The Linkage of Students’ Synchronous and Autonomous Learning at the Tertiary Level

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ABSTRACT

The goal of the research is to find out whether students’ synchronous learning correlates highly to their autonomous learning. Knowing that activities during synchronous learning must standardized into certain syllabus so that, learning process can be imitated into asynchronous learning nowadays. Therefore, studying the topic is still needed. This study used quantitative data that researchers obtained from numerous respondents. 100 participants, dominantly English Language Education students who experienced synchronous learning, already became active respondents to this study. A questionnaire comprised 15 items about how intensive students know the objective, specific or personal goal, negotiation, additional learning resources, checking their achievement and others during synchronous learning. The research applied a sequential exploration design in which quantitative data is collected and analyzed using SPSS 23. The result reveals that the sig value is 0.030 bigger (>) than 0.05. Thus, it shows a significant difference between the value of the synchronous relationship and autonomous learning when compared to the standards set. Next, it is reviewed further that the t value shows a positive score, meaning the research acquisition value is higher than the specified score. Synchronous learning has upgraded students’ autonomous learning. Therefore, from the results of the test, it can be concluded that there is a high correlation between synchronous and students’ autonomous learning.

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1. INTRODUCTION

Learning with technology, one of which is synchronous learning, is a must and is starting to become a culture today. Despite the fact that the government has issued regulations requiring direct face-to-face learning, some institutions continue to incorporate synchronous learning into current
learning. As a result, the topic of synchronous learning will continue to be a research topic, particularly in the field of education. When the COVID-19 pandemic hit both the elementary, junior high, high school and university levels in Indonesia, research on synchronous learning, also known as synchronous e-learning, became the most studied research (Asmuni, 2020; Basar, 2021). Several studies have investigated the obstacles during the learning process. Further, Asmuni (2020) shows in his research that distance learning during the COVID-19 pandemic generate various responses and changes in the learning system that influenced the learning process and the level of development of students in responding to the material presented. Problems also occur in education components such as teachers, parents and students themselves (Asmuni, 2020; Turmudi & Ratini, 2022). Lack of technology competence and limited access to supervising students, inactivity of students in participating in learning, and very limited supporting facilities, particularly internet access in some areas, all contribute to their learning problems. Meanwhile, parents complained about the lack of time available to accompany online learning due to their busy schedules. Synchronous learning was used before the COVID-19 pandemic (Dumford and Miller, 2018). Thus, we can conclude that online learning not become a learning alternative anymore but will become a learning imperative. So, portraying study about synchronous learning is still essential to research in education and universities.

Autonomous becomes a requirement for students at this stage, particularly in universities. Cole et al. (2021) say that the demands for autonomy are very large and if not responded appropriately, can have an unfavorable impact on psychological development in the future. Autonomous is the behaviour of individuals who can take the initiative, overcome obstacles or problems, are confident and can make decisions. (Hadi, 2012; Hidayati, Claramita, & Prabandari, 2017) write that for autonomous learning, the activities carried out are more driven by personal will, own choice and individual responsibility. Thus, lecturers or educators must seek activities that can increase learning autonomy during synchronous. In other words, because synchronous learning activities have received less attention in previous studies, educators must pay close attention to their effectiveness. Thus, this study aims to investigate and observe the relationship between autonomous and synchronous learning, which is still ongoing.

Synchronous learning has characteristics such as teachers and students being able to carry out the learning process simultaneously, even in different locations. According to (Bekleyen & Selimoglu, 2016; Cole et al., 2021), this type of learning has flexibility, processing, and, of course, the limitations of various internet networks. According to Sulha et al. (2021), a virtual class in e-Learning is a type of learning in which teaching materials are delivered to students via the Internet, Intranet, or other media such as Google Meet, Google Classroom, Video calls, What Apps Group (WAG), and others (Erni, 2021; Marleni, Sari, & Hardi, 2021; Suparjan & Mariyadi, 2021). In virtual learning, commonly, lecturers typically perform the following activities during synchronous learning: 1) an opening filled with silence because many students have yet to join, 2) explaining and asking the topic, 3) question and answer, 4) assignment, and 5) closing. Meanwhile, during synchronous learning, students’ activities generally begin with 1) class absence, 2) answering the question asked, and 3) answering the closing greeting (Hidayat, Rohaya, Nadine, & Ramadhan, 2020). This very limited activity necessitates students to be self-sufficient in carrying out the stages of learning outside of the meeting. They must be responsible for making or selecting decisions related to the learning process and be able to carry those decisions out. According to (Khairuddin, Arif, & Khairuddin, 2020) one of the benefits of online learning is the increase in independent learning. Without direct guidance from educators, the learning process forces students to seek information about the material and tasks assigned to them on their own. Furthermore, synchronous learning eliminates awkward feelings, allowing them to freely express their thoughts and ask questions (Hidayat et al., 2020). Online learning has several characteristics that can impact faculty implementation and course progress, such as the use of learning management systems and mobile learning (Dumford & Miller, 2018). Most characteristics of synchronous learning give a chance to learners to engage their learning strategies and method inside and outside the class.
Further, synchronous learning can also give students the freedom to choose their own learning strategies (Turmudi & Ratini, 2022). They also stated that synchronous learning relieves students of time constraints because they can choose where they want to attend lectures and the strategies they will use. Synchronous learning and autonomous learning are well-known at tertiary level as potential implementation and learning outcomes issues. Next, Yagcioglu, (2015) and Sönmez, (2016) state autonomous learning as a learning activity carried out by individuals in their own time and place without relying on the assistance of others as an increase in knowledge, skills, or achievement development, which includes determining and managing their own teaching materials, time, place, and utilizing various learning resources required. Individuals with this freedom are able to manage learning methods, have a strong sense of responsibility, and are skilled at utilizing learning resources. Moreover, Khulaifiyah et al. (2021), autonomous learning is a learning activity that is more driven by one’s own ability, self-choice, and self-responsibility in learning. Autonomous learning is the behavior of individuals who can take the initiative, overcome obstacles or problems, have self-confidence, and can do things without the assistance of others (Hidayat et al., 2020). Therefore, autonomous learning can also help individuals overcome problems that are built on prior knowledge or competencies. Thus, lecturers facilitate, stimulate, motivate, and serve as a role model, mentors, professionals, and evaluator during synchronous learning to ensure that learning is effective and efficient. Existing research is still focused on investigations that do not provide solutions to problems that arise in synchronous learning.

The phenomena above initiate the researchers’ research to study whether students’ synchronous learning is highly linked to their autonomous learning. Moreover, synchronous learning was used prior to the COVID-19 pandemic (DuFord & Miller, 2018). We can conclude that online learning will no longer be a learning option, but rather a learning requirement. Therefore, portraying research on synchronous learning is still necessary in education, particularly in universities and still becomes potential issue with implementation and learning outcomes. Later, the study’s findings result in the development of autonomous activities also will increase learning autonomy in the Learning subject and develop various activities of synchronous learning lesson plans that include activities which lead to student’ autonomous level in the Tertiary Level.

2. METHODS

This part discusses the research design, participants, research instrument, data collection technique, and the way the researcher analysis the finding. Based on the solution searched in this study, a quantitative approach is the best choice since the study focuses on the correlation between synchronous learning and students’ autonomous learning (Sulha et al., 2021; Turmudi & Ratini, 2022). In the first step, researchers explore the data obtained from participants in the institution. The target of this research is students in a private University in Riau Province. From all existing faculties (8 Faculties) in general and education faculty students in particular, the study got 100 participants who replayed the questionnaire in the form of Google form (Kostina, 2011).

Next, the researcher used the questionnaire as the main instrument. From theories, the researchers conclude the set into 15 items. The item covered learning objectives given by the lecturer, how they engaged to have specific goals outside of the learning goal, whether learners have the opportunity to negotiate about time and learning activities, looking for additional learning resources as supporting material outside the provided material, carrying out new activities or spontaneously program, having different learning strategies for a different subject, supporting materials that suit their needs, creating their own study groups, carrying out learning activities as stated in the course outline, concentrating and do not leave the class forum, interacting with lecturers and colleagues outside and inside, checking the effectiveness of their own learning, checking their competency improvement, and checking the learning achievements during synchronous classes (Anwar et al., 2020; Hidayat et al., 2020; Khotimah et al., 2019; Khulaifiyah et al., 2021).
In the next step, the researchers distributed the questionnaire via Google form and distributed it to all students at the University. The link from Google Form is distributed by email and the WA group under permission. Questionnaire data was collected for 2 months from 100 respondents involved. In the last step, the research applied a sequential exploration design to collect and analyse quantitative data. The workflow above shows that the research begins with identifying the problems that arise, and it is critical to find a solution to whether there is a difference in the synchronous relationship with autonomous learning when it is compared to the standards set. Categorization is made into 5 levels, very high, high, moderate, low and very low (see Table 2). This function is to classify the level of correlation and help the researcher determines the finding and interpretation.

Furthermore, research problems is linked to related theories, allowing for the immediate distribution of data filtering tools. After the instrument is complete, data collection is carried out. Furthermore, once the questionnaire data has been collected, the researchers and members use SPSS 23 and calculate to find statistical inferential and T-test-bivariate to analyse the data. Later, researchers test the hypothesis based on the results of the data analysis.

### 3. FINDINGS AND DISCUSSION

Finding the correlation between synchronous learning and students’ autonomous learning is the purpose of the study, so, to get the answer of the question then, in this part, the writers expose the finding in procedural after state the data founded. First, doing Kolmogorov-Smirnov test to see whether the sample had normal distribution before using statistic parametric; second, calculating by statistic parametric to determine the correlation between two variables, Third, doing descriptive statistics to test the hypothesis which the writer had to determine the answer of the research question.

<table>
<thead>
<tr>
<th>No</th>
<th>Indicators</th>
<th>Never</th>
<th>Sometimes</th>
<th>Always</th>
<th>Often</th>
<th>Percentage</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Students get information about learning objectives for each new topic in synchronous learning.</td>
<td>0,00%</td>
<td>17,00%</td>
<td>37,00%</td>
<td>46,00%</td>
<td>82,25%</td>
<td>Very good</td>
</tr>
<tr>
<td>2</td>
<td>Students get repetition of the delivery of learning objectives in each synchronous class.</td>
<td>1,00%</td>
<td>42,00%</td>
<td>38,00%</td>
<td>19,00%</td>
<td>68,75%</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>Students are asked to have specific goals other than the learning objectives delivered in synchronous classes.</td>
<td>6,00%</td>
<td>37,00%</td>
<td>39,00%</td>
<td>18,00%</td>
<td>67,25%</td>
<td>Good</td>
</tr>
<tr>
<td>4</td>
<td>Students have the opportunity to negotiate about time and learning activities at certain times in synchronous classes.</td>
<td>2,00%</td>
<td>27,00%</td>
<td>41,00%</td>
<td>30,00%</td>
<td>74,75%</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>Students are looking for additional learning resources for courses during synchronous learning.</td>
<td>2,00%</td>
<td>27,00%</td>
<td>36,00%</td>
<td>35,00%</td>
<td>76,00%</td>
<td>Good</td>
</tr>
<tr>
<td>6</td>
<td>Students carry out new activities besides class activities that support existing</td>
<td>2,00%</td>
<td>40,00%</td>
<td>31,00%</td>
<td>27,00%</td>
<td>70,75%</td>
<td>Good</td>
</tr>
</tbody>
</table>

*Table 1. The category found in the questionnaire is pictured*
### The Linkage of Students' Synchronous and Autonomous Learning at the Tertiary Level

1. Students have different learning strategies for each different subject in synchronous classes.
   - 0.00% 24.00% 35.00% 41.00% 79.25% Good

2. Students look for supporting materials that suit their needs during synchronous learning.
   - 0.00% 12.00% 48.00% 40.00% 82.00% Sangat Baik

3. Students create their own study groups to improve understanding of lecture material.
   - 2.00% 39.00% 33.00% 26.00% 70.75% Good

4. Students carry out learning activities as stated in the course outline from the lecturer’s RPS during synchronous classes.
   - 0.00% 15.00% 43.00% 42.00% 81.75% Very good

5. Students concentrate and don’t leave long class forums synchronous classes take place.
   - 2.00% 18.00% 30.00% 50.00% 82.00% Very good

6. Students interact with lecturers and colleagues outside and inside synchronous classes.
   - 3.00% 21.00% 42.00% 34.00% 76.75% Good

7. Students check the effectiveness of their own learning during synchronous classes.
   - 2.00% 25.00% 45.00% 28.00% 74.75% Good

8. Students check their competency improvement during synchronous classes.
   - 0.00% 32.00% 44.00% 24.00% 73.00% Good

9. Students check the learning achievements of each course during synchronous classes.
   - 1.00% 24.00% 40.00% 35.00% 77.25% Good

Descriptive analysis shows from the first item (see Table 1) that 82.25% of students get an explanation of the learning objectives every time they start a new learning topic. In more detail, 46% stated that they always obtained information regarding learning objectives and no students stated that they had never received information regarding learning objectives to be achieved before starting new learning. It seen from the aspect of learning objectives, the availability of learning objectives in synchronous learning is very good.

42% of students, or 42 students from 100 respondents for item no 2 admitted that they had repetition of the delivery of learning objectives in certain topics from the teacher especially for material that covered projects or collaboration in classwork. The 38 respondents admitted always receiving repetition on the learning objective. Meanwhile, 19 respondents admitted that they saw the teacher always gives repetition on the learning objective and only 1 respondent admit never get repetition for...
the learning objective. From the percentage, we can say that the availability of teacher repetition when delivery of learning objectives is in a good category.

The descriptive analysis for item number 3 in Table 1 is about whether students are asked to have specific goals other than the learning objectives delivered in synchronous classes. As a result, 39 students admitted that the teacher always ask about whether they have specific goals out of learning objective goals, and 37 respondents admitted sometimes having questions from the teacher and only 6 respondents from 100 respondents admitted never asked about having specifics goal other than the learning objective. The rest respondents admitted often get request from the teacher. In Sum up, the category of Item no 3 is in Good category.

Item number 4 described that 36 Students admitted always had the opportunity to negotiate about time and learning activities at certain times in synchronous classes since the teacher gave the chance and negotiation for students' comfort. 35 other students admitted sometime opportunity and only two admitted never had a chance to negotiate, so the average showed in the Good category.

The descriptive analysis for item number 5 in Table 1 is about whether students are looking for additional learning resources for courses during synchronous learning. In result, 36 students admitted always looking for additional learning resources for courses during synchronous learning, 35 respondents admitted often having the questions from the teacher, and only 2 students from 100 admitted never looking for additional learning resources for courses during synchronous learning. In Sum up, the category of Item no 5 is in Good category (75%).

Item number 6 described that 40 Students admitted sometime carried out new activities besides class activities that support existing courses during synchronous learning, 31 other students admitted that they always carried out new activities besides class activities that support existing courses during synchronous learning to support the main material. The other 27 students admitted often carried out new activities, and only 2 students admitted never had carried out new activities, so the average showed in Good category.

The data found from item number 7 about whether students have different learning strategies for each different subject in synchronous classes, it showed that 25 students admitted sometime they had, 34 students admitted that they always had different learning strategies, dan 41 students admitted often had different learning strategies moreover out of the classroom. So, everyone had strategies differently.

Item number 8 reported that 12 students sometimes looked for supporting materials that suit their needs during synchronous learning, 48 students admitted always looking for supporting materials, and 40 students reported having often looked for supporting materials when they worked for the task or project. The average route into Very Good category (82%).

The data result from item number 9 questioned about whether students created their own study groups to improve their understanding of lecture material showed that 2 students admitted never created such a group and did not have the enthusiasm to make, meanwhile 39 reported sometime had to create to comfort their collaboration, 33 students reported had always create their own group, and 26 students admitted often had made their own group. The category of how students created their own study was in Good category (70,75%).

The result data obtained in Item number 10 was a good category (81,75%). It reported that 15 Students sometime had carried out learning activities as stated in the course outline from the lecturer's RPS during synchronous classes. 43 students admitted always had it and 42 students reported had always carried out learning activities based on the course outline given.

The average data got in item number 11 was in Very Good category (82%). It was reported that 18 Students sometime concentrate and don't leave long class forums synchronous classes take place,
meanwhile 30 students reported always stayed in during synchronous learning and 50 percent students reported often stayed during synchronous class time, even though two respondents admitted never but in general they still prioritized their attendance in synchronous class.

The descriptive analysis for item number 12 were searching whether students interact with lecturers and colleagues outside and inside synchronous classes. only 3 students admitted never had interaction meanwhile 21 students admitted sometime they had, the other 42 students admitted always had and 34 students admitted had often interaction with colleagues.

Item number 13 about whether students checked the effectiveness of their own learning during synchronous classes. 25 students admitted sometime checked, 45 students admitted always checked, and 28 students admitted often checked the effectiveness of their own learning, so, every one admitted checking about the effectiveness of their learning. This item (no 13) showed that only 2 students had no experience checking about the effectiveness of synchronous learning.

Item number 14 about whether students check their competency improvement during synchronous classes or not. In result, 32 students admitted sometime checked, 44 students admitted always checked and 24 students admitted often checked their competency improvement during synchronous classes, so, every student admitted checking about the effectiveness of their learning. This item (no 14) showed that every student had experience checking their competency improvement during synchronous classes. They could check through the record of Google Classroom.

40 Students admitted that they always checked the learning achievements of each course during synchronous classes, 35 others admitted often checking and only one student admitted never check their own competence (see Item number 15). In General, students’ categories for items 11-15 were in Good category.

From the descriptive analysis of the indicator between synchronous learning (Item no 1-10) and students’ autonomous learning (item number11-15), they are both in the same category: Good. The average of each indicator was 75,35% and 76,75%.

The next step is doing calculating and analysis using SPSS 23. In this step, the researcher would report in sequence, determining the normality test (Tabel 2), doing the statistic test (Tabel 3), descriptive statistics (Tabel 4) and the result in a one-sample test (Tabel 5).

### The Normality Test

<table>
<thead>
<tr>
<th>Tabel 2. One-Sample Kolmogorov-Smirnov Test</th>
<th>AvsKB</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>100</td>
</tr>
<tr>
<td>Normal Parameters*</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>45.4900</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>6.77264</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
<td></td>
</tr>
<tr>
<td>Absolute</td>
<td>.067</td>
</tr>
<tr>
<td>Positive</td>
<td>.067</td>
</tr>
<tr>
<td>Negative</td>
<td>-.044</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>.671</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.759</td>
</tr>
</tbody>
</table>

a. Test distribution is Normal.

Based on the results of the normality test using the Kolmogorov Smirnov test (see Tabel 2) on a sample of 100 participants, the data was obtained that the Sig. of 0.759 is greater (> ) than 0.05, which indicates that the research sample data is normally distributed. This means that the research data can be continued to the next test phase using parametric statistics.
Statistic-Test

To find out the relationship between synchronous and autonomous learning, the data needs to be processed descriptively and inferentially. The magnitude of the synchronous relationship with autonomous learning can be categorized into five classes as follows:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Percentage</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 – 21</td>
<td>0.20 – 0.35</td>
<td>Very low</td>
</tr>
<tr>
<td>22 – 31</td>
<td>0.36 – 0.52</td>
<td>Low</td>
</tr>
<tr>
<td>32 – 41</td>
<td>0.53 – 0.69</td>
<td>Moderate</td>
</tr>
<tr>
<td>42 – 51</td>
<td>0.70 – 0.86</td>
<td>High</td>
</tr>
<tr>
<td>52 – 61</td>
<td>0.87 – 1.00</td>
<td>Very High</td>
</tr>
</tbody>
</table>

Descriptive Statistics

To find out the relationship between synchronous and autonomous learning, the data needs to be processed descriptively and inferentially. The magnitude of the synchronous relationship with autonomous learning can be categorized into five classes as follows:

<table>
<thead>
<tr>
<th>Table 3. Synchronous Category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Score</strong></td>
</tr>
<tr>
<td>12 – 21</td>
</tr>
<tr>
<td>22 – 31</td>
</tr>
<tr>
<td>32 – 41</td>
</tr>
<tr>
<td>42 – 51</td>
</tr>
<tr>
<td>52 – 61</td>
</tr>
</tbody>
</table>

The results of the descriptive test on the research sample (see Table 4) show that the average relationship between synchronous and autonomous learning is 45.49, which is in the high score and category. The results of the descriptive test also show that the highest number of respondents' answers is 44, with a median of 45 which is in the high category. So that from the results of the descriptive analysis, it can be concluded that the synchronous learning relationship with the autonomous learning of Islamic University students’ is positioned in the high category. The results of the descriptive test then need to be verified with a parametric statistical test. The parametric statistical test used in this study is the one-sample t-test. The one-sample t-test is used to determine the difference in the data acquisition results from the sample with the set standard, which is 44 (the highest score is in the medium category). The hypothesis used in the study are:

H0: there is no difference in the synchronous relationship with autonomous learning when it is compared to the standards set.

H1: there are differences in the synchronous relationship with autonomous learning when it is compared to the standards set.
The results of hypothesis testing using one-sample t-test (see Table 5), it shows that the sig value is 0.030 is smaller (<) than 0.05, which means H0 is rejected. The data shows that there is a significant difference between the value of the synchronous relationship and autonomous learning when it is compared to the standards set, namely, learning objectives, having specific goals, an opportunity to negotiate about time and learning activities, looking for additional learning resources, carry out new activities, have different learning strategies for a different subject, supporting materials that suit their needs, create their own study groups, carry out learning activities as stated in the course outline, concentrate and do not leave the class forum, interact with lecturers and colleagues outside and inside, check the effectiveness of their own learning, check their competency improvement, and check the learning achievements during synchronous classes.

Next, it is reviewed further that the t-value shows a positive score, which means the value of research acquisition is higher than the specified score. So, from the results of this test, it can be concluded that there is a high relationship between synchronous and students’ autonomous learning. This finding is in line with Turmudi & Ratini (2022), who state that synchronous learning gives students the freedom to choose their own learning strategies. Besides, synchronous learning can relieve students of time constraints because they can choose where they want to attend lectures and the strategies they will use.

In addition, synchronous learning upgrades not only educational access for students and, in many ways, provide much specific and equitable learning chance for people who are geographically separated or unable to physically attend classes (Nafrees, Roshan, Baanu, Nihma, & Shibly, 2020), but also synchronous learning approaches are quickly growing in popularity as schools continue to temporarily close or limit capacity (Dumford & Miller, 2018). Not only does this form of education feature schedule-friendly options, but students and teachers also relish being able to incorporate self-directed and autonomous learning because autonomous learning creates individuals have initiative, so they can overcome obstacles or problems, have self-confidence, and can do things without the assistance of others (Khulaifiyah, Utami Widiati, Mirjam Anugerahwati, 2021).

4. CONCLUSION

Despite these limitations, we’ve found that when students take the initiative, monitor their progress, and evaluate their performance, synchronous learning can significantly impact their ability to learn independently. Students and workers may find themselves in unfamiliar territory due to the shift from the traditional to the new normal in terms of when they study and when they work. Participation during synchronous learning effectively facilitated the development of autonomous learning activities. Most respondents’ answers demonstrated a strong commitment to improving autonomous learning. Using a variety of research techniques and expanding the number of persons involved could produce more generalizable results. Examining the other methods used to compile the results is also recommended. In the end, this research suggests that educators should hone their knowledge of autonomous learning activities that may be incorporated at any moment and be better equipped to grasp the fundamentals of autonomous learning and its constituent parts.

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REFERENCES


