

cek-019e0fab0d51-PLAGIARISM CHECK
AND AI ANALYSIS OF ACADEMIC ABILITY
AND PHYSICAL ACTIVITY OF EXCESSIVE
GADGET USERS IN RANCAKALONG
DISTRICT.pdf

By User Upload

ANALYSIS OF ACADEMIC ABILITY AND PHYSICAL ACTIVITY OF EXCESSIVE GADGET USERS IN RANCAKALONG DISTRICT

Jilan Nur Fajar¹, *Tatang Muhtar², Muhammad Nur Alif³, Anggi Setia Lengkana⁴

¹²³⁴Physical Education, Universitas Pendidikan Indonesia, Sumedang, Indonesia

*correspondence: tatangmuhtar@upi.edu

ABSTRACT

Excessive gadget use among elementary school students is a growing educational and health concern because it can disrupt the balance between academic learning, physical activity, and social-emotional development. This study analyzed the academic ability and physical activity of excessive gadget users in several elementary schools in Rancakalong District using a convergent parallel mixed-methods design guided by the PRECEDE-PROCEED framework. Quantitative data were obtained from an academic ability test, a Likert-scale screening instrument, and the International Physical Activity Questionnaire-Short Form (IPAQ-SF), whereas qualitative data were collected through observations and interviews with students, parents, and teachers. The quantitative sample consisted of 52 students in grades IV, V, and VI, and 6 students were purposively selected for in-dept IPAQ-SF and qualitative analysis. The mean academic score was 8.33 out of 20 and was significantly below the minimum competency standard of 12 ($t(51) = -11.36$; $p < 0.001$); only 4 students (7.69%) reached proficiency. IPAQ-SF results showed 5 participants (83.3%) in the moderate physical activity category and 1 participant (16.7) in the low category, but sitting time remained high at 3-7 hours per day. Qualitative findings explained this active-sedentary paradox through concentration problems, physical discomfort, instant gratification, inconsistent parental mediation, and a school-level regulation. The study concludes that excessive gadget use is associated with low academic achievement and unbalanced daily patterns, requiring integrated digital literacy, active learning, parental mediation, and school-based physical activity interventions.

Keywords: excessive gadget use, academic ability, physical activity, elementary school, convergent parallel mixed methods, PRECEDE-PROCEED

INTRODUCTION

Elementary education must balance cognitive achievement, physical growth, and social-emotional readiness, in line with the holistic purpose of basic education (UNESCO, 2021), at this stage, learning depends not only on memory and conceptual mastery but also on daily habits that support attention and academic readiness (OECD, 2020). Physical activity is also important because movement supports health, mental well-being, and cognitive functioning among school-aged children (WHO, 2022). Digital technology can support learning, but it becomes a developmental threat when gadget use dominates children's routines and displaces active play, direct communication, and sustained concentration. The problem addressed in this study is therefore not technology itself, but the shift from technology as a learning support to technology as a competing environment that absorbs time, attention, and physical engagement.

Recent screen-time literature suggests a practical threshold for identifying excessive non-essential gadget use. Contemporary guidance emphasizes content quality, family routines, and parental mediation rather than a single rigid hour limit (AAP, 2024). However, practical health guidance still warns that recreational screen exposure should not displace sleep, physical activity, and social interaction however, in general (Staff, 2024). In the Indonesia elementary-school context, gadget use of around 1-2 hours per day is commonly recommended as a limit to protect concentration and reduce addictive tendencies (Sugiarti & Andyanto, 2021). Gadget use exceeding two hours per day has also been described as excessive intensity that may reduce students' academic performance (Goodwood, 2021). A recent systematic review further shows

that screen time among children aged 6-14 is a global lifestyle issue related to learning behavior and health (Qi et al., 2023).

At the national policy level, Kurikulum Merdeka provides flexibility for schools and teachers to design student-centered learning according to student's contexts and learning needs, while the national digital-literacy framework emphasizes Digital Skill, Digital Ethics, Digital Safety, and Digital Culture as core pillars of digital competence (Ministry of Education, Culture, Research, and Technology, 2024; Kementrian Komunikasi dan Informatika & Katadata Insight Center, 2021). The 2024 learning outcomes for Informatics also state that, at the SD/MI level, computational thinking and digital literacy are not established as a separate subject for phases A, B and C, but are integrated into other subject such as Pancasila Education, Bahasa, Mathematics, and Science (BSKAP, 2024). Although these policies support responsible and meaningful digital use, their implementation at the elementary-school level has not fully anticipated the "competing digital environment" faced by children outside the classroom. This environment is characterized by portable access, algorithm-driven entertainment, instant rewards from games and videos, peer-based digital interaction, and continues stimulation that can compete with homework, outdoor play, sleep, and direct social participation. Preliminary field information from elementary schools in Rancakalong also indicated that gadget use for games, videos, and social interaction had become a routine after school and sometimes competed with homework, outdoor play, and sleep. This makes Rancakalong a relevant site because the issue is visible not merely as screen duration, but as a disruption of study discipline, physical activity, and social participation.

Excessive gadget use can affect academic ability through cognitive, emotional, and biological pathways. Rapid digital rewards may make children more accustomed to instant stimulation, whereas classroom learning requires delayed gratification, persistence, and self-regulation (Ponti, 2023). Increased screen exposure is also associated with lower psychological well-being, which may influence children's motivation and readiness to learn (Twenge & Campbell, 2020). Long sitting time reduces opportunities for gross motor movement, postural variation, and physical activity (Tremblay et al., 2017). Reduced physical activity can also weaken alertness and concentration during learning. Therefore, sedentary behavior should not be understood only as a health concern; it can also interfere indirectly with academic readiness through fatigue, discomfort, reduced attention, and lower motivation to complete challenging tasks. In this sense, physical inactivity and academic difficulty may emerge from the same imbalance in children's daily routines.

Previous studies have examined screen media use and academic performance (Singh, 2021). Other studies have discussed physical activity and self-regulation (Alonso-mart et al., 2021), sleep and concentration (Hale & Guan, 2022), and physical activity interventions (Lubans, 2021). However, fewer studies have integrated academic ability, physical activity, sedentary behavior, and qualitative experiences of students, parents, and teachers in one elementary-school context. This study addresses that gap through a convergent parallel mixed-methods design. The PRECEDE-PROCEED framework was used to organize the findings into predisposing factors, such as knowledge, preference, and instant gratification; enabling factors, such as access to gadgets and school facilities; and reinforcing factors, such as parental discipline, teacher guidance, and peer norms (Kim et al., 2022). The purpose of this study was to analyze the academic ability and physical activity of elementary school students who use gadgets excessively in Rancakalong District and to formulate implications for school and family-based interventions

METHOD

This study employed a convergent parallel mixed-methods design. Quantitative and qualitative data were collected within the same fieldwork period, analyzed separately, and then merged during interpretation to produce meta-inferences. This design was selected because statistical findings about academic achievement, Likert-scale responses, and IPAQ-SF scores needed to be explained through observations and interviews with students, parents, and teachers. The use of a convergent design follows mixed-methods guidance in which different forms of evidence are brought together to determine whether they confirm, complement, or

diverge from one another (Creswell & Plano Clark, 2018). The integration stage was also used to develop meta-inferences from the relationship between quantitative trends and qualitative themes (Fetters & Tajima, 2022).

Figure 1. Flow of the convergent parallel mixed-methods design

Phase	Quantitative strand	Qualitative strand	Integration
Data collection	Academic test and Likert scale (n = 52); IPAQ-SF (n = 6)	Observation and interviews with students, parents, and teachers	Collected during the same fieldwork period
Separate analysis	Descriptive statistics and one-sample t-test	Thematic coding and PRECEDE-PROCEED mapping	Results compared by convergence and divergence
Meta-inference	Academic and physical activity patterns	Explanatory experiences from school and home	Joint display used to formulate implications

The study was conducted in five elementary schools in Rancakalong District: SDN Rancamedalwangi, SDN Cibunar, SDN Citungku, SDN Cupuwangi, and SDN Rancakalong. The quantitative component involved 52 students in grades IV, V, and VI who were identified based on parental repots, Likert-scale screening results, and teacher recommendatitons. These students participated in the academic ability test and Likert-scale screening. Excessive gadget use was operationally defined as non-essential gadget use of more than two hours per day for activities such as playing games, watching videos, or using social media, based on parental reports and student reponses. Six participants were purposively selected for more detailed IPAQ-SF and qualitative analysis by considering teacher recommendations, variation in gadget-use patterns, willingness to participate, parental permission, and the ability to complete the intruments.

The instrumens include an academic ability test, a Likert-scale screening instrument, the Internasional Physical Activity Questionnaire-Short Form (IPAQ-SF), observation sheets, interview guides, and documentation. The academic test was a grade-level achievement test with a maximum score of 20 and a minimum competency standard (KKM) of 12; it was used as a local indicator of student's academic mastery. The Likert instrument was used descriptively at the item level to identify tendencies related to gadget preference, concentration, emotional responses, physical complaints, interest in movement, peer interaction, and daily sitting time. Before realibility analysis, the negatively worded item in the Likert-scale instrument was reverse-scored so that all items had the same measurement direction. Based on the responses of 52 students across 10 Likert-scale items, the Cronbach's Alpha calue was 0.645, indicating moderate internal consistency and sufficient reliability for descriptive and exploratory analysis. The IPAQ-SF was used to measure student's physical activity and sitting time; this intrument has been used internationally for physical activity surveillance, including adolescent validation studies (Djurdjević et al., 2024).

Table 1. Model of research variables, indicators, instrument, and data use

Variable/construct	Indicator or subindicator	Instrument/source	Data use
Excessive gadget use	Non-essential use > 2 hours/day; games, videos, social media	Parental report and Likert screening	Participant identification and contextual interpretation
Academic ability	Score out of 20; KKM = 12; proficiency status	Grade-level academic ability test	Mean, percentage, and one-sample t-test
Physical activity	MET-minutes/week; activity category; sitting time	IPAQ-SF	Descriptive classification and

Variable/construct	Indicator or subindicator	Instrument/source	Data use
			sedentary pattern analysis
Learning and behavioral symptoms	Concentration, daydreaming, boredom, physical complaints, parental supervision	10-item Likert scale	Item-level frequency and percentage analysis
Qualitative context	Physical, emotional, social, parental, and school factors	Observation, interviews, documentation	Thematic analysis and PRECEDE-PROCEED mapping

Quantitative data were collected through the academic test, Likert-scale responses, and IPAQ-SF. Qualitative data were obtained from observations of student's daily behavior and interviews with students, parents, and teachers. Documentation was used to support the interpretation of school policies, activity patterns, and contextual information related to gadget use. Quantitative data were analyzed using descriptive statistics to present means, percentages, frequency distributions, and IPAQ-SF categories. The main academic hypothesis was tested using a one-sample t-test by comparing the students' mean score with the reference value of 12. IPAQ-SF data were calculated using standard MET coefficients and interpreted together with daily sitting duration. Qualitative data were analyzed thematically by identifying repeated meanings and then mapping them to predisposing, enabling, and reinforcing factors within the PRECEDE-PROCEED framework. Integration was conducted through joint display analysis to identify confirmation, complementarity, or divergence between quantitative and qualitative findings. Trustworthiness was supported through source triangulation and methodological triangulation. Source triangulation compared information from students, parents, and teachers, while methodological triangulation compared findings from tests, questionnaires, observations, interviews, and documentation. Ethical considerations included school permission, informed consent from relevant adults, voluntary participation, protection of student identity, and anonymized reporting of participants using codes rather than personal names.

RESULTS

1. Academic Achievement Results

The academic test results showed that student's academic achievement was generally below the expected competency standard. The overall mean score was 8.33 out of 20, equivalent to 41.65% of the maximum score, and only 4 of 52 students (7.69%) reached the KKM of 12. The grade-level pattern showed a linear increase from grade IV to grade VI, but the improvement remained pedagogically insufficient because even the highest grade-level mean did not reach the minimum standard. Thus, the results indicate developmental progression without adequate competency attainment. A one-sample t-test confirmed that the student's mean score was significantly lower than the reference value of 12 ($t(51) = -11.36$; $p < 0.001$), meaning that the academic ability of excessive gadget users in this sample was statistically below the expected threshold.

Table 2. Summary of academic ability test results

Class	N	Mean Score	Proficient Students	% Proficient	Non-proficient Students	% not-proficient
IV	19	7,16	0	0,00	19	100,00
V	18	8,67	1	5,56	17	94,44
VI	15	9,40	3	20,00	12	80,00
Total	52	8,33	4	7,67	48	92,31

2. Likert Scale Results

The Likert-scale findings indicated that the impact of gadget use was not expressed only as an explicit preference for gadgets. For the item on difficulty concentrating during teacher explanation, 18 students (34.6%) selected strongly agree or agree. For the item on daydreaming when given a task, 13 students (25.0%) selected strongly agree or agree. Physical complaints after prolonged gadget use were reported by 17 students (32.7%), while boredom or frustration during challenging school tasks was reported by 12 students (23.1%). These item-level results suggest that the most visible symptoms were not always stated as gadget reference, but appeared through concentration, physical comfort, and task persistence.

A critical pattern emerged from the item stating that students preferred gadgets to outdoor play with friends. Most students disagreed or strongly disagreed with that statement (31 students; 59.6%), while only 4 students (5.8%) agreed or strongly agreed. This may indicate a gap between reported reference and actual sedentary behavior, because IPAQ-SF data still showed 3-7 hours of sitting per day among the selected participants. Social desirability may also influence children's responses because outdoor play is likely perceived as the answer expected by adults. Another important finding was parental supervising: 32 students (61.5%) reported that parents often limited or monitored gadget use, but qualitative data showed that restrictive control was not always sufficient unless accompanied by active mediation, alternative activities, and consistent routines.

3. Level of Physical Activity

The IPAQ-SF results for six purposively selected participants showed that 5 participants (83.3%) were classified as having moderate physical activity and 1 participant (16.7%) was classified as low. No participant reached the high activity category. Total IPAQ-SF scores ranged from 518 to 984 MET-minute/week, with an average of 795.33 MET-minute/week. The same score of 984 appeared in three participants because they reported the same calculated pattern of moderate activity and walking: 720 MET-minute/week from moderate activity plus 264 MET-minute/week from walking. Although most participants were not physically inactive according to IPAQ-SF categories, sitting time remained high, ranging from 3 to 7 hours per day. This finding shows an active-sedentary paradox: children may still meet moderate activity criteria while also spending long periods sitting.

Table 2, IPAQ-SF Summary

Respondents' total IPAQ score (MET-minutes/week)	Total IPAQ-SF score (Met-minute/week)	Physical Activity Category	sitting Time (hours/day)
S1	624	624 moderate	4
S2	984	984 moderate	7
S3	518	518 low	7
S4	984	984 moderate	4
S5	678	678 moderate	3
S6	984	984 moderate	5

4. Qualitative Findings

The qualitative findings were mapped into the PRECEDE-PROCEED framework. Predisposing factors included instant gratification, limited self-regulation, health knowledge that did not consistently become behavior, and negative emotional responses when gadget use became too intense. Enabling factors included access to devices, internet quota, digital applications, and school facilities that could either support or limit healthy routines. Reinforcing factors included parental control, teacher guidance, peer digital norms, and school policies. Anonymized coded evidence showed physical discomfort and posture-related complaints (S1, PHY-PAIN/PHY-POS), negative emotional responses and difficulty regulating use (S@, EMO-NEG/CTRL-PAR), parental strategies such as delayed access and quota control (P1, CTRL-DEL/ACC-QUO), and teacher concerns about reduced learning enthusiasm, weaker peer interaction, and declining interest in physical activity (T1, SOC-OUT/PHYS-SED).

Student interviews indicated that gadget use was embedded in daily routines for learning, entertainment, and social connection. Parents viewed gadget control as part of academic discipline, but they also reported difficulty maintaining consistent limits. Teacher described gadgets as a double-edged phenomenon: they may stimulate curiosity, but uncontrolled use was associated with lower learning motivation, reduced social interaction, and greater attraction to digital games than outdoor activity. Observations converged into four themes: emotional and social patterns, physical resilience, barriers to participation and self-confidence, and cognitive decline and concentration. Together, these findings explain why low academic achievement, concentration difficulty, physical complaints, and sedentary behavior appeared in the quantitative data.

Quantitative result	Qualitative explanation	PRECEDE-PROCEED category	Integrated inference
Mean academic score 8.33/20; significantly below KKM 12	Teachers and observations reported reduced concentration, passive participation, and difficulty following instructions	Predisposing	Low scores reflect learning readiness problems, not only test performance
34.6% reported concentration difficulty; 32.7% reported physical complaints	Students' coded data indicated fatigue, eye strain, posture discomfort, and emotional regulation problems	Predisposing / Enabling	Digital routines affect cognitive and physical comfort during learning
5 of 6 participants had moderate activity, but sitting time was 3-7 hours/day	Teachers and parents reported substitution of outdoor play by gadget-based games	Enabling	The main issue is an active-sedentary paradox rather than complete inactivity
61.5% reported parental supervision	Parents reported inconsistent control and expected school support	Reinforcing	Restrictive rules require active mediation, alternatives, and school-family consistency

DISCUSSION

19 Analytically, the findings of this study show that the main exposure experienced by students was excessive non-essential gadget use. This exposure competed with time for homework, outdoor play, sleep, and direct interaction with peers. At the mechanism stage, excessive gadget use was related to instant digital rewards, divided attention, long sitting duration, and parental mediation or supervision that was not always consistent. These conditions may weaken student's learning readiness because children become more easily distracted and less accustomed to maintaining focus on activities that require sustained effort. The manifestation of this mechanism appeared in low academic scores, concentration difficulties, physical complaints, and reduced student engagement in tasks or active activities. The meta-inference of this study indicates that moderate physical activity based on the IPAQ-SF may coexist with high sedentary time, forming an active-sedentary paradox. Therefore, the required intervention logic is not only limiting screen time but also strengthening digital literacy, active learning, parental mediation, and providing play-based physical activities that are attractive to students.

The academic findings show that excessive gadget users in this sample were not only below the KKM statistically, but also showed a pattern of insufficient learning progression. The increase in mean scores from grade IV to grade VI suggests normal developmental movement, yet the level remained below the expected threshold. This is important because it indicates that age and grade advancement alone did not compensate for learning barriers. Screen exposure has been associated with academic, behavioral, and social outcomes in school-aged children (Paulich et al., 2021). Digital exposure may contribute to this condition through reduced attention span, weaker persistence, and lower tolerance for tasks that require delayed gratification. Recent evidence also links screen use with concentration difficulties in children and adolescents (Leonhardt et al., 2025). The qualitative findings strengthened this interpretation because teachers and observations consistently pointed to concentration problems, passive participation, and task-completion difficulties. These patterns are consistent with evidence that screen time is related to executive function and children's cognitive readiness (Toth et al., 2025).

The physical activity findings add a theoretical contribution through the active-sedentary paradox. Most selected participants were classified as moderately active, yet several still sat for long periods each day. This means that the risk related to gadgets is not always a simple absence of movement. Rather, children may accumulate some physical activity while still spending much of the day in screen-based sitting. Current physical activity guidance stresses that children need sufficient movement and reduced sedentary time as part of healthy development (WHO, 2020). Long sitting can create postural discomfort, visual fatigue, and lower physical freshness, which may indirectly reduce readiness to learn and participate in classroom tasks (Saunders et al., 2020). This interpretation expands earlier arguments that screen time replaces movement by showing that replacement may be partial rather than absolute. In elementary school contexts, the distribution of daily time is therefore as important as the total amount of activity (Muhtar & Lengkana, 2021).

The Likert and qualitative data also reveal a discrepancy between reported preference and actual behavior. Many students did not openly state that they preferred gadgets to outdoor play, but sitting time and interview evidence still showed strong digital routines. This discrepancy can be interpreted as possible social desirability bias, because children may recognize that adults value outdoor play and therefore avoid admitting a strong gadget preference. A similar discrepancy appeared in parental supervision. Although many students reported that parents limited gadget use, parent interviews showed that restrictions were difficult to maintain consistently. Parental monitoring is important for controlling children's screen-time habits at home (Parent, 2022). However, restrictive mediation may reduce exposure only temporarily; active mediation is also needed to discuss content, model balanced routines, and replace screen time with meaningful non-screen activities (Suárez-Álvarez et al., 2022).

Schools should therefore be interpreted not only as academic institutions but also as health-promoting ecosystems. Teachers in this study had already attempted to limit gadget use and guide it toward learning purposes, yet the findings suggest that rules alone are insufficient. School health programs can strengthen both educational and health outcomes when they support health literacy, physical activity, and a healthy social-emotional climate (National Academies of Sciences and Medicine, 2020). Schools also need active learning strategies that require movement, collaboration, and direct interaction so that students experience alternatives to passive screen stimulation. Physical activity has been linked to cognitive functioning in children (Hillman, 2020), and physical fitness is related to concentration performance among adolescents (Altermann & Gröpel, 2024). Therefore, physical education, play-based movement, classroom movement breaks, and digital literacy can be integrated rather than treated as separate programs (Lengkana, 2022).

The PRECEDE-PROCEED framework clarifies how intervention should be organized. This model helps map health and educational issues into predisposing, enabling, and reinforcing factors before formulating intervention strategies (Kim et al., 2022). Predisposing factors in this study include children's knowledge, preferences, instant gratification, and self-regulation. Enabling factors include access to devices, internet quota, school rules, learning design, and availability of attractive physical activities. Reinforcing factors include parental consistency,

teacher guidance, peer norms, and school-family communication. This mapping prevents the recommendations from becoming a general wish list. It shows that digital literacy must target children's beliefs and skills, school must provide enabling environments for active learning, and parents must reinforce healthy routines at home. The joint display also generated a meta-inference; the low academic score was not explained by one variable alone but by the convergence of screen habits, sedentary time, concentration difficulty, and inconsistent adult mediation. This interpretation follows mixed-methods integration logic in which quantitative and qualitative evidence are combined to produce meta-inferences (Fetters & Tajima, 2022).

Several implications follow from these findings. For schools, gadget policies should distinguish between educational use and distracting use, while learning activities should deliberately include movement and peer interaction. Physical activity interventions should be considered because they can support both health and academic outcomes in youth (Lubans, 2021). For parents, supervision should move from mere prohibition to active mediation through discussion, co-activity, and consistent modelling of balanced digital routines. For future researchers, larger samples, comparison groups, and longitudinal designs are needed to test the strength of the relationships observed here. Future studies should also consider ecological momentary assessment, accelerometers, or screen-time logs to measure sitting and gadget exposure more precisely than self-report questionnaires. In addition, respondent-level Likert data should be retained so that internal consistency and item structure can be tested in subsequent research. Instrument validity and reliability should also be reviewed carefully when using self-report physical activity measures with adolescents or school-aged participants (Djurdjević et al., 2024).

CONCLUSION

This study concludes that excessive gadget use among elementary school students in Rancakalong District is associated with low academic achievement and unbalanced daily activity patterns. The student's average academic score was 8.33 out of 20 and was significantly below the KKM of 12, with only 7.69% of students reaching proficiency. The IPAQ-SF results showed that most selected participants were still categorized as moderately active, but their daily sitting time remained high at 3-7 hours per day. Therefore, the issue is not merely physical inactivity, but an imbalance between movement, sitting, learning routines, and digital exposure.

The theoretical contribution of this study is the identification of an active-sedentary paradox among excessive gadget users. Children may still perform some moderate physical activity while also experiencing long sedentary periods, concentration problems, physical discomfort, and low academic performance. Through the PRECEDE-PROCEED framework, these conditions can be understood as the interaction of predisposing factors, enabling factors, and reinforcing factors. Thus, the impact of gadget use should be viewed as a developmental balance issue rather than as a single-duration problem.

The practical implication is that intervention must be integrated across children, families, and schools. Children need digital literacy and self-regulation skills as predisposing factors. Schools need to function as enabling environments by providing active learning, movement-based activities, clear gadget policies, and attractive physical activity opportunities. Families need to act as reinforcing environments through consistent active mediation, not only restrictive rules. When these three levels work together, gadget use can be directed toward learning support rather than becoming a barrier to academic, physical, and socio-emotional development.

This study has limitations because it was conducted in a specific district, used a limited number of participants for IPAQ-SF and qualitative analysis, and did not include a comparison group. Self-report measures may also be affected by recall bias and social desirability. Future studies should involve larger samples, longitudinal designs, respondent-level psychometric analysis of Likert instruments, and objective activity or screen-use measures such as accelerometers, ecological momentary assessment, or digital logs. Despite these limitations, the

study provides empirical and practical evidence that excessive gadget use among elementary school children requires coordinated educational and health responses.

BIBLIOGRAPHY

- (AAP), A. A. of P. (2024). *The 5 C's of Media Guidance for School-Aged Children*. HealthyChildren.org.
- Alonso-mart, A. M., Ram, R., Garc, Y., Izquierdo, M., & Garc, A. (2021). *Physical Activity , Sedentary Behavior , Sleep and Self-Regulation in Spanish Preschoolers during the COVID-19 Lockdown*. 0–7.
- Altermann, W., & Gröpel, P. (2024). Physical fitness is related to concentration performance in adolescents. *Scientific Reports*, 14(1), 587. <https://doi.org/10.1038/s41598-023-50721-0>
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and Conducting Mixed Methods Research* (3rd ed.). SAGE Publications.
- Djurdjević, D., Todorović, J., & Sipetic-Grujičić, S. (2024). Validity and reliability of the International Physical Activity Questionnaire-Short Form in adolescents. *Kinesiology*, 56(2), 304–311. <https://doi.org/10.26582/k.56.2.10>
- Fetters, M. D., & Tajima, C. (2022). Joint displays of integrated data collection in mixed methods research. *International Journal of Qualitative Methods*, 21, 1–13. <https://doi.org/10.1177/16094069221104564>
- Goodwood, P. (2021). Dampak Penggunaan Gadget Terhadap Kepribadian Anak Sekolah Dasar. *Jurnal Humaniora Dan Ilmu Pendidikan*, 1(1), 1–13.
- Hale, L., & Guan, S. (2022). Screen time and academic performance in school-aged children. *Educational Psychology Review*, 34(1), 1–20.
- Hillman, C. H. (2020). Physical activity and cognitive function in children. *Nature Reviews Neuroscience*, 21(10), 577–590.
- Kim, J., Jang, J., Kim, B., & Lee, K. H. (2022). Effect of the PRECEDE-PROCEED model on health programs: A systematic review and meta-analysis. *Systematic Reviews*, 11, 213. <https://doi.org/10.1186/s13643-022-02092-2>
- Lengkana, A. S. (2022). Strategi Pembelajaran Pendidikan Jasmani di Era Digital. *Jurnal Pendidikan Jasmani Dan Olahraga*.
- Leonhardt, C., Danielsen, D., & Andersen, S. (2025). Associations between screen use, learning and concentration among children and young people in western countries: a scoping review. *Children and Youth Services Review*, 177, 108508. <https://doi.org/10.1016/j.childyouth.2025.108508>
- Lubans, D. R. (2021). Physical activity interventions and academic outcomes in youth. *British Journal of Sports Medicine*, 55(7), 376–383.
- National Academies of Sciences and Medicine, E. (2020). *Developing Health Literacy Skills in Children and Youth: Proceedings of a Workshop*. National Academies Press.
- OECD. (2020). *Education at a Glance 2020*. OECD Publishing.
- Parent, J. (2022). Parental monitoring of children's screen time. *Journal of Child and Family Studies*, 31(3), 812–824.
- Paulich, K. N., Ross, J. M., Lessem, J. M., & Hewitt, J. K. (2021). Screen time and early adolescent mental health, academic, and social outcomes in 9- and 10-year-old children: Utilizing the Adolescent Brain Cognitive Development (ABCD) Study. *PLoS ONE*, 16(9), e0256591.
- Ponti, M. (2023). *Screen time and preschool children : Promoting health and development in a digital world*. 184–192.
- Qi, J., Yan, Y., & Yin, H. (2023). Screen time among school-aged children of aged 6–14: a systematic review. *Global Health Research and Policy*, 8(1), 12. <https://doi.org/10.1186/s41256-023-00297-z>
- Saunders, T. J., Gray, C. E., Poitras, V. J., Chaput, J.-P., Janssen, I., & Katzmarzyk, P. T. (2020). Screen time and mental health in children and youth: Evidence from systematic reviews. *Applied Health Economics and Health Policy*, 18(2), 169–180. <https://doi.org/10.1007/s40258-019-00580-9>
- Singh, A. S. (2021). Screen media use and academic performance in children. *Journal of School*

- Health*, 91(3), 219–227.
- Staff, M. C. (2024). *Screen time and children: How to guide your child*. Mayo Clinic Health Information.
- Suárez-Álvarez, R., Vázquez-Barrio, T., & de Frutos-Torres, B. (2022). Parental digital mediation according to the age of minors: From restraint and control to active mediation. *Social Sciences*, 11(4), 178. <https://doi.org/10.3390/socsci11040178>
- Sugiarti, Y., & Andyanto, H. (2021). Pembatasan Penggunaan Gadget Terhadap Anak Dibawah Umur Oleh Orang Tua. *Jurnal Jendela Hukum*, 8(1), 81–88.
- Toth, C., Osser, B., Bondar, L. I., Fazakas, R., Marcu, F. M., Pascalau, N. A., Suci, R. N., & Dogaru, B. G. (2025). Associations Between Screen Time, Sleep, and Executive Function in School-Aged Children and Adolescents: The Moderating Role of Digital Content and Age. *Journal of Clinical Medicine*, 14(24), 8842. <https://doi.org/10.3390/jcm14248842>
- Tremblay, M. S., Aubert, S., Barnes, J. D., Saunders, T. J., Carson, V., Latimer-cheung, A. E., Chastin, S. F. M., Altenburg, T. M., & Chinapaw, M. J. M. (2017). *Sedentary Behavior Research Network (SBRN) – Terminology Consensus Project process and outcome*. 1–17. <https://doi.org/10.1186/s12966-017-0525-8>
- Twenge, J. M., & Campbell, W. K. (2020). Associations between screen time and lower psychological well-being among children and adolescents. *Preventive Medicine Reports*, 12, 271–283. <https://doi.org/10.1016/j.pmedr.2020.101271>
- UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing.
- WHO. (2020). *Guidelines on physical activity and sedentary behaviour*. World Health Organization.
- WHO. (2022). *Physical activity and young people*. World Health Organization.

cek-019e0fab0d51-PLAGIARISM CHECK AND AI ANALYSIS OF ACADEMIC ABILITY AND PHYSICAL ACTIVITY OF EXCESSIVE GADGET USERS IN RANCAKALONG DISTRICT.pdf

ORIGINALITY REPORT

4%

SIMILARITY INDEX

PRIMARY SOURCES

1	I Made Sudama, I Wayan Diana Putra Adnyana. "An Analysis of Lecturers' Competencies Based on Students' Perceptions: A Mixed Methods Approach", Jurnal Penelitian Ilmu-Ilmu Sosial, 2025 Crossref	18 words — < 1%
2	etd.repository.ugm.ac.id Internet	18 words — < 1%
3	Rinske E.C. Ellermeijer, Gabriela V. Koppenol-Gonzalez, Juan Jose Castellanos Piedrahita, Maria Cecilia Dedios Sanguineti et al. "Protocol for a mixed-method effectiveness evaluation of the community-led child protection approach (Seeds) in La Guajira, Colombia", Child Protection and Practice, 2025 Crossref	17 words — < 1%
4	Guoqing Min, Jing Yue, Yan Zhang, Juan Yan, Danning Zhang, Kunqiang Yu, Haibin Li. "Longitudinal association between problematic social media use and school refusal among adolescents: a random intercept cross-lagged panel model", Frontiers in Psychology, 2026 Crossref	12 words — < 1%
5	Xiaodan Wang, Nannan Qiu, Chi Zhang, Shuang Zhou, Yunfeng Zhao, Yongning Wu, Yun Yun	12 words — < 1%

Gong. "Comprehensive dietary and internal exposure assessment of deoxynivalenol contamination in a high-risk area in China using duplicate diet studies and urinary biomarkers", Food Control, 2021

Crossref

6 ucrisportal.univie.ac.at

Internet

10 words — < 1%

7 Darlynn M. Rojo-Wissar, Juliana Acosta, Karissa DiMarzio, Megan Hare, Chelsea F. Dale, Wesley Sanders, Justin M. Parent. "The role of sleep in prospective associations between parent reported youth screen media activity and behavioral health", Child and Adolescent Mental Health, 2023

Crossref

9 words — < 1%

8 en.gizmologi.id

Internet

9 words — < 1%

9 uokerbala.edu.iq

Internet

9 words — < 1%

10 Csongor Toth, Brigitte Osser, Gyongyi Osser, Laura Ioana Bondar et al. "Screen Time, Digital Content Quality, and Parental Mediation as Predictors of Linguistic and Pragmatic Development: Implications for Pediatric and Preventive Health", Children, 2026

Crossref

8 words — < 1%

11 Dewi Sekar Kencono, Achmad Djunaedi, Yuyun Purbokusumo. "Bridging the data divide: Integrating social assistance systems in Jakarta during Covid-19", BIS Humanities and Social Science, 2025

Crossref

8 words — < 1%

12 activinsights.com

Internet

8 words — < 1%

13	crcprepare.ca Internet	8 words — < 1 %
14	doi.org Internet	8 words — < 1 %
15	erepo.uef.fi Internet	8 words — < 1 %
16	iafor.org Internet	8 words — < 1 %
17	jscholarship.library.jhu.edu Internet	8 words — < 1 %
18	teachertaskforce.org Internet	8 words — < 1 %
19	ugspace.ug.edu.gh Internet	8 words — < 1 %
20	Liye Zou, Liu Ji, Fabian Herold, Aiguo Chen. "The Handbook of Physical Activity and Cognitive Neuroscience", Routledge, 2026 Publications	7 words — < 1 %

EXCLUDE QUOTES OFF

EXCLUDE BIBLIOGRAPHY ON

EXCLUDE SOURCES

OFF

EXCLUDE MATCHES

OFF