

How Dependency on Social Media Can Help Improve Student Achievement in Online Learning

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Abstract

In this pandemic era, social media plays a significant role for students, both as a means of communication and seeking entertainment. The learning system uses e-learning and WhatsApp groups as a medium of communication between lecturers and students. The student participation is monitored through how the students are active in discussions on WhatsApp groups and timeliness in completing assignments. This condition makes students spend a lot of time using social media particularly WhatsApp in their daily lives and using Instagram, YouTube, and TikTok as entertainment media. This study aimed to see how gender, age, and personality influence student achievement during this pandemic with dependency on social media as a mediating variable. In this study, the dependent variable was student achievement and the independent variable was personality and demographic factors. Knowing the relationship between these variables was done by using the PLS analysis tool. Based on statistical tests, it was known that addiction to social media could not mediate the relationship between demographic factors and student achievement. Personality could affect achievement indirectly by being mediated by dependency on social media. This condition could occur because in the pandemic all kinds of communications related to academic activities were carried out using WhatsApp group as social media. It means the more students are fully involved in the WhatsApp group, the more knowledge will be gained. Thus, it could help students completing assignments and exams. While the consequence of this was the frequency of time spent on social media was increasing.

Keywords

student achievement; social media dependence; demographic factors; personality



I. Introduction

Nowadays, the use of social media as a companion media in online learning is a significant part. There are social media that can be used as a companion for academic activities, namely WhatsApp groups, line groups, or telegram groups as a medium of communication and student discussion in a class. The use of the internet is already part of our daily lives. (Wahid, 2020). The development of technology and information has had a significant influence on society (Sitorus, 2019). Lukman Hakim in Razy (2020), that the media has a very strong influence on the formation of one's cognition. In addition to these discussion groups, YouTube's role as a source of additional information in understanding lecture material also has an important role. This condition makes students spend more time using social media that makes them have an addiction impact on social media (Hanis & Razak, 2019). This condition certainly has a positive and negative effect on academic activities. The use of social media for students depends on the needs to be met, gender, age, and of course the personality of the student.

Generally, male students are more easily addicted to social media than female students (Kırcaburun, 2016), (Alnjadat et al., 2019), (Dailey et al., 2020). This condition is caused by women using social media as a medium of communication and sharing news with their colleagues (Rousseau & Puttaraju, 2014), men using social media to discuss their hobbies (Andreassen et al 2016), and the degree of addiction to social media as well are not the same (Alkaabi et al., 2017). In addition to gender, age also determines the level of addiction to social media where the younger and more productive a person's ages, the more addicted to social media will be (Dailey et al., 2020), but this condition is different from the opinion of (Hanis & Razak, 2019) where the frequency of use of social media affects the level of addiction to social media.

In addition, student characteristics also affect the level of addiction to social media where students with conscientiousness and depressed personalities have a close relationship with addiction to social media (Dailey et al., 2020). On the other hand, Sumaryanti states that a person with a personality of neuroticism, agreeableness, extraversion, (Sumaryanti et al., 2020). Openness to experiences and agreeableness have a positive correlation with a person's tendency to be addicted to social media (Rabaa et al., 2015). This condition is because these personality types can express themselves and are comfortable being active on social media

Dependency on social media has a good and bad side. If students and lecturers can use social media as a medium for discussion and learning, it will make a good effect on student performance (Alahmar, 2016); (Boateng & Amankwaa, 2016). The use of social media can be used as a forum to discuss the assigned tasks, a medium in completing other assignments, providing each other with the latest information regarding class schedules and locations, exchanging knowledge between students, and various problems related to the tasks. In this condition, lecturers can monitor student activity while the students can get a more in-depth explanation of the discussion material at any time. So that students who are active in this group get good performance. If students spend more time on social media to seek entertainment, their academic achievement is affected (Allemina Gloria & Akbar, 2019) and indirectly experiences an increase in anxiety because they cannot follow developments that occur on social media (Jiang & Ngien, 2020).

Student motivation in achieving achievement certainly depends on the characteristics of the student. Particularly, students who tend to have openness and conscientiousness personalities (conscientiousness is someone with a high level of responsibility, has and sets goals and orientations as well as a diligent student). Thus, even if they use social media as a communication medium for online learning companions, this personality can still follow well and focus on the academic field.

Besides the personality, the gender and age of students also contribute to the level of achievement achieved by students. (Nnenna, G.E., Adukwu, 2018); (Musa et al., 2016); (Isaiah Amedu, 2015) the average score obtained by male students is higher than that of female students. This opinion is different from (Oyibe et al., 2016) and (Eugene & Ezech, 2016), who stated that female students tend to have a better level of achievement when compared to male students. In addition, age affects the level of student achievement (Dukmak, 2015) where the younger the age of the student, the greater the motivation to learn so that the achievement obtained is better when compared to more mature students (BEĆIROVIĆ & HURIĆ – BEĆIROVIĆ, 2017).

This research aims to see how demographic and personality factors affect the level of addiction to social media and how the role of social media in mediating demographic and personality factors on the level of achievement achieved by students during learning using online methods.

III. Research Methods

The method used in this study was a quantitative research method. The questionnaires to students via a google form were collected. The sample in this study were students at least in the second semester and conducting online learning using social media as a tool in their academic activities. The researcher collected the data using the accidental sampling technique, which was carried out by anyone who coincidentally meets the researcher and could be used as a sample if it was deemed that the person met was suitable as a data source (Sugiyono, 2017). The measurement scale in this study used the liker scale, Sugiyono (2017) which 5 students strongly agree, 4 agree, 3 is average, 2 does not agree and 1 strongly disagree. In analyzing the data used path analysis using PLS (partial least square). In this study, the level of student achievement was the dependent variable (AC), demographic factors (FD), and personality (KP) were independent variables, while the dependence on social media was a mediating variable (SA). The following is the research model:

$$SA = \beta_0 + \beta_1 FD + \beta_2 KP + \varepsilon_1$$

$$AC = \beta_3 SA + \beta_4 FD + \beta_5 KP + \varepsilon_2$$

IV. Discussion

4.1 Results of Hypothesis Testing for Each Variable

Hypothesis testing in this study was conducted by looking at the value of T-Statistics and P-Values. The research hypothesis could be declared accepted if the P-Values <0.05. The results of hypothesis testing conducted through the inner model are as follows:

Table 1. Results of Hypothesis Testing for Each Variable

	<i>Original Sample (O)</i>	<i>Sample Mean (M)</i>	<i>Standard Deviation (STDEV)</i>	<i>T Statistic (O/STDEV)</i>	<i>P Value</i>
Demographics --> Social Media	0,115	0,120	0,006	1,951	0,052
Demographics --> Achievements	-0,034	-0,033	0,106	0,319	0,750
Personality --> Social Media	0,668	0,672	0,066	10,129	0,000
Personality --> Achievements	0,140	0,139	0,117	1,197	0,232
Social Media --> Achievements	0,366	0,366	0,123	2,987	0,003

Source: output PLS, 2021.

The tests in PLS were statistically obtained, each hypothesized relationship was conducted using simulation. In this case, the bootstrap method was applied to the sample. Testing with bootstrap is also intended to minimize the problem of abnormal research data. The results of the bootstrapping test from the PLS analysis are as follows:

1) Demographics of Social Media

The results of the tests obtained the P-Value value, the demographic influence on social media is $0.052 > 0.05$. So, that demographic variable has no significant effect on social media.

2) Demographics on Achievement

The results of the tests obtained the P-Value value, the demographics influence on achievement is $0.750 > 0.05$. So, the demographic variable has no significant effect on achievement.

3) Personality to Social Media

The results of the tests obtained the P-Value value, the influence of personality on social media is $0.000 < 0.05$. So, the personality variable has a significant effect on social media.

4) Personality to Achievement

The results of the tests have obtained the P-Value value, personality influence on achievement is $0.232 > 0.05$. So, the personality variable has no significant effect on achievement.

5) Social Media on Achievement

The results of the tests have P-Value, values social media influence on achievement is $0.003 < 0.05$. So, the social media variable has a significant effect on achievement.

4.2 Mediation Test Results

This mediation test was to see the influence of demographics and personality on achievement through social media. The tests obtained the following results:

Table 2. Mediation Test Results

	<i>Original sample (O)</i>	<i>Sample Mean (M)</i>	<i>Standard Deviation (STDEV)</i>	<i>T Statistic (O/STDEV)</i>	<i>P Value</i>
Demographics --> Social Media --> Achievements	0,042	0,042	0,026	1,629	0,104
Personality --> Social Media --> Achievements	0,244	0,045	0,085	1,281	0,004

Source: Primary Data 2021

The test results with bootstrapping from the PLS analysis are as follows:

1) The influence of demographics on achievement through social media

The results of the tests had obtained a P-Value value of $0.104 > 0.05$. These results indicated that the indirect effect of demographics on achievement through social media was not significant.

2) The influence of personality on achievement through social media

The results of the tests had obtained a P-Value value of $0.004 < 0.05$. These results indicated that the indirect personality influence on achievement through social media was significant.

4.3 The Influence of Personality on Social Media Dependency

Based on the results of hypothesis testing, personality influenced the dependence on social media (p -value < 0.05). Based on this condition, a person's personality affected the level of dependency on social media. The personality that had the most influence on social media was conscientiousness, which described a personality that was responsible, organized, reliable, and persistent in getting things done. The results of this study were certainly following current conditions where social media used widely by students were WhatsApp groups, Line groups or telegram groups, even Instagram and YouTube for academic and non-academic activities. The online learning system that used e-learning and explanations and discussions about lecture material was mostly in WhatsApp, Line, or telegram groups. The characteristics of students who could participate in regular discussions in WhatsApp, Line, or telegram groups spend more time communicating. With this online learning system, students have a great responsibility to themselves that the one who knows to what extent the

understanding of the material is himself. In this digital learning system, the characteristics of students who are responsible for completing assignments on time and participating in regular discussions make students spend much time in their daily lives during lecture hours to continue communicating on social media. This condition is following the results of the study, the length of time using social media in a day as many as 61% of respondents is 5 hours or more. It happened because if students take two courses a day, about 6-7 hours, they are involved in discussions on social media. Always being connected to social media WhatsApp, line or telegram groups as a medium of communication in academic and non-academic activities had an impact on a person's stress level. Based on the research results on personality, emotional stability also contributes to the level of dependence on social media. Someone with an unstable emotional level tends to use social media as an escape from their emotions. Always connected with friends and lecturers through social media in communicating for a long time makes students feel bored and not always in a good mood. Therefore, as an outlet, students use other social media, such as Instagram and Tiktok as entertainment media and look for other information, while searching for additional study material can also be done on YouTube. So the more emotionally unstable a person has, the more time he uses to connect with social media. Usually, students use social media not only after class is over but also in the middle of their lectures, they use social media to overcome boredom due to online study which makes the atmosphere of the online class not as enthusiastic as when offline lectures.

4.4 The Influence of Demographics and Personality on Achievement through Social Media Addicted as Mediation Variables

Based on the results, the indirect influence between demography on achievement through dependency on social media was not significant (the p-value > 0.05 is 0.104). This condition occurred because during this pandemic both male and female students use social media in addition to academic activities and seek entertainment considering that during this pandemic there was a social distancing policy and learning was carried out online. This condition caused students to spend more time on social media such as WhatsApp, Line, or telegram groups for academic activities as well as YouTube, Instagram, and TikTok to find entertainment amid social distancing conditions.

In this pandemic situation, learning challenges also become increasingly challenging. When offline, it is easy for lecturers and students to interact on the topic of study discussions. Communication regarding academic activities can indeed be done online using any social media and in a more flexible situation, yet this condition can be constrained by the signal factor and the technology used. If the equipment used by one party does not support it, it can hamper educational activities. Online communication using social media such as WhatsApp group, Line group or Telegram group, Google class, Zoom do not guarantee the effectiveness of this academic activity. So that more effort is needed between the two parties, especially students in receiving learning from lecturers. So if they do not fully involve themselves in online discussion activities which are usually done in WhatsApp, Line, or Telegram groups, and tend to use other social media during lectures, the knowledge they get will not be optimal so the achievements obtained will be less than satisfactory. Online learning does have its advantages and disadvantages. The advantages include (i) reducing transportation costs which can be used as a credit fee (ii) students have flexibility in exploring learning methods (iii) being able to find sources of information about course material from various sources. The disadvantages are (i) it causes boredom (ii) students become less focused in the learning process (iii) students and lecturers must-have technological devices that can be used during online lectures.

Based on the results of the tests carried out, a P-value of $0.004 < 0.05$ was obtained. These results indicate that the indirect effect of personality on achievement through social media was significant. The personality that influenced social media dependence was conscientiousness which was a personality that was regular, persistent, responsible for oneself, and disciplined. By having this personality, students who took online lectures were fully and actively involved in online discussions on social media such as WhatsApp groups, line groups, or telegram groups. They would gain more knowledge from the interactions carried out. So, the achievements obtained were also better, compared to students who were not fully involved in online discussions on social media WhatsApp, Line, or telegram groups.

Characteristics that affect dependency on social media was emotional stability which this characteristic describes a person's ability to withstand stress. In this pandemic era, good enough positive emotional stability is needed by students who have good emotional stability and can manage stress due to online lectures for one and a half years. Therefore, students who have positive emotions and convince themselves to be fully involved in online discussion activities both on WhatsApp groups, line groups, or telegram groups will get more knowledge and information. So that the achievements obtained will be better than compared to students who have negative emotions and cannot fully involve themselves in online discussion activities in WhatsApp groups, line groups, or telegram groups. Another social media that students often use as a reference source in online lectures is YouTube, which helps them to find additional information about the material discussed, such as in entrepreneurship courses or the Indonesian economy.

4.5 The Influence of Demographic Factors on Achievement

Based on the results, demographic factors did not have a significant influence on student-level achievement. Both male and female students had the same opportunity to achieve achievement. Other factors determined the level of achievement, such as hard work in lecture activities, the activeness in the lecture process, test scores, and assignment scores obtained. Whatever the gender, as long as the student is serious in his studies, the achievement obtained is also good.

4.6 The Influence of Personality on Achievement

Based on the results of the tests, the P-value of the influence of personality on achievement was $0.232 > 0.05$. So that the personality variable had no significant effect on achievement. This condition was due to personal factors requiring the mediation of other variables in determining student achievement. In student life, the influence of environmental factors is important in influencing how students develop and carry out their academic activities. In this study, social media is needed as a mediating variable. This condition is because social media such as WhatsApp groups, line groups, or telegram groups are currently communication media and tools for lecturers in monitoring student progress in daily academic activities.

4.7 The Effect of Social Media Dependence on Achievement

Based on the results of the tests, the P-value of the influence of social media on achievement was $0.003 < 0.05$. It could be concluded that the social media variable had a significant effect on achievement. In the current pandemic situation, the academic field where learning activities by using e-learning, WhatsApp, and Line groups as a medium for discussion and delivery of material explanations. In this pandemic, the assessment of student activities is carried out by lecturers based on activities in WhatsApp groups, line groups, or telegram groups. So that the more students focus on involving themselves in WhatsApp

groups, line groups, or telegram discussion groups, the better the assessment of student activity will be and the more information and knowledge they will get, so that the achievements obtained are increasing and good.

V. Conclusion

The use of zoom, google classroom, or google meeting will not be able to replace the effectiveness of offline learning activities. The presence of social media such as WhatsApp, Line, or Telegram groups is a communication medium that supports academic activities that are very useful for online learning. This condition makes many students spend more and more time on the use of social media. A person's personality affects how a person uses social media. The more students devote their time to discussions in social media groups, the more information they get. It is an indication of student activeness in class discussions. Social media such as WhatsApp groups, Line groups, or Telegram groups are also used by lecturers as a medium for monitoring student activity in academic activities so that the more active students are in communication groups, the better the achievements will be. Based on the explanation above, it can be seen that addiction to social media can act as a mediating variable on how personality affects achievement levels. Conscientiousness and emotional stability tend to be more addicted to using social media. Besides being able to mediate a person's personality in the level of achievement, dependence on social media can also be a mediating variable on how the demographic conditions of students can affect the level of achievement obtained.

References

- Alahmar, A. (2016). The impact of social media on the academic performance of second-year medical students at College of Medicine, University of Babylon, Iraq. *Journal of Medical and Allied Sciences*, 6(2), 77. <https://doi.org/10.5455/jmas.236927>
- Alkaabi, S. A., Albion, P., & Redmond, P. (2017). Social Network Misuse in the Classroom and Its Impact on Male Student Motivation in UAE Tertiary Education. *IAFOR Journal of Education*, 5(SI). <https://doi.org/10.22492/ije.5.si.05>
- Allemina Gloria, S., & Akbar, S. (2019). THE IMPACT OF SOSIAL MEDIA USAGE TO ACADEMIC PERFORMANCE. In *Jurnal Pendidikan Kedokteran Indonesia-The Indonesian Journal of Medical Education Suita Allemina Gloria & Surya Akbar* (Vol. 8, Issue 2). The.
- Alnjadat, R., Hmaid, M. M., Samha, T. E., Kilani, M. M., & Hasswan, A. M. (2019). Gender variations in sosial media usage and academic performance among the students of University of Sharjah. *Journal of Taibah University Medical Sciences*, 14(4), 390–394. <https://doi.org/10.1016/j.jtumed.2019.05.002>
- Bećirović, S. (2017). The relationship between gender, motivation and achievement in learning English as a foreign language. *European Journal of Contemporary Education*, 6(2), 210–220. <https://doi.org/10.13187/ejced.2017.2.210>
- BEĆIROVIĆ, S., & HURIĆ – BEĆIROVIĆ, R. (2017). The role of age in students' motivation and achievement in learning English as a second language. *The Journal of Linguistic and Intercultural Education*, 10(1), 23–36. <https://doi.org/10.29302/jolie.2017.10.1.2>
- Boateng, R. O., & Amankwaa, A. (2016). The Impact of Sosial Media on Student Academic Life in Higher Education. *Double Blind Peer Reviewed International Research, Beijing Normal University, China*, 16(4), 9.

https://www.researchgate.net/profile/Raymond_Owusu_Boateng/publication/331000005_The_Impact_of_Social_Media_on_Student_Academic_Life_in_Higher_Education_The_Impact_of_Social_Media_on_Student_Academic_Life_in_Higher_Education/links/5cf7e07d4585153c3db71c98

- Borgohain, M., & Gohain, A. B. (2020). Impact of Sosial Media in The Student's Academic Performance : An Analysis of The State Universities of Assam. *European Journal of Molecular & Clinical Medicine*, 7(10), 2597–2606.
- Dailey, S. L., Howard, K., Roming, S. M. P., Ceballos, N., & Grimes, T. (2020). A biopsychosocial approach to understanding sosial media addiction. *Human Behavior and Emerging Technologies*, 2(2), 158–167. <https://doi.org/10.1002/hbe2.182>
- Dost, I. N., Bohloulzadeh, G., & Hafshejani, N. K. (2017). The Impact of Teachers' Personality on Senior High School EFL Learners' General English Achievement. *International Journal of English Literature and Sosial Sciences*, 2(3), 77–93. <https://doi.org/10.24001/ijels.2.3.9>
- Dukmak, S. (2015). Factors Influencing the Academic Achievement of Students in the Preparatory and Secondary Schools of the United Arab Emirates. In *European Journal of Sosial Sciences* (Vol. 46, Issue 2). <http://www.europeanjournalofsosialsciences.com/>
- Eugene, U. O., & Ezeh, D. N. (2016). Influence of Gender and Location on Students' Achievement in Chemical Bonding. *Mediterranean Journal of Sosial Sciences*, May. <https://doi.org/10.5901/mjss.2016.v7n3p309>
- Gowon, C., & Akanya, J. (2019). Effects of Sosial Media on the Academic Achievement of Students: A Case Study of the Students of the Department of Arts Education, Kogi State University, Anyigba, Nigeria. In *International Journal of English Language Teaching* (Vol. 7, Issue 5). www.eajournals.org
- Hanis, F., & Razak, A. (n.d.). Sosial Media Addiction towards Young Adults Emotion Model Intervensi Spiritual Islam terhadap Ketagihan Digital Era Pemusatan Media View project Eye Tracking in Educational Games Environment View project. <https://www.researchgate.net/publication/342026354>
- Isaiah Amedu, O. (2015). *Journal of Education and Practice* www.iiste.org ISSN (Vol. 6, Issue 17). Online. www.iiste.org
- Jiang, S., & Ngien, A. (2020). The Effects of Instagram Use, Sosial Comparison, and Self-Esteem on Sosial Anxiety: A Survey Study in Singapore. *Sosial Media and Society*, 6(2). <https://doi.org/10.1177/2056305120912488>
- Khan, A., Shin, L. P., Hishan, S. S., Mustaffa, M. S., Madihie, A., & Sabil, S. (2018). Effect of personality traits and learning styles towards students' academic achievement in Johor Bahru. *International Journal of Engineering and Technology (UAE)*, 7(2), 4–9. <https://doi.org/10.14419/ijet.v7i2.10.10943>
- Kircaburun, K. (2016). *Journal of Education and Practice* www.iiste.org ISSN (Vol. 7, Issue 24). Online. www.iiste.org
- Musa, A. K. J., Dauda, B., & Umar, M. A. (2016). Gender differences in Achievement Goals and Performances in English Language and Mathematics of Senior Secondary Schools students in Borno State, Nigeria. *Journal of Education and Practice*, 7(27), 165–175. www.iiste.org
- Nnenna, G.E, Adukwu, B. C. (2018). Influence of gender and school location on senior secondary school student's achievement in biology in Agbani Education Zone of Enugu State. *Journal of Education and Practice*, 9(21), 45–51.
- Oyibe, O. A., Journal, B., Vol, E., Centre, E., & UK, D. (2016). Gender and Academic Achievement of Secondary School. 4(September), 72–83.

- Rabaa, A., Rabaa, A. A., & AlJamal, E. (2015.). Personality Traits as Predictors of Sosial Networks Addiction among University Students. *Journal of Emerging Trends in Engineering and Applied Sciences (JETEAS)*, 6(3), 182–195. <https://www.researchgate.net/publication/325498807>
- Rahman, A.A.A, dan F.H.A.Razak.2019.Media sosial Addiction towards Young Adults Emotion. *Journal of Media and Information Warfare* 12 (2)
- Razy, S., Winarno, and Rusnaini. (2019). Beginner Voter Perception of Presidential Candidates (Case Study of the Presidential Election in 2019). *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal* Vol 3 (2): 795-801.
- Robbins, S.T, danT.A.Judge.2008.Perilaku Oragnisasi.Buku 1.Jakarta: Salemba Empat.
- Rousseau, J. M., & Puttaraju, K. (n.d.). A Study on Gender Differential Factors in Uses of Sosial Networking Sites. www.ijhssi.org
- Sitorus, H.V., Nugrahadi, E.W., and Budiarta, K. (2019). The Effect of Learning Strategy and Thinking Ability on the Students' Learning Outcomes in Economics Subject of XI Social Students in Senior High School State 1 in Pematang Siantar. *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal* Vol 2 (4): 451-460.
- Sugiyono, 2017. *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta
- Sumaryanti, I. U., Azizah, S., Diantina, F. P., & Nawangsih, E. (2020). Personality and Sosial Media Addiction among College Students. <https://www.statista.com/statistics/284437/indonesia-sosial-network->
- Vedel, A., & Poropat, A. E. (2017). Personality and Academic Performance. In *Encyclopedia of Personality and Individual Differences* (pp. 1–9). Springer International Publishing. https://doi.org/10.1007/978-3-319-28099-8_989-1
- Wahid, R., Pribadi, F., Wakas, B.E. (2020). (Digital Activism: Covid-19 Effects in Campus Learning. *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal* Vol 3 (3): 1336-1342.