Academic Stress Toward Limited Internet Access When Learning During the COVID-19 Pandemic in Rural Areas

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Chapter 6
Academic Stress Toward Limited Internet Access When Learning During the COVID-19 Pandemic in Rural Areas

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ABSTRACT

Online learning has been optimized all over the world during the Covid-19 pandemic. However, in Indonesia, this mode of learning brings several problems; mainly, limited internet access causing academic stress. This study was intended to analyze the impact of academic stress due to limited internet access in remote rural areas. The research applies a quantitative approach with purposive random sampling tested on 685 samples using Kendall's Tau-b test. The study results indicated the relationship between academic stress and the range of domiciles on internet access during the pandemic. The relationship between the academic stress variable and the range of residence to internet access during the pandemic is solid. Also, the level of academic stress experienced by students is relatively high based on the range of domicile for internet access during the pandemic. Thus, the lecturers must adopt the teaching methodology when teaching online platforms.

INTRODUCTION

Education is fundamental and essential in human life as it is a starting point for a sound mind (Anis et

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al., 2021; Bhardwaj, 2016; Winarti et al., 2021). Educated people will determine the country's development to progress and participate in technological discoveries, science and art. Education is essential and cannot be ignored by the government (Ngafifi, 2014). Thus, education must continue in any condition.

In normal conditions, education takes place offline where lecturers are not required to use the Learning Management System (LMS) designed by the university. But, the deadly epidemic of Covid-19 shaking the world has challenged education systems worldwide and forced educators to shift to online learning (Dhawan, 2020; Fatimah et al., 2020; Nash, 2015). The use of information technology is intended to support blended learning-based education (Sarbaini et al., 2019). In this condition, information technology has a crucial role in overcoming the problems in education during a pandemic (Al-Balas et al., 2020; Sadikin & Hamidah, 2020). Consequently, (Windihastuty & Samsinar, 2019) lecturers must upload all lecture materials to online learning platforms and applications, such as google meet, zoom, google classroom, Edmodo, quiver, teacher room, and other e-learning applications (Alshehri et al., 2020; Kristanto et al., 2017). These online education features are expected to encourage independent, flexible, collaborative, interactive, and efficient learning and can be accessed anytime and anywhere without limitation. This policy is also intended to break the chain of the spread of Covid-19 (Prem et al., 2020; Sahu, 2020) following several countries in Asia like Saudi Arabia (Alashwal, 2020) and China (Huang et al., 2020). Previously, when the SARS outbreak hit the world in 2003, Japan, Bulgaria, and Thailand had implemented policies to close face-to-face schools. This decision proved effective in reducing the transmission of influenza outbreaks at that time (Tsang et al., 2014).

However, this change resulted in the students being under heavy pressure as it influences learning styles and the students' psychological condition as they need a long time to adapt (Huang et al., 2020). Also, students must operate various technology platforms smartly, quickly, and responsively and follow technological developments as the primary online learning facility. They inevitably have to keep up with these changes (Favale et al., 2020; Radha et al., 2020).

Continuous online learning at home reduces motivation, eliminates interest in education, and makes physical and mental fatigue, making students stressed for a long time (Rinawati & Darisman, 2020). Therefore, students need treatment and actualization space according to their needs and potential to develop their abilities optimally (Sheldon, 2004), both in offline and online learning (Alashwal, 2020). The demand to shift from offline to online systems psychologically impacts students. They have to be creative, innovative, and quick to adapt to technology—inability to adapt to technology results in technostress (Wang et al., 2020). Technostress is the psychological and physical discomfort to master and keeps up with technological developments or vice versa (Weil & Rosen, 1997; Nimrod, 2018).

This psychological and physical discomfort might be from internet access. If internet access is fast and smooth, it will provide mental and physical comfort. Access to transfer data quickly helps students use the learning platform and impacts students' psychological calm, comfort, and concentration in online learning (Cooper et al., 2001). For a long time, millions of people have used internet access all over Indonesia (Sosiawan, 2008). The problem is that, like even in a country like the USA, there is a digital gap where urban areas have better internet access than rural areas (Sarkar et al., 2017). In Kalimantan, one of the biggest islands, Internet networks are often unstable because of the geographical condition of Kalimantan Island, which is primarily forested and bounded by nine wide and long rivers and many towering mountains. Also, surrounded by the sea in the western, eastern, southern, and northern parts, the people experience severe problems with the internet network (Andina, 2017). If the problem of internet access is not resolved, it will create negative feelings and decrease student interest in online learning (Kuo et al., 2014).

This article analyses students' academic stress toward internet access at two state universities on Kalimantan Island during the pandemic.

BACKGROUND

Stress is a physical and psychological pressure requiring a different way of management (Auerbach & Gramling, 1998; Haque & Aston, 2016; Makin & Lindley, 1995; Stranks, 2005) because it can fall into categories of eustress (good stress), distress (bad stress), hyper-stress (too much stress), and hypo-stress (too little stress) (Faizan & Haque, 2019). Since stress affects physical, behavioral, cognitive, emotional aspects (Malach-Pines & Keinan, 2007), inappropriate stress management leads to decreased performance (Ali et al., 2014; Ekundayo, 2014; Fairbrother & Warn, 2003; Haque & Oino, 2019). In stressful situations, individuals are under pressure physically and psychologically (Aguiar-Quintana et al., 2021) that to make them remain productive and innovative, good leadership is compulsory (Haque & Yamoah, 2021; Kets de Vries et al., 2009), depending on stress model (Malach-Pines & Keinan, 2007; Mark & Smith, 2008).

Similar to occupational stress (Aguiar-Quintana et al., 2021), academic stress is psychological pressure caused by demands and expectations that do not match abilities. This stress is influenced by students' external and internal environments (Qian & Fuqiang, 2018) and the teaching-learning process (Misra & McKean, 2000). It is regarded as distress (bad stress) for it hinders the effectiveness of instructional delivery (Ongori & Agolla, 2008). The current findings on occupational stress indicate a significant difference in stress levels among people living in developed and developing countries where the latter is less stressed (Haque et al., 2016; Haque et al., 2018). When applied to online learning in developing countries like Indonesia, we believe that learners will experience distress. As a developing country, Indonesia is somewhat technologically proficient and well-prepared for welcoming e-advancements in public and business organizations. However, the considerable adoption of e-learning innovation in Indonesia has not been acknowledged to the degree and impact similar to developed countries or some developing countries (Sarbaini et al., 2019).

A survey conducted by the Indonesian Internet Service Providers Association or *Asosiasi Penyelenggara Jasa Internet Indonesia* (APJII) in 2018-2019 shows that internet users per region on the island of Kalimantan are only 6.5% of all internet users from Indonesia's other areas. Unfortunately, so far, the researchers have not found any data that reveals the condition of internet access on the island of Kalimantan related to the state of internet access during the current pandemic. APJII explained that internet users' penetration in West Kalimantan Province is in the first position, with 80% of the total population. Then, internet users in South Kalimantan Province are 76.4%, and in Central Kalimantan Province, 70%. Meanwhile, internet users in East Kalimantan Province are 67.8% of the population, while 32.2% are not internet users. North Kalimantan Province is at the end of the list, with 60% internet users. APJII stated that the highest contribution was in West Kalimantan Province, with 2.1% of internet users followed by East Kalimantan Province 1.6%, followed by South Kalimantan Province 1.5% of internet users, Central Kalimantan Province 0.9% of internet users, and North Kalimantan Province 0.3% of internet users.

According to APJII, students and university students are quite large, recorded at 71.8%. Researchers quite well understand the condition of limited internet access for students. According to the researchers' preliminary study, internet access limitations depend on students' geographical needs and regular electricity supply. Limited internet access took place in most areas on the island of Kalimantan, especially the one

further away from the centre of government or the provincial capital, district capitals, and sub-district capitals. This condition makes the students experience difficulty in the learning process via e-learning.

The disruption of geographic conditions and network access hinders students' development in higher education from taking part in the lecture process. Various challenges to educational needs arise as the face-to-face process cannot be replaced by continuously giving lecture assignments. The Covid-19 Pandemic policy forcibly changed face-to-face formal education into formal education through online learning. Education has shifted from the need for transportation, economy, and financing to support teaching to the need for electronic devices connected via the internet and internet connectivity. This condition is not easy for education providers, educators, and students (Christianto, 2020). The imposing of strict movement in several areas impacts facilities and internet connectivity, which are still not all reachable.

On the other hand, the Covid-19 pandemic challenges learning methods and supporting learning facilities. This is closely related to the readiness of online learning methods or distance education, on the one hand, supported by adequate information technology facilities. Teaching and learning during the Covid-19 pandemic cannot be separated from internet media use. The learning method must also change in delivery and the interaction model used. Previously, all educational programs used the face-to-face mode; this time, the meeting has been held online. The material presentation must also be packaged more densely, attractive, and persuasively. Although the educators and students cannot meet physically or face to face, one characteristic of the learning process remains interaction. The use of the internet in various media platforms, from Zoom, Google Meet, Cisco Webex, and other media, provides various facilities that make it easier for educators and students. The problem arises regarding the adaptability of the educational staff and students to the media used mainly in internet access where the network is poor.

MAIN FOCUS OF THE CHAPTER

Higher education plays an essential role in identifying students experiencing technical difficulties in securing active participation in technology-based learning (Sheldon, 2004). Indonesia is one of the countries experiencing difficulties adapting to technology, especially online learning, due to the uneven internet access distribution. Being an archipelago, internet access in one area is different from other areas. Rural areas of Kalimantan are areas in Indonesia that still lack facilities to support online learning. Besides, many universities in Indonesia are not ready for technological facilities in an online-based academic system (Christianto, 2020). Inadequate internet network access facilities finally become a severe problem for students following the learning process leading to academic stress.

This study uses a quantitative approach with the type of correlation research to know the level of the relationship of several variables between two or more variables without trying to influence these variables and manipulate the variables (Wallen & Fraenkel, 2001). The research's population were students of Class 2019 at State Universities in South Kalimantan, namely Lambung Mangkurat University and Antasari State Islamic University. The samples were determined using a purposive random sampling technique. The population of Lambung Mangkurat University was 37.430 students. Three hundred forty-five students were selected as the research samples, based on an error rate of 5%. Simultaneously, the total population of Class 2019 at Antasari State Islamic University was 12.477 students. Three hundred forty students were selected as the research samples, based on a 5% error rate (Sugiyono, 2010). The data were collected using a questionnaire for academic stress variables adapted from Dewanti's (2016). A questionnaire on the variable of coverage on internet access during the Covid-19 pandemic was adapted

from Adnan et al. (2018). The e-learning access instrument consists of 7 (seven) indicators: 1. ability to use a computer/laptop, 2. the convenience of using electronic media, 3. perceived differences between online and offline learning, 4. differences in motivation between online and offline learning, 5. the effectiveness of lectures by internet network, 6. digital project/group assignment completion, and 7. the importance of face-to-face contact with lecturers in learning. The academic stress instrument includes 11 (eleven) statement items. The statement items on the two instruments are presented on a point scale for the answer choices, namely: 1 = "Strongly Agree," 2 = "Agree," 3 = "Disagree," 4 = "Strongly Disagree." This study uses a quantitative approach with correlation research, namely knowing the relationship of several variables between two or more variables without any attempt to influence these variables and manipulate the variables (Fatimah et al., 2020). Data were analyzed using Kendall's Tau-b test (Rundle et al., 2020), facilitated by the Statistical Package for the Social Sciences (SPSS) of the 2020 version. The criteria for the correlation coefficient between variables in the correlation analysis is categorized as follows (Sarwono, 2018):

a. The correlation coefficient value of 0.00 to 0.25 means the relationship is very weak.
b. The correlation coefficient value is 0.25 to 0.50, which means the relationship is sufficient.
c. The correlation coefficient value is 0.51 to 0.75, which means the relationship is strong.
d. The correlation coefficient value is 0.76 to 0.99, which means the relationship is very strong.
e. The correlation coefficient value of 1.00 means the relationship is perfect.

Questionnaires were distributed randomly to students from the two public universities. The questionnaires were distributed through chain shares from social media groups, which were entrusted from one sample to another, using the google form application. The instruments' distribution was carried out in 3 (three) months from June to August 2020.

The following hypotheses are employed:

H1: Access to e-learning during a pandemic significantly affects the academic stress level of students.
H2: Access to e-learning during the pandemic does not significantly affect students' level of academic stress.

The research result is presented in the table below.

Table 1 shows the significant value or Sig. (2-tailed) between the academic stress variable and the domicile range of internet access during the Covid-19 pandemic is 0.000 <0.01. Thus, it is concluded that academic stress and academic community with limited coverage of internet access during the Covid-19 pandemic are positively related. The correlation coefficient between academic stress and coverage of internet access during the Covid-19 pandemic was 0.778. Consequently, it is concluded that the level of relationship between academic stress and coverage on internet access during the Covid-19 pandemic is strong in Lambung Mangkurat University and Antasari State Islamic University. As a consequence, they miss information and online learning materials leading to difficulty receiving information and submitting assignments online (Wang et al., 2020). Some respondents stated that they were annoyed and became anxious because of slow internet access. This condition does not motivate students in the learning process, for they feel uncomfortable communicating with lecturers and classmates using electronic media. The slow internet access often creates misunderstandings and makes them late to get information related to the learning process. This finding supports Olszewska (2020) pointing out that almost half

Table 1. Nonparametric correlations

Correlation			Academic Stress	Internet Access
Kendall's Tau	Academic Stress	Correlation Coefficient	1.000	.778**
		Sig. (2-tailed)	.000	.000
		N	685	685
	Internet Access	Correlation Coefficient	.778**	1.000
		Sig. (2-tailed)	.000	.000
		N	685	685
**. *Correlation is significant at the 0.01 level (2-tailed).*				

Source: Field Survey (2021)

of the respondents gave a negative response to online learning due to the difficulty of managing their study time at home and no direct interaction between teachers and students to learn. A gap in internet access can also impact social welfare disparities in socio-economic terms because delay in receiving information affects society's progress supporting the finding of Sarkar et al. (2017).

SOLUTIONS AND RECOMMENDATIONS

Online learning requires excellent and robust internet access and teachers' readiness to use technology creatively and innovatively to meet the needs of students (Alashwal, 2020). In the teaching and learning process, the students want a two-way interaction. However, this two-way interaction is hard to apply in online learning, and in this study, the problems are worsened with limited internet access, making the learning process unable to meet the desired objectives. Further, the material presented online tends to be theoretical and does not allow students to learn and practice effectively. With this evidence, lecturers are recommended not to force to use web-based online learning platforms but instead use other media like radio or television. These media might be viewed as outdated, but it is more feasible to be applied with the wider coverage. However, lecturers cannot use this platform simultaneously, thus, requiring them to record teaching materials in advance (Alashwal, 2020).

In addition to poor internet access, implementation of online instruction lacks support and attention from parents/family. Parental consent is an essential factor in creating healthy psychological conditions in students by providing learning facilities (Sumakul & Ruata, 2020). Therefore, universities are encouraged to work together with families/parents to support online learning; thus, students can learn well, in a healthy and positive psychological condition to actualize themselves optimally during the pandemic (Radha et al., 2020; Tsang et al., 2014). Difficulty in accessing the internet causes psychological pressures on the students, such as (a) anxiety of not being able to participate in learning smoothly, (b) fear of low learning achievement, (c) unable to concentrate appropriately (Dhawan, 2020). This psychological condition denotes academic stress (Wardi & Ifdil, 2016), like occupational stress that people are under pressure physically and psychologically (Aguiar-Quintana et al., 2021).

Since stress is a physical and psychological pressure requiring a different way of management, consequently, to make learners remain productive and innovative, excellent classroom leadership is compulsory depending on the stress model if it is eustress (good stress), distress (bad stress), hyper-stress (too much

stress), and hypo-stress (too little stress). In this study, it is believed that students experience bad stress. Since inappropriate stress management causes decreased performance, the researchers recommend that universities evaluate the readiness of technology acceptance among lecturers and students to avoid distress which may occur not only in students but also lecturers. This is because, under Unified Theory of Acceptance and Use of Technology (UTAUT) (Sarbaini et al., 2019), individual's behavioral intention to use technology is influenced by performance expectancy (i.e., the degree to which the technology is perceived to be useful), effort expectancy (i.e., degree to which using the technology is perceived to be easy to use), social influence (i.e., degree to which using the technology is appreciated in the social network important to the individual), and facilitating conditions (i.e., degree to which the individual believes to be in possession of the resources to use the technology).

CONCLUSION

Based on the description above, the researchers conclude: (1) There is a relationship between academic stress and coverage of internet access during the pandemic for students on the island of Kalimantan, (2) There is a solid relationship between academic stress and domicile reach, (3) The direction of the positive relationship shows that the level of academic stress experienced by students is high based on the coverage of internet access during the pandemic.

It turns out that technology, which has been considered a solution for sustainable education during a pandemic (COVID-19), has become a problem for many students and families. This study indicates that the problem in learning originates from the classroom factors that structure learning and learning outcomes. The poverty factor has limited student access and participation in learning during a pandemic. Those who come from economically weak families cannot afford adequate facilities in online learning. Limited facilities and access in the long term will put risks on learning outcomes. Students who are deprived will, at the same time, mean underachievement in education during a pandemic.

FUTURE RESEARCH DIRECTIONS

The researchers recommend that future research is conducted with qualitative research to explore more if the weak internet network on the Indonesian island of Borneo is the main problem. Since the impact of academic stress is enormous, especially when students do not attend lectures and other learning processes, the role of education experts is needed to explore, especially in anticipating the psychological condition of each student. In-depth interviews derived from future research can be carried out to intensively examine the psychological influence of students, develop a more flexible curriculum during the pandemic, regulate rules for students who live in areas with difficult network access for higher education, and as a basis for developing facilities needed by universities in remote areas in Indonesia.

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