

# A Study on Thai Student-Teachers' Online Learning Behaviors in the COVID-19 Pandemic

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## Abstract

The COVID-19 pandemic causing severe and lethal health issues by means of contact or airborne transmission has significantly altered our normal way of life. Having regular face-to-face contact poses a great risk even with precautionary measures taken resulting in a drastic change in the realm of learning and teaching from onsite to online. Studying online has been seen as problematic and has received negative feedback, especially in the aspect of comprehensibility of lessons and unusual learning atmospheres. This negativity contributes to the changes in students' behaviors which, as a result, significantly affects the learning outcome and academic achievements. This study, then, aims to investigate Thai student-teachers' online learning behaviors during the pandemic and to study the relationship

between Thai student-teachers' online learning behaviors and learning achievement during the pandemic. The 118 participants, selected by the purposive sampling method, were student teachers enrolling in the Learning and Instruction course in the first semester of the 2020 academic year when the transition from onsite to online learning started. The instruments were the Learning and Study Strategies Inventory (LASSI) adopted from Weinstein and Palmer (2002) and a learning achievement test. The statistics used in the data analysis were percentage, mean score, standard deviation, and Pearson's Correlation Coefficient. The results of the study were (1) 10 strategic learning behaviors were found to be used by student-teachers in Thailand in online learning during the COVID-19 outbreak and (2) the behaviors of information processing, motivation, concentration, and self-testing were correlated with learning achievement. The results could be implemented to develop teacher education processes and academic works in the related field.

**Keywords:** COVID-19, Student behaviors, Online learning

## **1. Introduction**

The coronavirus (COVID-19) pandemic has affected people's lives in all aspects. The infectious disease harms millions of lives in terms of routine, work, and education. According to United Nations Educational, Scientific and Cultural Organization (2020), more than 1.5 billion students are reported to have been affected by the closure of schools and institutions around the world because of countries' preventive procedures against the spread of COVID-19. This greatly affects the quality of education as educational stakeholders must adapt to the new learning environment, and some might not be able to cope with problems that follow (Duraku & Hoxha, 2020). In detail, the changing learning environment from in-class to online learning could bring about disadvantages and obstacles in learning. For example, students who were not financially ready could not afford broadband internet and effective communication tools. Moreover, even in the ready online learning environment, students could be distracted by the tools they use in learning. For instance, an Instagram notification could draw learners' concentration away and break their attention for a whole class. Therefore, both teachers and students must adapt themselves to the new normal of education to survive the pandemic as well as success in learning.

In Thailand, the coronavirus has been with the lives of people for more than 2 years. According to the Department of Disease Control (2020), the first patient was reported in early 2020. Since then, there have been lock-down policies announced depending on the severity of the situation. In March 2020, the first public announcement of the Ministry of Education of Thailand to close the educational institution was declared to prevent pandemics. The situation worsened in the 2021 academic year since schools and universities were asked to close and handle their teaching online for two semesters in some areas. According to the World Bank (2021), Thailand was reported to be a middle-income country. However, it is also issued a high level of income disparity which means students in poor families are likely to be affected in online learning as they do not have enough money to effort tools. Therefore, the absence of onsite learning could greatly account for problems in both teaching and learning in the country.

Moreover, the effects of the pandemic on education were more severe in courses that needed practice in an authentic situation. In this case, online learning in the COVID-19 outbreak could also affect teacher education. According to Labaree (2000), instructing student teachers demands the consideration of student understanding, emotion management, structural isolation, and quality of teaching techniques. These issues need time, patience, and real practice to master. Student teachers learn to teach at the same time. The content they learn in class needs to be processed into the content they teach in the future (Cohen, 1988). Moreover, the closure of schools equals fewer opportunities to practice teaching in the internship. Darling-Harmond, Gendler, and Wise (1990) stated that a teaching internship is a practical preparation to be a professional teacher. Student teachers could gain experiences in schools as they are given the opportunities to teach in real classes. Moreover, the advice of supervisory teachers could help them grow in their career path. Unfortunately, the virus lessened their opportunities to learn in both class and real situations.

Realistically, it could not be doubted that health issues are the priority in the pandemic situation. Even though preventive procedures might obstruct the processes of teacher development, adaptation seems to be the only choice. According to Joan (2013), effective learners are flexible and be able to change behaviors to cope with a difficult learning situation. Therefore, studying the behaviors of student teachers who still learn effectively despite being put in an unwilling situation of online learning in the COVID-19 outbreak could be beneficial for teacher education.

## **2. Literature Review**

### *2.1 Nature of Online Learning*

It seems that online learning is the only choice that could keep education continuing in the COVID-19 situation. The use of teaching techniques such as steaming, online meeting, and online video could prevent social interaction activities in classes that could lead to the spread of the disease. Online learning is defined as the use of technical assistance in learning (Lowenthal, Wilson, & Parrish, 2009). The assistance could cover assigning online exercises, using virtual classrooms, steaming course content, uploading instructional videos on the website, etc. Benson (2002) indicated that online learning is an updated version of distance learning as the advance of communication technology allows more interaction between teachers and students. Moreover, online learning requires components in driving its environment. First, Salimpoor et al. (2010) suggested that computer tutorials assist learners to comprehend course content. In addition, multimedia and teaching material illustrate class content interestingly (Maag, 2004). At this point, learners need to have a good command of computer skills to assess the online content. Moreover, learning tools also need to be ready to portray the learning media effectively. Moreover, Gillett-Swan (2017) indicated that online learning might isolate learners as the environment could cause problems for cooperative learning, team learning, and group work. Furthermore, the complication of assessment is also considered in online classroom management. Boyles (2011) indicated that the application of technology in online learning made it more difficult to assess learners' abilities. The use of translation tools, paraphrase tools, and search engine assists students to complete their tasks.

At the same time, it put a burden on teachers in assessing learners' true abilities. Lastly, Appana (2008) suggested that one of the major disadvantages of online learning is the limitation in instructing interactional courses. Courses that need physical practice like physical education and authentic practice such as medication, music, and teaching might not match the online learning environment.

### *2.2 Nature of Teacher Education*

Teacher education is an important issue for nations as it could control the quality of education and signify the development of a country. Therefore, the development of teaching personnel needs careful consideration in terms of academic, economic, and social aspects (Kasemsap, 2017). Moreover, Glatthorn (1995) indicated that "Teacher development is the professional growth a teacher achieves as a result of gaining increased experience and examining his or her teaching systematically" (Glatthorn, 1995). According to the Colorado Commission on Higher Education (2020), 5 principles should be taken into consideration in teacher preparation. First, teacher preparation programs should develop teachers with a deep understanding of pedagogical principles. Moreover, programs should prepare teachers to understand learners in terms of cognitive processes, socio-emotional development as well as others. Next, the programs should provide the candidates with opportunities to gain teaching experience. The programs should apply systematic assessment to track teachers' development processes. Lastly, the programs should apply reliable data to engage continuous improvement. In Thailand, teachers are expected to be excellent in both academics and morality as they could be role models for their students. It is important to convince high proficiency students in high school to choose teacher education. The principles of teacher education also focus on contributing to teaching experiences. Classes are expected to let student teachers practice in an authentic teaching situation, and a year of internship is required (Office of the Education Council, 2015). At this point, it could be noted that teacher education requires a practical learning environment to let student teachers develop their teaching professionalism and might be affected by online learning in a pandemic situation such as the COVID-19 outbreak.

### *2.3 Students Learning Behaviors*

Study strategies are behaviors that learners apply in processing class input and drawing the connection of data to comprehend the content. Weinstein and Palmer (2002) presented the Learning and Study Strategies Inventory (LASSI) which is an assessment of students' awareness about and use of learning and study strategies related to skill, will, and self-regulation components of strategic learning. There are 10 scales of the LASSI including anxiety, attitude, concentration, information processing, motivation, selecting main ideas, self-testing, test strategies, time management, and using academic resources. The test could be used as a diagnostic tool to describe students' characteristics in learning. It also provides feedback about the weak point of students where the improvement of their knowledge, skills, attitudes, motivations, and beliefs are needed. The test could also predict the learning capability in various situations including online learning in the pandemic era.

## *2.4 Previous Studies*

Since the pandemic affects education around the globe, and normal classes have been supplanted by an online environment, studies have been conducted to study learners' behaviors in the online environment during the outbreak of COVID-19 (e.g., Bird, Castleman, & Lohner, 2020; Boca, 2021; Hu, 2021; Lertsakornsiri, Narumitlert, & Samutpradit, 2021; Mahyoob, 2020; Yanna et al., 2021). The results of the previous studies exemplify the effects of the pandemic on various aspects of education. For example, Bird, Castleman, and Lohner (2020) found that shifting to online learning during COVID-19 resulted in the increase of dropout rate in college. The authors discussed that student readiness is the main factor affecting the drop rate. It could be noted that even in the US where people are familiar with technology, online learning could still affect students' behaviors. Hu (2021) found that online learning affected Taiwanese students learning achievement. The active online environment was not suitable for certain groups of students. The author suggested asynchronous online learning as a supportive tool. Mahyoob (2020) studied the Challenges of e-Learning during the COVID-19 pandemic experienced by EFL learners. The result of the study indicates that most EFL learners are not satisfied with continuing online learning, as they could not fulfill the expected progress in language learning performance. The current study also aims to explore the effects of COVID-19 on students learning achievement and how the student applies to learn strategies to cope with the difficulties. The research questions are (1) What are Thai student-teachers' online learning behaviors in the COVID-19 pandemic? and (2) Are there any relationships between Thai student-teachers' online learning behaviors in the COVID-19 pandemic and learning achievement?

## **3. Methodology**

### *3.1 Participants*

The participants were 118 student-teachers in Mahasarakham University, Thailand selected by the purposive sampling method. The participants enrolled in the Learning and Instruction course in the first semester of the 2020 academic year. At the time, the country was affected by the COVID-19, and educational institutions were asked to either mix on onsite and online learning or completely learn online. The participants were asked to complete the Learning and Study Strategies Inventory (LASSI) at the end of the semester.

### *3.2 Instruments*

The instruments were The Learning and Study Strategies Inventory (LASSI) adopted from Weinstein and Palmer (2002) and a learning achievement test. The LASSI consists of 60 items in 10 domains. According to Weinstein and Palmer (2002), it can be used to predict learners' strategic learning behaviors, strong points, and weak points of their learning. The learning achievement test consists of 60 multiple choice question items. The index of item objective congruence (IOC) of the items was at 0.6-1.0. The difficulty of the item was at 0.32-0.65.

### 3.3 Data Analysis

The study was conducted in a quantitative approach. The statistics used in the data analysis were percentage, mean score, standard deviation, and Pearson's Correlation Coefficient.

## 4. Results of the Study

The results indicate that the overall learning online learning behavior of student teachers was at a high level ( $\bar{x} = 4.04$ , S.D. = 0.74). In addition, the strategic learning behaviors of information processing ( $\bar{x} = 4.25$ , S.D. = 0.54), time management ( $\bar{x} = 4.19$ , S.D. = 0.64), motivation ( $\bar{x} = 4.14$ , S.D. = 0.76), selecting main idea ( $\bar{x} = 4.10$ , S.D. = 0.68), concentration ( $\bar{x} = 4.09$ , S.D. = 0.73), self-testing ( $\bar{x} = 4.07$ , S.D. = 0.74), test-strategies ( $\bar{x} = 4.01$ , S.D. = 0.85), attitude ( $\bar{x} = 3.86$ , S.D. = 0.79), using academic resource ( $\bar{x} = 3.85$ , S.D. = 0.82), and anxiety ( $\bar{x} = 3.81$ , S.D. = 0.80) were found to be used respectively. It could be interpreted that learners applied strategic learning behaviors to cope with the difficulty during the COVID-19 outbreak.

Table 1. Participants' online learning behaviors in the COVID-19 pandemic

<b>Behaviors</b>	$\bar{X}$	<b>S.D.</b>	<b>Interpretation</b>
Information processing	4.25	0.54	High
Time management	4.19	0.64	High
Motivation	4.14	0.76	High
Selecting main idea	4.10	0.68	High
Concentration	4.09	0.73	High
Self-testing	4.07	0.74	High
Test-strategies	4.01	0.85	High
Attitude	3.86	0.79	High
Using academic resource	3.85	0.82	High
Anxiety	3.81	0.80	High
<b>Overall</b>	<b>4.04</b>	<b>0.74</b>	High

It is also evident that the relationship between learning achievement and students' online learning behaviors in terms of information processing, motivation, concentration, and self-testing were present. In detail, learning achievement and information processing was found to be moderately correlated,  $r(116) = 0.576$ ,  $p = 0.00$ . Moreover, learning achievement and motivation were found to be moderately correlated,  $r(116) = 0.658$ ,  $p = 0.00$ . learning achievement and concentration were found to be moderately correlated,  $r(116) = 0.598$ ,  $p =$

0.00. Lastly, learning achievement and self-testing were found to be moderately correlated,  $r(116) = 0.576$ ,  $p = 0.00$ . It could be interpreted that the strategic learning behaviors of information processing, motivation, concentration, and self-testing contributed to the learning achievement of students during the COVID-19 situation which drives them to learn online.

Table 2. The relationships between participants' online learning behaviors in the COVID-19 pandemic and learning achievement

Behaviors	Relationship between learning achievement (r)	Sig (p)
Information processing	0.576**	.000
Time management	0.107	.095
Motivation	0.658**	.00
Selecting main idea	0.107	.185
Concentration	0.598**	.000
Self-testing	0.785**	.000
Test-strategies	0.256	.246
Attitude	-0.158	.078
Using academic resource	0.138	0.254
Anxiety	0.086	0.354

## 5. Discussion

The result of the study indicates that the student teachers applied various strategic learning behaviors in learning online during the COVID-19 outbreak. The participants reported using all 10 domains of the Learning and Study Strategies Inventory (LASSI) at a high level. According to Weinstein and Palmer (2002), students need to put skills, will, and self-regulation into learning. In detail, students should develop strategies for information processing, main idea selection, and test taking to achieve the learning goals. These skills help them learn more effectively resulting in both knowledge and performance in learning. Moreover, students should be eager to learn. Attitude, motivation, and anxiety management could allow them to learn with a willing mind and bring about success in learning. Students also need self-regulation in learning. Concentration, time management, self-testing, and study aids are what it takes to regulate themselves in any learning situation. These learning behaviors can be beneficial in online learning where learners are expected to take more responsibilities for learning. Additionally, changing learning behaviors can also yield positive outcomes. These certain behaviors include staying focused in lessons, adhering to class rules, being cooperative in activities, engaging in extra self-study, asking questions to clarify misunderstanding, and summarizing lessons to promote understanding and achievement in

learning.

The study correlates with previous studies on how COVID-19 and online learning affect education. In addition to the university dropout rate (Bird, Castleman, & Lohner, 2020), the shift in the learning environment (Hu, 2021), learner satisfaction (Mahyoob, 2020), and independence of learning (Yanna et al., 2021), the current study indicates that learners need to adapt to the new environment of learning by applying strategic learning. Moreover, it could confirm the benefit of effective learning strategies in the unpredictable world of the 21<sup>st</sup> century (Weinstein & Palmer, 2002).

The results of the study indicate that information processing, motivation, concentration, and self-testing were the strategic learning behaviors that correlated with students' learning achievement in the learning and instruction course. These behaviors derived from the skills, willingness, and self-regulation of the students. These factors positively affected the students despite being put in unfamiliar learning situations of online learning. The result is also similar to Lertsakornsiri, Narumitlert, and Samutpradit (2021) who indicated adaptability, instructional behaviors, and learning attitude as factors affecting online learning during the COVID-19 outbreak. In addition, the students were in control of their own learning behaviors which could be adapted to various online learning situations. The mindset to achieve good outcomes often results in positive behaviors toward learning which lead to the continuation of such behaviors. Having an example of a peer with positive behaviors seemed to have an influence on other students to exhibit behaviors in the same way. Furthermore, the study added more factors leading to success in online instruction. It could be noted that apart from teaching factors, teaching quality and teaching material found in Boca (2021) and social factors such as support from parents and teachers found in Yanna et al. (2021), learning behaviors as a learner factor is also crucial in the achievement of online learning instruction.

## **6. Conclusion**

In conclusion, the questions asked in this study could be answered that 1) 10 strategic learning behaviors were found to be used by student-teachers in Thailand in online learning during the COVID-19 outbreak and 2) the behaviors of information processing, motivation, concentration, and self-testing were correlated with learning achievement. The result of the study could be implemented in a pedagogical setting. The ability to use learning strategies should be prioritized in teacher education as it helps learners to cope with difficulties in online learning. Learning strategies could be instructed as content in learning subjects and even in a course of their own. Learning how to learn could be beneficial when learners are forced to go out of their comfort zone of learning. Furthermore, the study could contribute to research in the area of teacher education. It seems that the COVID-19 outbreak affects education around the globe, and educational stakeholders need to adapt themselves to carry on the teacher education processes. Alternative methods should be applied to fill the hole left by online learning in interactional and authentic natures of teacher education. In addition, the results of the study could also contribute to the academic aspects in education. Scholars in the area should note that learner factors are also important for online instruction.

Further, the study still has limitations and recommendations for further studies. First, the



study only provides a quantitative aspect of the data collection. Continued studies might include qualitative instruments for a better understanding of how learners use learning strategies in online learning. Moreover, the study investigated only the learning achievement of the Learning and Instruction course. Further studies should explore the scope of the studies in terms of learning achievement in teacher education. In addition, learners' strategic learning behaviors could lead to success in online learning. Further studies could also investigate the student's behaviors in other areas of study. It must be noted that the COVID-19 pandemic is an obstacle for human activities including education. Learning to cope with difficulties in the new normal is the only viable way out for educators.

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