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Internet Usage and Academic Performance of Secondary School Students in Indonesia

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Internet Usage and Academic Performance of Secondary School Students in Indonesia

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Abstract

Learners and teachers around the world extensively use the internet. Internet usage makes learners more motivated to look for information more frequently. Hence, the study sought to examine the impact of internet usage on the academic performance of secondary school students in Indonesia. The study employed a descriptive research design. The target population included principals, teachers and learners in secondary schools in Jakarta, Indonesia. The target population was 500 participants. The study used a stratified sampling technique to get the sample size. The study used questionnaires to collect the data. The analysis of the data was done using descriptive and inferential statistics. It was found that internet usage explains 26.1% of the variations in academic performance. The study findings showed that internet usage is positively and significantly related to academic performance ($\beta=.2857$, $p=0.014$). The study concluded that internet usage positively impacts learners' academic performance. The use of the internet opens doorways to a wealth of information, knowledge, and educational resources, increasing opportunities for learning in and beyond the classroom. The internet provides different content that students can use to learn or enhance their understanding. The study recommended that learning organizations make sure that appropriate internet services are provided in their respective libraries to make it possible for learners to fulfill their information needs. The schools need to help learners utilize the internet for positive academic achievement. Government should make sure that each learning institution has a cost-free ICT center so that children can learn and have earlier knowledge to understand the favorable and unfavorable elements of the internet.

Keywords: *Internet Usage, Academic Performance, Secondary School Students, Indonesia*

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1.0 Introduction

The number of internet users has increased significantly. United Nations data in 2018 reveals that internet usage has currently reached 4.1 billion individuals globally. This was the first time that internet usage numbers have gone beyond half of the globe's population (Sharma & Park, 2018). In Indonesia, internet users have gotten up to 181.10 million by 2019. The numbers have increased by 10.12%, contrasted to the previous year. In the 21st century, the internet has commonly been utilized by learners and educators worldwide. To improve the quality of learning, specialists have created some new and innovative means of educational evaluation (Stewart, 2018). Most of them are using the internet to boost learners' education. Hence, essential to analyze whether usage of the internet affects academic success or otherwise.

There are several tasks that learners can perform using the internet. Typical tasks are playing video games, exploring social media, communicating, searching for entertainment, downloading online videos for learning and buying online (Balakrishnan & Gan, 2019). Several secondary school learners use the internet as social media and for entertainment purposes and thus resulting in wastage of time, late submission of schoolwork, and poor academic results. Learners not only use the internet to gain information but also interact with their close peers in social conversation and engage in cyber communities. For this reason, teens' socialization today takes place via communications with individuals from both the actual and virtual worlds. The internet enables young people to be much more open to trial and error and social exploration; the internet has been noted to be a vital instrument in adolescent socialization (Batat, 2020).

Exposure to innovations gives numerous benefits to everybody. It also consists of the advantages that learners can acquire through the advancement of the internet as a learning tool. By using the internet, learners may acquaint themselves with a lot of knowledge that might be advantageous (Lee & Markey, 2017). Many learners use digital media to inquire about information materials, as the primary source of contemporary issues, and as the arena for receiving and giving out information with peers like social networking sites. Internet use makes it less complicated for learners to acquire the information they require quickly. This makes learners more encouraged to look for information more often. As a result, using the internet will be an aspect that will undoubtedly influence the academic achievement of learners (Fidel, Davies, Douglass, Holder, Hopkins, Kushner & Toney, 2019).

Nonetheless, when Internet usage is not managed effectively, it might negatively influence learners' academics. When a learner tends to use the internet, it positively impacts academics—accessing e-books and searching for information conveniently aids learners in finishing their activities, thereby boosting learner academic performance (Huang, Liang, Su & Chen, 2021). This is anchored on academic achievement, the study's outcome to gauge precisely how much a learner, educator, or school has accomplished their educational objectives. This shows the effect of the internet on academics, referring to how internet resources and services assist learners in boosting understanding and searching for information to complete their tasks.

In the recent past, the internet was utilized mainly for entertainment and to obtain information from different sources; however, the role of the internet for teens has changed rapidly. Most teenagers currently use the internet to communicate with their peers, make new friends, and have regular

face-to-face communication (Valkenburg & Peter, 2020). Teens additionally like messaging and social networking internet sites like Facebook and MySpace as means of communication. Some teens like digital communication compared to usual standards such as face-to-face communication and phone conversation, mainly because they are more convenient, cheap, and quick to use compared to traditional methods. E-mail and text messaging enable prompt, asynchronous communication with others, while instant messaging simultaneously enables simultaneous communication among many participants. Teens use instant messaging much more regularly than adults among online populations, and 80% of the online teenage population globally uses instant messaging regularly.

The internet has brought up plenty of new possibilities for learners (Bouhnik, Deshen & Gan, 2019). It has provided an open approach to learning whereby learners no longer depend on their instructors or books as their information resources. With the internet in place, learners are not now restricted to learning materials in the school library. Asfaw and Bo (2018) argued that internet usage is a staple for learners' academic experience. They utilize it to exchange ideas with teachers and schoolmates to research and access library materials. For several of them, it is an essential instrument that has significantly transformed the way they interact with others and with information as they go about their research studies. Hence, the internet widens learners' borders beyond their regional home boundaries and provides better learning materials.

The usage of the internet gives its users fantastic recognition of the relevance of the world around them, and it will undoubtedly continue to expand as long as its users are not refuted of simple accessibility (Owen, 2021). Young people are the leaders of a better and greater future, so the internet remains a source of knowledge. Countries like the United States of America, Canada, the United Kingdom, and Finland have understood the importance of the internet and connected all learning institutions in their nations with the Internet (Hargittai, 2019). These developed the popularity of the internet amongst senior high school learners, which provides all information for them and is much better, easier, and obtainable than their school libraries. Nonetheless, small numbers of learners are yet to have enhanced access to the internet in their learning institutions.

1.1 Research objective

To examine the effect of internet usage on academic performance of secondary school students in Indonesia.

2.0 Literature Review

Pabian, Erreygers, Vandebosch, Van Royen, Dare, Costello and Cross (2018) argued that internet became one of the most vital things for most of the people. Internet utilization had actually been enhancing in the last decade. It occurred to people with numerous histories and ages all over the globe. Internet usage behavior is not only happened to adult but additionally took place to learner at learning institution. Researchers have discovered that internet use has unfavorable results on learner's academic performance. However other researches highlighted that positive internet usage behavior provided substantial effects on academic result. Here we differentiate internet usage actions into 2 groups, General and professional domain. General internet use refers to habits that concentrate on communication and amusing functions; while professional internet

usage describes efficient activities in operation web such as searching for information and performing some jobs that pertain to help completing academic's jobs. The study intends to analyze the effect of internet usage general and professional on learner's academics in India. In the research, socio-economic status (SES) is utilized as the control variable. Based on regression analysis, this research found that web use dramatically contributed; 9.2% variance on academic performance; 90.8% variance was discussed by various other variables. In the higher SES level, general internet usage provided higher prediction on learner's academic performance. But professional internet usage was higher in reduced SES level group.

Steinmueller (2019) reported that the internet is a primary technology in the advancement of information technology. Currently, the internet has actually become a vital device and needed by the knowledge-based society present the contemporary for information management, searching of information search, communication, as well as research. A borderless globe has been noticed with the internet. When using internet technology will make it simpler for individuals to get different information and the current information promptly. Using of the internet is advantageous to the globe, particularly to learners. As a learner, development of internet modern technology must be made use of like possible. Take the benefit of the internet advantages without over used. The study will certainly discuss utilization of the Internet among learners of tertiary institutions in Ukraine. The outcomes acquired have revealed that learner interest in school amongst final year learners in Ukraine is one of the most reliable factors in boosting learner academic success. Moreover, it is discovered that using internet for educational purposes additionally assists learners to improve in their studies.

Kim (2021) conducted research to determine the association between teenage internet usage, parent-adolescent relationships, and academic/ behavior adjustments in Germany households. In spite of the considerable numbers of Germany teens that use the internet for learning, social, and entertainment purposes, little is known about just how teenage Internet usage influences family communications and youth outcomes. To analyze the effect of teenage Internet usage on young people results in Germany, six hundred and nine teens and their parents were chosen from ten senior high schools in Hamburg, Germany. Results suggested that Germany learners and women had disparities in the manner in which they utilized the internet. Ladies were most likely to make use of the Internet to enjoy on the internet education courses and blog more frequently and much longer than boys, whereas children were more probable to make use of the internet for playing internet games than girls. Outcome revealed that internet use for educational functions was connected with teenage academic success. The pathways did not differ for boys and girls. Parent-child partnerships were discovered to be essential to youth modification and played a considerable duty in the organization between teenage internet usage and academic and behavior outcomes. Future researches must show how Germany handles the increase of this quickly developing modern technology and its influence of family relationships. Parenting programs are required to consist of approaches concerning exactly how the Internet can be made use of as an academic tool to benefit teens.

Ambad, Kalimin and Yusof (2017) performed research to determine the partnership between Internet Dependency (IA) and academic performance among international learners in Finland. The research again discovered the disparities in net dependency in terms of gender and nation of

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original. After that, an overall amount of 120 learners were chosen arbitrarily from different regions. To determine IA, Internet Addiction Examination based upon Hill (2015) study which customized by Punjab and Sharif (2019), was utilized. The information gathered was assessed making use of SPSS. The statistical approaches frequency and percentage were utilized to identify the patterns of using the internet; t-test and one-way ANOVA was used to take a look at the differences in IA in terms of demographic variables. The outcomes of the research revealed that there were no substantial disparities in IA in terms of sex, region of origin. The outcomes likewise showed that there were no considerable distinctions in IA in regards to CGPA. It is recommended that future study should service large-scale making use of different-campus technology evaluations.

Cheung and Vogel (2020) conducted research to determine the factors affecting learner performance making use of the teaching and learning procedure through e-learning based upon the linked theory of approval and use technology (UTAUT). This research also lays out to recommend additional variables to increase the UTAUT design to be preferable to make use of in higher education. This study conducted a literature works review, specialist interviews, and a self-administered study involving 200 learners at learning institutions in Riau district, Indonesia. The questionnaire data were assessed using SmartPLS 2. This research shows that UTAUT constructs, specifically, social impact, center conditions, and initiative expectations have a substantial influence on student behavior and performance, while the performance span variable reveals no considerable effect. The additional variables, including teacher characteristics, external motivation, as well as institutional structure, directly impact learner performance. Nevertheless, concerning learner behavior, inspiration and environment are the only variables with a significant effect. The results of this research recommend the behavior determinant such as teacher characteristics, inspiration and environment, and institutional structure boost learner performance. This research study checks out factors influencing the performance of school student via the knowing using e-learning by developing the UTAUT constructs to consist of the teacher characteristics, motivation and atmosphere, and institutional structure in improving learner performance.

Rouis, Limayem and Salehi-Sangari (2020) conducted research to determine the effect of the internet on the academic achievement of learners in chosen high schools in Sweden. Questionnaires were used for data collection. The research population consisted of 6000 learners. Research discovered that most of the participants were computer literate and they utilize the internet, it was found that the learners more often access the internet from Cyber Café, and that they consult the web to get relevant materials for learning, most of the learners ranked the internet for academic pursuit to be on the standard, E-journals and E-books were among the materials the learners often made use of on the web. They also suggested that with the assistance of the internet, they are much better gotten ready for their evaluations. It was also disclosed that Power interruption, slow internet speed, insufficient of computer system terminals, a lot of data overload, lack of computer system were several of the troubles counting against effective internet access in secondary schools in Sweden.

Davis (2021) discovered that the eruptive development of the internet has actually caused pathological use, additionally referred to as internet addition. Many nations have noted enhanced

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variety of web addiction within teens and the adverse impacts of it. The goal of the research is to observe the frequency of internet addiction and the musculoskeletal symptoms (MSS), physical and psychosocial habits issues amongst sample of Indonesian school student. 715 Indonesian secondary learners participated willingly in the research by completing out a collection of sets of questions include internet addiction test questionnaire. The prevalence of net addiction among Indonesian second learners was 4.5%, whereby 59% of the samples were classified as having trouble with internet. As forecasted, greater web addiction was accompanied with higher MSS. The majority of individuals were reporting MSS in top neck, lower neck, appropriate shoulder, back, and midsection. Higher web addiction additionally reveals higher physical and psychosocial behavior issues. The research validates number of basic frequency of net dependency in young people. Outcome of the study additionally strengthens the reality of negative impacts of intense usage of net not only for physical and musculoskeletal, but additionally for psychosocial wellbeing.

Daoud, Starkey, Eppel and Sylvester (2020) conducted study to learn the impact of internet on academic performance of high school learners. Research of some chosen secondary schools in Taiwan. Five Independent institutions were randomly chosen, 200 pieces of set of questions was given out to the ten chosen Private Schools, five head teachers were random picked for the research. The complete numbers of participants were two hundred. According to the results, the research reveals that internet is a device that can develop children mindset and it has actually played a vital function in the society, it has actually changed the society favorably. Internet is likewise a device that restrains the academic performance of learners, according to the abuses of technology by both the instructors and the learners. The study advised that: guardians, instructors and other adults working with children must limit the extent of time children invest utilizing computer systems and monitor the material learners are subjected to involving video games, software and the internet. In addition, state and local education agencies need to improve and come up with appropriate age for kid's computer fluency like standards needed to be distributed to all primary and secondary instructors and incorporated into pre-service and in service technology training sessions. Likewise, government needs to arrange cost-free ICT centers in the culture and full supervision to make the youngsters recognize or have the earlier knowledge and to recognize the favorable and negative aspect of internet to enhance the finding from the research.

3.0 Research Methodology

The study employed a descriptive research design. The target population included principals, teachers and learners in secondary schools in Jakarta, Indonesia. The target population was 500 participants. The study used a stratified sampling technique to get the sample size. The study used questionnaires to collect the data. The analysis of the data was done using descriptive and inferential statistics.

4.0 Research Findings and Discussion

The presentations of results were presented in sections. The section notably included the correlation and regression analysis.

4.1 Correlation Analysis

The correlation analysis was used to examine the association between the variables. It depicts the movement of the variables. The study results of the correlation analysis is summarized in Table 1

Table 1: Correlation Analysis

		Academic Performance	Internet Usage
Academic Performance	Pearson Correlation	1.000	
	Sig. (2-tailed)		
Internet Usage	Pearson Correlation	.334**	
	Sig. (2-tailed)	0.000	0.000

Table 1 indicates that internet usage is positively and significantly associated with academic performance ($r=.334$, $p=.000$). The results concur with Kim (2021), who discovered that internet use for educational functions was connected with students' academic success. Huang, Liang, Su and Chen (2021) found that internet use enables accessing of the e-book, searching of learning materials conveniently and aid learners in finishing the assignments which will be considerable in boosting learner academic performance.

4.2 Regression Analysis

The section included model fitness, analysis of variance and regression of coefficient. The results presented in Table 2 indicate the model fitness

Table 2: Model Fitness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.184a	0.261	0.247	1.25256

The results from Table 2 show that internet usage was found to be satisfactory in explaining the academic performance among the secondary school students in Indonesia. This was supported by the coefficient of determination, also known as the R square of 26.1%. This signified that internet usage explains 26.1% of the variations in the academic performance among secondary schools' learners.

Table 3: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.155	1	4.155	446.77	.000b
	Residual	2.545	273	0.0093		
	Total	6.700	274			

The results in Table 3 show that the overall model was statistically significant. The results signify that internet usage is a good predictor in explaining the academic performance among the secondary schools' students in Indonesia as the reported p-value was 0.000, which was less than the conventional probability significance level of 0.05.

Table 4: Regression of Coefficient

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.1547	0.004		7.245	0.005
Internet Usage	0.2857	0.042	0.324	3.157	0.014

According to the results presented in Table 4, it was discovered that internet usage was positively and significantly related with academic performance ($\beta=.2857$, $p=0.014$). This was supported by a calculated t-statistic of 3.157 that is larger than the critical t-statistic of 1.96. The results implied that when the internet usage is increased by one unit, the academic performance will increase by 0.2857 units while holding other factors constant. Asfaw and Bo (2018) argued that internet usage is a staple for learners' academic experience as they utilize it to exchange ideas with teachers and schoolmates in doing research and to access library materials. Rouis, Limayem & Salehi-Sangari (2020), articulated that power interruption, slow internet speed, insufficient computer system terminals, a lot of data overload, lack of computer system were several of the troubles counting against effective internet access in learning institutions. These shortcomings should be addressed to enable smooth learning.

5.0 Conclusion and Recommendations

The study concluded that internet usage positively impacts learners' academic performance. The learner's academic success may be improved if they show precisely how to use the internet appropriately. The internet has brought up new ways of learning. The wealth of information available therein goes beyond any physical library. However, internet learning encounters obstacles to using the internet for educational purposes, such as power failure and the revolting network failing. The study recommended a need for learning organizations to get high-powered generators that will serve as a backup in case of power interruption. Learning organizations need

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to make sure that appropriate internet services are provided in their respective libraries to make it possible for learners to fulfill their information needs. It is suggested that schools need to help learners utilize the internet for positive academic achievement. Government should make sure that each learning institution has a cost-free ICT center so that children can learn and have earlier knowledge to understand the favorable and unfavorable elements of the internet.

REFERENCES

- Ambad, S. N. A., Kalimin, K. M., & Yusof, K. M. A. A. K. (2017). The Effect of Internet Addiction on Students' emotional and Academic Performance. *E-Academia Journal*, 6(1), 19-31
- Asfaw, T. T., & Bo, C. C. (2018). Student use of internet in China: A study on Huazhong University of Science and Technology (HUST). *Pakistan Journal of Information and Technology*, 2(1), 25-29. <https://doi.org/10.3923/itj.2003.25.29>
- Balakrishnan, V., & Gan, C. L. (2019). Students' learning styles and their effects on the use of social media technology for learning. *Telematics and Informatics*, 33(3), 808-821. <https://doi.org/10.1016/j.tele.2015.12.004>
- Batat, W. (2020). Exploring adolescent development skills through Internet usage: a study of French 11–15 year old. *International Journal of Consumer Studies*, 32(4), 374-381. <https://doi.org/10.1111/j.1470-6431.2008.00671.x>
- Bouhnik, D., Dshen, M., & Gan, R. (2019). WhatsApp goes to school: Mobile instant messaging between teachers and students. *Journal of Information Technology Education: Research*, 13(1), 217-231. <https://doi.org/10.28945/2051>
- Cheung, R., & Vogel, D. (2020). Predicting user acceptance of collaborative technologies: An extension of the technology acceptance model for e-learning. *Computers & education*, 63 (12), 160-175. <https://doi.org/10.1016/j.compedu.2012.12.003>
- Daoud, R., Starkey, L., Eppel, E., Vo, T. D., & Sylvester, A. (2020). The educational value of internet use in the home for school children: A systematic review of literature. *Journal of Research on Technology in Education*, 4(2) 1-22. <https://doi.org/10.26686/wgtn.12757955>
- Davis, R. A. (2021). A cognitive-behavioral model of pathological Internet use. *Computers in human behavior*, 17(2), 187-195. [https://doi.org/10.1016/S0747-5632\(00\)00041-8](https://doi.org/10.1016/S0747-5632(00)00041-8)
- Fidel, R., Davies, R. K., Douglass, M. H., Holder, J. K., Hopkins, C. J., Kushner, E. J., ... & Toney, C. D. (2019). A visit to the information mall: Web searching behavior of high school students. *Journal of the American society for Information Science*, 50(1), 24-37. [https://doi.org/10.1002/\(SICI\)1097-4571\(1999\)50:1%3C24::AID-ASI5%3E3.0.CO;2-W](https://doi.org/10.1002/(SICI)1097-4571(1999)50:1%3C24::AID-ASI5%3E3.0.CO;2-W)
- Hargittai, E. (2019). Weaving the Western Web: Explaining differences in Internet connectivity among OECD countries. *Telecommunications policy*, 23(10-11), 701-718. [https://doi.org/10.1016/S0308-5961\(99\)00050-6](https://doi.org/10.1016/S0308-5961(99)00050-6)

<https://doi.org/10.53819/81018102t5067>

- Huang, Y. M., Liang, T. H., Su, Y. N., & Chen, N. S. (2021). Empowering personalized learning with an interactive e-book learning system for elementary school students. *Educational technology research and development*, 60(4), 703-722. <https://doi.org/10.1007/s11423-012-9237-6>
- Owen, H. (2021). *Creating leaders in the classroom: How teachers can develop a new generation of leaders*. United Kingdom, Routledge.
- Pabian, S., Erreygers, S., Vandebosch, H., Van Royen, K., Dare, J., Costello, L., ... & Cross, D. (2018). "Arguments online, but in school we always act normal": The embeddedness of early adolescent negative peer interactions within the whole of their offline and online peer interactions. *Children and youth services review*, 8(6), 1-13. <https://doi.org/10.1016/j.childyouth.2018.01.007>
- Sharma, P. K., & Park, J. H. (2018). Blockchain based hybrid network architecture for the smart city. *Future Generation Computer Systems*, 19(2), 650-655. <https://doi.org/10.1016/j.future.2018.04.060>
- Steinmueller, W. E. (2019). Knowledge-based economies and information and communication technologies. *International Social Science Journal*, 54(171), 141-153. <https://doi.org/10.1111/1468-2451.00365>
- Valkenburg, P. M., & Peter, J. (2020). Online communication among adolescents: An integrated model of its attraction, opportunities, and risks. *Journal of adolescent health*, 48(2), 121-127. <https://doi.org/10.1016/j.jadohealth.2010.08.020>