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LAMPIRAN 1: SUBMISSION OF MANUSCRIPT

January 20, 2021

Dear Editor,

I would like to submit a manuscript titled "Online-Based Collaborative Learning: Economics Teaching Innovation in Higher Education" to "Review of International Geographical Education Online (RIGEO)". I have an adjustment based on the journal template. Lastly, I hope it will be accepted in your journal. I am waiting for your kindly response.

Thank you

Yours Faithfully

Dr. Agus Eko Sujianto

Online-Based Collaborative Learning: Economics Teaching Innovation in Higher Education

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Abstract: The purpose of this study is to examine student attitudes towards online-based collaborative learning in economics teaching. What is meant by collaborative learning is learning that pays attention to aspects of engagement, exploration, transformation, presentation, and reflection. The respondents of this study were 221 students who were taking economics courses. The data collection technique used a questionnaire distributed by Google form. Data analysis used descriptive statistics on the research instrument as many as 53 items, with stages: data distribution test, descriptive statistics, instrument validity, and reliability and hypothesis testing. The results: the data is normally distributed, the majority of students strongly agree with online-based collaborative learning, the instrument used passes the validity and reliability test, and the results of hypothesis testing indicate that the five hypotheses are tested and significant. Future research opportunities are to develop research variables and analyse the data using associative statistics.

Keywords: Online-based collaborative learning, economics teaching, microeconomics, macroeconomics

INTRODUCTION

As a learning method, the collaborative approach is widely adopted by educational institutions, especially higher education in Indonesia. Collaborative learning was chosen because it has advantages, where Chandra (2015) explains that collaborative learning is useful for improving students' thinking, communication, leadership, social responsibility, and this method positions students as the focus of learning. According to Le, Janssen, & Wubbels (2018), collaborative learning can improve student friendship and skills. While Abidin, Masitoh, & Bachri (2019); Ku, Lohr, & Cheng (2004) argues that empirically collaborative learning can increase togetherness, experience, and mutual support between students to create harmonization of teaching and learning processes and learning motivation.

Collaborative learning is more meaningful when combined with online media, especially in the COVID-19 pandemic, where the classical learning model is implemented in the same time and place (Dharma, Sugihartini, & Arthana, 2018; Hijriati, 2017; Sulandari, 2020) is no longer relevant to be applied. In this situation, so those teaching innovations are needed, especially in the field of economics in universities in the form of online learning (Anugrahana, 2020; Hamid, SENTRYO, & Hasan, 2020; Maison, Kurniawan, & Anggraini, 2020; Pratama & Mulyati, 2020; Sadikin & Hamidah, 2020). This online-based learning was chosen to minimize face-to-face learning that endangers the teaching and learning process for both educators, education staff, and students during this epidemic (Abidah, Hidaayatullaah, Simamora, Fehabutar, & Muktakinati, 2020; Marini & Milawati, 2020; Rayuwati, 2020).

However, online-based collaborative learning is not always successfully applied to every institution and subject. According to McInnerney & Roberts (2002), collaborative learning in higher education, both online and face-to-face, is still neglected, due to the difficulty in controlling the class and students' lack of confidence. While in subjects such as mathematics, online-based collaborative learning is not successful (Nason & Woodruff, 2004). The two studies above were carried out long before the covid pandemic occurred, while during the covid pandemic this online-based collaborative learning method was indispensable and helped students improve their achievement and enthusiasm for learning (Arief, 2020; Coman, Țiru, Meseșan-Schmitz, Stanciu, & Bularca, 2020; Demuyakor, 2020; Soeryanto, Arsana, Warju, & Ariyanto, 2020). In Indonesia, during the pandemic where the government implemented large-scale social restrictions, learning was held online (Handarini & Wulandari, 2020; Kristina, Sari, & Nagara, 2020; Sugiarto, 2020).

Students respond positively to the implementation of online-based collaborative learning because it can explore students to work well together and improve their performance (Ku et al., 2004). This learning strategy is very supportive to be applied to learning in universities, especially in economics courses. Previous research that supports the implementation of collaborative learning includes Stoytcheva (2017), that economic problems in the classroom can be answered through distance collaborative learning. The same study as the study in New Delhi on 120 students who tested online collaborative learning strategies and conventional learning strategies. The results of the study found that student performance using online-based collaborative strategies was significantly higher than conventional learning (Maulidah & Aziz, 2020; Mehar & PrabhjitKaur, 2020).

While research in Malaysia on 112 economic student respondents showed that online-based collaborative learning had a positive and significant impact on student performance, so educational institutions seriously considered this method as a learning method in the classroom (Yin, Yusof, Lok, & Zakariya, 2018). Stanley & Zhang (2020) suggest that online-based collaborative learning at large public universities has a positive impact on student participation and performance in class. Then Son (2016) explained that student-centered collaborative learning innovation is very important in growing international economics learning courses that are applicable, interesting and make students very active in the classroom.

In-depth observation of the previous research above is very clear that collaborative learning is student-centred learning so that students have a strategic role in realizing successful learning in the classroom. The implementation of online-based learning is very responsive to the conditions currently happening in Indonesia, namely the corona disease outbreak, therefore student independence is important in learning innovation during the Covid 19 pandemic. Meanwhile an understanding of economics courses both quantitatively, qualitatively and curves empirically proves that online-based collaborative learning plays a very important role in improving student innovation and ability or performance. Mastery of economics courses consisting of microeconomics and macroeconomics integrates three aspects, namely the cognitive, affective, and psychomotor domains.

The economics course examines microeconomics and macroeconomics which are explained in 13 sections and described in 36 chapters (Mankiw, 2018). Meanwhile, online-based collaborative learning in this study is divided into five variables which also become stages in online collaborative learning, namely: Engagement, Exploration, Transformation, Presentation, and Reflection.

In the engagement aspect, students are directly involved in the teaching and learning process, and in the economics class, direct involvement is needed to instill responsibility, participation, and social care. With the involvement of students in the classroom, it is hoped that interest in learning and knowledge of economics will grow (Chou & Chen, 2018; Curtis &

Lawson, 2001; Haqqi, 2017; Mulia, 2020; Panlumlers et al., 2017; Stanley & Zhang, 2020; Sulistyawati & Zuchdi, 2016). Exploration, where students are invited to understand the problems shared by the lecturer to be solved together virtually so that good group collaboration is needed, and each member is required to provide income-based on relevant and adequate literature (Chou & Chen, 2018; Curtis & Lawson, 2001; Haqqi, 2017; Mulia, 2020; Panlumlers, Nilsook, & Jeerungsuwan, 2017; Rohmat, 2017; Sulistyawati & Zuchdi, 2016).

In the transformation aspect, internal group discussions become a benchmark for the success of collaborative learning. This internal group discussion is a lesson to appreciate different incomes so that tolerance is built between group members (Haqqi, 2017; Laal & Laal, 2012; Nazeer, 2006; Panlumlers et al., 2017; Son, 2016). There were many previous studies that the presentation aspect was carried out after going through the process of internal group discussions. The presentation in question is related to economic material which is very effectively applied to collaborative learning methods. Students not only learn in presenting the material but also observe, analyse and answer in this presentation forum. Considering that collaborative learning is student-centred, students act as dynamists in presentations, and the success of presentations is highly dependent on the ability of students to elaborate on the material presented (Gleeson, McDonald, & Williams, 2009; Haqqi, 2017; Laal & Laal, 2012; Nazeer, 2006; Panlumlers et al., 2017; Rahmawati & Nurhidayati, 2016).

After the presentation was carried out, it was followed by reflection, namely questions and answers between groups, and the lecturer in the position of motivator and facilitator. At this reflection stage, it is hoped that there will be feedback from students regarding the economic learning process in a certain semester which is also a form of teaching and learning responsibility (Gleeson et al., 2009; Haqqi, 2017; Manizar, 2015; Nazeer, 2006; Panlumlers et al., 2017; Sorensen, 2004).

This online-based collaborative learning is one of the innovative choices in the learning strategy of economics courses in universities. The decision to choose this learning is because theoretically and empirically this method is useful for increasing student competence not only in aspects of learning outcomes but also social, psychological, and other academic aspects.

Table 1. Literature Review Mapping

| Literature | Variables | | | | |
|-------------------------|------------|-------------|----------------|--------------|------------|
| | Engagement | Exploration | Transformation | Presentation | Reflection |
| Curtis & Lawson | √ | — | — | — | — |
| Sulistyawati & Zuchdi | √ | — | — | — | — |
| Panlumlers et al. | √ | √ | √ | √ | √ |
| Haqqi | √ | — | √ | √ | √ |
| Chou & Chen | √ | — | — | — | — |
| Mulia | √ | — | — | — | — |
| Stanley & Zhang | √ | — | — | — | — |
| Nazeer | — | √ | √ | √ | √ |
| Sulistyawati dan Zuchdi | — | √ | — | — | — |
| Rohmat | — | √ | — | — | — |
| Jackson & Fagan | — | √ | — | — | — |
| Laal dan Laal | — | — | √ | √ | — |

| | | | | | |
|-------------------------|---|---|---|---|---|
| Son | — | — | √ | — | — |
| Gleeson et al. | — | — | — | √ | √ |
| Rahmawati & Nurhidayati | — | — | — | √ | — |
| Sorensen | — | — | — | — | √ |
| Manizar | — | — | — | — | √ |
| Putri | — | — | — | √ | √ |
| Monaco | — | — | — | √ | √ |
| Galarza & Johnson | — | — | — | √ | — |
| Cohn | — | — | — | √ | — |
| Martinez et al. | — | √ | — | √ | — |
| Parker | √ | √ | √ | √ | √ |

Based on the above thinking, this research is directed to answer research questions, namely: (1) how are students' attitudes towards online-based engagement learning in economics teaching? (2) how are students' attitudes towards online-based exploratory learning in economics teaching? (3) how are students' attitudes towards online-based transformational learning in economics teaching? (4) how are students' attitudes towards online-based presentation learning in economics teaching? And (5) how are students' attitudes towards online-based reflection learning in economics teaching?

METHODS

Research Design

The approach chosen in this research is quantitative with a descriptive research type. This study seeks to maximize the respondents' attitudes about online-based collaborative learning. This learning model was chosen based on the consideration that in the COVID-19 era classical face-to-face learning is prohibited by the government. Instead, lectures are held online with a collaborative approach. This collaborative approach has the advantage of group work, where students interact with each other to solve problems. This learning is very useful because it can minimize the weaknesses of online learning which tends to be individual. The integration of this collaborative model with online learning can position students as students' subjects, where students are social beings who will develop when interacting with groups.

Population and Sample

The population of this research is students of the Faculty of Economics and Islamic Business, State Islamic Institute (IAIN) Tulungagung who in the odd semester of 2020/2021 is taking economics courses (microeconomics and macroeconomics). Based on observations of faculty academic data, information was obtained that the number of students taking this course was 229 people.

Data Collection and Research Instruments

The data collection technique used a questionnaire compiled using an attitude scale from Likert which was distributed to respondents using google form. Based on the theoretical basis and empirical basis, research instruments can be put forward, where each variable is reduced to a sharpened indicator in the form of a questionnaire instrument to be distributed to respondents.

Table 2. Grid of Research Instruments

| Variable | Indicator | Descriptor |
|----------|-----------|------------|
|----------|-----------|------------|

| | | |
|----------------|-------------------------|--|
| Engagement | Participation | Direct involvement in the group; |
| | Social care | Discipline; Honest; Confidence; |
| | Responsible | Support each other; Interaction; |
| Exploration | Cooperation | Teamwork; |
| | Opinion | Actively express opinions; |
| | Literature tracking | Ability to find literature; Ability to clarify literature; |
| Transformation | Discussion | Exchange ideas; Ability to describe vocabulary |
| | Tolerance | Appreciate differences; |
| | Presenting | Ability in running presentation software; |
| Presentation | | Ability to present material in writing; |
| | | Ability to present material orally |
| | Observing | Ability to observe problems; |
| | Analysing | Ability to analyse data; |
| Reflection | Answering | Ability to answer questions; |
| | Lecturer as motivator | Open; Empathy; Religious; |
| | Lecturer as facilitator | Understanding of differences; Understanding of competence; |

Based on table 2, the research instrument was developed into 53 items with details for the engagement variable as many as 11 items, the exploration variable as many as 10 items, 9 items for each transformation and presentation variable, while the reflection variable has 14 items.

Data Analysis Technique

The stages of analysing research data using systematics are: distribution of data, descriptive statistics, and instrument validity and reliability (Ibe, 2014; Marshall & Jonker, 2010; Sarmah & Bora Hazarika, 2012; Valim, Palucci Marziale, Hayashida, Rossi Rocha, & Ferreira Santos, 2015). For large samples, data with normal distribution or normal distribution is required, while descriptive statistics are intended to simplify data and at the same time describe research variables. The validity and reliability of the instrument were used to measure respondents' attitudes towards research variables, as well as to measure the quality of the instrument or research statement items collected using a questionnaire. Testing data distribution, descriptive statistics, instrument validity and reliability, and hypothesis testing using the SPSS application.

Hypothesis Testing

Based on the theoretical basis and empirical basis, this research is directed to test the following hypotheses: (1) students' attitudes towards online-based engagement learning in economics teaching are not the same; (2) students' attitudes towards online-based exploratory learning in economics teaching are not the same; (3) students' attitudes towards online-based transformational learning in economics teaching are not the same; (4) students' attitudes towards online-based presentation learning in economics teaching are not the same and (5) students' attitudes towards online-based reflection learning in economics teaching are not the same.

To test the hypothesis above, it is guided by the statement of the null hypothesis (Ho) and the alternative hypothesis (Ha), namely:
Ho: Students' attitudes towards online-based collaborative learning in economics teaching are the same;

Ha: Students' attitudes towards online-based collaborative learning in economics teaching are not the same.

More technically, this research hypothesis testing uses One-Sample T-Test with Two Tail Test with the following guidelines:

If the p value < 5% (0.025) then Ho is rejected;

If the p value > 5% (0.025) then Ho is accepted.

RESULTS

Systematically, this study reveals the importance of online-based collaborative learning as one of the innovations in teaching economics in higher education. This study involved as many as 221 respondents. The total number of students taking this course is 229 people. Respondents who filled out the questionnaire distributed using Google forms up to the specified time limit (December 1 to December 19, 2020) were 221 people or about 96.5% and those who did not fill out the questionnaire were 8 people or about 3.5%. Students who did not fill out this questionnaire due to limited internet connection, busy class schedule, did not know if they were research respondents, did not understand the method of filling out the questionnaire and other activities so they did not have enough time to fill out the questionnaire. Meanwhile, the level of respondent participation (LRP) in filling out research questionnaires uses the formula:

$$LRP = \frac{\text{Completed Questionnaire}}{\text{Questionnaire Distribution}} \times 100 = 96,5\%$$

The LRP value of 96.5% can be translated that the respondent's participation is high, and respondents feel it is important to give their opinion about online-based collaborative learning in economics courses. In addition, the researcher's socialization of learning models during the COVID pandemic through learning innovations that integrate independence and information technology is considered successful so that it can increase the participation rate of respondents.

Respondent's Gender

Respondents of the female sex dominate in this study, namely 74% or as many as 164 people. While male respondents as many as 57 people or about 26%. This data explains that women's public interest in choosing Islamic economics majors is more than men's, they give a positive response to filling out research questionnaires and these responses can contribute to the success of this research.

Data Distribution

Requirements in One-Sample T-Test where the data is normally distributed. So that the five research variables must be tested for normality, where this study uses the kurtosis ratio test and the skewness ratio combined with the histogram normality test.

Table 3. Skewness and Kurtosis Ratio

| Variable | Skewness Ratio | Kurtosis Ratio |
|----------------|----------------|----------------|
| Engagement | -0,2586 | -1,8354 |
| Exploration | -1,8536 | 0,7400 |
| Transformation | -1,9321 | -0,9412 |
| Presentation | -1,6963 | 1,7547 |
| Reflection | -1,2931 | -0,9936 |

To test the distribution of data can use the value of the ratio of skewness and kurtosis, with guidelines if the value of this ratio is between -2 to +2 then the data is normally distributed

(Sujianto, 2009) . Based on table 3, the value of the skewness ratio and the kurtosis ratio is in the value interval recommended by (Sujianto, 2009), the research variable data is normally distributed.

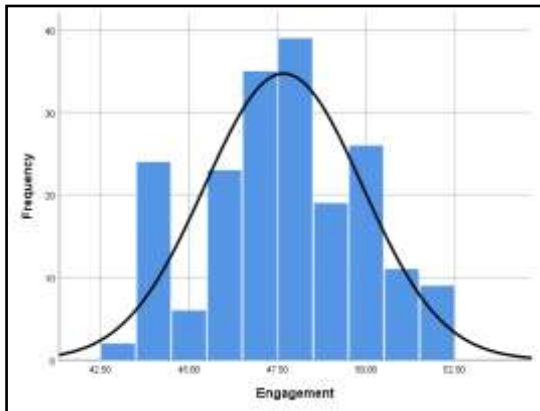


Figure 2a. Engagement

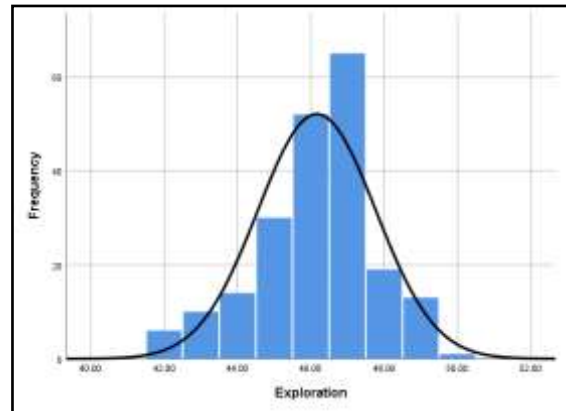


Figure 2b. Exploration

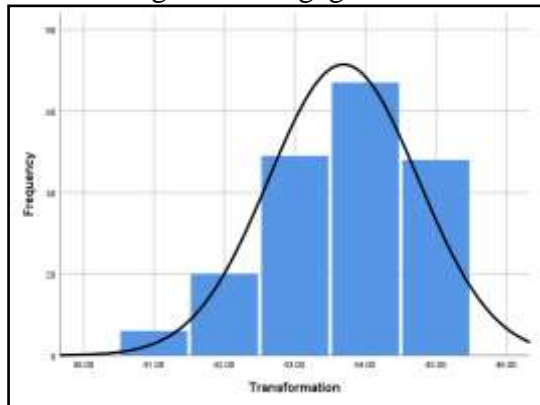


Figure 2c. Transformation

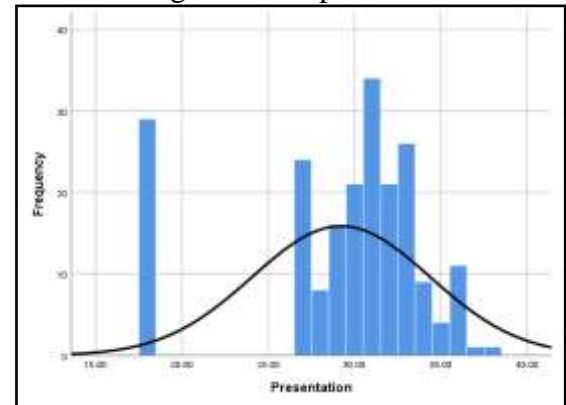


Figure 2d. Presentation

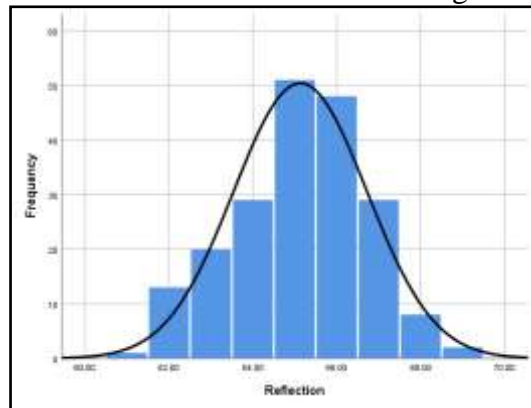


Figure 2e. Reflection

Figures 2a to 2e are histograms that reflect the distribution of research data. According to (Sujianto, 2009) data is called normal if the histogram curve is balanced on the left and right and is bell-shaped.

Descriptive statistics

The table below is a description of the main research data based on the number of valid data (N), range, and standard deviation (SD) of the research variables.

Table 4. Descriptive Statistic

| Statistic | Variables | | | | |
|-----------|------------|-------------|----------------|--------------|------------|
| | Engagement | Exploration | Transformation | Presentation | Reflection |
| N | 194 | 210 | 190 | 205 | 201 |
| Range | 9.00 | 8.00 | 4.00 | 20.00 | 8.00 |
| SD | 2.22936 | 1.60814 | 1.06079 | 5.15379 | 1.59160 |

The number of valid data (N) on each variable varies in the range of 194 to 210 respondents. This result is caused by the occurrence of data outliers in each variable so that the data that can be processed is smaller than the total number of respondents as many as 221. The range is the difference between maximum data and minimum data, where the greater the range of data, the more varied the research data. The results showed that the range of presentation variables was higher than other variables so that the variation was also higher. The Standard Deviation (SD) for the presentation variable is higher than the other four variables. These results indicate that the data is increasingly varied, but because the SD value of the presentation variable (5.15379) does not exceed the average (29.2146), there are no data outliers.

Engagement Variable Overview

To explore student responses to the engagement variable, the researcher used 11 questionnaire instruments developed from table 2. The answers to the research questionnaire were divided into 5 choices with a score interval of 1 to 5, namely: never (1), rarely (2), sometimes (3), often (4), and always (5). Regarding the indicator of participation, the descriptor of direct involvement in the group (researchers only show the results with the largest percentage), the attitude of respondents about their attendance in group study according to schedule, as many as 44.3% stated often. Attitudes towards the statement of participating directly in group decision making as much as 53.4% stated often. The indicator of social awareness of discipline descriptors was reduced to two items, namely being present on time in a group study (48.4% of respondents' attitudes were rare) and going home together in a group study (59.3% often). For honest descriptors, the attitude of respondents about conveying information according to reality is 49.3% stating often. Attitudes about the statement of obedience to the group agreement, as many as 45.7% stated often. The self-confidence descriptor is reduced to two, namely my opinion is correct (48.4% of respondents think it is rare) and by studying diligently, you will get good grades (59.3% think often).

The indicators of responsibility for descriptors support each other, where respondents think about respecting other people's views as much as 68.8% think always. The interaction descriptor is reduced to two statements, namely: speaking politely with friends when interacting, where the attitude of the respondent is always (77.8%). And for items that take seriously the problems expressed by friends in group forums, the results are 62% (often). All instruments filled in and returned by respondents have been tested for validity and reliability, where all instruments are valid (item validity value > 0.3) and reliable (item reliability value > 0.6).

Overview of Exploration Variables

The exploration variable was reduced to three indicators, namely cooperation, opinion, and literature track, and developed into ten instruments. On the indicator of cooperation, as many as 54.6% or 187 people agree that students have a strong contribution to the success of the group. As many as 82.8% or 183 people strongly agree if they exert their abilities to the fullest. A total of 57.9% = 128 people agree that students are aware of their role in achieving the targeted goals. A total of 121 people or 54.8% of respondents agree that they are jointly

responsible for the quality of work. In the opinion indicator, 54.8% = 121 people strongly agree if they are actively submitting problems to be solved together. Respondents agreed (a total of 136 people = 61.5%) that they were active in conveying solutions to be solved together. In the literature tracking indicator, 161 people = 72.9% of respondents agreed they visited the library to search for literature. A total of 93.7% strongly agree if they browse the internet to search for literature. Respondents strongly agreed (82.4%) that the literature they found was published by well-known book publishers and 95.5% strongly agreed that the literature found came from indexed journals. All instruments filled in and returned by respondents have been tested for validity and reliability, where all instruments are valid (item validity value > 0.3) and reliable (item reliability value > 0.6).

Overview of Transformation Variables

The transformation variable was developed into nine instruments, where respondents agreed (48.9% = 108 people) that they felt happy during the discussion. Respondents also strongly agree (83.3% = 184 people) that the material discussed is relevant to the group assignment. A total of 188 people or 85.1% of respondents strongly agree that the discussion method motivates learning. Respondents also strongly agree (84.2%) if the discussion method increases interest in learning. Students responded strongly agree with 86.9% that the discussion method can improve understanding of learning. While related to communication skills, as many as 182 people, or 82.4% of students strongly agree with this collaborative learning. Students also strongly agree (by 89.1%) that the discussion method can build friendships. As many as 85.1% of students strongly agree with the discussion method because it can avoid competition in the group. The discussion method can create togetherness, whereas many as 203 people or 91.9% of students choose strongly agree. All instruments filled in and returned by respondents have been tested for validity and reliability, where all instruments are valid (item validity value > 0.3) and reliable (item reliability value > 0.6).

Presentation Variable Overview

The presentation variable was reduced to nine instruments, where students agreed that they were able to run presentation software (PowerPoint) as many as 129 people, or 58.4%. A total of 101 people or 45.7% of students strongly agree that they can present the material in writing. Likewise, the presentation of the material orally, whereas many as 85 people or 38.5% of students answered agree. Regarding the instrument that students can observe problems by looking for data, they give a response that does not agree with a percentage of 56.6% or as many as 125 people. Item number five is that students can observe problems by tabulating data, as many as 98 people or 44.3% answered disagree. Respondents do not agree (117 people or 52.9%) that with the help of data processing software, they can perform data analysis. As many as 150 people or 67.9% of respondents thought they could not read the results of the data analysis. However, if there are questions from the audience, as many as 93 people or 42.1% agree that they can provide answers. A total of 41.2% of respondents agreed that they were satisfied with the answers. All instruments filled in and returned by respondents have been tested for validity and reliability, where all instruments are valid (item validity value > 0.3) and reliable (item reliability value > 0.6).

Overview of Reflection Variables

There are two indicators for the reflection variable, namely the lecturer as a motivator and the lecturer as a facilitator, and developed into fourteen instrument items. A total of 115 people or 52% of respondents strongly agree that lecturers encourage students to dare to express their opinions. Respondents strongly agree (120 people or 54.3%) that so far, lecturers

encourage students to have an optimistic attitude. Strongly agree (53.8%) also conveyed by respondents that so far lecturers encourage students to discover their talents. A total of 122 people or 55.2% of respondents strongly agree that so far, lecturers encourage students to have self-confidence. As many as 73.3% or 162 respondents answered strongly agree that so far, lecturers have instilled the belief that learning is worship. Opinions strongly agree as many as 168 people or 76% that so far, lecturers require to always please parents. Respondents strongly agree (as much as 65.2%) that during this time, lecturers oblige to always remember Allah SWT in the form of worship in addition to studying and pleasing parents.

Lecturers as facilitators can be explained that according to respondents, lecturers are not excessive in defending their opinions in class (111 people who answered strongly agree or 50.2%). Lecturers listen more to students, as many as 140 people or 63.3% strongly agree. Respondents strongly agree that 166 people = 75.1%, where lecturers are egalitarian, that is, they are willing to accept student ideas and receive feedback from students (67.4% strongly agree). According to respondents, lecturers are very tolerant of student errors (answering strongly agree as many as 154 people = 69.7%). Lecturers also increase their attention to students, who answered agree as many as 139 people or 62.9%, then those who answered strongly agreed that lecturers appreciated student achievements as many as 161 people or 72.9%. All instruments filled in and returned by respondents have been tested for validity and reliability, where all instruments are valid (item validity value > 0.3) and reliable (item reliability value > 0.6).

Hypothesis Testing

There are five hypotheses tested in this study, where the results of statistical tests can be stated in table 6. In the third column, namely Sig. (2-tailed) which shows the significant value with a two-tailed test, then the decision making is guided by the comparison of the value of 0.025 with (0.05) as stated in the method section above.

Table 5. Hypothesis Test Results

| Variables | t _{statistic} | Sig. (2-tailed) |
|----------------|------------------------|-----------------|
| Engagement | 160.113 | 0.000 |
| Exploration | 379.933 | 0.000 |
| Transformation | 515.728 | 0.000 |
| Presentation | 70.049 | 0.000 |
| Reflection | 544.521 | 0.000 |

The first hypothesis, "student attitudes towards online-based engagement learning in economics teaching is not the same" is tested. Because of the value of Sig. (2-tailed) < 0.025 so reject Ho is rejected and accept Ha. The second hypothesis, that "students' attitudes towards online-based exploratory learning in economics teaching are not the same" is tested because they accept Ha. The third hypothesis is "student attitudes towards online-based transformational learning in economics teaching are not the same". The result rejects Ho and accepts Ha so that the hypothesis is tested. The fourth hypothesis is that "student attitudes towards online-based presentation learning in economics teaching are not the same". The result of the test is that the value of Sig. (2-tailed) < 0.025 so that Ho rejects and accepts Ha so that the hypothesis is tested. While the fifth hypothesis "student attitudes towards online-based reflection learning in economics teaching is not the same" is tested because of the value of Sig. (2-tailed) < 0.025.

DISCUSSION

Based on the results of research that is integrated with hypothesis testing, it can be stated that students' attitudes towards online-based collaborative learning in economics teaching are not the same. However, this learning method has a positive impact on student competence in studying economics subjects, both microeconomics and macroeconomics. Viewed from the microeconomics aspect, this research is relevant to previous research, where the response of the majority of students at Flinders University, Australia to collaborative learning for microeconomics courses is very positive. Where they feel that this learning is very beneficial compared to traditional learning. With collaborative learning, students can socialize and develop their skills. Students also think that this method can encourage an in-depth understanding of microeconomics courses (Gleeson et al., 2009).

Individual microeconomics learning has problems, and students do not understand the concept and its implementation in the field. The implementation of this collaborative learning can empirically build the skills and positive character of students (Putri, 2016). In addition, collaborative learning can encourage the empowerment and independence of students, especially in microeconomics courses, where students are required to be competent and skilled in quantitative terms (Monaco, 2018). Even offline and online-based collaborative learning that is applied to students at universities in the United States and Peru discusses the demand, supply, and balance of the milk market in both countries. At the end of the semester, students in these two countries presented their findings, so this collaborative learning is very interesting to apply and can motivate students to study in international classes (Galarza & Johnson, 2011).

In the macroeconomics aspect, collaborative learning outside the classroom is widely adopted by universities by discussing macroeconomics material such as international trade, interest rates, investment, consumption, government spending, inflation, economic growth, and unemployment. Collaborative learning has an impact on increasing student understanding and is better than traditional learning (Cohn, 1999). Collaborative learning that discusses selected macroeconomics variables, namely GDP and inflation, it can be concluded that collaborative learning not only improves students' theoretical understanding but also contributes to improving skills in analysing and searching for data related to macroeconomics variables (Martínez, Ferrándiz, Flores, & Muñoz, 2016). Collaborative learning has positive benefits, for example, with the guidance of lecturers, students can understand macroeconomics courses more quickly. Not only does it support final grades, but this learning can also increase interaction and collaboration between students (Parker, 2010).

CONCLUSION

Online-based collaborative learning is very relevant to be implemented in educational institutions, not only in primary and secondary education but also in higher education. This method is widely discussed and implemented, especially during the Covid-19 pandemic, including in economics teaching. Microeconomics and macroeconomics courses that are approached qualitatively, quantitatively and curves can be understood by students by applying collaborative learning by paying attention to the stages: engagement, exploration, transformation, presentation, and reflection. With online group learning and the direction of the lecturer, the majority of students strongly agree with the implementation of learning methods that position students as social beings to build social interaction among students.

It is undeniable that online-based collaborative learning is in great demand by students. Theoretical and empirical evidence shows that the implementation of this learning can have an impact on the spirit of learning and learning outcomes. It is recommended for future researchers to expand the study with an associative approach, namely to examine the effect of collaborative

learning on learning outcomes with the spirit of learning as an intervening and/or moderating variable.

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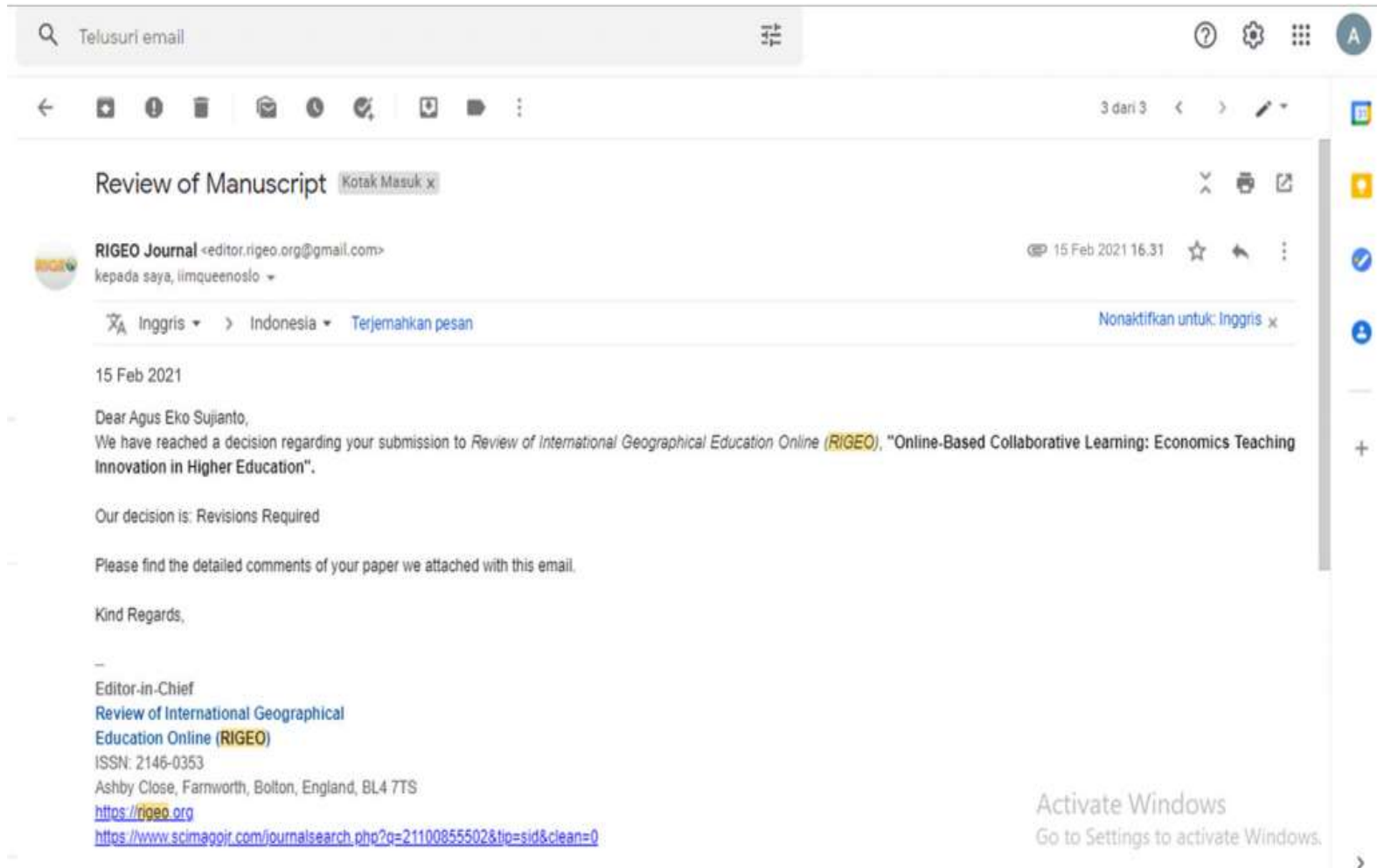
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The paper is well written and contains significant information. However, there are some corrections needed to be done:

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Online-Based Collaborative Learning: Economics Teaching Innovation in Higher Education

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Abstract:

The goal of this study is to assess student views regarding online-based collaborative learning in the context of economics classroom instruction. The term "collaborative learning" refers to learning that takes into consideration characteristics such as interaction with the subject matter, exploration, transformation, presentation, and reflection. The participants in this study were 221 undergraduate students who were enrolled in economics courses. The questionnaire was delivered through Google Forms, which served as the data collection method. The descriptive statistics were employed on the study instrument, which included as many as 53 questions, and the analysis was divided into five stages: the data distribution test, descriptive statistics, instrument validity and reliability, and hypothesis testing. Among the findings: the data is normally distributed, a large majority of students strongly agree with online-based collaborative learning, the instrument used passes the validity and reliability tests, and findings from hypotheses testing indicate that all five hypotheses were tested and found to be statistically significant. Future study options include the development of research variables and the use of associative statistics to analyze the data.

Keywords: Online-based collaborative learning, economics teaching, microeconomics, macroeconomics

INTRODUCTION

The collaborative approach is widely used by educational institutions, particularly higher education in Indonesia, as a learning method. Collaborative learning was chosen because of its benefits. According to Chandra (2015) the benefits include strengthening students' thinking, communication, leadership, and social responsibility, as well as placing students at the center of learning. Collaborative learning, according to Le, Janssen, and Wubbels (2018), can boost student friendship and competence. Additionally, Abidin, Masitoh, and Bachri (2019); Ku, Lohr, and Cheng (2004) claim that empirically collaborative learning can promote student togetherness, experience, and mutual support to generate harmonization of teaching and learning processes and learning motivation.

Meaningful learning is enhanced when utilized in the COVID-19 pandemic, where the traditional learning method is implemented simultaneously with the online media (Dharma, Sugihartini, & Arthana, 2018; Hijriati, 2017; Sulandari, 2020). Since new teaching strategies are needed in various parts of academia, especially in economics departments, e-learning is

essential (Anugrahana, 2020; Hamid, Sentryo, & Hasan, 2020; Maison, Kurniawan, & Anggraini, 2020; Pratama & Mulyati, 2020; Sadikin & Hamidah, 2020). To minimize face-to-face learning, this online-based learning was chosen (Abidah, et. al, 2020; Marini & Milawati, 2020; Rayuwati, 2020).

On the other hand, online-based collaborative learning is not always successful when implemented in every institution and discipline. According to McInnerney and Roberts (2002), collaborative learning in higher education, both online and face-to-face, is still underutilized due to the difficulties in maintaining control of the class and the lack of trust among students. While online collaborative learning is successful in some topics, such as mathematics, it is not successful in others (Nason & Woodruff, 2004). Despite the fact that the two studies mentioned above were conducted long before the covid pandemic occurred, this online-based collaborative learning method proved to be indispensable during the covid pandemic and helped students improve their achievement and enthusiasm for learning (Arief, 2020; Coman, îru, Meseşan-Schmitz, Stanciu, and Bularca, 2020; Demuyakor, 2020; Soeryanto, Arsana, Warju, and Ariyanto, 2020; Learning was conducted online during the state-imposed epidemic in Indonesia (Handarini & Wulandari, 2020; Kristina, Sari, & Nagara, 2020; Sugiarto, 2020).

Students appreciate the use of online-based collaborative learning since it helps them connect and enhance their collaboration abilities (Ku et al., 2004). This method is helpful when used in the context of university-level education, especially in economics courses. Previous research that supports the deployment of collaborative learning includes the findings of Stoytcheva (2017), which show that when considering distant collaborative learning in the classroom, economic difficulties can be solved. The same study was done in New Delhi to determine the effectiveness of online collaborative learning tactics in comparison to conventional learning strategies on 120 college students. Students had much better results while employing online-based collaboration tactics (Maulidah & Aziz, 2020; Mehar & Kaur, 2020).

Online collaborative learning had a favorable and considerable impact on student performance in Malaysia, which led educational institutions to seriously investigate this method as a classroom teaching technique (Yin, Yusof, Lok, & Zakariya, 2018). According to Stanley and Zhang (2020), online-based collaborative learning has a favorable impact on student involvement and performance in class at large public universities. In addition, Son (2016) admits student-centered collaborative learning innovation is critical in developing international economics learning courses that are relevant, engaging, and encourage students to participate actively in the classroom.

Looking closely at the previous studies mentioned above, it is abundantly evident that collaborative learning is student-centered learning, as students are in control of their performance. Based on the conditions in Indonesia, such as the coronavirus epidemic, the deployment of online-based learning is very sensitive, so the achievement of student independence is critical in new learning models during the Covid 19 pandemic. Additionally, an understanding of economics courses demonstrates that online-based collaborative learning improves students' ability and performance by boosting their inventiveness and grasp of how economies work. Earning a high level of understanding in microeconomics and macroeconomics, often known as micro- and macroeconomics, involves integrating cognitive, emotional, and psychomotor domains.

Economic theory is covered in two parts: microeconomics and macroeconomics. Microeconomics is explained in 13 sections and macroeconomics is covered in 36 chapters in this economics course (Mankiw, 2018). Meanwhile, in this study, web-based collaborative learning is separated into five variables, each of which corresponds to a stage in online collaborative learning, namely: engagement, exploration, transformation, presentation, and reflection (also known as stages in online collaborative learning).

Students are given direct involvement in teaching and learning at the engagement stage, and they need to acquire responsibility, participation, and social concern in the economics class. Teachers believe that increasing student participation in the classroom will stimulate a desire in learning and a greater understanding of economics (Chou & Chen, 2018; Curtis & Lawson, 2001; Haqqi, 2017; Mulia, 2020; Panlumlers et al., 2017; Stanley & Zhang, 2020; Sulistyawati & Zuchdi, 2016). Exploration, where students are allowed to discover together what problems the lecturer is concerned with, and everyone has to provide income based on the most up-to-date literature (Chou & Chen, 2018; Curtis & Lawson, 2001; Haqqi, 2017; Mulia, 2020; Panlumlers, Nilsook, & Jeerungsuwan, 2017; Rohmat, 2017; Sulistyawati & Zuchdi, 2016).

Internal group talks become a criterion for collaborative learning success in transformation. This internal group debate teaches tolerance among group members by appreciating varied salaries (Haqqi, 2017; Laal & Laal, 2012; Nazeer, 2006; Panlumlers et al., 2017; Son, 2016). In many earlier research, the presentation aspect was done out following internal group talks. The lecture in question is about economics and how it applies to collaborative learning. Students learn not only by presenting but also by observing, analysing, and responding. To make presentations successful, students must be able to elaborate on the subject offered (Gleeson, McDonald, & Williams, 2009; Haqqi, 2017; Laal & Laal, 2012; Nazeer, 2006; Panlumlers et al., 2017; Rahmawati & Nurhidayati, 2016).

Following the presentation, there was a period of reflection, which included questions and answers between groups, with the lecturer acting as a motivator and facilitator. It is envisaged that at this stage of reflection, students would provide feedback on the economic learning process in a specific semester, which is also a kind of teaching and learning responsibility (Gleeson et al., 2009; Haqqi, 2017; Manizar, 2015; Nazeer, 2006; Panlumlers et al., 2017; Sorensen, 2004).

This collaborative learning environment, which is based on the internet, is one of the more innovative options available in the learning strategy of economics courses at universities. The decision to employ this style of learning was made because it has been shown both theoretically and practically to be effective in boosting student competency in a variety of areas, including not only learning outcomes, but also social, psychological, and other academic characteristics.

Table 1. Literature Review Mapping

| Literature | Variables |
|------------|-----------|
|------------|-----------|

| | Engagement | Exploration | Transformation | Presentation | Reflection |
|--------------------------|------------|-------------|----------------|--------------|------------|
| Curtis & Lawson | √ | — | — | — | — |
| Sulistiyawati & Zuchdi | √ | — | — | — | — |
| Panlumlers et al. | √ | √ | √ | √ | √ |
| Haqqi | √ | — | √ | √ | √ |
| Chou & Chen | √ | — | — | — | — |
| Mulia | √ | — | — | — | — |
| Stanley & Zhang | √ | — | — | — | — |
| Nazeer | — | √ | √ | √ | √ |
| Sulistiyawati dan Zuchdi | — | √ | — | — | — |
| Rohmat | — | √ | — | — | — |
| Jackson & Fagan | — | √ | — | — | — |
| Laal dan Laal | — | — | √ | √ | — |
| Son | — | — | √ | — | — |
| Gleeson et al. | — | — | — | √ | √ |
| Rahmawati & Nurhidayati | — | — | — | √ | — |
| Sorensen | — | — | — | — | √ |
| Manizar | — | — | — | — | √ |
| Putri | — | — | — | √ | √ |
| Monaco | — | — | — | √ | √ |
| Galarza & Johnson | — | — | — | √ | — |
| Cohn | — | — | — | √ | — |
| Martinez et al. | — | √ | — | √ | — |
| Parker | √ | √ | √ | √ | √ |

Research Questions

Based on the above thinking, this research is directed to answer the following five research questions:

- 1) How are students' attitudes towards online-based engagement learning in economics teaching?;
- 2) How are students' attitudes towards online-based exploratory learning in economics teaching?;
- 3) How are students' attitudes towards online-based transformational learning in economics teaching?;
- 4) How are students' attitudes towards online-based presentation learning in economics teaching?;
- 5) How are students' attitudes towards online-based reflection learning in economics teaching?.

METHODS

Research Design

The quantitative method was used in this study, and the descriptive research style was used as well. The goal of this research is to optimize respondents' feelings towards online-based collaborative learning. This learning style was selected in order to accommodate the time that face-to-face education has been outlawed by the government according to COVID-19. instead,

classes are offered through the internet in a collaborative style. Group work, where students interact with each other to solve problems, offers the advantage of a collaborative approach. This is particularly effective, as it can eliminate the shortcomings of online learning, which tends to be limited to the student on his or her own. Students in this paradigm will develop by interacting with groups, which positions them as the subjects of others.

Population and Sample

The participants in this study are students at the State Islamic Institute (IAIN) Tulungagung, Faculty of Economics and Islamic Business who are studying economics courses in the odd semester of 2020/2021 (microeconomics and macroeconomics). It was discovered that the total number of students taking this course was 229.

Data Collection and Research Instruments

An attitude scale from Likert was utilized in the data collection process, and a questionnaire was created and delivered to respondents using a Google form. A research instrument can be proposed based on the theoretical and empirical foundations, where each variable is reduced to a sharpened indication in the form of a questionnaire instrument that will be delivered to respondents.

Table 2. Grid of Research Instruments

| Variable | Indicator | Descriptor |
|----------------|-------------------------|--|
| Engagement | Participation | Direct involvement in the group; |
| | Social care | Discipline; Honest; Confidence; |
| | Responsible | Support each other; Interaction; |
| Exploration | Cooperation | Teamwork; |
| | Opinion | Actively express opinions; |
| | Literature tracking | Ability to find literature; Ability to clarify literature; |
| Transformation | Discussion | Exchange ideas; Ability to describe vocabulary |
| | Tolerance | Appreciate differences; |
| | Presenting | Ability in running presentation software; Ability to present material in writing; Ability to present material orally |
| Presentation | Observing | Ability to observe problems; |
| | Analysing | Ability to analyse data; |
| | Answering | Ability to answer questions; |
| Reflection | Lecturer as motivator | Open; Empathy; Religious; |
| | Lecturer as facilitator | Understanding of differences; Understanding of competence; |

According to table 2, the study instrument was divided into 53 items, with 11 items for the engagement variable, 10 items for the exploration variable, 9 items for each transformation and presentation variable, and 14 items for the reflection variable.

Data Analysis Technique

The steps of doing a systematic analysis of research data are as follows: data distribution, descriptive statistics, instrument validity and reliability, and instrument validity and reliability (Ibe, 2014; Marshall & Jonker, 2010; Sarmah & Bora Hazarika, 2012; Valim, et. al, 2015).

When dealing with large samples, data with normal distribution or normal distribution is essential, although descriptive statistics are meant to simplify data while also describing the factors under investigation (research variables). To assess the validity and reliability of the instrument, as well as the overall quality of the instrument or research statement items obtained through a questionnaire, respondents' views regarding research variables were assessed. Using the SPSS application, you may assess data distribution, descriptive statistics, instrument validity and reliability, and hypothesis testing among other things.

Hypothesis Testing

The study is guided by two basic premises: theoretical basis and empirical evidence. Here, the following hypotheses are examined: (1) Online-based learning in economics is not uniformly beneficial; (2) Online-based exploration in economics is not uniformly beneficial; (3) Online-based transformative learning in economics is not uniformly beneficial; (4) Online-based presentation learning in economics is not uniformly beneficial, and (5) Online-based reflection learning in economics is not uniformly beneficial.

For the purpose of testing the null hypothesis (Ho) and the alternative hypothesis (Ha), the following statements of the null hypothesis (Ho) and the alternative hypothesis (Ha) are used:

- 1) There is no difference in students' attitudes toward online-based collaborative learning in economics teaching and students' attitudes toward traditional classroom-based collaborative learning in economics teaching.
- 2) Technically speaking, the One-Sample T-Test with Two Tail Test is used in this study hypothesis testing, and the following parameters are followed. If the p value is less than five percent (0.025), Ho is rejected; if the p value is greater than five percent (0.025), Ho is approved.

FINDINGS

This study finds that one of the newer advances in teaching economics in higher education is the implementation of online-based collaborative learning. As many as 221 people were part in this research. This class has 229 students enrolled. In order to reach a goal of distributing questionnaires to 220 respondents within the time restriction (between December 1st and December 19th, 2020), those who completed the form received up to 96.5% of the submissions, whereas those who did not received up to 3.5% of the submissions. Students who missed this survey because of lack of Internet access, a busy schedule, they didn't know if they were study respondents, or because they had too much work to do skipped the questionnaire. The level of respondent involvement (LRP) in filling out research questionnaires is calculated using the formula $LRP = \text{rate of participation} / \text{total response rate}$.

$$LRP = \frac{\text{Completed Questionnaire}}{\text{Questionnaire Distribution}} \times 100 = 96,5\%$$

With an LRP of 96.5 percent, it can be inferred that respondents are highly engaged in the survey and that they believe it is vital to express their opinions about online-based collaborative learning in economics courses. Furthermore, the researcher's socialization of learning models during the COVID pandemic through learning innovations that integrate independence and information technology is considered successful, as evidenced by the fact that the participation rate of respondents has increased as a result of the research.

Respondent's Gender

This survey shows that women predominate in it, which means that there are as many as 164 people responding. Male respondents can estimate the total number of respondents to be around 56, or around 26 percent of the total population. This data demonstrates that women's interest in choosing Islamic economics majors is greater than men's, because while answering research surveys, they are more likely to give a favorable response and these responses help with the research's success.

Data Distribution

When the data is regularly distributed, the requirements for a One-Sample T-Test must be met. As a result, the five research variables must be examined for normalcy, and in this study, the kurtosis ratio and the skewness ratio are used in conjunction with the histogram normality test to accomplish this.

Table 3. Skewness and Kurtosis Ratio

| Variable | Skewness Ratio | Kurtosis Ratio |
|----------------|----------------|----------------|
| Engagement | -0,2586 | -1,8354 |
| Exploration | -1,8536 | 0,7400 |
| Transformation | -1,9321 | -0,9412 |
| Presentation | -1,6963 | 1,7547 |
| Reflection | -1,2931 | -0,9936 |

If the value of the ratio of skewness and kurtosis is between -2 and 2, then the data is regularly distributed. The skewness ratio and kurtosis ratio are in the recommended value interval (Sujianto, 2009) derived from the research variable data.

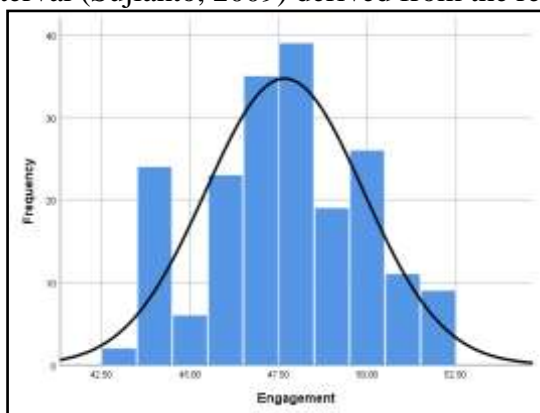


Figure 2a. Engagement

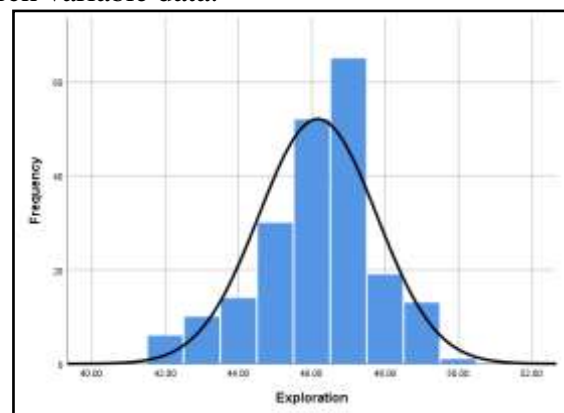


Figure 2b. Exploration

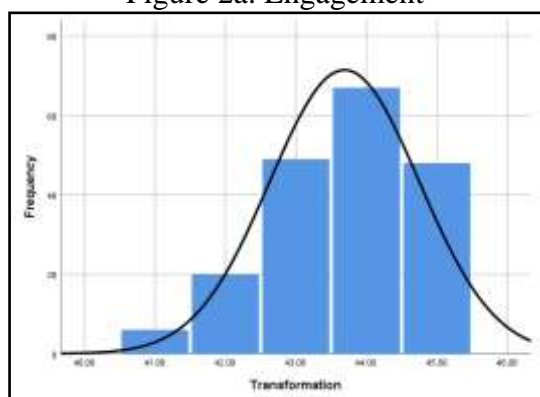


Figure 2c. Transformation

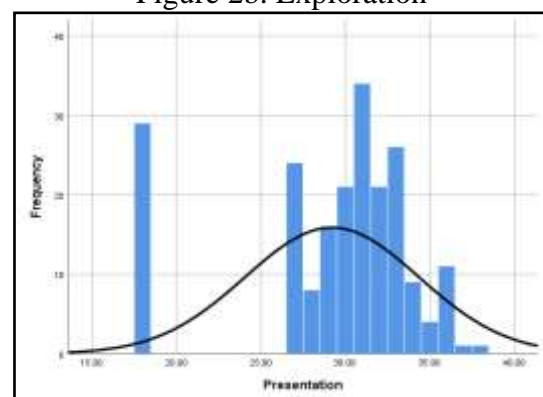


Figure 2d. Presentation

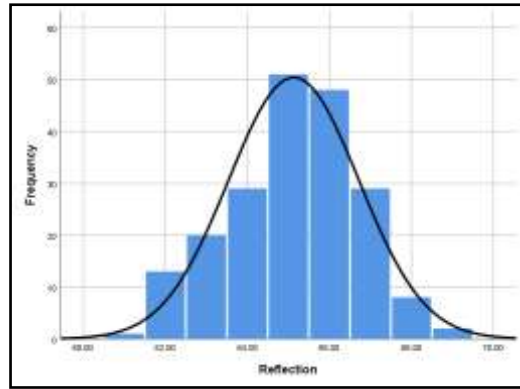


Figure 2e. Reflection

Figures 2a to 2e are histograms that reflect the distribution of research data. According to (Sujianto, 2009) data is called normal if the histogram curve is balanced on the left and right and is bell-shaped.

Descriptive Statistics

The table below is a description of the main research data based on the number of valid data (N), range, and standard deviation (SD) of the research variables.

Table 4. Descriptive Statistic

| Statistic | Variables | | | | |
|-----------|------------|-------------|----------------|--------------|------------|
| | Engagement | Exploration | Transformation | Presentation | Reflection |
| N | 194 | 210 | 190 | 205 | 201 |
| Range | 9.00 | 8.00 | 4.00 | 20.00 | 8.00 |
| SD | 2.22936 | 1.60814 | 1.06079 | 5.15379 | 1.59160 |

Depending on the variable, the number of valid data points (N) fluctuates between 194 and 210 respondents. Due to the existence of data outliers in each variable, the amount of data that can be processed is less than the total number of respondents, which may be as high as 221 in this case. In research data, the range is defined as the difference between the maximum and minimum data, with the larger the range of data, the more diverse the research results. The findings revealed that the range of presentation variables was greater than the range of other variables, resulting in a greater degree of diversity. While the presentation variable has a larger standard deviation (SD), it has a smaller SD than the other four variables. While these findings show that the data is becoming increasingly diversified, the fact that the standard deviation of the presentation variable (5.15379) does not surpass the average (29.2146) indicates that there are no data outliers.

Engagement Variable Overview

Using 11 questionnaires from Table 2, the researcher conducted a survey, which was then published. Using a 1-to-5 point scale, the responses to the research questionnaire were divided into five groups, which were as follows: never (1); rarely (2); occasionally (3); frequently (4); and always (5). Only 44.3 percent of those who answered the survey said they regularly attended group studies. 53.4 percent of participants expressed a strong conviction in the ability of groups to make decisions.

The indicator of social awareness of discipline descriptions only contained two factors, showing up on time in a group study and travelling home together in a group study (59.3 percent

often). One hundred and ninety-four (194) respondents say they frequently use honest descriptors, and of these, 48.3% claim to have positive views toward presenting information in accordance with reality. That percentage of people who indicated that they often express loyalty to the group agreement was around 45.7 percent. Only two self-confidence adjectives are left. They are both true (59.3 percent think often). As a group, the indicators of responsibility for descriptions support each other in situations where respondents think about respecting other people's perspectives as much as 68.8 percent of respondents think about it all of the time. when conversing with friends, be courteous (77.8 percent). ineffective (also known as ineffective) (often). It has been determined whether or not all instruments are valid (item validity value > 0.3) and reliable (item reliability value > 0.6) in cases where all instruments are valid and reliable in the same situation.

Overview of Exploration Variables

Cooperation, opinion, and literature track were simplified to three indicators and subsequently expanded to ten measures. Among those who believe that students make a major contribution to the group's overall success, 54.6 percent (187 people) agree that students do so. The majority of 82.8 percent (183 persons) strongly believe that they should use their abilities to the greatest degree possible if they are given the opportunity. Respondents agree that children are aware of their role in achieving the targeted objectives in a whopping 98 percent (128 people) of their responses.

The results of this poll show that together, people who responded were found to be accountable for 54.8% of the quality of their employment. 54.8 percent of poll respondents strongly agree that they actively seek solutions to problems with others. Over half of the participants claimed they are actively working on collaboratively fixing ideas. In a survey of 161 library visitors, 72.9 percent said they went to find literature. Nearly all (93.7%) agree they browse for books online. Moreover, 95.5 percent of respondents agreed that the material they encountered was produced by well-known book publishers and indexed journals. All valid and trustworthy instruments (item validity >0.3) have been returned.

Overview of Transformation Variables

The transformation variable was developed into nine instruments, where respondents agreed (48.9% = 108 people) that they felt happy during the discussion. Respondents also strongly agree (83.3% = 184 people) that the material discussed is relevant to the group assignment. A total of 188 people or 85.1% of respondents strongly agree that the discussion method motivates learning. Respondents also strongly agree (84.2%) if the discussion method increases interest in learning. Students responded strongly agree with 86.9% that the discussion method can improve understanding of learning.

Around 82.4% of students strongly agree that students collaborate to learn. Moreover, students overwhelmingly agree (by an 89.1 percent margin) that the discussion method can help them form friendships. The results show that as many as 85.1 percent of students strongly support the discussion method since it helps to eliminate competitiveness within a group of students. As many as 203 people or 91.9 percent of students chose highly agree, which indicates that the discussion method can foster community building. Validity and reliability of all instruments filled out and returned by respondents have been checked, and all instruments have been found to be valid (item validity value > 0.3) and reliable (item reliability value > 0.6) according to the results.

Presentation Variable Overview

Students were able to execute presentation software (PowerPoint) as many as 129 persons, or 58.4 percent if presentation variable was restricted to nine instruments. 101 students (or 45.7 percent) strongly agree that they are capable of presenting the subject in written form, according to the survey results. In a similar vein, the oral presentation of the topic reveals that 85 percent of students agreed with the information presented. When asked if they agree or disagree with the instrument that allows students to observe difficulties by looking for data, 56.6 percent of students, or as many as 125 people, respond negatively.

Additionally, students can find issues by tabulating data, which allows up to 98 individuals or 44.3% of the participants to respond in the negative. With the use of data processing software, the number of respondents who agree that they can undertake data analysis comes to 117 persons or 52.9 percent. Nearly 150 persons or 67.9% of respondents stated that they did not have the skills necessary to interpret the outcomes of the data analysis. As many as 93 persons or 42.1% feel that they can deliver answers if there are inquiries from the audience. Out of responders, 41.2% had expressed satisfaction with the responses. All instruments were valid and reliable when they were completed and returned by respondents.

Overview of Reflection Variables

A total of fourteen instrument items have been generated from two indicators for the reflection variable, namely the lecturer as a motivator and the lecturer as a facilitator, and they are as follows: A total of 115 persons, or 52 percent of those who answered the survey, strongly agreed that lecturers should encourage students to express themselves. According to the survey respondents, teachers have so far encouraged students to maintain an optimistic outlook (120 people, or 54.3 percent). Respondents expressed strong agreement (53.8 percent) with the statement that thus far, lecturers have encouraged students to discover their skills. A total of 122 persons, or 55.2 percent of those who answered the survey, strongly agreed that, thus far, professors have encouraged students to have confidence in themselves. Approximately 73.3 percent of respondents (162 respondents) strongly agreed that lecturers had taught the attitude that learning is a form of religious worship so far. As many as 168 persons (or 76 percent) strongly think that lecturers are required to always please parents, according to their opinions. Sixty-two percent of respondents strongly agree that lecturers are required to always recall Allah SWT in the form of worship in addition to teaching and satisfying parents throughout this time.

As respondents explained, instructors are not overbearing when it comes to expressing their own thoughts in class (111 people who answered strongly agree or 50.2 percent). Around 100 pupils, or roughly 63.3% of the class, believe that lecturers pay greater attention to their classmates. 166 individuals equal 75.1% (67.4 percent strongly agree). A large majority of respondents responded affirmatively, with as many as 154 individuals agreeing, stating that lecturers are tolerant of student faults (agreeing strongly, 68.7% of respondents). A lecturer additionally directs their attention towards their students, and that can improve how students feel about themselves, resulting in answers like “agree as many as 139 people or 62.9 percent answered, then strongly agree that lecturers value student accomplishments as many as 161 people or 72.9 percent. All instruments were found to be valid and reliable, and all items have been successfully filled out and returned by respondents.

Hypothesis Testing

This study investigated five hypotheses, the findings of which may be found in Table 6, which shows the outcomes of the statistical tests. The decision-making process is directed by the comparison of the value of 0.025 with the value of (0.05) in the third column, Sig. (2-tailed), which indicates the significant value with a two-tailed test, as described in the method section above.

Table 5. Hypothesis Test Results

| Variables | t _{statistic} | Sig. (2-tailed) |
|----------------|------------------------|-----------------|
| Engagement | 160.113 | 0.000 |
| Exploration | 379.933 | 0.000 |
| Transformation | 515.728 | 0.000 |
| Presentation | 70.049 | 0.000 |
| Reflection | 544.521 | 0.000 |

The first hypothesis, "student views towards online-based engagement learning in economics education does not necessarily reflect that the way economics is taught today remains unchanged" is examined. Ho (the higher) has an issue with Sig. (2-tailed) < 0.025, thus it is refused. Conversely, Ha (the lower) has no issues with Sig. (2-tailed) < 0.025, therefore it is accepted. In this instance, "students' attitudes towards online-based exploratory learning in economics instruction are not the same" is a hypothesis that is tested because Ha is accepted. The final hypothesis, "Students' attitudes about online-based transformational learning in economics courses are not the same," is supported by further investigation. The conclusion goes against Ho and agrees with Ha, in which case the hypothesis is proven false. The fourth hypothesis postulates that students' attitudes toward online-based presentation learning in economics class differs from their attitudes towards traditional lecture methods. According to the results of the test, the value of Sig. (2-tailed) < 0.025, which is less than 0.025, so that Ho rejects and accepts Ha, which leads to the hypothesis being investigated. A final hypothesis, "student attitudes towards online-based reflection learning in economics instruction does not have the same results for both Sig. (2-tailed) < 0.025 and Sig. (3-tailed) > 0.025," is being investigated, with the additional benefit of a p-value of < 0.025.

DISCUSSION

According to the findings of research that has been combined with hypothesis testing, it can be concluded that students' attitudes toward online-based collaborative learning in economics instruction are not the same for every student. Student competency in economics courses, both microeconomics and macroeconomics, is improved as a result of this learning strategy, according to the findings of the study. This research, when viewed from the perspective of microeconomics, corresponds with previously conducted research, which found that the majority of students at Flinders University in Australia responded extremely well to collaborative learning for microeconomics courses. When compared to traditional learning, they believe that this learning is quite advantageous. Students can mingle while while developing their skills through collaborative learning. Students believe that this strategy can help them gain a more in-depth understanding of microeconomics courses as well as other subjects (Gleeson et al., 2009).

Students don't comprehend the concept and how it is implemented in the field. Students' talents and character can be built when this collaborative learning is implemented (Putri, 2016). It is also helpful to have collaborative learning techniques since they can motivate students to achieve their full potential, especially in microeconomics courses, where students are required to master mathematical concepts (Monaco, 2018). The demand, supply, and balance of the milk market is covered in detail even when offline and online-based collaborative learning is applied to students at institutions in the United States and Peru. Although students from both nations presented their findings at the conclusion of the semester, this collaborative learning experience motivates individuals to continue their studies in international classes (Galarza & Johnson, 2011).

Collaboration outside the classroom in macroeconomics is widely used by universities to discuss topics such as international trade, interest rates, investment, consumption, government spending, inflation and economic growth. In the case of macroeconomics, collaborative learning outside the classroom is widely used by universities to discuss topics such as inflation and economic growth. The use of collaborative learning has a positive influence on student knowledge and is superior to traditional learning methods (Cohn, 1999). When discussing selected macroeconomics variables, such as GDP and inflation, it can be concluded that collaborative learning not only improves students' theoretical understanding but also contributes to improving skills in analyzing and searching for data related to macroeconomics variables (Martinez, Ferrandiz, Flores and Muoz, 2016). Collaborative learning provides a number of advantages, for example, students can grasp macroeconomics concepts more rapidly when they work together under the guidance of their professors. Not only does it contribute to final marks, but it also has the potential to encourage engagement and collaboration between students in the process (Parker, 2010).

CONCLUSION

In summary, the implementation of online-based collaborative learning in educational institutions is particularly relevant in the pre- and in-college level. This strategy is frequently referenced and used, especially during the Covid-19 pandemic, which was particularly hard on the economic system. Undergraduate students taking a qualitative, quantitative, and graphical approach to microeconomics and macroeconomics courses will understand the material using collaborative learning techniques such as attention to the stages of engagement, exploration, transformation, presentation, and reflection. A large majority of students feel strongly in favor of introducing approaches that encourage students to conceive of themselves as social creatures in order to facilitate social interaction among their peers.

It is evident that students are in high demand for collaborative learning opportunities that take place online. It has been demonstrated both theoretically and empirically that the application of this learning can have an impact on both the spirit of learning and the outcomes of learning. We urge that future researchers extend the study using an associative method. This means that they should explore the influence of collaborative learning on educational results while including the spirit of learning as an intervening and/or moderating variable in the study design.

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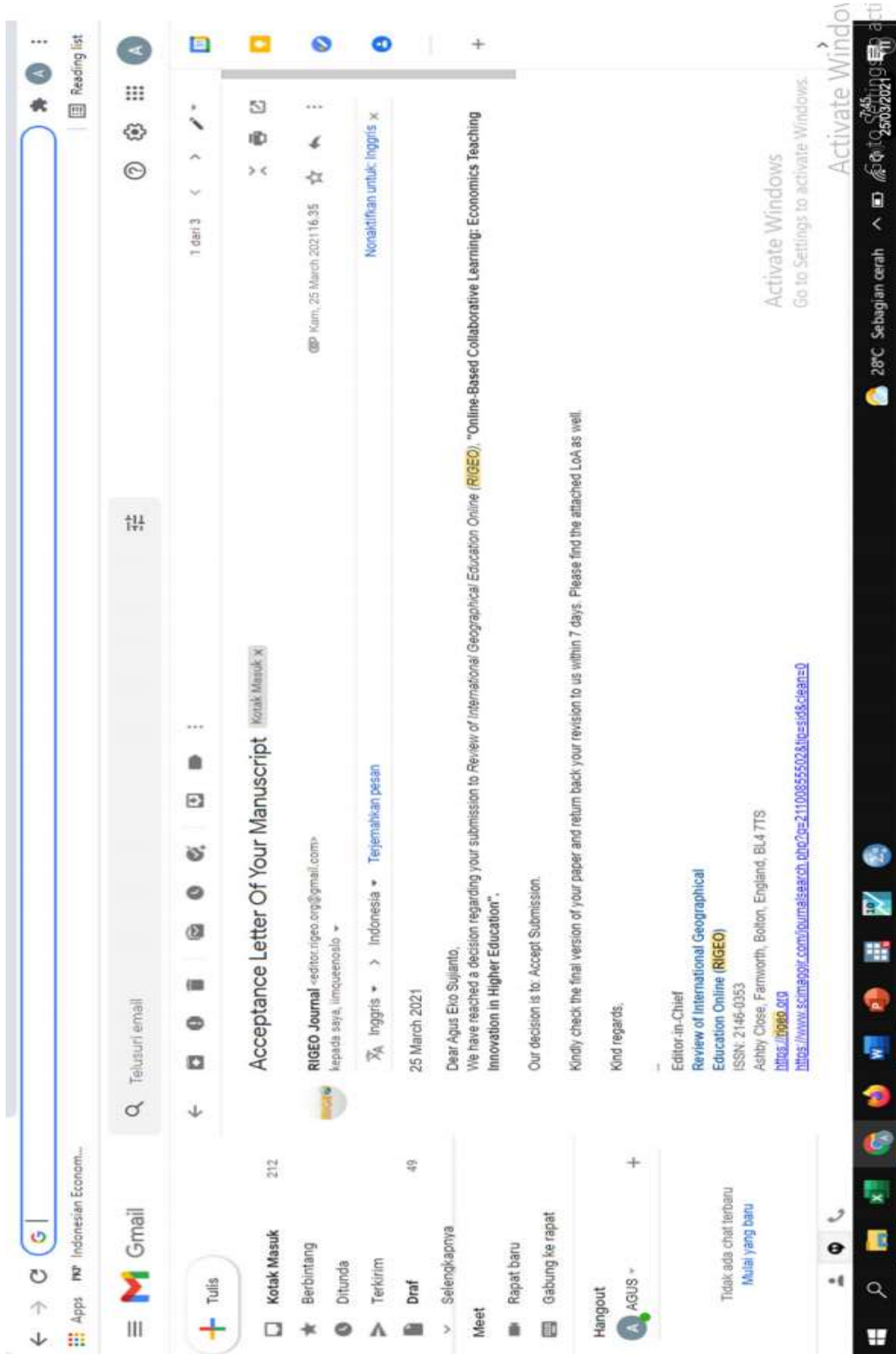
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LAMPIRAN 3: ACCEPTANCE LETTER OF MANUSCRIPT



Online-Based Collaborative Learning: Economics Teaching Innovation in Higher Education

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Abstract:

The goal of this study is to assess student views regarding online-based collaborative learning in the context of economics classroom instruction. The term "collaborative learning" refers to learning that takes into consideration characteristics such as interaction with the subject matter, exploration, transformation, presentation, and reflection. The participants in this study were 221 undergraduate students who were enrolled in economics courses. The questionnaire was delivered through Google Forms, which served as the data collection method. The descriptive statistics were employed on the study instrument, which included as many as 53 questions, and the analysis was divided into five stages: the data distribution test, descriptive statistics, instrument validity and reliability, and hypothesis testing. Among the findings: the data is normally distributed, a large majority of students strongly agree with online-based collaborative learning, the instrument used passes the validity and reliability tests, and findings from hypotheses testing indicate that all five hypotheses were tested and found to be statistically significant. Future study options include the development of research variables and the use of associative statistics to analyze the data.

Keywords: Online-based collaborative learning, economics teaching, microeconomics, macroeconomics

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INTRODUCTION

The collaborative approach is widely used by educational institutions, particularly higher education in Indonesia, as a learning method. Collaborative learning was chosen because of its benefits. According to Chandra (2015) the benefits include strengthening students' thinking, communication, leadership, and social responsibility, as well as placing students at the center of learning. Collaborative learning, according to Le, Janssen, and Wubbels (2018), can boost student friendship and competence. Additionally, Abidin, Masitoh, and Bachri (2019); Ku, Lohr, and Cheng (2004) claim that empirically collaborative learning can promote student togetherness, experience, and mutual support to generate harmonization of teaching and learning processes and learning motivation.

Meaningful learning is enhanced when utilized in the COVID-19 pandemic, where the traditional learning method is implemented simultaneously with the online media (Dharma, Sugihartini, & Arthana, 2018; Hijriati, 2017; Sulandari, 2020). Since new teaching strategies

are needed in various parts of academia, especially in economics departments, e-learning is essential (Anugrahana, 2020; Hamid, Sentryo, & Hasan, 2020; Maison, Kurniawan, & Anggraini, 2020; Pratama & Mulyati, 2020; Sadikin & Hamidah, 2020). To minimize face-to-face learning, this online-based learning was chosen (Abidah, et. al, 2020; Marini & Milawati, 2020; Rayuwati, 2020).

On the other hand, online-based collaborative learning is not always successful when implemented in every institution and discipline. According to McInnerney and Roberts (2002), collaborative learning in higher education, both online and face-to-face, is still underutilized due to the difficulties in maintaining control of the class and the lack of trust among students. While online collaborative learning is successful in some topics, such as mathematics, it is not successful in others (Nason & Woodruff, 2004). Despite the fact that the two studies mentioned above were conducted long before the covid pandemic occurred, this online-based collaborative learning method proved to be indispensable during the covid pandemic and helped students improve their achievement and enthusiasm for learning (Arief, 2020; Coman, îru, Meseşan-Schmitz, Stanciu, and Bularca, 2020; Demuyakor, 2020; Soeryanto, Arsana, Warju, and Ariyanto, 2020; Learning was conducted online during the state-imposed epidemic in Indonesia (Handarini & Wulandari, 2020; Kristina, Sari, & Nagara, 2020; Sugiarto, 2020).

Students appreciate the use of online-based collaborative learning since it helps them connect and enhance their collaboration abilities (Ku et al., 2004). This method is helpful when used in the context of university-level education, especially in economics courses. Previous research that supports the deployment of collaborative learning includes the findings of Stoytcheva (2017), which show that when considering distant collaborative learning in the classroom, economic difficulties can be solved. The same study was done in New Delhi to determine the effectiveness of online collaborative learning tactics in comparison to conventional learning strategies on 120 college students. Students had much better results while employing online-based collaboration tactics (Maulidah & Aziz, 2020; Mehar & Kaur, 2020).

Online collaborative learning had a favorable and considerable impact on student performance in Malaysia, which led educational institutions to seriously investigate this method as a classroom teaching technique (Yin, Yusof, Lok, & Zakariya, 2018). According to Stanley and Zhang (2020), online-based collaborative learning has a favorable impact on student involvement and performance in class at large public universities. In addition, Son (2016) admits student-centered collaborative learning innovation is critical in developing international economics learning courses that are relevant, engaging, and encourage students to participate actively in the classroom.

Looking closely at the previous studies mentioned above, it is abundantly evident that collaborative learning is student-centered learning, as students are in control of their performance. Based on the conditions in Indonesia, such as the coronavirus epidemic, the deployment of online-based learning is very sensitive, so the achievement of student independence is critical in new learning models during the Covid 19 pandemic. Additionally, an understanding of economics courses demonstrates that online-based collaborative learning improves students' ability and performance by boosting their inventiveness and grasp of how economies work. Earning a high level of understanding in microeconomics and macroeconomics, often known as micro- and macroeconomics, involves integrating cognitive, emotional, and psychomotor domains.

Economic theory is covered in two parts: microeconomics and macroeconomics. Microeconomics is explained in 13 sections and macroeconomics is covered in 36 chapters in this economics course (Mankiw, 2018). Meanwhile, in this study, web-based collaborative learning is separated into five variables, each of which corresponds to a stage in online collaborative learning, namely: engagement, exploration, transformation, presentation, and reflection (also known as stages in online collaborative learning).

Students are given direct involvement in teaching and learning at the engagement stage, and they need to acquire responsibility, participation, and social concern in the economics class. Teachers believe that increasing student participation in the classroom will stimulate a desire in learning and a greater understanding of economics (Chou & Chen, 2018; Curtis & Lawson, 2001; Haqqi, 2017; Mulia, 2020; Panlumlers et al., 2017; Stanley & Zhang, 2020; Sulistyawati & Zuchdi, 2016). Exploration, where students are allowed to discover together what problems the lecturer is concerned with, and everyone has to provide income based on the most up-to-date literature (Chou & Chen, 2018; Curtis & Lawson, 2001; Haqqi, 2017; Mulia, 2020; Panlumlers, Nilsook, & Jeerungsuwan, 2017; Rohmat, 2017; Sulistyawati & Zuchdi, 2016).

Internal group talks become a criterion for collaborative learning success in transformation. This internal group debate teaches tolerance among group members by appreciating varied salaries (Haqqi, 2017; Laal & Laal, 2012; Nazeer, 2006; Panlumlers et al., 2017; Son, 2016). In many earlier research, the presentation aspect was done out following internal group talks. The lecture in question is about economics and how it applies to collaborative learning. Students learn not only by presenting but also by observing, analysing, and responding. To make presentations successful, students must be able to elaborate on the subject offered (Gleeson, McDonald, & Williams, 2009; Haqqi, 2017; Laal & Laal, 2012; Nazeer, 2006; Panlumlers et al., 2017; Rahmawati & Nurhidayati, 2016).

Following the presentation, there was a period of reflection, which included questions and answers between groups, with the lecturer acting as a motivator and facilitator. It is envisaged that at this stage of reflection, students would provide feedback on the economic learning process in a specific semester, which is also a kind of teaching and learning responsibility (Gleeson et al., 2009; Haqqi, 2017; Manizar, 2015; Nazeer, 2006; Panlumlers et al., 2017; Sorensen, 2004).

This collaborative learning environment, which is based on the internet, is one of the more innovative options available in the learning strategy of economics courses at universities. The decision to employ this style of learning was made because it has been shown both theoretically and practically to be effective in boosting student competency in a variety of areas, including not only learning outcomes, but also social, psychological, and other academic characteristics.

Table 1. Literature Review Mapping

| Literature | Variables | | | | |
|-----------------|------------|-------------|----------------|--------------|------------|
| | Engagement | Exploration | Transformation | Presentation | Reflection |
| Curtis & Lawson | √ | — | — | — | — |

| | | | | | |
|--------------------------|---|---|---|---|---|
| Sulistiyawati & Zuchdi | √ | — | — | — | — |
| Panlumlers et al. | √ | √ | √ | √ | √ |
| Haqqi | √ | — | √ | √ | √ |
| Chou & Chen | √ | — | — | — | — |
| Mulia | √ | — | — | — | — |
| Stanley & Zhang | √ | — | — | — | — |
| Nazeer | — | √ | √ | √ | √ |
| Sulistiyawati dan Zuchdi | — | √ | — | — | — |
| Rohmat | — | √ | — | — | — |
| Jackson & Fagan | — | √ | — | — | — |
| Laal dan Laal | — | — | √ | √ | — |
| Son | — | — | √ | — | — |
| Gleeson et al. | — | — | — | √ | √ |
| Rahmawati & Nurhidayati | — | — | — | √ | — |
| Sorensen | — | — | — | — | √ |
| Manizar | — | — | — | — | √ |
| Putri | — | — | — | √ | √ |
| Monaco | — | — | — | √ | √ |
| Galarza & Johnson | — | — | — | √ | — |
| Cohn | — | — | — | √ | — |
| Martinez et al. | — | √ | — | √ | — |
| Parker | √ | √ | √ | √ | √ |

Research Questions

Based on the above thinking, this research is directed to answer the following five research questions:

- 1) How are students' attitudes towards online-based engagement learning in economics teaching?;
- 2) How are students' attitudes towards online-based exploratory learning in economics teaching?;
- 3) How are students' attitudes towards online-based transformational learning in economics teaching?;
- 4) How are students' attitudes towards online-based presentation learning in economics teaching?;
- 5) How are students' attitudes towards online-based reflection learning in economics teaching?.

METHODS

Research Design

The quantitative method was used in this study, and the descriptive research style was used as well. The goal of this research is to optimize respondents' feelings towards online-based collaborative learning. This learning style was selected in order to accommodate the time that face-to-face education has been outlawed by the government according to COVID-19. Instead, classes are offered through the internet in a collaborative style. Group work, where students interact with each other to solve problems, offers the advantage of a collaborative approach. This is particularly effective, as it can eliminate the shortcomings of online learning, which tends to be limited to the student on his or her own. Students in this paradigm will develop by interacting with groups, which positions them as the subjects of others.

Population and Sample

The participants in this study are students at the State Islamic Institute (IAIN) Tulungagung, Faculty of Economics and Islamic Business who are studying economics courses in the odd semester of 2020/2021 (microeconomics and macroeconomics). It was discovered that the total number of students taking this course was 229.

Data Collection and Research Instruments

An attitude scale from Likert was utilized in the data collection process, and a questionnaire was created and delivered to respondents using a Google form. A research instrument can be proposed based on the theoretical and empirical foundations, where each variable is reduced to a sharpened indication in the form of a questionnaire instrument that will be delivered to respondents.

Table 2. Grid of Research Instruments

| Variable | Indicator | Descriptor |
|----------------|--------------------------------|--|
| Engagement | Participation | Direct involvement in the group; |
| | Social care Responsible | Discipline; Honest; Confidence; Support each other; Interaction; |
| Exploration | Cooperation | Teamwork; |
| | Opinion Literature tracking | Actively express opinions; Ability to find literature; Ability to clarify literature; |
| Transformation | Discussion | Exchange ideas; Ability to describe vocabulary |
| | Tolerance | Appreciate differences; |
| Presentation | Presenting | Ability in running presentation software; Ability to present material in writing; Ability to present material orally |
| | Observing | Ability to observe problems; |
| | Analysing Answering | Ability to analyse data; Ability to answer questions; |
| Reflection | Lecturer as motivator | Open; Empathy; Religious; |
| | Lecturer as facilitator | Understanding of differences; Understanding of competence; |

According to table 2, the study instrument was divided into 53 items, with 11 items for the engagement variable, 10 items for the exploration variable, 9 items for each transformation and presentation variable, and 14 items for the reflection variable.

Data Analysis Technique

The steps of doing a systematic analysis of research data are as follows: data distribution, descriptive statistics, instrument validity and reliability, and instrument validity and reliability (Ibe, 2014; Marshall & Jonker, 2010; Sarmah & Bora Hazarika, 2012; Valim, et. al, 2015). When dealing with large samples, data with normal distribution or normal distribution is essential, although descriptive statistics are meant to simplify data while also describing the factors under investigation (research variables). To assess the validity and reliability of the instrument, as well as the overall quality of the instrument or research statement items obtained through a questionnaire, respondents' views regarding research variables were assessed. Using

the SPSS application, you may assess data distribution, descriptive statistics, instrument validity and reliability, and hypothesis testing among other things.

Hypothesis Testing

The study is guided by two basic premises: theoretical basis and empirical evidence. Here, the following hypotheses are examined: (1) Online-based learning in economics is not uniformly beneficial; (2) Online-based exploration in economics is not uniformly beneficial; (3) Online-based transformative learning in economics is not uniformly beneficial; (4) Online-based presentation learning in economics is not uniformly beneficial, and (5) Online-based reflection learning in economics is not uniformly beneficial.

For the purpose of testing the null hypothesis (H_0) and the alternative hypothesis (H_a), the following statements of the null hypothesis (H_0) and the alternative hypothesis (H_a) are used:

- 1) There is no difference in students' attitudes toward online-based collaborative learning in economics teaching and students' attitudes toward traditional classroom-based collaborative learning in economics teaching.
- 2) Technically speaking, the One-Sample T-Test with Two Tail Test is used in this study hypothesis testing, and the following parameters are followed. If the p value is less than five percent (0.025), H_0 is rejected; if the p value is greater than five percent (0.025), H_0 is approved.

FINDINGS

This study finds that one of the newer advances in teaching economics in higher education is the implementation of online-based collaborative learning. As many as 221 people were part in this research. This class has 229 students enrolled. In order to reach a goal of distributing questionnaires to 220 respondents within the time restriction (between December 1st and December 19th, 2020), those who completed the form received up to 96.5% of the submissions, whereas those who did not received up to 3.5% of the submissions. Students who missed this survey because of lack of Internet access, a busy schedule, they didn't know if they were study respondents, or because they had too much work to do skipped the questionnaire. The level of respondent involvement (LRP) in filling out research questionnaires is calculated using the formula $LRP = \text{rate of participation} / \text{total response rate}$.

$$LRP = \frac{\text{Completed Questionnaire}}{\text{Questionnaire Distribution}} \times 100 = 96,5\%$$

With an LRP of 96.5 percent, it can be inferred that respondents are highly engaged in the survey and that they believe it is vital to express their opinions about online-based collaborative learning in economics courses. Furthermore, the researcher's socialization of learning models during the COVID pandemic through learning innovations that integrate independence and information technology is considered successful, as evidenced by the fact that the participation rate of respondents has increased as a result of the research.

Respondent's Gender

This survey shows that women predominate in it, which means that there are as many as 164 people responding. Male respondents can estimate the total number of respondents to be around 56, or around 26 percent of the total population. This data demonstrates that women's interest in choosing Islamic economics majors is greater than men's, because while answering research

surveys, they are more likely to give a favorable response and these responses help with the research's success.

Data Distribution

When the data is regularly distributed, the requirements for a One-Sample T-Test must be met. As a result, the five research variables must be examined for normalcy, and in this study, the kurtosis ratio and the skewness ratio are used in conjunction with the histogram normality test to accomplish this.

Table 3. Skewness and Kurtosis Ratio

| Variable | Skewness Ratio | Kurtosis Ratio |
|----------------|----------------|----------------|
| Engagement | -0,2586 | -1,8354 |
| Exploration | -1,8536 | 0,7400 |
| Transformation | -1,9321 | -0,9412 |
| Presentation | -1,6963 | 1,7547 |
| Reflection | -1,2931 | -0,9936 |

If the value of the ratio of skewness and kurtosis is between -2 and 2, then the data is regularly distributed. The skewness ratio and kurtosis ratio are in the recommended value interval (Sujianto, 2009) derived from the research variable data.

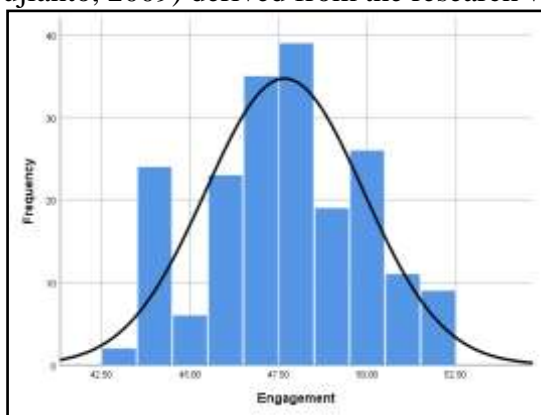


Figure 2a. Engagement

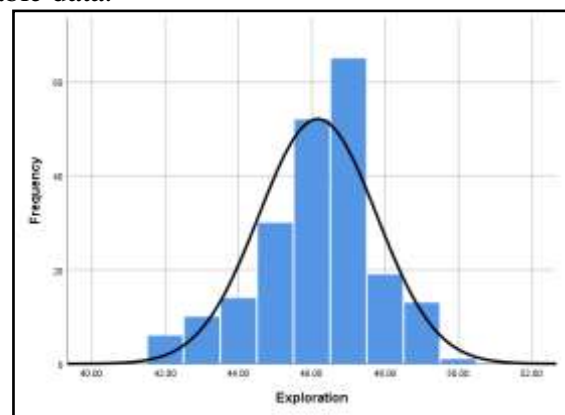


Figure 2b. Exploration

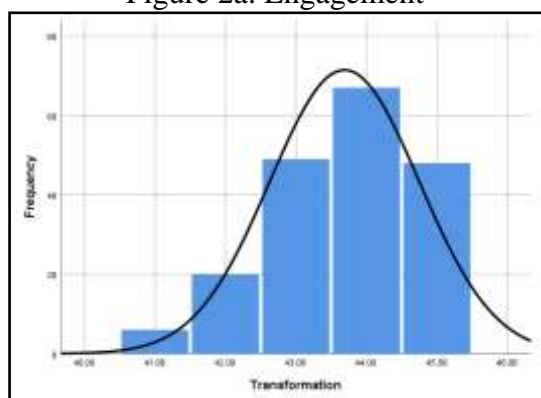


Figure 2c. Transformation

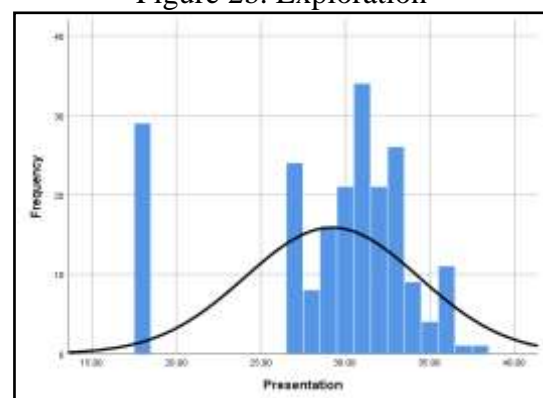


Figure 2d. Presentation

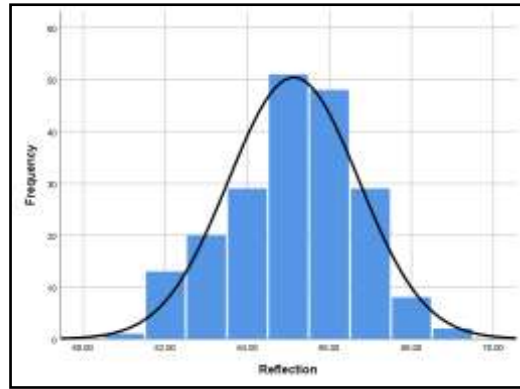


Figure 2e. Reflection

Figures 2a to 2e are histograms that reflect the distribution of research data. According to (Sujianto, 2009) data is called normal if the histogram curve is balanced on the left and right and is bell-shaped.

Descriptive Statistics

The table below is a description of the main research data based on the number of valid data (N), range, and standard deviation (SD) of the research variables.

Table 4. Descriptive Statistic

| Statistic | Variables | | | | |
|-----------|------------|-------------|----------------|--------------|------------|
| | Engagement | Exploration | Transformation | Presentation | Reflection |
| N | 194 | 210 | 190 | 205 | 201 |
| Range | 9.00 | 8.00 | 4.00 | 20.00 | 8.00 |
| SD | 2.22936 | 1.60814 | 1.06079 | 5.15379 | 1.59160 |

Depending on the variable, the number of valid data points (N) fluctuates between 194 and 210 respondents. Due to the existence of data outliers in each variable, the amount of data that can be processed is less than the total number of respondents, which may be as high as 221 in this case. In research data, the range is defined as the difference between the maximum and minimum data, with the larger the range of data, the more diverse the research results. The findings revealed that the range of presentation variables was greater than the range of other variables, resulting in a greater degree of diversity. While the presentation variable has a larger standard deviation (SD), it has a smaller SD than the other four variables. While these findings show that the data is becoming increasingly diversified, the fact that the standard deviation of the presentation variable (5.15379) does not surpass the average (29.2146) indicates that there are no data outliers.

Engagement Variable Overview

Using 11 questionnaires from Table 2, the researcher conducted a survey, which was then published. Using a 1-to-5 point scale, the responses to the research questionnaire were divided into five groups, which were as follows: never (1); rarely (2); occasionally (3); frequently (4); and always (5). Only 44.3 percent of those who answered the survey said they regularly attended group studies. 53.4 percent of participants expressed a strong conviction in the ability of groups to make decisions.

The indicator of social awareness of discipline descriptions only contained two factors, showing up on time in a group study and travelling home together in a group study (59.3 percent

often). One hundred and ninety-four (194) respondents say they frequently use honest descriptors, and of these, 48.3% claim to have positive views toward presenting information in accordance with reality. That percentage of people who indicated that they often express loyalty to the group agreement was around 45.7 percent. Only two self-confidence adjectives are left. They are both true (59.3 percent think often). As a group, the indicators of responsibility for descriptions support each other in situations where respondents think about respecting other people's perspectives as much as 68.8 percent of respondents think about it all of the time. when conversing with friends, be courteous (77.8 percent). ineffective (also known as ineffective) (often). It has been determined whether or not all instruments are valid (item validity value > 0.3) and reliable (item reliability value > 0.6) in cases where all instruments are valid and reliable in the same situation.

Overview of Exploration Variables

Cooperation, opinion, and literature track were simplified to three indicators and subsequently expanded to ten measures. Among those who believe that students make a major contribution to the group's overall success, 54.6 percent (187 people) agree that students do so. The majority of 82.8 percent (183 persons) strongly believe that they should use their abilities to the greatest degree possible if they are given the opportunity. Respondents agree that children are aware of their role in achieving the targeted objectives in a whopping 98 percent (128 people) of their responses.

The results of this poll show that together, people who responded were found to be accountable for 54.8% of the quality of their employment. 54.8 percent of poll respondents strongly agree that they actively seek solutions to problems with others. Over half of the participants claimed they are actively working on collaboratively fixing ideas. In a survey of 161 library visitors, 72.9 percent said they went to find literature. Nearly all (93.7%) agree they browse for books online. Moreover, 95.5 percent of respondents agreed that the material they encountered was produced by well-known book publishers and indexed journals. All valid and trustworthy instruments (item validity >0.3) have been returned.

Overview of Transformation Variables

The transformation variable was developed into nine instruments, where respondents agreed (48.9% = 108 people) that they felt happy during the discussion. Respondents also strongly agree (83.3% = 184 people) that the material discussed is relevant to the group assignment. A total of 188 people or 85.1% of respondents strongly agree that the discussion method motivates learning. Respondents also strongly agree (84.2%) if the discussion method increases interest in learning. Students responded strongly agree with 86.9% that the discussion method can improve understanding of learning.

Around 82.4% of students strongly agree that students collaborate to learn. Moreover, students overwhelmingly agree (by an 89.1 percent margin) that the discussion method can help them form friendships. The results show that as many as 85.1 percent of students strongly support the discussion method since it helps to eliminate competitiveness within a group of students. As many as 203 people or 91.9 percent of students chose highly agree, which indicates that the discussion method can foster community building. Validity and reliability of all instruments filled out and returned by respondents have been checked, and all instruments have been found to be valid (item validity value > 0.3) and reliable (item reliability value > 0.6) according to the results.

Presentation Variable Overview

Students were able to execute presentation software (PowerPoint) as many as 129 persons, or 58.4 percent if presentation variable was restricted to nine instruments. 101 students (or 45.7 percent) strongly agree that they are capable of presenting the subject in written form, according to the survey results. In a similar vein, the oral presentation of the topic reveals that 85 percent of students agreed with the information presented. When asked if they agree or disagree with the instrument that allows students to observe difficulties by looking for data, 56.6 percent of students, or as many as 125 people, respond negatively.

Additionally, students can find issues by tabulating data, which allows up to 98 individuals or 44.3% of the participants to respond in the negative. With the use of data processing software, the number of respondents who agree that they can undertake data analysis comes to 117 persons or 52.9 percent. Nearly 150 persons or 67.9% of respondents stated that they did not have the skills necessary to interpret the outcomes of the data analysis. As many as 93 persons or 42.1% feel that they can deliver answers if there are inquiries from the audience. Out of responders, 41.2% had expressed satisfaction with the responses. All instruments were valid and reliable when they were completed and returned by respondents.

Overview of Reflection Variables

A total of fourteen instrument items have been generated from two indicators for the reflection variable, namely the lecturer as a motivator and the lecturer as a facilitator, and they are as follows: A total of 115 persons, or 52 percent of those who answered the survey, strongly agreed that lecturers should encourage students to express themselves. According to the survey respondents, teachers have so far encouraged students to maintain an optimistic outlook (120 people, or 54.3 percent). Respondents expressed strong agreement (53.8 percent) with the statement that thus far, lecturers have encouraged students to discover their skills. A total of 122 persons, or 55.2 percent of those who answered the survey, strongly agreed that, thus far, professors have encouraged students to have confidence in themselves. Approximately 73.3 percent of respondents (162 respondents) strongly agreed that lecturers had taught the attitude that learning is a form of religious worship so far. As many as 168 persons (or 76 percent) strongly think that lecturers are required to always please parents, according to their opinions. Sixty-two percent of respondents strongly agree that lecturers are required to always recall Allah SWT in the form of worship in addition to teaching and satisfying parents throughout this time.

As respondents explained, instructors are not overbearing when it comes to expressing their own thoughts in class (111 people who answered strongly agree or 50.2 percent). Around 100 pupils, or roughly 63.3% of the class, believe that lecturers pay greater attention to their classmates. 166 individuals equal 75.1% (67.4 percent strongly agree). A large majority of respondents responded affirmatively, with as many as 154 individuals agreeing, stating that lecturers are tolerant of student faults (agreeing strongly, 68.7% of respondents). A lecturer additionally directs their attention towards their students, and that can improve how students feel about themselves, resulting in answers like “agree as many as 139 people or 62.9 percent answered, then strongly agree that lecturers value student accomplishments as many as 161 people or 72.9 percent. All instruments were found to be valid and reliable, and all items have been successfully filled out and returned by respondents.

Hypothesis Testing

This study investigated five hypotheses, the findings of which may be found in Table 6, which shows the outcomes of the statistical tests. The decision-making process is directed by the

comparison of the value of 0.025 with the value of (0.05) in the third column, Sig. (2-tailed), which indicates the significant value with a two-tailed test, as described in the method section above.

Table 5. Hypothesis Test Results

| Variables | t _{statistic} | Sig. (2-tailed) |
|----------------|------------------------|-----------------|
| Engagement | 160.113 | 0.000 |
| Exploration | 379.933 | 0.000 |
| Transformation | 515.728 | 0.000 |
| Presentation | 70.049 | 0.000 |
| Reflection | 544.521 | 0.000 |

The first hypothesis, "student views towards online-based engagement learning in economics education does not necessarily reflect that the way economics is taught today remains unchanged" is examined. Ho (the higher) has an issue with Sig. (2-tailed) < 0.025, thus it is refused. Conversely, Ha (the lower) has no issues with Sig. (2-tailed) < 0.025, therefore it is accepted. In this instance, "students' attitudes towards online-based exploratory learning in economics instruction are not the same" is a hypothesis that is tested because Ha is accepted. The final hypothesis, "Students' attitudes about online-based transformational learning in economics courses are not the same," is supported by further investigation. The conclusion goes against Ho and agrees with Ha, in which case the hypothesis is proven false. The fourth hypothesis postulates that students' attitudes toward online-based presentation learning in economics class differs from their attitudes towards traditional lecture methods. According to the results of the test, the value of Sig. (2-tailed) < 0.025, which is less than 0.025, so that Ho rejects and accepts Ha, which leads to the hypothesis being investigated. A final hypothesis, "student attitudes towards online-based reflection learning in economics instruction does not have the same results for both Sig. (2-tailed) < 0.025 and Sig. (3-tailed) > 0.025," is being investigated, with the additional benefit of a p-value of < 0.025.

DISCUSSION

According to the findings of research that has been combined with hypothesis testing, it can be concluded that students' attitudes toward online-based collaborative learning in economics instruction are not the same for every student. Student competency in economics courses, both microeconomics and macroeconomics, is improved as a result of this learning strategy, according to the findings of the study. This research, when viewed from the perspective of microeconomics, corresponds with previously conducted research, which found that the majority of students at Flinders University in Australia responded extremely well to collaborative learning for microeconomics courses. When compared to traditional learning, they believe that this learning is quite advantageous. Students can mingle while while developing their skills through collaborative learning. Students believe that this strategy can help them gain a more in-depth understanding of microeconomics courses as well as other subjects (Gleeson et al., 2009).

Students don't comprehend the concept and how it is implemented in the field. Students' talents and character can be built when this collaborative learning is implemented (Putri, 2016). It is also helpful to have collaborative learning techniques since they can motivate students to achieve their full potential, especially in microeconomics courses, where students are required to master mathematical concepts (Monaco, 2018). The demand, supply, and balance of the milk market is covered in detail even when offline and online-based collaborative learning is applied to students at institutions in the United States and Peru. Although students from both nations

presented their findings at the conclusion of the semester, this collaborative learning experience motivates individuals to continue their studies in international classes (Galarza & Johnson, 2011).

Collaboration outside the classroom in macroeconomics is widely used by universities to discuss topics such as international trade, interest rates, investment, consumption, government spending, inflation and economic growth. In the case of macroeconomics, collaborative learning outside the classroom is widely used by universities to discuss topics such as inflation and economic growth. The use of collaborative learning has a positive influence on student knowledge and is superior to traditional learning methods (Cohn, 1999). When discussing selected macroeconomics variables, such as GDP and inflation, it can be concluded that collaborative learning not only improves students' theoretical understanding but also contributes to improving skills in analyzing and searching for data related to macroeconomics variables (Martinez, Ferrandiz, Flores and Muoz, 2016). Collaborative learning provides a number of advantages, for example, students can grasp macroeconomics concepts more rapidly when they work together under the guidance of their professors. Not only does it contribute to final marks, but it also has the potential to encourage engagement and collaboration between students in the process (Parker, 2010).

CONCLUSION

In summary, the implementation of online-based collaborative learning in educational institutions is particularly relevant in the pre- and in-college level. This strategy is frequently referenced and used, especially during the Covid-19 pandemic, which was particularly hard on the economic system. Undergraduate students taking a qualitative, quantitative, and graphical approach to microeconomics and macroeconomics courses will understand the material using collaborative learning techniques such as attention to the stages of engagement, exploration, transformation, presentation, and reflection. A large majority of students feel strongly in favor of introducing approaches that encourage students to conceive of themselves as social creatures in order to facilitate social interaction among their peers.

It is evident that students are in high demand for collaborative learning opportunities that take place online. It has been demonstrated both theoretically and empirically that the application of this learning can have an impact on both the spirit of learning and the outcomes of learning. We urge that future researchers extend the study using an associative method. This means that they should explore the influence of collaborative learning on educational results while including the spirit of learning as an intervening and/or moderating variable in the study design.

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ACCEPTANCE

March 25, 2021

Dear Authors,

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We are pleased to let you know that your paper entitled: **“Online-Based Collaborative Learning: Economics Teaching Innovation in Higher Education”** has been accepted in *Review of International Geographical Education Online (RIGEO)*. Paper will be published in Vol. 11, Issue 2 (2021).

Regards,




Editor-in-Chief
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Online-Based Collaborative Learning: Economics Teaching Innovation in Higher Education

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Abstract

The goal of this study is to assess student views regarding online-based collaborative learning in the context of economics classroom instruction. The term "collaborative learning" refers to learning that takes into consideration characteristics such as interaction with the subject matter, exploration, transformation, presentation, and reflection. The participants in this study were 221 undergraduate students who were enrolled in economics courses. The questionnaire was delivered through Google Forms, which served as the data collection method. The descriptive statistics were employed on the study instrument, which included as many as 53 questions, and the analysis was divided into five stages: the data distribution test, descriptive statistics, instrument validity and reliability, and hypothesis testing. Among the findings: the data is normally distributed, a large majority of students strongly agree with online-based collaborative learning, the instrument used passes the validity and reliability tests, and findings from hypotheses testing indicate that all five hypotheses were tested and found to be statistically significant. Future study options include the development of research variables and the use of associative statistics to analyze the data.

Keywords

Online-based collaborative learning, economics teaching, microeconomics, macroeconomics

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Introduction

The collaborative approach is widely used by educational institutions, particularly higher education in Indonesia, as a learning method. Collaborative learning was chosen because of its benefits. According to Chandra (2015) the benefits include strengthening students' thinking, communication, leadership, and social responsibility, as well as placing students at the center of learning. Collaborative learning, according to Le, Janssen, and Wubbels (2018), can boost student friendship and competence. Additionally, Abidin, Masitoh, and Bachri (2019); Ku, Lohr, and Cheng (2004) claim that empirically collaborative learning can promote student togetherness, experience, and mutual support to generate harmonization of teaching and learning processes and learning motivation. Meaningful learning is enhanced when utilized in the COVID-19 pandemic, where the traditional learning method is implemented simultaneously with the online media (Dharma, Sugihartini, & Arthana, 2018; Hijriati, 2017; Sulandari, 2020). Since new teaching strategies are needed in various parts of academia, especially in economics departments, e-learning is essential (Anugrahana, 2020; Hamid, Sentyo, & Hasan, 2020; Maison, Kumiawan, & Anggraini, 2020; Pratama & Mulyati, 2020; Sadikin & Hamidah, 2020). To minimize face-to-face learning, this online-based learning was chosen (Abidah, et. al, 2020; Marini & Milawati, 2020; Rayuwati, 2020). On the other hand, online-based collaborative learning is not always successful when implemented in every institution and discipline. According to McInerney and Roberts (2002), collaborative learning in higher education, both online and face-to-face, is still underutilized due to the difficulties in maintaining control of the class and the lack of trust among students. While online collaborative learning is successful in some topics, such as mathematics, it is not successful in others (Nason & Woodruff, 2004). Despite the fact that the two studies mentioned above were conducted long before the covid pandemic occurred, this online-based collaborative learning method proved to be indispensable during the covid pandemic and helped students improve their achievement and enthusiasm for learning (Arief, 2020; Coman, İru, Meseşan-Schmitz, Stanciu, and Bularca, 2020; Demuyakor, 2020; Soeryanto, Arsana, Warju, and Ariyanto, 2020; Learning was conducted online during the state-imposed epidemic in Indonesia (Handarini & Wulandari, 2020; Kristina, Sari, & Nagara, 2020; Sugiarto, 2020). Students appreciate the use of online-based collaborative learning since it helps them connect and enhance their collaboration abilities (Ku et al., 2004). This method is helpful when used in the context of university-level education, especially in economics courses. Previous research that supports the deployment of collaborative learning includes the findings of Stoytcheva (2017), which show that when considering distant collaborative learning in the classroom, economic difficulties can be solved. The same study was done in New Delhi to determine the effectiveness of online collaborative learning tactics in comparison to conventional learning strategies on 120 college students. Students had much better results while employing online-based collaboration tactics (Maulidah & Aziz, 2020; Mehar & Kaur, 2020). Online collaborative learning had a favorable and considerable impact on student performance in Malaysia, which led educational institutions to seriously investigate this method as a classroom teaching technique (Yin, Yusof, Lok, & Zakariya, 2018). According to Stanley and Zhang (2020), online-based collaborative learning has a favorable impact on student involvement and performance in class at large public universities. In addition, Son (2016) admits student-centred collaborative learning innovation is critical in developing international economics learning courses that are relevant, engaging, and encourage students to participate actively in the classroom. Looking closely at the previous studies mentioned above, it is abundantly evident that collaborative learning is student-centred learning, as students are in control of their performance. Based on the conditions in Indonesia, such as the coronavirus epidemic, the deployment of online-based learning is very sensitive, so the achievement of student independence is critical in new learning models during the Covid 19 pandemic. Additionally, an understanding of economics courses demonstrates that online-based collaborative learning improves students' ability and performance by boosting their inventiveness and grasp of how economies work. Earning a high level of understanding in microeconomics and macroeconomics, often known as micro- and macroeconomics, involves integrating cognitive, emotional, and psychomotor domains. Economic theory is covered in two parts: microeconomics and macroeconomics. Microeconomics is explained in 13 sections and macroeconomics is covered in 36 chapters in this economics course (Mankiw, 2018). Meanwhile, in this study, web-based collaborative learning is separated into five variables, each of which corresponds to a

stage in online collaborative learning, namely; engagement, exploration, transformation, presentation, and reflection (also known as stages in online collaborative learning). Students are given direct involvement in teaching and learning at the engagement stage, and they need to acquire responsibility, participation, and social concern in the economics class. Teachers believe that increasing student participation in the classroom will stimulate a desire in learning and a greater understanding of economics (Chou & Chen, 2018; Curtis & Lawson, 2001; Haqqi, 2017; Mulia, 2020; Panlumlers et al., 2017; Shabbir et al., 2021; Nazari et al., 2021; Stanley & Zhang, 2020; Sulistyawati & Zuchdi, 2016). Exploration, where students are allowed to discover together what problems the lecturer is concerned with, and everyone has to provide income based on the most up-to-date literature (Chou & Chen, 2018; Curtis & Lawson, 2001; Haqqi, 2017; Mulia, 2020; Panlumlers, Nilsook, & Jeerungsuwan, 2017; Rohmat, 2017; Sulistyawati & Zuchdi, 2016). Internal group talks become a criterion for collaborative learning success in transformation. This internal group debate teaches tolerance among group members by appreciating varied salaries (Haqqi, 2017; Laal & Laal, 2012; Nazeer, 2006; Panlumlers et al., 2017; Son, 2016). In many earlier research, the presentation aspect was done out following internal group talks. The lecture in question is about economics and how it applies to collaborative learning. Students learn not only by presenting but also by observing, analysing, and responding. To make presentations successful, students must be able to elaborate on the subject offered (Gleeson, McDonald, & Williams, 2009; Haqqi, 2017; Laal & Laal, 2012; Nazeer, 2006; Panlumlers et al., 2017; Rahmawati & Nurhidayati, 2016; Shabbir et al., 2020). Following the presentation, there was a period of reflection, which included questions and answers between groups, with the lecturer acting as a motivator and facilitator. It is envisaged that at this stage of reflection, students would provide feedback on the economic learning process in a specific semester, which is also a kind of teaching and learning responsibility (Gleeson et al., 2009; Haqqi, 2017; Manizar, 2015; Nazeer, 2006; Panlumlers et al., 2017; Sorensen, 2004).

Table 1.
Literature Review Mapping

| Literature | Variables | | | | |
|-------------------------|------------|-------------|----------------|--------------|------------|
| | Engagement | Exploration | Transformation | Presentation | Reflection |
| Curtis & Lawson | ✓ | — | — | — | — |
| Sulistyawati & Zuchdi | ✓ | ✓ | — | — | — |
| Panlumlers et al. | ✓ | ✓ | ✓ | ✓ | ✓ |
| Haqqi | ✓ | — | ✓ | ✓ | ✓ |
| Chou & Chen | ✓ | — | — | — | — |
| Mulia | ✓ | — | — | — | — |
| Stanley & Zhang | ✓ | — | — | — | — |
| Nazeer | — | ✓ | ✓ | ✓ | ✓ |
| Sulistyawati dan Zuchdi | — | ✓ | — | — | — |
| Rohmat | — | ✓ | — | — | — |
| Jackson & Fagan | — | ✓ | — | — | — |
| Laal dan Laal | — | — | ✓ | ✓ | — |
| Son | — | — | ✓ | — | — |
| Gleeson et al. | — | — | — | ✓ | ✓ |
| Rahmawati & Nurhidayati | — | — | — | ✓ | — |
| Sorensen | — | — | — | — | ✓ |
| Manizar | — | — | — | — | ✓ |
| Putri | — | — | — | ✓ | ✓ |
| Monaco | — | — | — | ✓ | — |
| Galarza & Johnson | — | — | — | ✓ | — |
| Cohn | — | — | — | ✓ | — |
| Martinez et al. | — | ✓ | — | ✓ | — |
| Parker | ✓ | ✓ | ✓ | ✓ | ✓ |

This collaborative learning environment, which is based on the internet, is one of the more innovative options available in the learning strategy of economics courses at universities. The decision to employ this style of learning was made because it has been shown both theoretically and practically to be effective in boosting student competency in a variety of areas, including not only learning outcomes, but also social, psychological, and other academic characteristics.

Research Questions

Based on the above thinking, this research is directed to answer the following five research questions:

- 1) How are students' attitudes towards online-based engagement learning in economics teaching?
- 2) How are students' attitudes towards online-based exploratory learning in economics teaching?
- 3) How are students' attitudes towards online-based transformational learning in economics teaching?
- 4) How are students' attitudes towards online-based presentation learning in economics teaching?
- 5) How are students' attitudes towards online-based reflection learning in economics teaching?

Methods

Research Design

The quantitative method was used in this study, and the descriptive research style was used as well. The goal of this research is to optimize respondents' feelings towards online-based collaborative learning. This learning style was selected in order to accommodate the time that face-to-face education has been outlawed by the government according to COVID-19, instead, classes are offered through the internet in a collaborative style. Group work, where students interact with each other to solve problems, offers the advantage of a collaborative approach. This is particularly effective, as it can eliminate the shortcomings of online learning, which tends to be limited to the student on his or her own. Students in this paradigm will develop by interacting with groups, which positions them as the subjects of others.

Population and Sample

The participants in this study are students at the State Islamic Institute (IAIN) Tulungagung, Faculty of Economics and Islamic Business who are studying economics courses in the odd semester of 2020/2021 (microeconomics and macroeconomics). It was discovered that the total number of students taking this course was 229.

Data Analysis Technique

The steps of doing a systematic analysis of research data are as follows: data distribution, descriptive statistics, instrument validity and reliability, and instrument validity and reliability (Ibe, 2014; Marshall & Jonker, 2010; Sarmah & Bora Hazarika, 2012; Valim, et. al, 2015). When dealing with large samples, data with normal distribution or normal distribution is essential, although descriptive statistics are meant to simplify data while also describing the factors under investigation (research variables). To assess the validity and reliability of the instrument, as well as the overall quality of the instrument or research statement items obtained through a questionnaire, respondents' views regarding research variables were assessed. Using the SPSS application, you may assess data distribution, descriptive statistics, instrument validity and reliability, and hypothesis testing among other things.

Data Collection and Research Instruments

An attitude scale from Likert was utilized in the data collection process, and a questionnaire was created and delivered to respondents using a Google form. A research instrument can be

proposed based on the theoretical and empirical foundations, where each variable is reduced to a sharpened indication in the form of a questionnaire instrument that will be delivered to respondents. According to table 2, the study instrument was divided into 53 items, with 11 items for the engagement variable, 10 items for the exploration variable, 9 items for each transformation and presentation variable, and 14 items for the reflection variable.

Table 2.
Grid of Research Instruments

| Variable | Indicator | Descriptor |
|----------------|-------------------------|--|
| Engagement | Participation | Direct involvement in the group; |
| | Social care | Discipline; Honest; Confidence; |
| Exploration | Responsible | Support each other; Interaction; |
| | Cooperation | Teamwork; |
| | Opinion | Actively express opinions; |
| Transformation | Literature tracking | Ability to find literature; Ability to clarify literature; |
| | Discussion | Exchange ideas; Ability to describe vocabulary |
| | Tolerance | Appreciate differences; |
| Presentation | Presenting | Ability in running presentation software; |
| | Observing | Ability to present material in writing; |
| | Analysing | Ability to present material orally |
| | Answering | Ability to observe problems; |
| Reflection | Lecturer as motivator | Ability to analyse data; |
| | Lecturer as facilitator | Ability to answer questions; |
| | | Open; Empathy; Religious; |
| | | Understanding of differences; Understanding of competence; |

Hypothesis Testing

The study is guided by two basic premises: theoretical basis and empirical evidence. Here, the following hypotheses are examined: (1) Online-based learning in economics is not uniformly beneficial; (2) Online-based exploration in economics is not uniformly beneficial; (3) Online-based transformative learning in economics is not uniformly beneficial; (4) Online-based presentation learning in economics is not uniformly beneficial, and (5) Online-based reflection learning in economics is not uniformly beneficial. For the purpose of testing the null hypothesis (H_0) and the alternative hypothesis (H_a), the following statements of the null hypothesis (H_0) and the alternative hypothesis (H_a) are used:

- 1) There is no difference in students' attitudes toward online-based collaborative learning in economics teaching and students' attitudes toward traditional classroom-based collaborative learning in economics teaching.
- 2) Technically speaking, the One-Sample T-Test with Two Tail Test is used in this study hypothesis testing, and the following parameters are followed. If the p value is less than five percent (0.025), H_0 is rejected; if the p value is greater than five percent (0.025), H_0 is approved.

Findings

This study finds that one of the newer advances in teaching economics in higher education is the implementation of online-based collaborative learning. As many as 221 people were part in this research. This class has 229 students enrolled. In order to reach a goal of distributing questionnaires to 220 respondents within the time restriction (between December 1st and December 19th, 2020), those who completed the form received up to 96.5% of the submissions, whereas those who did not received up to 3.5% of the submissions. Students who missed this survey because of lack of Internet access, a busy schedule, they didn't know if they were study respondents, or because they had too much work to do skipped the questionnaire. The level of respondent involvement (LRP) in filling out research questionnaires is calculated using the formula $LRP = \text{rate of participation} / \text{total response rate}$.

$$LRP = \frac{\text{Completed Questionnaire}}{\text{Questionnaire Distribution}} \times 100 = 96.5\%$$

With an LRP of 96.5 percent, it can be inferred that respondents are highly engaged in the survey and that they believe it is vital to express their opinions about online-based collaborative learning in economics courses. Furthermore, the researcher's socialization of learning models during the COVID pandemic through learning innovations that integrate independence and information technology is considered successful, as evidenced by the fact that the participation rate of respondents has increased as a result of the research.

Respondent's Gender

This survey shows that women predominate in it, which means that there are as many as 164 people responding. Male respondents can estimate the total number of respondents to be around 56, or around 26 percent of the total population. This data demonstrates that women's interest in choosing Islamic economics majors is greater than men's, because while answering research surveys, they are more likely to give a favorable response and these responses help with the research's success.

Data Distribution

When the data is regularly distributed, the requirements for a One-Sample T-Test must be met. As a result, the five research variables must be examined for normalcy, and in this study, the kurtosis ratio and the skewness ratio are used in conjunction with the histogram normality test to accomplish this.

Table 3.
Skewness and Kurtosis Ratio

| Variable | Skewness Ratio | Kurtosis Ratio |
|----------------|----------------|----------------|
| Engagement | -0.2586 | -1.8354 |
| Exploration | -1.8536 | 0.7400 |
| Transformation | -1.9321 | -0.9412 |
| Presentation | -1.6963 | 1.7547 |
| Reflection | -1.2931 | -0.9936 |

If the value of the ratio of skewness and kurtosis is between -2 and 2, then the data is regularly distributed. The skewness ratio and kurtosis ratio are in the recommended value interval (Sujianto, 2009) derived from the research variable data.

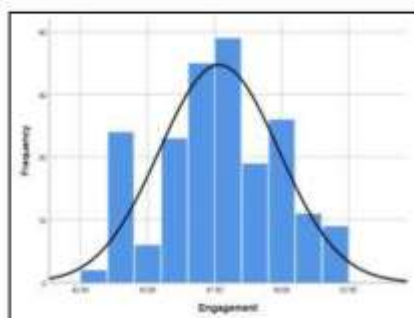


Figure 2a. Engagement

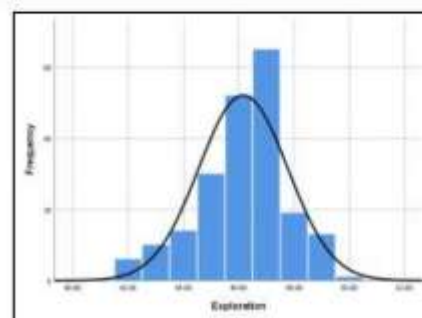


Figure 2b. Exploration

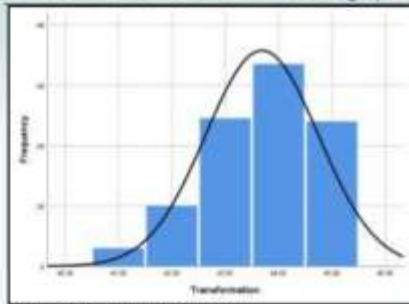


Figure 2c. Transformation

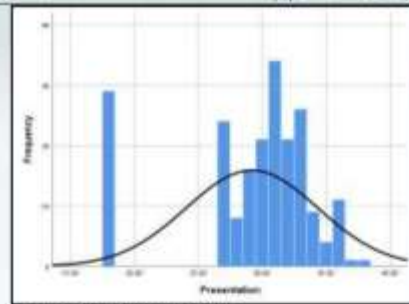


Figure 2d. Presentation

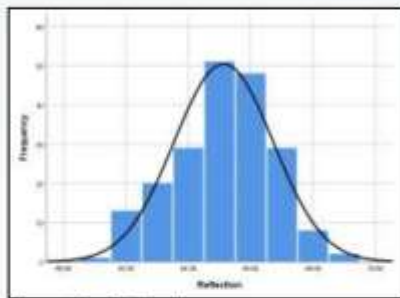


Figure 2e. Reflection

Figures 2a to 2e are histograms that reflect the distribution of research data. According to (Sujianto, 2009) data is called normal if the histogram curve is balanced on the left and right and is bell-shaped.

Descriptive Statistics

The table below is a description of the main research data based on the number of valid data (N), range, and standard deviation (SD) of the research variables.

Table 4.
Descriptive Statistic

| Statistic | Variables | | | | |
|-----------|------------|-------------|----------------|--------------|------------|
| | Engagement | Exploration | Transformation | Presentation | Reflection |
| N | 194 | 210 | 190 | 205 | 201 |
| Range | 9.00 | 8.00 | 4.00 | 20.00 | 8.00 |
| SD | 2.22936 | 1.60814 | 1.06079 | 5.15379 | 1.59160 |

Depending on the variable, the number of valid data points (N) fluctuates between 194 and 210 respondents. Due to the existence of data outliers in each variable, the amount of data that can be processed is less than the total number of respondents, which may be as high as 221 in this case. In research data, the range is defined as the difference between the maximum and minimum data, with the larger the range of data, the more diverse the research results. The findings revealed that the range of presentation variables was greater than the range of other variables, resulting in a greater degree of diversity. While the presentation variable has a larger standard deviation (SD), it has a smaller SD than the other four variables. While these findings show that the data is becoming increasingly diversified, the fact that the standard deviation of the presentation variable (5.15379) does not surpass the average (29.2146) indicates that there are no data outliers.

Engagement Variable Overview

Using 11 questionnaires from Table 2, the researcher conducted a survey, which was then published. Using a 1-to-5 point scale, the responses to the research questionnaire were divided into five groups, which were as follows: never (1); rarely (2); occasionally (3); frequently (4); and always (5). Only 44.3 percent of those who answered the survey said they regularly attended group studies. 53.4 percent of participants expressed a strong conviction in the ability of groups to make decisions. The indicator of social awareness of discipline descriptions only contained two factors, showing up on time in a group study and travelling home together in a group study (59.3 percent often). One hundred and ninety-four (194) respondents say they frequently use honest descriptors, and of these, 48.3% claim to have positive views toward presenting information in accordance with reality. That percentage of people who indicated that they often express loyalty to the group agreement was around 45.7 percent. Only two self-confidence adjectives are left. They are both true (59.3 percent think often). As a group, the indicators of responsibility for descriptions support each other in situations where respondents think about respecting other people's perspectives as much as 68.8 percent of respondents think about it all of the time, when conversing with friends, be courteous (77.8 percent), ineffective (also known as ineffective) (often). It has been determined whether or not all instruments are valid (item validity value > 0.3) and reliable (item reliability value > 0.6) in cases where all instruments are valid and reliable in the same situation.

Overview of Exploration Variables

Cooperation, opinion, and literature track were simplified to three indicators and subsequently expanded to ten measures. Among those who believe that students make a major contribution to the group's overall success, 54.6 percent (187 people) agree that students do so. The majority of 82.8 percent (183 persons) strongly believe that they should use their abilities to the greatest degree possible if they are given the opportunity. Respondents agree that children are aware of their role in achieving the targeted objectives in a whopping 98 percent (128 people) of their responses. The results of this poll show that together, people who responded were found to be accountable for 54.8% of the quality of their employment. 54.8 percent of poll respondents strongly agree that they actively seek solutions to problems with others. Over half of the participants claimed they are actively working on collaboratively fixing ideas. In a survey of 161 library visitors, 72.9 percent said they went to find literature. Nearly all (93.7%) agree they browse for books online. Moreover, 95.5 percent of respondents agreed that the material they encountered was produced by well-known book publishers and indexed journals. All valid and trustworthy instruments (item validity > 0.3) have been returned.

Overview of Transformation Variables

The transformation variable was developed into nine instruments, where respondents agreed (48.9% = 108 people) that they felt happy during the discussion. Respondents also strongly agree (83.3% = 184 people) that the material discussed is relevant to the group assignment. A total of 188 people or 85.1% of respondents strongly agree that the discussion method motivates learning. Respondents also strongly agree (84.2%) if the discussion method increases interest in learning. Students responded strongly agree with 86.9% that the discussion method can improve understanding of learning. Around 82.4% of students strongly agree that students collaborate to learn. Moreover, students overwhelmingly agree (by an 89.1 percent margin) that the discussion method can help them form friendships. The results show that as many as 85.1 percent of students strongly support the discussion method since it helps to eliminate competitiveness within a group of students. As many as 203 people or 91.9 percent of students chose highly agree, which indicates that the discussion method can foster community building. Validity and reliability of all instruments filled out and returned by respondents have been checked, and all instruments have been found to be valid (item validity value > 0.3) and reliable (item reliability value > 0.6) according to the results.

Presentation Variable Overview

Students were able to execute presentation software (PowerPoint) as many as 129 persons, or 58.4 percent if presentation variable was restricted to nine instruments. 101 students (or 45.7 percent)

strongly agree that they are capable of presenting the subject in written form, according to the survey results. In a similar vein, the oral presentation of the topic reveals that 85 percent of students agreed with the information presented. When asked if they agree or disagree with the instrument that allows students to observe difficulties by looking for data, 56.6 percent of students, or as many as 125 people, respond negatively. Additionally, students can find issues by tabulating data, which allows up to 98 individuals or 44.3% of the participants to respond in the negative. With the use of data processing software, the number of respondents who agree that they can undertake data analysis comes to 117 persons or 52.9 percent. Nearly 150 persons or 67.9% of respondents stated that they did not have the skills necessary to interpret the outcomes of the data analysis. As many as 93 persons or 42.1% feel that they can deliver answers if there are inquiries from the audience. Out of responders, 41.2% had expressed satisfaction with the responses. All instruments were valid and reliable when they were completed and returned by respondents.

Overview of Reflection Variables

A total of fourteen instrument items have been generated from two indicators for the reflection variable, namely the lecturer as a motivator and the lecturer as a facilitator, and they are as follows: A total of 115 persons, or 52 percent of those who answered the survey, strongly agreed that lecturers should encourage students to express themselves. According to the survey respondents, teachers have so far encouraged students to maintain an optimistic outlook (120 people, or 54.3 percent). Respondents expressed strong agreement (53.8 percent) with the statement that thus far, lecturers have encouraged students to discover their skills. A total of 122 persons, or 55.2 percent of those who answered the survey, strongly agreed that, thus far, professors have encouraged students to have confidence in themselves. Approximately 73.3 percent of respondents (162 respondents) strongly agreed that lecturers had taught the attitude that learning is a form of religious worship so far. As many as 168 persons (or 76 percent) strongly think that lecturers are required to always please parents, according to their opinions. Sixty-two percent of respondents strongly agree that lecturers are required to always recall Allah SWT in the form of worship in addition to teaching and satisfying parents throughout this time. As respondents explained, instructors are not overbearing when it comes to expressing their own thoughts in class (111 people who answered strongly agree or 50.2 percent). Around 100 pupils, or roughly 63.3% of the class, believe that lecturers pay greater attention to their classmates. 166 individuals equal 75.1% (67.4 percent strongly agree). A large majority of respondents responded affirmatively, with as many as 154 individuals agreeing, stating that lecturers are tolerant of student faults (agreeing strongly, 68.7% of respondents). A lecturer additionally directs their attention towards their students, and that can improve how students feel about themselves, resulting in answers like "agree as many as 139 people or 62.9 percent answered, then strongly agree that lecturers value student accomplishments as many as 161 people or 72.9 percent. All instruments were found to be valid and reliable, and all items have been successfully filled out and returned by respondents.

Hypothesis Testing

This study investigated five hypotheses, the findings of which may be found in Table 6, which shows the outcomes of the statistical tests. The decision-making process is directed by the comparison of the value of 0.025 with the value of (0.05) in the third column, Sig. (2-tailed), which indicates the significant value with a two-tailed test, as described in the method section above.

Table 5.
Hypothesis Test Results

| Variables | t _{statistic} | Sig. (2-tailed) |
|----------------|------------------------|-----------------|
| Engagement | 160.113 | 0.000 |
| Exploration | 379.933 | 0.000 |
| Transformation | 515.728 | 0.000 |
| Presentation | 70.049 | 0.000 |
| Reflection | 544.521 | 0.000 |

The first hypothesis, "student views towards online-based engagement learning in economics education does not necessarily reflect that the way economics is taught today remains unchanged" is examined. H_0 (the higher) has an issue with Sig. (2-tailed) < 0.025 , thus it is refused. Conversely, H_a (the lower) has no issues with Sig. (2-tailed) < 0.025 , therefore it is accepted. In this instance, "students' attitudes towards online-based exploratory learning in economics instruction are not the same" is a hypothesis that is tested because H_a is accepted. The final hypothesis, "Students' attitudes about online-based transformational learning in economics courses are not the same," is supported by further investigation. The conclusion goes against H_0 and agrees with H_a , in which case the hypothesis is proven false. The fourth hypothesis postulates that students' attitudes toward online-based presentation learning in economics class differs from their attitudes towards traditional lecture methods. According to the results of the test, the value of Sig. (2-tailed) < 0.025 , which is less than 0.025 , so that H_0 rejects and accepts H_a , which leads to the hypothesis being investigated. A final hypothesis, "student attitudes towards online-based reflection learning in economics instruction does not have the same results for both Sig. (2-tailed) < 0.025 and Sig. (3-tailed) > 0.025 ," is being investigated, with the additional benefit of a p-value of < 0.025 .

Discussion

According to the findings of research that has been combined with hypothesis testing, it can be concluded that students' attitudes toward online-based collaborative learning in economics instruction are not the same for every student. Student competency in economics courses, both microeconomics and macroeconomics, is improved as a result of this learning strategy, according to the findings of the study. This research, when viewed from the perspective of microeconomics, corresponds with previously conducted research, which found that the majority of students at Flinders University in Australia responded extremely well to collaborative learning for microeconomics courses. When compared to traditional learning, they believe that this learning is quite advantageous. Students can mingle while while developing their skills through collaborative learning. Students believe that this strategy can help them gain a more in-depth understanding of microeconomics courses as well as other subjects (Gleeson et al., 2009). Students don't comprehend the concept and how it is implemented in the field. Students' talents and character can be built when this collaborative learning is implemented (Putri, 2016). It is also helpful to have collaborative learning techniques since they can motivate students to achieve their full potential, especially in microeconomics courses, where students are required to master mathematical concepts (Monaco, 2018). The demand, supply, and balance of the milk market is covered in detail even when offline and online-based collaborative learning is applied to students at institutions in the United States and Peru. Although students from both nations presented their findings at the conclusion of the semester, this collaborative learning experience motivates individuals to continue their studies in international classes (Galarza & Johnson, 2011). Collaboration outside the classroom in macroeconomics is widely used by universities to discuss topics such as international trade, interest rates, investment, consumption, government spending, inflation and economic growth. In the case of macroeconomics, collaborative learning outside the classroom is widely used by universities to discuss topics such as inflation and economic growth. The use of collaborative learning has a positive influence on student knowledge and is superior to traditional learning methods (Cohn, 1999). When discussing selected macroeconomics variables, such as GDP and inflation, it can be concluded that collaborative learning not only improves students' theoretical understanding but also contributes to improving skills in analyzing and searching for data related to macroeconomics variables (Martinez, Ferrandiz, Flores and Muoz, 2016). Collaborative learning provides a number of advantages, for example, students can grasp macroeconomics concepts more rapidly when they work together under the guidance of their professors. Not only does it contribute to final marks, but it also has the potential to encourage engagement and collaboration between students in the process (Parker, 2010).

Conclusion

In summary, the implementation of online-based collaborative learning in educational institutions is particularly relevant in the pre- and in-college level. This strategy is frequently referenced and used, especially during the Covid-19 pandemic, which was particularly hard on the economic

system. Undergraduate students taking a qualitative, quantitative, and graphical approach to microeconomics and macroeconomics courses will understand the material using collaborative learning techniques such as attention to the stages of engagement, exploration, transformation, presentation, and reflection. A large majority of students feel strongly in favor of introducing approaches that encourage students to conceive of themselves as social creatures in order to facilitate social interaction among their peers. It is evident that students are in high demand for collaborative learning opportunities that take place online. It has been demonstrated both theoretically and empirically that the application of this learning can have an impact on both the spirit of learning and the outcomes of learning. We urge that future researchers extend the study using an associative method. This means that they should explore the influence of collaborative learning on educational results while including the spirit of learning as an intervening and/or moderating variable in the study design.

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