

# The Impact of Synchronous and Asynchronous Learning on Academic Integrity Violations by University Students

Yeney Widya Prihatiningtias<sup>1</sup>, Muhammad Aldi Alif Rahmat<sup>2</sup>  
Universitas Brawijaya<sup>1,2</sup>

M.T. Haryono No. 165, Malang, East Java, Indonesia, 65141

Correspondence email: [yeney.wp@ub.ac.id](mailto:yeney.wp@ub.ac.id)

ORCID ID: 0000-0003-3663-2782

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### ABSTRACT

This study intends to investigate the impact of synchronous and asynchronous online learning on the occurrence of academic ethical infractions among students. The object of this research is an active student of Bachelor's Degree in the Department of Accounting, Faculty of Economics and Business, Universitas Brawijaya. A total of 354 data were collected using a survey method with a purposive sampling technique. Data analysis was performed using the SPSS application. The test results show that synchronous online learning has an effect on students' academic ethics violations. In addition, the test results also show that asynchronous online learning has an effect on violations of student academic ethics. The findings are consistent with the Fraud Triangle Hypothesis, which contends that when fraud is possible, cases of academic ethical infractions become more serious.

**Keywords:** Academic Integrity, Asynchronous Learning, Accounting Students, Academic Violations, Synchronous Learning

## INTRODUCTION

Academic ethics are defined as noble values that must be obeyed by the academic community when acting, behaving, or doing activities like academics or as superior individuals in the social environment, based on a value system covering the fields of religion, customs, courtesy, decency, as well as moral and moral benchmarks. Each educational institution has its own way of providing an understanding of academic ethics. One example is the Faculty of Economics and Business Universitas Brawijaya (FEB UB). Existing facts explain that actions that violate academic ethics often occur, which are referred to as academic fraud. Fraud will occur if no efforts are made to detect and prevent it. The phenomenon of fraud can be found in various regions. According to Tuanakotta (2013), fraud is referred to as an illegal activity, including deceit, concealment, or violation. Fraud is committed by a person and a group of people for the sake of gaining an advantage to avoid loss or to secure personal gain. Fraud can be carried out by various groups as if it has been seen as normal by some people.

Research by Or, Greenberger, and Milliken (2021) attempted to determine the relationship between character strength and ethical engagement in online-based faculty. One of the tasks of colleges is to engage in effective teaching practices. When the online learning system in universities began to be implemented, problems regarding ethics became more and more frequent due to ineffective learning. Various efforts have been made by educators to keep interacting with students during online learning, such as the use of the Big Blue Button and Zoom, which allows real-time learning, to the use of Google Classroom as a means of conveying lecture information or simply sharing materials that have been prepared by lecturers so that students can read them. wherever and whenever.

Online lectures are carried out while still referring to the academic ethics listed in the FEB UB academic manual. Reflection of attachment to academic ethics is highlighted in several aspects, such as lectures, research, publications, and so on. Therefore, ethical behavior can be one of the main factors influencing students' learning experience and academic success. This underlies researchers to conduct research related to violations of student academic ethics during online learning. Online learning that is still applied today makes this research relevant to existing work. Based on the discussion of the aforementioned social phenomena, a survey of undergraduate students in the Department of Accounting of the Faculty of Economics and Business, Universitas Brawijaya, was conducted to examine the impact of synchronous and asynchronous online learning on violations of student academic ethics. The next section of this research discusses the literature review and the formulation of hypotheses, and then it moves on to the research methods section. The results and discussions section is described to explain the rejection or acceptance of the hypothesis. Finally, the closing remarks are provided at the end of the paper, which include the summary of the study, research limitations, implications, and suggestions for future research.

## LITERATURE REVIEW

### Theory of X and Y

Theories X and Y of Douglas McGregor can be described as different perspectives regarding people and their relation to organizations (Robbins, 1996). Theory X states that humans will behave after the work culture that has been passed down from generation to generation. This theory also believes that humans are seen as having a negative part, namely humans do not like the work given to them and must be forced to excel. Therefore, humans need to be prosecuted and controlled with various punishments so that they can be moved to achieving organizational goals.

Theory Y is the opposite concept of the above theory, humans are seen as having a positive side in organizing. So this theory assumes that humans have full control over themselves in realizing organizational goals. In other words, humans can be responsible for all their duties without the need for punishment. Based on this, it can be concluded that theory Y has a dynamic and modern nature of one's development in the organization. Theory Y provides an affirmation that humans need to adapt according to their capacities. As academics or educated groups, students can control themselves and understand their obligations. So students need to be aware of their role and essence as ethical and moral human beings.

### **Deontology Theory**

Deontology theory is one of the non-consequentialist ethical theories, namely a theory that judges the good or bad of an activity based on a person's willingness to do what he has been required to do. This term is taken from the Greek "deon" which means "obligation" and "logos" which means knowledge (Bertens, 2013). Deontology views one's obligations as the basis for judging the good or bad of an action. Similar to other non-consequentialist theories, deontological theory views the morality of an action as being motivated or driven in order to carry out the obligations that have been carried out. A person is said to act properly and well if he follows what is his duty and obligation.

### **Fraud Triangle Theory**

In general, fraud is cheating relating to the amount of money or property (Pradesyah, Yuslem, & Batubara, 2021). Thus, Donald R. Cressey created the fraud triangle idea in 1950. The theory is based on Cressey's research on the things that cause some people to commit fraud because of trust violators (Irianto & Novianti, 2018). The fraud triangle theory provides an explanation of a number of factors that cause fraud. Albrecht, Albrecht, Albrecht, and Zimbelman (2012) suggest three elements that form the basis for individuals to commit fraud, including pressure, opportunity, and rationalization.

#### ***Pressure***

Pressure can be interpreted as a motivation to obtain something that is limited by a person's inability to achieve that goal, resulting in the individual committing fraud (Albrecht et al., 2012). Most students find it challenging to understand lecture material and tend to commit fraud due to demands to pass the course (Nursani, 2014). Pressure can be obtained from the external or internal environment. Internal pressures include the desire to get a very good Grade Point Average (GPA), lack of confidence, and the desire to be praised. External pressures can be in the form of demands from family, influence from friends, and too many tasks.

#### ***Opportunity***

Albrecht et al. (2012) define opportunity as a situation where a person faces conditions that allow him to cheat and avoid the risk of being caught while committing the fraud. The emergence of opportunities can be caused by system weaknesses such as lack of control or sanctions which in their application are not firm (Purnamasari, 2014). Opportunity can also be caused by an inability to assess the quality of performance, apathy, or lack of information. According to Nursani (2014), opportunities can arise by utilizing internet technology, less strict examination supervision, and the use of loopholes from the take-home test method.

#### ***Rationalization***

Rationalization in the Fraud Triangle dimension can be interpreted as an effort to justify oneself for wrong actions. Students can make rationalizations in the form of belief in the fairness of the violations committed because these actions do not harm other parties, even though they are ethically wrong. Purnamasari (2014) also revealed that students justify academic violations because other students mostly do these actions. Also, some students do this solely to help their friends on the basis of solidarity. A rationalization is

a form of internal conflict between perpetrators of fraud or violations. Rationalizations that are commonly used include a culture of academic cheating in the academic world, sanctions that are not too heavy, and the mindset that acts of cheating do not harm other parties.

### **Online Learning**

Online learning has the goal of providing quality learning services in a massive network so that students can reach it (Sofyana & Rozaq, 2019). Online learning in practice is divided into synchronous and asynchronous learning. Synchronous online learning can be interpreted as student activities that are present directly at lectures (real-time) as well as 2-way interactions between lecturers and students. Meanwhile, asynchronous online learning can be interpreted as student activities that are not directly present at lectures that minimize two-way interaction. In this learning model, there is often no direct feedback (Littlefield, 2018).

### **Violations of Academic Ethics**

Violation can be interpreted as an act of breaking the rules of the assignment or exam in an unjustified way (Nursalam, Bani, & Munirah, 2013). As academics, students also have rules to behave like an academic. This rule is commonly referred to as academic ethics. Ethics are moral principles that describe what is right or wrong in regulating one's behavior (Plante & McCreddie, 2019). Higher education often involves academic ethics, which generally refers to the standards of behavior required in academia to promote the integrity of educational practice (Asamoah, 2019). According to Bertens (2013), ethics is the science of morality, so ethics can also be called a science that investigates behavior. Theoretically, ethics is divided into two parts, namely basic and applied ethics. Basic ethics or general ethics contains the basic theory of ethical values, while applied ethics discusses practical issues in human life, such as professional ethics, political ethics, academic ethics, and so on.

### **Hypotheses Development**

The existence of intense interaction during synchronous online learning allows educators to continue to supervise students so as not to commit fraud or other violations of academic ethics. However, no system is completely perfect in preventing fraud, including synchronous online learning systems. Students, both students and college students, can still find loopholes in breaking the rules during synchronous online learning. Meanwhile, asynchronous online learning has an advantage, namely that recordings of shared learning sessions can give students time to better understand the content or learn more before asking questions in the discussion. The drawback of asynchronous online learning is the possibility that students feel less connected to the lecturer. Work on assignments and exams that are not directly supervised can open up gaps for students to plagiarize. Certainly, plagiarism is not justified according to academic ethics. Therefore, many previous researchers consider that asynchronous online learning with media such as Google Classroom allows students to violate academic ethics. Further review is needed to assess whether asynchronous online learning has a direct impact on students' academic ethics violations.

### ***The Effect of Synchronous Online Learning on Students' Academic Ethics Violations***

The Covid-19 pandemic has changed many policies, especially policies regarding learning that were previously carried out offline are now carried out online. This makes online learning continue to be in the spotlight of students. Everything is criticized, generally regarding the impact of online learning on violations of student academic ethics which has the potential to harm other parties in the higher education environment. One type of online learning is synchronous online learning. Synchronous online means that learning is carried out face-to-face in real time which allows educators to remain

interactive with students. The media used in general are Zoom, Google Meet, or other similar platforms.

A thorough literature review on synchronous online learning was done by Raes, Detienne, Windey, and Depaepe (2020). In order to present a summary of recent research on the advantages, difficulties, and current design principles for setting up synchronous learning, the study synthesizes the strongest data that is currently available globally. One of the key conclusions from the analysis of 47 studies by Raes et al. (2020) is that synchronous learning can lead to more engaging learning environments. However, this new study room has various challenges.

Nurjanah, Anggraeni, and Van Melle (2021) examined the effect of the misuse of information technology on accounting students' academic fraud behavior during online lectures. The results of this study indicate that the misuse of information technology has a significant effect on the academic fraud behavior of accounting students during online lectures. The development of increasingly advanced information technology and the conditions of online lectures make it easier for misuse to occur to commit student academic fraud.

The existence of intense interaction during synchronous online learning allows educators to continue to supervise students so as not to commit fraud or other violations of academic ethics. However, no system is completely perfect in preventing fraud, including synchronous online learning systems. Students, both students and college students, can still find loopholes in breaking the rules during synchronous online learning. Based on this explanation, the researcher formulates the hypothesis used in this study as follows: H1: Synchronous online learning positively affects students' academic ethics violations.

### ***The Effect of Asynchronous Online Learning on Violations of Student Academic Ethics***

In their publication, Celic and Dedeic (2021) compared synchronous and asynchronous learning in online learning at the university level. The publication includes an analysis of the transition to online learning as well as an analysis of the pros and cons of the two models and their challenges. Celic and Dedeic wrote that the advantage of synchronous online learning is that it allows students to ask questions and get answers in real-time, while the drawback is that some students may not be able to participate at the appointed time due to technical or scheduling problems.

The publication also contains the advantages of asynchronous online learning, namely recordings from shared learning sessions that can give students time to understand the content better or learn more before asking questions in discussion. According to the publication, the drawback of asynchronous online learning is that students may feel less connected to lecturers. Working on assignments and exams that are not directly supervised can open students' loopholes for plagiarism. By all means, plagiarism is not justified according to academic ethics. Therefore, many parties consider asynchronous online learning with media such as Google Classroom to allow students to violate academic ethics.

Oktaviani, Luzyawati, and Hamidah (2022) examined the effectiveness of Google Classroom in improving academic ethics. The findings of this investigation suggest that the communicative attitude is included in the "not good" category in asynchronous online learning using Google Classroom. Further review is needed to assess whether asynchronous online learning has a direct impact on students' academic ethics violations. From this explanation, the researchers formulated the hypothesis used in this study as follows:

H2: Asynchronous online learning affects students' academic ethics violations.

## RESEARCH METHOD

This research is a descriptive in nature by using a quantitative approach. Descriptive research means observing situations, conditions, or other events whose results are then displayed in the form of research reports (Arikunto, 2019). A descriptive study is carried out if the researcher knows many things about the phenomenon being raised. Descriptive studies only want to know more details about the influencing factors. Descriptive research is often designed to collect data that describes individual characteristics, phenomena, or circumstances (Sekaran & Bougie, 2017).

The population studied were active undergraduate students from the Department of Accounting, Faculty of Economics and Business, Universitas Brawijaya. The decision to determine the population was based on the fact that the perpetrators of violations of academic ethics were dominated by students. This follows the implementation of a new policy related to learning activities that have been converted into an online learning system. The sample was selected by purposive sampling method with the criteria of active undergraduate students from the Department of Accounting, Faculty of Economics and Business, Universitas Brawijaya. Based on data from the Recording Section of FEB UB, the population in this study was 1,140 active undergraduate students from the Accounting Department of FEB UB, including 232 students from class 2018, 258 students of class 2019, 314 students from the class of 2020, and 336 students of class 2021. This population figure is used as the basis for researchers to calculate the number of samples using the technique or Slovin formula. The calculation results obtained the number of samples as many as 296 respondents. Respondents used to have the possibility of not achieving the minimum number, so the researchers distributed questionnaires to 350 respondents in order to minimize the inaccuracy.

Primary data are the sort of data used, which is the data from the questionnaires that have been returned. The method for collecting data in this study refers to the questionnaire guidelines and a list of statements distributed to a predetermined sample. The purpose of the researcher using the questionnaire is to obtain an actual picture through the answers of the respondents.

The method of analysis in processing the data in this study is the method of quantitative analysis. The analysis used is descriptive analysis and multiple regression models assisted by the IBM Statistical Package for Social Sciences (SPSS) version 25 application. The researcher uses the Ordinary Least Square (OLS) method in answering the research problem. The ability to determine the direction of the link between the independent and dependent variables is the essence of the OLS approach. Because there is one dependent variable and two independent variables in this study, multiple linear regression is used. Another reason is that the dependent variable used in this study (violations of student academic ethics) uses a Likert scale where there are five answer options for each statement divided into Strongly Disagree, Disagree, Doubtful, Agree, and Strongly Agree. Therefore, the dependent variable in this study will be analyzed using multiple linear regression and requires a classical assumption test in testing the hypothesis (Purnomo, 2016).

## RESULTS

### Characteristics of Respondents

The general description related to the respondents of this research will be categorized based on gender and generation of active undergraduate students in the Department of Accounting, FEB Universitas Brawijaya. The results of the general description in this study are described as follows:

### **Gender**

Based on the data collected, the respondents were male, as many as 129 (36.4%) students and 225 (63.6%) female respondents. As a result, it may be said that the study's respondents were predominately women. As many as 225 of the total 745 (30%) active female undergraduate students of the Department of Accounting FEB UB became respondents in this study.

### **Class Year**

Based on the data collected, the respondents from the 2018 class were 108 (30.5%) students, the 2019 class was 98 students equal to (27.7%), the 2020 batch was 110 (31.1%) students, and 38 (10.7%) students of the class of 2021. Therefore, it can be concluded that most respondents were from the class of 2020. A total of 110 of the total 314 (35%) active undergraduate students of the Accounting Department FEB UB class of 2020 were identified as respondents.

## **Data Analysis Results**

### **Validity and Reliability Test**

There are 25 statement items that pass the validity test of the 40 statement items that the researchers compiled when conducting the Pilot Test on 30 respondents. According to the reliability test results, this study's value of Cornbach's Alpha is 0.736, and since this number is greater than 0.7, it can be said that the research data is credible.

### **Classic Assumption Test**

#### *Normality test*

The analysis value of Asymp. Sig (2-tailed), obtained from the normality test, leads to the conclusion that the significance threshold for the existing data is  $0.200 > 0.05$ . These findings demonstrate that the variables under investigation have a normal distribution.

#### *Linearity Test*

It may be argued that there is a substantial linear association between the X1 (Synchronous Online Learning) variable and the Y (Student Academic Ethics Violation) variable based on the linearity value of the X1 variable linearity test, which was determined to be Sig.  $0.001 < 0.05$ . The value of Sig.  $0.777 > 0.05$ , when seen from the value of deviation from linearity leads to the conclusion that the two variables are significantly linear. Also, a significant linear association exists between the X2 (Asynchronous Online Learning) variable and Y (Student Academic Ethics Violation) based on the linearity value of the X2 variable linearity test, which revealed a value of Sig.  $0.000 < 0.05$ . The value of Sig.  $0.443 > 0.05$ , when seen from the value of deviation from linearity leads to the conclusion that the two variables are significantly linear.

#### *Multicollinearity Test*

Based on the results of the multicollinearity test, it can be concluded that the research model does not indicate any symptoms of multicollinearity because the results of the VIF and tolerance values both meet the assumptions of a good research model.

#### *Heteroscedasticity Test*

Based on the heteroscedasticity test results, it is possible to determine if the correlation between the independent variable and the unstandardized residual value is between 0.194 and 0.305 for X1 and X2, respectively. This demonstrates that the two Sig. it values are greater than the required 0.05. As a result, it can be said that there are no signs of heteroscedasticity inferred by the regression model utilized in this study.

### **Descriptive Statistic Analysis**

According to the statistical descriptive test findings, 354 responded to the questionnaires the researchers delivered. The results of the descriptive statistical test show that the respondents' answers represent the X1 variable because the mean value exceeds the

standard deviation value ( $14.55 > 3.640$ ). In addition, it can also be concluded that the respondents' answers represent the X2 variable because the mean value exceeds the standard deviation value ( $21.74 > 3.789$ ). The answers from respondents also represent the Y variable because the mean value exceeds the standard deviation value ( $38.32 > 11.706$ ).

#### *Multiple Linear Regression Analysis*

It is known that Synchronous Online Learning (X1 regression)'s coefficient is 0.321 based on the findings of a multiple linear regression study. Academic ethics infractions will rise by 0.321 if synchronous online learning sessions increase by 1. If there is a positive correlation between synchronous online learning and student academic ethics violations, the coefficient with a positive value explains why; the higher the synchronous online learning, the greater the student's academic ethics violations. Also, the Asynchronous Online Learning variable's (X2) regression coefficient is 1.113. Academic ethical infractions will rise by 1.113 if asynchronous online learning sessions grow by 1. If there is a positive correlation between asynchronous online learning and student academic ethics violations, the coefficient with a positive value explains why; the more asynchronous online learning, the more ethical academic violations of students.

#### **Hypothesis Test**

##### ***Coefficient of Determination Test***

The relationship between X1 and X2 on Y is explained by the adjusted R2 value (coefficient of determination), which is 0.151 based on the examination of the coefficient of determination. Other factors that were not considered affect or can be used to explain the remaining 85%. The R-value (correlation coefficient), which in this study has a value of 0.394, can also be used to measure the size of the relationship between the independent variable and the dependent variable. This explains why the interval of 0.20 - 0.399 indicates that the association between the independent variables X1 and X2 and the dependent variable Y is in the low group. Positive values can be found in the relationship between the independent variables X1 and X2 and the dependent variable Y. This also explains that if the independent variables, namely Synchronous Online Learning (X1) and Asynchronous Online Learning (X2) are increased, then the dependent variable, namely Student Academic Ethics Violations (Y) will increase.

##### ***T - Test***

When examining the outcomes of the multiple linear regression analysis, it is clear that the value of Sig. was calculated to be between 0.000 and 0.048. Therefore, it can be concluded that the study accepts H1 and H2. This then explains if Synchronous and Asynchronous Online Learning each have a partial effect on Student Academic Ethics Violations.

##### ***F - Test***

It can be explained if the value of Sig. obtained for variable X was worth 0.000 based on the findings of the F test. Then, we obtained a comparison that  $0.000 < 0.05$ . So it can be concluded that variable X is declared to have a simultaneous effect on variable Y, which means that Synchronous and Asynchronous Online Learning simultaneously affect Student Academic Ethics Violations. Therefore, with the various tests that have been carried out, H1 and H2 of this study are accepted.

## **DISCUSSION**

### **Synchronous Online Learning Positively Affects Violations of Student Academic Ethics**

During online learning, a synchronous system allows students and lecturers to be able to carry out lectures in real-time without having to be present in the same room. However, information technology development and the condition that force the implementation of



online learning during the Covid-19 pandemic, unfortunately, makes it easier for students to abuse the learning system by carrying out academic fraud (Nurjanah et al., 2021; Herdian, Mildaeni, & Wahidah, 2021; Srirejeki, Faturokhman, Praptapa, & Irianto, 2022).

On the other side, synchronous learning results in a decrease in lecturer supervision when students do assignments and exams. This opens opportunities for students to commit fraud without the knowledge of the lecturer. Albrecht et al. (2012) define opportunity as a situation where a person faces conditions that allow him to cheat and avoid the risk of being caught when committing fraud. The emergence of opportunities can be caused by system weaknesses such as lack of control or sanctions, which in their application are not firm (Purnamasari, 2014). The absence of lecturers and students in the same room causes synchronous online learning to have shortcomings in controlling fraud so that synchronous online learning affects acts of cheating or violations of academic ethics by students.

### **Asynchronous Online Learning Positively Affects Violations of Student Academic Ethics**

As with synchronous lectures, asynchronous lectures also still have many gaps that open up opportunities for cheating because asynchronous lectures are not carried out interactively, thereby reducing the reach of lecturers to supervise students in completing assignments and exams. According to Nursani (2014), opportunities can arise by utilizing internet technology, less strict examination supervision, and the use of loopholes from the take-home test method. Asynchronous online learning generally carries out take-home exams, giving students more time to work on exam questions than in-class exams.

The absence of lecturers and students in the same room and the relatively long processing time increase opportunities to violate academic ethics. The lack of connection between students and lecturers in asynchronous lectures is a drawback and becomes a gap for students to cheat (Celic & Dedeic, 2021). Working on assignments and exams that are not directly supervised can open up gaps for students to plagiarize. Thus, plagiarism is not justified according to academic ethics.

Both arguments mentioned above are consistent with the Fraud Triangle Hypothesis, which claims that various factors trigger fraud. Albrecht et al. (2012) suggest three elements that form the basis for individuals to commit fraud, such as pressure, opportunity, and rationalization. The opportunity (opportunity) to commit fraud resulted in an increase in the intensity of cases of violations of student academic ethics.

## **CONCLUSION**

By surveying current undergraduate students in the Department of Accounting at FEB Universitas Brawijaya, researchers can assess the impact of synchronous and asynchronous online learning on violations of student academic ethics. According to the study's findings, synchronous online learning has an impact on students' academic ethical infractions. In addition, the results of this study also explain that asynchronous online learning has an influence on students' academic ethics violations. The conclusion above is in accordance with the Fraud Triangle Theory, which states that if there is an opportunity to commit fraud, it will result in an increase in the intensity of cases of violations of student academic ethics. This also means that as long as the learning process is conducted using online mode, the possibility of academic ethics violations by students will still be high.

Referring to the research limitations, we suggest various metrics can be used to compare synchronous and asynchronous online learning variables. Considering the number of items that do not pass the validity test at the initial stage of this research. Other indicators, such as learning flexibility, use of technology, or online learning readiness can be used

to replace the indicators in this study. Different independent variables may also be utilized to analyze the changes in the dependent variable. Another variable that can be used is hybrid learning, considering that it is a new learning method that has begun to be applied in the Accounting Department of FEB UB, which combines online learning methods with face-to-face. Further researchers can look for samples in voluntary situations of using online learning.

## LIMITATION

Several problems or obstacles were found in completing this research. All forms of these problems become limitations in the study. First, many statement items did not pass the validity test, so the researcher eliminated those items which were originally 40 items and then eliminated them so that only 25 items remained. This can be due to statement items that are rarely used or respondents who are less honest in filling out the questionnaire. Additionally, in this study, the independent variable's and dependent variable's relationship strength ( $R^2$ ) is rated as poor, which means that the influence given by synchronous and asynchronous online learning on violations of academic ethics is not that strong. Moreover, the implementation of online learning is an obligation for the response to the Covid-19 pandemic phenomenon, so the samples used are also limited only in a mandatory condition.

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N/A

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