



The 14th National and International Conference
"Global Goals, Local Actions: Looking Back and Moving Forward 2021"
18 August, 2021

Factors Affecting Media Literacy during COVID-19 Pandemic of High Secondary School Students in Pittsburgh City, Pennsylvania, USA

Bahadir Turgut¹

Prasak Sanparp²

Email: zakpeace7052@gmail.com

¹Student of Faculty of Social sciences and humanities, Mahidol University

²Lecturer of Faculty of Social sciences and humanities, Mahidol University

Abstract

Social media literacy is important because of its popularity. The aim of this research was to identify factors affecting high secondary school students' social media literacy during COVID-19 pandemic in Pittsburgh City. From cross-sectional survey, sample sized was calculated and selected by proportional stratified randomization. 160 students were included. The validity (IOC) and reliability (Cronbach's alpha), of questionnaire were more than 0.5 and 0.76 respectively. The descriptive statistics and multiple linear regression by forward stepwise were applied. The findings are as follow: the students' social media literacy levels were high. The factors affecting social media literacy were self-directed learning, school and parent supports. This model can predict social media literacy of high secondary school students by 43.4%. The recommends were the school should promote self-directed learning and have a course of media literacy for students. The family should control and suggest their children to use social media.

Keywords: Social media literacy, COVID-19, Student

Introduction

Presently, people live in overwhelm information with media, so media literacy is an obligation (Jenkins et al., 2009). Because of rapid transformation in media environment especially social medias, literacy must include the capability for interpreting media messages from all types of vehicles and texts (Adams & Hamm, 2010), or the fluency to read and write media language (Thoman & Jolls, 2004). Lacking media literacy leads to weaken in media conditioning and harmful media effects, which turn positions from the low media literate individual to serious disadvantages (Potter, 2013). Social media is comfortable to communicate and share,



The 14th National and International Conference
"Global Goals, Local Actions: Looking Back and Moving Forward 2021"
18 August, 2021

so it is popular now. People are used to make social networks or social connections with the others who give same individual or occupational interests, events relations. The utilization of social media has occupied the liveliness of children and taking chances for communication, participation and self-appearance (Boyd, 2014).

The impact of social network on youth is remarkable. (Nalwa, & Anand, 2003). While, issues of social media are examples of persecuting, bullying, harassing and even suicide (Mascheroni, Ponte, Garmendia, Garitaonandia, & Murru, 2010), guiding parents, adaptations and productions to try manage web based interconnections so as to decrease the chance of danger. Platforms of social media allow consumers to have discussions, share data and create content. Social media has various forms such as blogs, picture-sharing sites, instant messaging, video-sharing sites. Many people consume social media to share information and communications globally (Kuppuswamy & Narayan, 2010). It allows individuals to connect with others, get knowledge of new information, make interests, be fun and connecting with others. Social media is a creative idea with a so bright chance with extra view for progression. Advertisement or communication via social media is efficient way. Consumers can find or get information globally (Kietzmann, 2012). Hence, social media literacy is essential due to popular consume. Schools must possess a major duty of preparing learners in suitable media utilization. Learning and teaching can help students to have media literacy Education should close look to an energetic and innovative use of media as a studying tools, both in and out of the school, to a crucial feedback the influence of media for social too. Media literacy can be combined in teaching and learning in many methods (Neag, 2015; Friesem et al., 2014). The self-directed learning is one of the learning strategies and activities to enhance social media literacy.

The relationships of self-directed learning and information and computer technology is broadly utilized in educational context (Prestridge, 2012; Mareco, 2017). It implied that the utilize of technology can increase the motivation of students to learn, and can support lifelong learning beyond the usual classes (Saxena, 2013). The use of educational technology is main component to get studying efficiently. Pupils were educated in class, and then given work through on-line learning and distance workshop. Students are given liberal to study by their own intelligence (Asfar & Zainuddin, 2015). This assists them to do their own knowledge and undergo. Many students make cooperative learning by various technological instruments to promote self-directed learning ability. The students study from individual studying networks such as Facebook, they may have cooperation of other students in the same channels. The adults are able to autonomous study when they require (Saxena, 2013). Dawson et al. (2012)



The 14th National and International Conference
"Global Goals, Local Actions: Looking Back and Moving Forward 2021"
18 August, 2021

studied the relationship between using technology and self-directed learning. The finding identified that fostering of technology was able to enhance and adopt self-directed learning competences, motivations, self-managements and self-monitoring. Rashid and Asghar (2016) studied technology utilized and self-directed learning of higher education students. The finding demonstrated that utilization of technology has a direct positive relationship with students' self-directed learning.

In 2019-2020, rapid pandemic of COVID-19 led people to receive and use information about health and transform their health behaviour (Corman, et al., 2020). The aim of communication in health was to teach people about the severity and prevention or spreading the infection. Most valuable information is made to comprehend easily that proposes practical solving such as washing hands, keeping physical distance (Prem, et al., 2020). There is still false information. People should consider to acquire, comprehend, and utilize this information in a moral manner to be health literate. However, the COVID-19 info- pandemic has stressed that poor media literacy of population is an underestimated problem globally (Zarocostas, 2020). For COVID-19 pandemic, firstly, media literacy is important for protection. Secondly, system preparedness and individual preparedness are key for solving problems. It is difficult but possible to enhance health literacy (Prem, et al., 2020).

Media literacy help people to catch the reasons and reflect on outcomes of their various possible actions. For social responsibility, thought over people interests and comprehension how person choose views such as moral aspects and behavioral insights should be determined by health literacy (Van den Hoven, 2012). Unfortunately, fake information about COVID-19 has grown on social media. This fake news comes in many forms such as grass can kill the virus. The worst of fake news may cause people to either overreact such as hoarding goods, more dangerously under-react such as deliberately engaging in risky behavior and inadvertently spreading the virus. As a result, it is necessary to comprehend why people both trust and distribute fake news. Secondary high school students were teen-age persons, who are easy to accept fake news on social media due to lack of experiences. These problems will be solved by media literacy (Pennycook, 2020).

The USA. is the most infected COVID-19 patients with more than 8 million persons. COVID-19 patients in Pennsylvania are around 180,000, COVID-19 patients in Pittsburgh city are around 70,000. The information of COVID-19 via social media is very fast that some are true, some are fake. Hence, media literacy is important especially in students who have few experiences. Pittsburgh city is urban area where use of social media is comfortable. Most of



The 14th National and International Conference
"Global Goals, Local Actions: Looking Back and Moving Forward 2021"
18 August, 2021

students use social media to find information of COVID-19. Thus the research of social media literacy and affecting factors during COVID-19 pandemic in Pittsburgh city, Pennsylvania, USA. is interesting.

Research Objectives

1. To examine the social media literacy levels during COVID-19 pandemic of high secondary school students in Pittsburgh city, Pennsylvania, USA.
2. To identify affecting factors of social media literacy during COVID-19 pandemic of high secondary school students in Pittsburgh city, Pennsylvania, USA.

Scope of the Research

1. Scope of the population/sample.

Population and samples are 3,984 and 160 high secondary school students respectively in Allegheny County, Pittsburgh city, Pennsylvania, USA.

2. Scope of the variables

The variables in this study were media literacy levels as dependent variable. For independent factors, self-directed learning as internal factor and learning media literacy from school, parent suggestion as external factors.

3. Scope of Timeframe

This research was conducted during January, 1st, 2021 – March, 31st, 2021

Method

The cross-sectional survey study was conducted. The population was 3,984 high secondary school students in Allegheny county, Pittsburgh city, USA. The sample size was calculated, the samples were 160 students. In order to make every student in each high secondary school had the same opportunity to be selected as sample, the multistage random sampling method were employed to draw the students from each high secondary school by proportional stratified random sampling. The media literacy in this study refers to social media literacy. The questionnaire was applied from Driesen et al. (2014) that consisted of 3 components that were using, understanding, contributing social media medially. The self-directed learning questionnaire was applied from Williamson (2007) that consisted of awareness, learning strategy, learning activity, evaluation and interpersonal skill.



The 14th National and International Conference
 "Global Goals, Local Actions: Looking Back and Moving Forward 2021"
 18 August, 2021

The validity of self-administrator questionnaire was checked each item by 3 experts with IOC. more than 0.5. The reliability was analyzed by using Cronbach's alpha coefficient. The 30 students in another county were tried out to find and improve the research instruments. The Cronbach's alpha coefficient of social media literacy was 0.76, while self-directed learning was 0.73.

The sample size was calculated by this formula

$$n = \frac{NZ_{\alpha/2}^2 P(1 - P)}{d^2(N - 1) + Z_{\alpha/2}^2 P(1 - P)}$$

N = population = 3,984

p = rate of media literacy from pilot study = 87.7%

d = 0.05

n = sample size = 160

The multistage random sampling method was employed to draw the students from each high secondary school by proportional stratified random sampling high secondary schools and then simple random sampling students.

After that, the data were collected of self-administrator questionnaires from students by online via e-mail

Data were analyzed by descriptive statistic and forward stepwise multiple regression.

Results

The high secondary school students who participated in this study were 81 men (50.6%) and 79 women (49.6%). The average of ages was 16 years and 11 months. The education levels of participants in grade 10, 11 and 12 were 56, 53, and 51 students or 33.1%, 35.0 % and 31.9 % respectively.

The scores of COVID-19 social media literacy were divided into 5 levels (highest, high, moderate, low and lowest). The results showed that the overall level of COVID-19 social media literacy of high secondary school students in Pittsburgh, USA was in high level. In detail, the using social media, understanding social media, contributing social media medially all were the high level as shown in Table 1.



The 14th National and International Conference
 "Global Goals, Local Actions: Looking Back and Moving Forward 2021"
 18 August, 2021

Table 1: COVID-19 social media literacy level of high secondary school students

COVID-19 social media literacy	Mean	SD.
Using social media	3.70	0.90
Understanding social media	3.68	0.84
Contributing social media medially	3.49	0.88
Overall COVID-19 social media literacy	3.63	0.83

The relationship of self-directed learning and COVID-19 social media of high secondary school students during COVID-19 pandemic by simple correlation with significant coefficient of was shown in table 2.

Table 2: the correlations between COVID-19 social media literacy and self-directed learning

Factors	COVID-19 social media literacy	Self-directed learning
COVID-19 social media literacy	1	0.629*
Self-directed learning	0.629*	1

The significant relationship between school support, parent support and COVID-19 social media literacy of high secondary school students during COVID-19 pandemic by Fischer's exact test was shown in table 3

Table 3: the relationship between COVID-19 social media literacy and school support, parent support

Factors	COVID-19 social media literacy			Fisher's exact test P-value
	Number (percentage)			
	Low & Intermediate	High & Highest	Total	
School support				0.002
Have	34(23.1)	113(76.9)	147(100.0)	
No	7(53.8)	6(42.6)	13(100.0)	
Parent support				<0.001
Have	19(14.2)	115(85.8)	134(100.0)	
No	22(85.6)	4(15.4)	26(100.0)	



The 14th National and International Conference
 "Global Goals, Local Actions: Looking Back and Moving Forward 2021"
 18 August, 2021

The multiple regression by stepwise method was conducted. The regression model of factors affecting COVID-19 social media of students are showed in table 4 and the following information:

Three independent variables are statistically significant:

1) self-directed learning ($p < 0.001$), 2) parent support ($p = 0.01$), 3) school support ($p = 0.049$)

From table, the predictive model is as following:

$$\text{COVID-19 Social media literacy} = \text{Constant} + 0.251 (\text{learn media literacy from school}) + 0.119 (\text{parent suggestion}) + 0.452 (\text{self-directed learning})$$

The adjust R^2 is 0.434 that refers to this model can predict COVID-19 social media 43.4%.

Table 4: Multiple regression of factors affecting COVID-19 social media literacy of high secondary school students

Model	Std. Coeff. Beta	R	Adjust R^2	t	Sig.
(Constant)				5.44	<0.001
Self-directed learning	0.45	0.63	0.39	5.76	<0.001
Parent support	0.25	0.66	0.42	3.23	0.001
School support	0.12	0.67	0.43	1.98	0.049

Discussion

According to the study, social media literacy levels during COVID-19 are in high level. In detail, using social media during COVID-19 pandemic refers to students consider the usages to find fast and reliably information during COVID-19 pandemic which is in crisis. Understanding social media refers to students have critical thinking and make decision to believe information, which leads to understand and good self-care practice to prevent and control COVID-19 infection. Contributing social media medially refers to distribute useful and correct information to other people. The dimension of using social media is at high level with mean of 3.70. It reveals that the social media utilizations of high secondary school students are good. This result offers that the recent technologies (social media), may be transformed the communication



The 14th National and International Conference
"Global Goals, Local Actions: Looking Back and Moving Forward 2021"
18 August, 2021

figure over the USA. From the findings, the level of social media literacy in dimension of understanding social media is at a high level with mean of 3.68. It reveals that high secondary school students can understand information via social media well during COVID-19 pandemic, while research of Hutto & Bell (2014) found that the elder in the USA. understand FaceBook at moderate level. Contributing social media medially is found that the dimension of contributing social media medially is at a high level with an average mean of 3.49. It reveals that high secondary school students can contribute social media medially well during COVID-19 pandemic, while the study of Hutto & Bell (2014) found that the elder in the USA. contribute facebook medially fairly. The directed communications (as opposed to broadcast communications and passive consumption of content) is significantly correlated with feelings of social satisfaction among this distinct population.

There are significant relationships between COVID-19 social media literacy and self-directed learning, school and family support. All the possible variables were used to run stepwise multiple regression. The factors revealed to be associated to social media literacy during COVID-19 pandemic are self-directed learning, learning media literacy from school and parent suggestion. The model is

$$\text{COVID-19 Social media literacy} = \text{Constant} + 0.251 (\text{learn media literacy from school}) + 0.119 (\text{parent suggestion}) + 0.452 (\text{self-directed learning})$$

This model can predict COVID-19 social media 43.4%.

Recommendation

Recommendations for the schools are as follow:

1. The schools should promote social media for high secondary school students. The promotion could be about use of social media, understand social media and contributing social media medially. The self-directed learning should be promoted in awareness, learning strategy, learning activity, evaluation and interpersonal skill.
2. The schools should have program, teaching and learning, campaign and organizing activity about social media literacy and cooperate with parents of children to suggest them about social media literacy.



The 14th National and International Conference
"Global Goals, Local Actions: Looking Back and Moving Forward 2021"
18 August, 2021

Recommendations for high secondary school students are as follow:

1. Some of high secondary school students should try to learn by self-directed learning. They are supposed to become more social media literacy if they would like to improve social media literacy at school and home. There are some effective ways for them such as aware, set learning strategy, choose learning activity that suitable for them, assess and train interpersonal skill.

2. The parents of high secondary students should suggest more information in order to let them use social media in proper way, develop understanding information and the correct distribution of information via social media.

Recommendations for further study are as follow:

1. The researchers who would like to do the research about social media literacy of students could wide their fields. For example, they could focus on the factors affecting social media literacy of students in other level of schools such as primary school, low secondary school, college and university in order to investigate whether there will have some difference between high secondary and other level of schools or not.

2. They could add more details about social media literacy of people not in school or education institute in the further study in order to do comparison on students and social media literacy of people. That could demonstrate factors affecting social media literacy of students comprehensively.

Acknowledgement (If any)

This study is a part of thesis of master degree of educational management, Faculty of Social Sciences and Humanities, Mahidol University.

References

- Adams, D. & Hamm, M. (2010). *Demystify Math, Science, and Technology Creativity, Innovation, and Problem Solving*. Rowman & Littlefield Publisher, Inc.
- Amah, M., Karlinah, S., Hidayat, D.R., Damayani, N.A. (2019). The Role of Parents and Teachers in Creating the Insight of TV Media Literacy for Middle School Students in Kupang City. *International Journal of Innovation, Creativity and Change*, 5(3), Special Edition: Science, Applied Science, Teaching and Education, 821-843.



The 14th National and International Conference
"Global Goals, Local Actions: Looking Back and Moving Forward 2021"
18 August, 2021

- Asfar, N. & Zainuddin, Z. (2015). Secondary students' perceptions of information, communication and technology (ICT) use in promoting self-directed learning in Malaysia. *The Online Journal of Distance Education and e-Learning*, 3(4), 67-82.
- Boyd, D. (2014). *It's Complicated: The Social Lives of Networked Teens*. Yale University Press.
- Boyd, D., & Ellison, N. B. (2007). 'Social Network Sites: Definition, History, and Scholarship'. *Journal of Computer-Mediated Communication*, 13(2), 210-230.
- Claes, E., & Quintelier, E. (2009). Newspapers in Education: A Critical Inquiry into the Effects of using Newspapers as Teaching Agents. *Educational Research*, 51(3), 341-363.
- Corman, V. M., et al. (2020). *Detection of 2019 novel coronavirus (2019-nCoV) by real-time RT-PCR*. *Euro Surveill*. Published online January 23, 2020, <https://doi:10.2807/1560-7917.ES.2020.25.3.2000045>.
- Dawson, S., Macfadyen, L., Risko, F., Foulsham, T. & Kingstone, A. (2012). Using technology to encourage self-directed learning: The Collaborative lecture annotation system (CLAS). *Ascilite 2012: Future Challenges, Sustainable Futures*, 246-255.
- Driesen, A., Meeus, W., T' Sas, J., & Van Ouytsel, J. (2014). *Media didactica: werkboek mediawijsheid voor lerenden, leraren en lerarenopleiders*. Die Keure.
- Friesem, Y., et al. (2014). Media Now: A Historical Review of a Media Literacy Curriculum. *Journal of Media Literacy Education*, 6(2), 35-55.
- Hobbs, R. (2011). *Digital and media literacy: Connecting culture and classroom*. Thousand Oaks, Corwin Press.
- Hutchby, I. (2000). *Conversation and Technology*. Polity.
- Hutto, C., & Bell, C. (2014). Social Media Gerontology: Understanding Social Media Usage among a Unique and Expanding Community of Users. *47th Hawaii International Conference on System Science*. <http://www.doi.org/10.1109/HICSS.2014.223>.
- Kietzmann, J. H. (2012). Unpacking the social media phenomenon: towards a research agenda. *Journal of Public Affairs*, 12(2), 109-119.
- Kuppuswamy, S., & Narayan, P. (2010). The Impact of Social Networking Websites on the Education of Youth. *International Journal of Virtual Communities and Social Networking (IJVCSN)*, 2(1), 67-79.
- Mareco, D. (2017). *10 Reasons Today's Students NEED Technology in the Classroom*. Josey-Bass.



The 14th National and International Conference
"Global Goals, Local Actions: Looking Back and Moving Forward 2021"
18 August, 2021

- Mascheroni, G., Ponte, C., Garmendia, M., Garitaonandia, C. & Murru, M. F. (2010). Comparing media coverage of online risks for children in South Western European Countries: Italy, Portugal and Spain. *International Journal of Media and Cultural Politics*, 6(1), 25-44.
- Mihailidis, P. (2012). *News literacy: Global perspectives for the newsroom and the classroom*. Peter Lang.
- Meeus, W., Van Ouytsel, J., Driesen, A., & T'Sas, J. (2014). Media Literacy in the Digital Age. How to Benefit from Media Use while Protecting against Harm. *The Journal of Didactics*, 5(1&2), 64-79.
- Nalwa, K. & Anand, A. P. (2003). Internet addiction in Students: a cause of concern. *Cyber psychology and Behavior*, 6(6), 653-659.
- Neag, A. (2015). Media Literacy and the Hungarian National Core Curriculum – A Curate's Egg. *Journal of Media Literacy Education*, 7(1), 35-45.
- Pajares, F. (1992). Teachers' Beliefs and Educational Research: Cleaning Up a Messy Construct. *Review of Educational Research*, 62, 307-332.
- Pennycook, G. (2020). Fighting COVID-19 Misinformation on Social Media: Experimental Evidence for a Scalable Accuracy-Nudge Intervention. *Psychological Science*, 31(7), 770-780.
- Potter, W.J. (2013). Review of Literature on Media Literacy. *Sociology Compass*, 7(6), 417-435.
- Prem, K., et al. (2020). The effect of control strategies to reduce social mixing on outcomes of the COVID-19 epidemic in Wuhan, China: a modelling study. *Lancet Public Health*, published online March 25, [https://doi.org/10.1016/S2468-2667\(20\)30073-6](https://doi.org/10.1016/S2468-2667(20)30073-6).
- Prestridge, S. (2012). The beliefs behind the teacher that influences their ICT practices. *Computers and Education*, 58(1), 449-458.
- Rashid, T. & Asghar, H.M. (2016). Technology use, self-directed learning, student engagement and academic performance: Examining the interrelations. *Computers in Human Behavior*, 63, 604-612.
- Ribner, A.D., Barr, R.F., Nichols, D.L. (2020). Background media use is negatively related to language and literacy skills: indirect effects of self-directed learning. *Pediatr Res*. <http://www.doi: 10.1038/s41390-020-1004-5>.
- Salleh, U. K. M, Zulnaidi, H., Rahim, S. S. A., Zakaria, A. R. B., Hidayat, R. (2019). Roles of Self-Directed Learning and Social Networking Sites in Lifelong Learning. *International Journal of Instruction*, 12(4), 167-182.
- Saxena, S. (2013). *How technology supports self-directed learning*. Josey-Bass.



The 14th National and International Conference
"Global Goals, Local Actions: Looking Back and Moving Forward 2021"
18 August, 2021

- Schmidt, H. (2012). Media Literacy Education at the University Level. *The Journal of Effective Teaching*, 12(1), 64-77.
- Scull, T.M. Kupersmidt, J.B. (2011). An Evaluation of a Media Literacy Program Training Workshop for Late Elementary School Teachers. *Journal of Media Literacy Education*, 2(3), 199 – 208.
- Thoman, E., & Jolls, T. (2004). Media Literacy—A National Priority for a Changing World. *American Behavioral Scientist*, 48(1), 18-29.
- Tulodziecki, G., & Grafe, S. (2012). Approaches to Media literacy education in the Federal Republic of Germany. Trends and current situation. *Journal of Media Literacy Education*, 4(1), 44-60.
- Van den Hoven, M. (2012). Why one should do one's bit: thinking about free riding in the context of public health ethics. *Public Health Ethics*, 5, 154–60.
- Zarocostas, J. (2020). How to fight infodemic. *Lancet*, 395, 676.