

# Students Self-Efficacy Profile in Online Learning: *Basic Information to Improve the Quality of Learning*

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## ABSTRACT

Online learning that occurred suddenly during the Covid-19 pandemic created challenges for education at universities. To be successful in learning, students need to have high self-efficacy in online learning. This study aims to look at student self-efficacy profiles in online learning during the COVID-19 pandemic and the differences based on student demographic factors (gender, year of entry, and field of study). Self-efficacy data was obtained by filling out the Online Learning Self Efficacy questionnaires by 125 undergraduate students in Yogyakarta which were distributed online through social media. The instrument of self-efficacy in online learning was adapted from the Online learning Self Efficacy Scale from Zimmerman and Kulikowich (2016). Furthermore, the data were analyzed using descriptive analysis to see differences in online learning self-efficacy on several student demographic factors. The results showed that the student's self-efficacy profile was dominated by the moderate category. There are variations in student self-efficacy profiles in the analysis based on gender, year of entry, and field of study. This is a recommendation for lecturers to improve the quality of online learning by packaging learning that is innovative, interesting, motivating, and introduces students to technology and online learning resources so that they are able to face challenges in online learning.

**Keywords:** *online learning, self-efficacy, undergraduate student.*

## 1. INTRODUCTION

Online distance learning has been going on for more than one year in Indonesia as a result of the Covid-19 pandemic. This online learning was carried out suddenly since the implementation of the learning policy by the [1]. Education at universities located in red zone locations is also carried out online, including lectures at Universitas Negeri Yogyakarta (UNY). By minimizing face-to-face contact, it will break the chain of the spread of Covid-19 [2]. The Covid-19 pandemic has increasingly made people aware that currently a flexible education system is needed in dealing with unexpected future conditions [3].

Research on online learning in universities has been widely carried out in various countries affected by the pandemic. These online learning studies explore the problems that occur [4], the impacts and challenges of online learning [5], the strategies implemented [6], the

media used [7], assessment in learning [8], and solution efforts to overcome problems in online learning (search for sources). Many research are conducted by education practitioners, in the hope of finding the right problems and solutions for the implementation of online learning.

Online learning that occurs suddenly certainly causes problems for lecturers, students, parents, school administrators, and other stakeholders [9]. These problems include many students and lecturers who do not have supporting technology devices and limited internet access [10][11]; limited use of information technology tools, online media, and the readiness of lecturers in providing online teaching materials [12]; difficulties in conducting learning assessments in an appropriate and objective way [13]. To overcome problems in learning, lecturers as learning facilitators must have the right strategy to face challenging online learning. Lecturers must be open to online technology that can be used in learning, know student needs, create

material content that is easily accessible by students (if necessary, recap lectures or make learning videos) and can be re-accessed by students who have problems, and adopt a flexible approach to teaching and learning [9].

Challenges in online learning put psychological pressure on students [14]. These challenges received different responses in each student. There are students who give up and are passive in online learning, but there are also students who have the passion and effort to study well. The different responses are due to the different self-efficacy of students in dealing with online learning. Self-efficacy is a belief in one's ability to face challenges and problems so that all thoughts and behavior are directed to solve problems [15]. Students with high self-efficacy will feel confident that they can solve light, medium, and difficult problems.

This self-efficacy can be measured by the self-efficacy scale which many researchers have developed based on the field of study. Self efficacy instruments are widely developed in fields where many humans have to struggle with psychological pressure, such as in the world of health, namely patient self-efficacy in dealing with chronic diseases [16], self-efficacy in people with disabilities [17] and include learning, which is related to outdoor learning [18], self-efficacy in dealing with statistical learning [19], and even online learning. Self-efficacy instruments in online learning have also been widely used before, but are specific to parts of online learning, namely the self-efficacy scale for internet used by Torzkadeh and Dyke [20]; computer self-efficacy (CSE) by Murphey et al [21]; self-efficacy scale in online technology use (OTSSES) by Miltiadou and Yu [22]; and the self-efficacy scale for Web-based learning (WBLSES) developed by Nahm, & Resnick [23]. As for the overall self-efficacy scale instrument which includes the learning process in an online environment, time management, and the use of a technology called the Online Learning Self Efficacy Scale (OLSSES) developed by Zimmerman and Kulikowich [24].

The OLSSES [24] can be used to view the self-efficacy profile of online learning that occurred during the Covid-19 pandemic in Indonesia. It is important for a lecturer to know the student's self-efficacy profile so that they can apply strategies to motivate students to learn online, since motivation is one of the factors that influence self-efficacy. In addition to motivation, other factors that affect self-efficacy are one's experience in previous online learning, the presence of feedback and rewards from educators, social influences, and interactions and communication that exist in learning [25]. Motivation can be created by educators with innovative, interesting, creative learning strategies so that learning becomes fun. Such conditions support the creation of self-efficacy in students so that they can

survive to continue learning online despite the many challenges that accompany them.

The first step before determining the best online learning strategy is to find out the student's self-efficacy profile in online learning. This study reveals the self-efficacy profile of students in carrying out online learning. The results of this study are expected to be considered by lecturers and policy makers in determining the next learning strategy. In addition, it can be the basis for further researchers related to online learning at the university level.

## **2. MATERIAL & RESEARCH METHOD**

### ***2.1. Research Design***

This is a quantitative research with survey method. The participants of this survey were undergraduate students in Universitas Negeri Yogyakarta who have experienced online learning for 1 year (in the period mid-2020 to mid-2021). The focus of this research is to look at student self-efficacy profiles in online learning and analyze them based on demographic factors such as gender, year of entry, and field of study.

### ***2.2. Research Participant***

The respondents of this study were students who voluntarily were willing to fill out the online OLSSES form. The total respondents were 125 students from different fields of study, namely 87 students of health-science field (Faculty of Mathematics and Natural Sciences and Faculty of Sports Science) and 38 students of socio-economic fields (Faculty of Social Sciences and Faculty of Economics). Respondents consisted of 26 male students and 99 female students. The age of the respondents ranged from 18 - 23 years. Respondents were divided into 3 levels based on the year of entry at the university. There were students who entered in 2020 or first year students year (51 students), students of class 2019 or second year students year (18 students), and 2018 students or third year students (56 students).

### ***2.3. Data Collect and Analysis Method***

The instrument in this study is a questionnaire, used to measure student self-efficacy in online learning that adapts the Online Learning Self Efficacy Scale (OLSSES) [24] which was developed for online learning at the university level. OLSSES was translated from English and compiled into questions by the researcher with the help of 3 linguists. The questionnaire consists of 19 question items with each having 5 answer choice scales, namely I strongly disagree (1), I disagree (2), I am neutral (3), I agree (4), and I strongly agree (5). All of these OLSSES items describe student self-efficacy in

online learning including aspects of the learning process in an online environment, time management, and the use of technology.

Questionnaires were given to students in the form of an online form which was compiled using Google Form. In addition to question items to see self-efficacy, respondents were also asked to fill in data on gender, age, year of entry in the university, and field of study. The online form is distributed through social communication media. The form is set to only be filled in by one email account once to avoid data duplication. After one month the questionnaire was distributed and there were 125 students who had filled it out.

The data from the questionnaire were analyzed quantitatively by descriptive analysis. Analysis was conducted to see the tendency of respondents' answers to which level of self-efficacy. Student self-efficacy scores are grouped into 5 categories, namely very low, low, moderate, high, and very high. The range of these categories is determined based on the calculation of the answer interval from the lowest to the highest total score as shown in Table 1.

**Table 1.** Categorization of self-efficacy profiles in student online learning

Total Score	Category
Less than 51.80	Very low
51.80-62.59	Low
62.60-73.39	Medium
73.40-84.19	High
More than 84.20	Very high

Then, descriptive analysis was conducted to see differences in student self-efficacy based on demographic factors, such as gender, year of entry, and study program. The average self-efficacy was compared between male and female students, between first year of entry, second year of entry, and third year entry students.

### 3. RESULT & DISCUSSION

Online learning at university has been conducted for more than one year. In this long duration, students have started to get used to the online learning. It is hoped that students will be adaptive to this new learning system even though it is implemented suddenly. Therefore, this study aims to reveal the profile of student self-efficacy in online learning. The first step in this research is the adaptation of OLSES which was developed by Zimmerman and Kulikowich [25] into an online questionnaire in Indonesian. Furthermore, the

questionnaire was distributed through WhatsApp social media and filled in by students voluntarily.

The results of the answers from as many as 125 students were analyzed using descriptive analysis. Descriptive analysis was carried out to see the tendency of students' answers and categorize student answers so that it was known that their self-efficacy profile was in the very low, low, medium, high, or very high categories as shown in Table 2.

**Table 2.** The Profil of Self-Efficacy Undergraduate Student in Universitas Negeri Yogyakarta

Level Category of Self-Efficacy	Percentage (%)
Very low	2
Low	6
Medium	40
High	38
Very high	14

Table 2 shows the student self-efficacy in this study was dominated by the moderate category. Conditions that force students to study online suddenly make students not ready to deal with it, causing their self-efficacy in category medium. This self-efficacy in online learning will affect student learning outcomes. If someone has high self-efficacy in online learning, they can take advantage of the online environment to access learning materials optimally, have time management skills, and have skills to use relevant technology so that it will have a positive effect on their learning success [28]. Lecturers play an important role in implementing effective online learning so that student self-efficacy can increase from moderate to high even to very high. The analysis of the average student answers was investigated to find out which items indicated low student self-efficacy (Table 3).

**Table 3.** Mean Score Each Item

Item	Mean
1. Navigate in online learning effectively	3.976
2. Communicating effectively with teacher	4.104
3. Learning needs accesable	4.504
4. Manage the technical difficulties byself	3.944
5. Manage time effectively	3.664
6. Complate tasks on time	4.12
7. Learn to use new online learning technologies	4.216
8. Remain active in learning even without direct interaction with the lecturer in the same room	3.744
9. Remain active in learning even without direct interaction with the other students in the same room	3.92

10. Searching in internet for answer question	4.232
11. Looking for teaching material in online	3.664
12. Use asynchronous or indirect technologies to communicate with other	4.12
13. Finished all assignment and deadlines only with a few reminders	3.776
14. Finish group project or assignments completely online	4.304
15. Use synchronous technology to communicate with other people	4.336
16. Stay focused to learn although faced the distractions or problems	3.488
17. Have a strategy to to complete all online coursework	4.024
18. Use online library in learning efficiently	2.904
19. Ask the question directly in forum (email, discussion forum, etc) when have some problems in online learning	3.568

The item with the low average score is item 18, related to the use of online libraries in learning. This shows that many students do not use the online library in learning. On the other hand, this online library supports active learning where students can access unlimited learning materials so that they can find and organize new materials independently to solve problems and improve their competence [29]. Therefore, it is an obligation for lecturers to introduce the latest and varied learning resources, one of which is an online library that can be accessed online easily and for free.

The next analysis is to compare the average student self-efficacy scores based on demographic factors, namely gender, year level, and field of study. Based on the average value, the mean OLSES score of female students is greater than that of male students with a small average difference of 2.613 (Fig. 1).

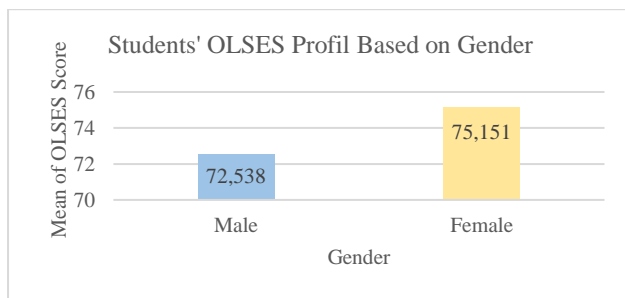


Figure 1 Students' OLSES mean based on gender

The difference in average is not too big because male and female students are in the same age range (18-23 years) where that age is an adult age category so that they already have maturity in learning, knowing which one is best for themselves. Therefore, they will persist in learning even though the conditions are comfortable and require more effort in learning. However, female students tend to have a higher average OLSES than male students because adult female students have the

ability to organize what is needed and carry out appropriate strategies to survive challenges [30], including challenges in online learning.

Based on year of entry year, it was found that students from various years had OLSES averages that were not too far apart, between first year and second year students was 2.145, between first year and third year students was 1.5, and between second and third year students was 3.645. The highest average self-efficacy is owned by the second year students (Fig 2.).

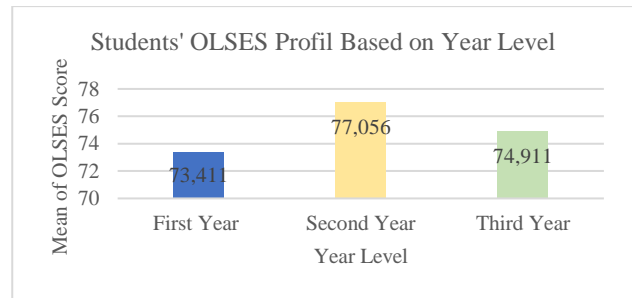


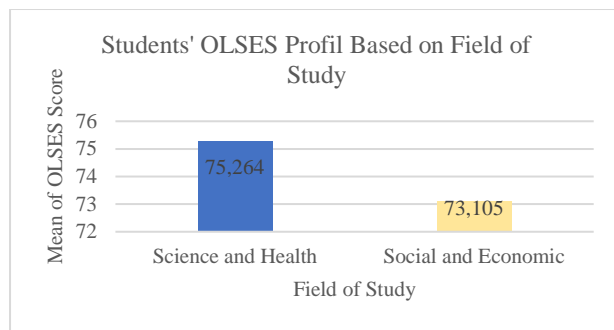
Figure 2 Students' OLSES based on year of entry

Second year students have the highest self-efficacy profile compared to other year levels and first year students have the lowest self-efficacy profiles. Second year students are students who have started lectures since 2019, they are familiar with learning at the lecture level so they are easier to adapt compared to first year students who have just entered lectures who already have to undergo online learning. First year students not only have to adapt to the online learning system, but also have to adapt to a new learning environment (university level). This is in line with Gonta & Bulgac's research [31] that a new learning environment has a psychological effect which if not managed properly will reduce motivation in learning.

Beside as a facilitator, lecturers must act as motivators for students. Lecturers must be able to generate student motivation in learning in new situations and environments. Motivation can be realized in the form of increasing student involvement in learning so that independent learning can be realized [32]. In addition to increasing student engagement, lecturers also need to help students improve their performance with well-designed independent exercises that make students feel successful [33]. The impact is the growth of long-term self-motivation. Another way to increase student motivation in learning is to teach primary knowledge or basic concepts at the beginning of new learning followed by explanations related to the development of that knowledge [34]. By understanding basic knowledge, students will be curious and interested in learning more. Analysis of students' mean OLES scores based on field of study showed that students from the science and health fields had a higher average OLSES

than students in the socio-economic field with a difference of 2,159 (Fig. 3.).

Students from the fields of science and health have self-efficacy in online learning. In line with this, students who study science will be trained in their five senses to get used to thinking on scientific and sensitive matters so that they have more emotional maturity [35]. This is what causes science and health students to tend to be more adaptive in online learning.



**Figure 3** Students' OLSES mean based on field of study

Based on the results of the study, only insignificant differences found on the self-efficacy in online learning of students of difference in terms of gender, year level, and field of study. The results of this study are in line with Yavuzalp & Bahcivan [36] that there is no difference in self-efficacy in students based on gender and school type. Self-efficacy in online learning is influenced by experiences in previous online learning, technology and supportive exercises, and responses and feedback from lecturers [37]. In addition, student motivation and attitude as well as social influences in the learning environment also have an effect on one's self-efficacy in learning [25]. Lecturers should be able to create an interesting, innovative, and motivating learning atmosphere for students so that students can have high self-efficacy to continue to persist in learning even though they face challenges in online learning.

#### 4. CONCLUSION

Students' self-efficacy in online learning measured by the Online Learning Self-Efficacy Scale is dominated by the medium category. Lecturers should be able to create an interesting, innovative learning atmosphere, introduce technology and online learning resources, and motivate students so students can have high self-efficacy to continue to learn despite facing challenges in online learning. In addition, students are also less effective in utilizing the online library in learning. The results of comparing the average self-efficacy at the gender level, year of entry, and field of science are not much different. Female students have self-efficacy in online learning compared to male students because they have the ability to organize better learning strategies.

Students at the second level have the highest self-efficacy because they are familiar with learning at the university level and only adapt to online learning, while first year students, in addition to having to adapt to online learning, they must also adapt to a new learning environment (switching from high school to university). Sensitivity and the habit of scientific thinking using reason and senses make science and health students more adaptive to face challenges in learning.

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