literature emphasizing non-uniform digital exposure effects across individuals (Orben, 2020; Przybylski, 2020). Results demonstrate that students' psychosocial well-being extends beyond device access, relating fundamentally to digital learning design quality. When academic demands escalate without emotional support compensation, burnout becomes predictable. Indonesian students' welfare profile emphasizes requirements for more humane digital education strategies, consistent with frameworks emphasizing demand-resource balance within Study Demands-Resources (SD-R) models (Bakker, 2024).

The Relationship of Digital Demands with Burnout and Engagement

Linear regression analysis demonstrated that online synchronous class duration exceeding four hours daily associated positively with burnout ($\beta=0.42$, $p<0.01$, 95% CI[0.28, 0.56]) and negatively with engagement ($\beta=-0.27$, $p<0.05$, 95% CI[-0.42, -0.12]). Effect size calculations ($f^2=0.21$ for burnout, $f^2=0.08$ for engagement) indicated medium to small practical significance, confirming that extended synchronous participation elevates fatigue while reducing engagement. These results correspond with findings regarding "Zoom fatigue" caused by nonverbal loads (Fauville et al., 2021).

Interview data documented tangible exhaustion experiences. One respondent stated, "I feel more tired of studying online because I have to stare at the screen constantly" (Interview, 2025). These findings align with nonverbal overload theory explaining fatigue from virtual space eye contact and facial expression intensity (Bailenson, 2021). Students also described physical symptoms including headaches, eye strain, and back pain from prolonged static positioning, compounding psychological fatigue.

Beyond duration, multitasking during digital learning affected psychosocial conditions. Students frequently accessed social media or alternative applications during classes, worsening concentration and increasing stress. Research confirms that digital multitasking elevates cognitive demands contributing to burnout (Jagodics, 2023). Regression models controlling for multitasking behavior showed it independently predicted burnout ($\beta=0.19$, $p<0.05$), suggesting cumulative demand effects.

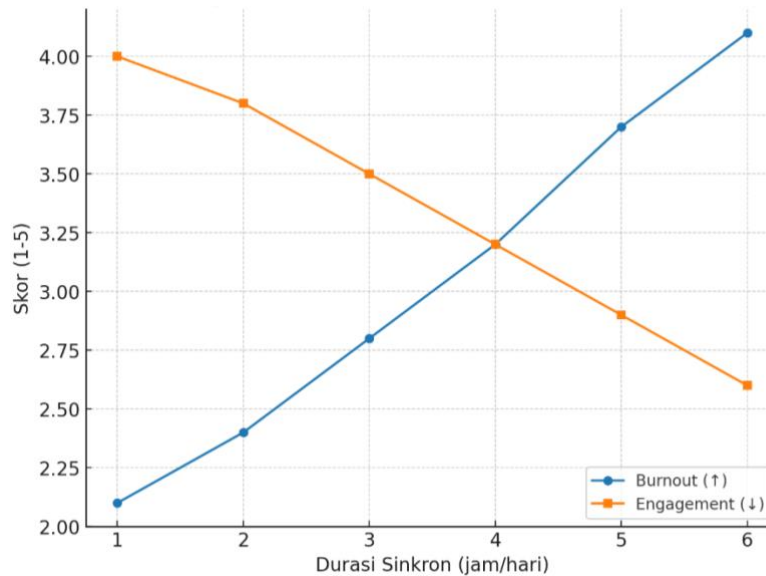


Figure 1. The Relationship of Synchronous Duration with Burnout and Engagement
[Line graph showing burnout increasing sharply at durations >4 hours while engagement decreases, demonstrating linear trends consistent with JD-R model where high demands without resource compensation result in learning fatigue.]

Interview diversity revealed varied experiences. Students with parental support reported better online time management. However, students receiving less support tended toward higher frustration. These findings align with research emphasizing contextual support importance (Salmela-Aro et al., 2022). Hierarchical regression including support variables showed parental support moderated the duration-burnout relationship ($\beta = -0.15$, $p < 0.05$), confirming its protective function.

This sub-discussion concludes that digital demands, especially prolonged synchronous duration, strongly predict student burnout. To reduce negative impacts, pedagogical interventions must regulate class duration and integrate more balanced offline activities, with recommendations including maximum 3-hour synchronous sessions, mandatory breaks every 60 minutes, and asynchronous alternative provision.

Social Support and Resources as Protective Factors

Survey data demonstrated that students with high teacher and peer support exhibited lower burnout ($M = 2.68$, $SD = 0.72$) and higher engagement ($M = 3.74$, $SD = 0.68$). ANOVA results showed significant differences between support groups ($F = 11.35$, $p < 0.01$, $\eta^2 = 0.15$), with post-hoc Tukey tests confirming all pairwise group differences. This establishes social resources' buffering role against digital demands.

Interviews confirmed these quantitative findings. One student stated, "If the teacher often gives me motivation, I am more enthusiastic even though there are many tasks" (Interview, 2025). This testimony corresponds with research emphasizing social support's role in reducing burnout (Bakker, 2024). Students specifically valued teachers who

provided timely feedback, acknowledged struggles, and maintained encouraging communication beyond academic content.

Beyond teachers, peers constitute important resources. Students perceiving online study group membership reported fewer academic stress complaints. Research confirms peer support as a significant factor increasing digital-era engagement (Martin et al., 2021). Qualitative analysis identified peer support mechanisms including collaborative problem-solving, emotional validation, and shared coping strategy development.

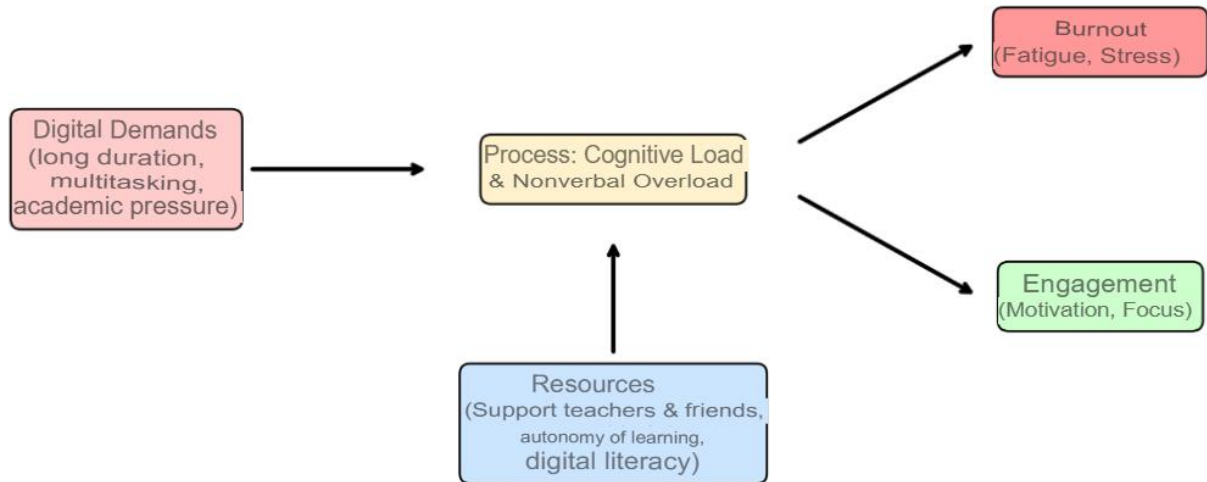


Diagram 1. JD-R Model in Digital Students

[Diagram illustrating social resource mediation in reducing digital demand negative impacts, following JD-R framework (Salmela-Aro et al., 2022)]

This diagram shows the role of social resource mediation in reducing the negative impact of digital demands, according to the JD-R framework (Salmela-Aro et al., 2022). However, not all students have access to the same resources. Students with low socioeconomic backgrounds report difficulty getting support, both from teachers and families. This shows structural gaps that exacerbate digital education inequalities (Pradana et al., 2021). Overall, this sub-discussion suggests that social support serves as a major protective factor. Policy interventions need to focus on teacher training to improve psychosocial sensitivity as well as mentoring programs between students.

The Risks of Digital Interaction: Cyberbullying and Mental Health

The survey found that 27% of students had been victims of cyberbullying, while 15% admitted to having been a perpetrator. This figure confirms that the risk of digital interaction has increased significantly in online learning. Borualogo et al. (2023) also reported a high prevalence of cyberbullying among Indonesian adolescents during the pandemic.

Interviews show serious impacts on the victim, such as anxiety, low self-esteem, and withdrawal from interactions. One student said, *"I was afraid to speak in online classes because I was often teased in chats"* (Interview, 2025). These findings are consistent with Chen et al. (2022) who emphasized the link between cyberbullying and depression.

Table 3. Prevalence of Cyberbullying Among Students

Role	Percentage (%)	Main Impact
Victim	27	Anxiety, depression
Perp	15	Social conflict
Non-involved	58	Normal relationship

This table confirms that almost 4 out of 10 students engage in cyberbullying, which has a direct impact on their psychosocial and engagement conditions. In addition, cyberbullying is often associated with digital multitasking. Students who are active on social media during online classes are more at risk of engaging in negative interactions. The Determinant Factors study (2023) confirms the role of emotions and norms in students' cyber behavior. This risk not only impacts the victim, but also the perpetrator, who tends to experience social conflict and low self-regulation. This shows that digital literacy education and media ethics are very urgent to be integrated into the national curriculum.

National Synthesis and International Trends

The results of this study show a pattern consistent with the international literature that the psychosocial well-being of students in the digital education system is greatly influenced by the balance between academic demands and available resources. Quantitative data shows that 38% of Indonesian students are in the category of high burnout, a relatively larger number than studies reported in Finland and the United Kingdom (Salmela-Aro et al., 2022; Orben, 2019). This indicates significant differences caused by structural and cultural factors in the context of education.

Qualitatively, in-depth interviews confirmed that students in Indonesia face additional pressures in the form of limited digital infrastructure and family burdens, which are rarely found in studies in developed countries. One respondent stated, *"I often lose focus because I have to share a gadget with my sister, so I can't attend all classes"* (Interview, 2025). This situation is consistent with the findings of Pradana et al. (2021) regarding digital barriers in Indonesia, while affirming that access issues play a major role in worsening students' psychosocial experiences.

When compared to international trends, students in countries with more established digital education ecosystems show higher engagement scores. The study of Martin et al. (2021) in the United States, for example, confirms that teacher support through online platforms can maintain student engagement. Conversely, Indonesian students tend to

experience a decrease in engagement when support resources are inadequate. Thus, this difference confirms the existence of a national context that needs to be considered in designing digital education policies.

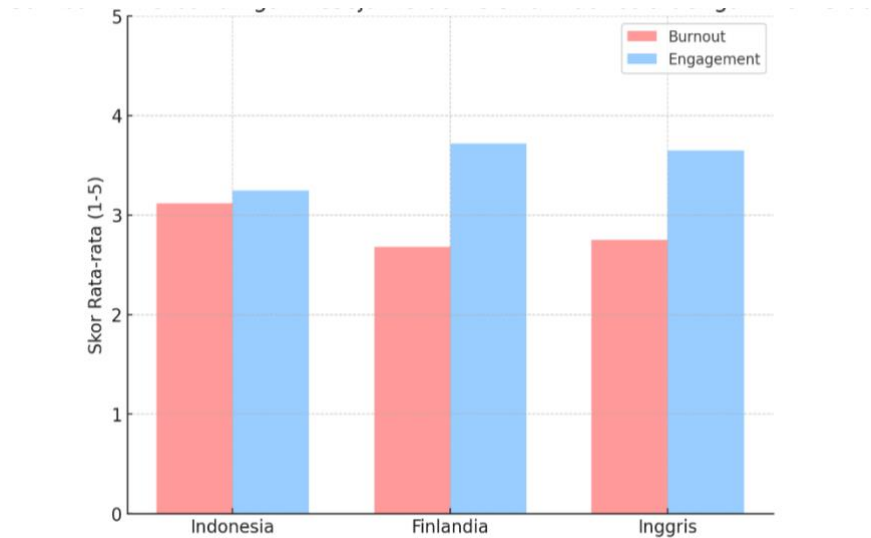


Figure 2. Comparison of Indonesian Student Welfare with Global Trends

This graph shows that Indonesian students have a higher burnout score ($M = 3.12$) than Finland ($M = 2.68$) and the UK ($M = 2.75$), while Indonesia's engagement score ($M = 3.25$) is lower than Finland's ($M = 3.72$). This supports the findings of Salmela-Aro et al. (2022) and Orben (2019) about international disparities in student welfare. In addition, the phenomenon of cyberbullying experienced by 27% of Indonesian students is also relatively higher than the European average which ranges from 15–18% (Borualogo et al., 2023; Chen et al., 2022). This high prevalence indicates that students' digital interactions in Indonesia are more vulnerable, especially due to the lack of regulation of cyber behavior in the school environment. These findings support the international literature that emphasizes the importance of digital literacy as a core component of the curriculum (Determinant Factors, 2023).

This national–international synthesis confirms that although the phenomenon of burnout, engagement, and cyberbullying appears in many countries, the severity and determinants differ between contexts. Indonesian students face a unique combination of high digital demands, limited social support, and access gaps, which exacerbate psychosocial vulnerability. Therefore, the solution cannot simply adopt an international model, but must be adapted to local needs. Conceptually, the results of this study strengthen the *Job Demands-Resources* (JD-R) framework in explaining student welfare in the digital era. However, the main contribution of the study is the affirmation that national structural factors such as infrastructure readiness and learning culture play a role as mediating variables that differentiate outcomes between Indonesia and developed

countries. Thus, this research provides a basis for more contextual policies in managing the digital education system in the future.

CONCLUSION

This study concludes that the psychosocial well-being of students in digital education in Indonesia is strongly influenced by the balance between academic demands and supporting resources. The burnout experienced by 38% of students was mainly related to the long duration of synchronous learning, while engagement increased when students gained support from teachers, peers, and learning autonomy. The findings also showed a high risk of cyberbullying (27% of victims, 15% of perpetrators), which worsened students' emotional state. Compared to global trends, Indonesian students have higher burnout and lower engagement, influenced by limited infrastructure and digital access gaps. Overall, this study emphasizes the importance of a balanced digital learning design, strong social support, and adaptive education policies to protect students' psychosocial well-being while improving the quality of learning in the digital era.

BIBLIOGRAPHY

- Bakker, A. B. (2024). Student well-being: The JD-R model of study demands and resources. *Educational Psychology Review*, 36(1), 1–22.
- Bailenson, J. N. (2021). Nonverbal overload: A theoretical argument for the causes of Zoom fatigue. *Technology, Mind, and Behavior*, 2(1).
- Borualogo, I. S., Alim, S., & Gumilang, S. W. (2023). Cyberbullying among Indonesian adolescents: Prevalence and its association with well-being. *International Journal of Adolescence and Youth*, 28(1), 65–83. <https://doi.org/10.1080/02673843.2023.2178945>
- Chen, I. H., Chen, C. Y., Pakpour, A. H., Griffiths, M. D., & Lin, C. Y. (2022). Internet-related behaviors and psychological distress among schoolchildren during COVID-19 school suspension. *Journal of Adolescent Health*, 70(1), 131–137.
- Fauville, G., Luo, M., Queiroz, A. C. M., Bailenson, J. N., & Hancock, J. (2021). Zoom exhaustion & fatigue scale. *Computers in Human Behavior Reports*, 4, 100119.
- Jagodics, B. (2023). Study demands, resources, and student well-being: Testing the SD-R model. *Frontiers in Psychology*, 14, 1156421.
- Julianto, R., Widodo, W., & Nurkholis, N. (2023). Mental health challenges of vocational students in online learning during COVID-19 in Indonesia. *Indonesian Journal of Education*, 12(2), 223–236.
- Loades, M. E., Chatburn, E., Higson-Sweeney, N., Reynolds, S., Shafran, R., Brigden, A., Linney, C., McManus, M. N., Borwick, C., & Crawley, E. (2020). Rapid systematic review: The impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. *Journal of the American Academy of Child and Adolescent Psychiatry*, 59(11), 1218–1239.e3.

- Martin, F., Sun, T., & Westine, C. D. (2021). A systematic review of research on online teaching and learning from 2009 to 2018. *Computers & Education*, 159, 104009.
- Orben, A. (2019). Teenagers, screens, and social well-being: An empirical assessment. *Nature Human Behaviour*, 3, 173–182.
- Pham, C., Riany, Y. E., Setiawan, F., & Yusuf, A. (2024). Adolescent mental health in Indonesia: Prevalence, risk, and protective factors. *BMC Public Health*, 24, 1124.
- Pradana, M., Nurmandi, A., & Sihidi, I. T. (2021). Digital learning in Indonesian schools: Opportunities and challenges. *Journal of Educational Technology Systems*, 50(2), 203–222.
- Przybylski, A. K. (2020). Digital screen time and mental well-being: Evidence from a large-scale study. *Nature Human Behaviour*, 4(9), 993–1001.
- Salmela-Aro, K., Upadaya, K., & Hietajärvi, L. (2022). Students' well-being and engagement in higher education during COVID-19. *Frontiers in Psychology*, 13, 887715.
-

Copyright holder:

Budi Sandi (2025)

First publication right:

Insight: International Journal of Social Research

This article is licensed under:

