



Students' Understanding of Plagiarism in Academic Writing: Indonesian Context

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Abstract

Extensive studies identify plagiarism as a grave problem in Indonesian university students' academic writing (Adiningrum, 2015; Sulaiman, 2015; Zalnur, 2012). Plagiarism is the most severe problem found in students' theses in the context investigated in this study (Tangkelangi & Widyasari, 2015). However, no study explicitly examines the extent that students understand plagiarism, including both its concept and its practices in the focused context. Therefore, this study aims to fill this gap by investigating students' understanding of plagiarism. This study also aims to determine whether gender and academic achievement are considerable factors in students' plagiarism understanding in the focused context. To investigate these issues, survey research using an adapted questionnaire was conducted to gather data from participants. The participants were third-year students majoring in English Education who will take a unit discussing plagiarism issues in the next semester. The data was analysed using the Rasch model to determine the students' understanding of plagiarism. Then, a t-test was used to examine whether the students' understanding differed between gender and a Pearson's *r* test was used to examine whether academic achievement correlated with their plagiarism understanding. The results of the analyses revealed that the students had a basic understanding of plagiarism and their understanding did not differ between gender or with academic achievement. These findings imply that several plagiarism principles need to be explored more, including unattributed paraphrasing, self-plagiarism and citations and referencing. It is also implied that special treatment for a particular gender or a certain academic achiever is not necessary.

Keywords: academic achievement; gender; plagiarism; students' understanding

Introduction

Indonesia is an Asian country where the issue of plagiarism in higher education has become a recent concern (Bretag, 2016). The policy that regulates plagiarism was imposed in 2010, by the Ministry of Education and Culture (MOEC), through Regulation Number 17. Consequently, around this period, Indonesian students studying abroad, where plagiarism issues are well monitored, required extra efforts to complete assignments asking them to use various sources (Adiningrum & Kutieleh, 2011). Similar conditions still exist, as extensive studies have revealed that accusations of plagiarism in university students' assessments in Indonesia are perceived as severe.

Student plagiarism in Indonesia is present in both the small and large components of their assignments (Adiningrum, 2015). When writing both short essays and long reports, like a thesis, copy-paste activities are practised by students on a large scale. Students admit that this is a common practice because facilities such as internet support them to do so and the older students also do the same thing (Sulaiman, 2015; Zalnur, 2012). Another type of plagiarism that exists in students' writing is chained plagiarism, which refers to students plagiarising text from other students, who previously copied that text from someone else (Sulaiman, 2015). In other words, the same text is plagiarised in an ongoing manner by students and is either not noticed or just ignored by academic staff. Hiring other people to write theses under their names is another type of plagiarism engaged in by Indonesian university students (Adiningrum, 2015).

Concerning these types of plagiarism in Indonesia, attention and willingness to both comprehend and promote the strict implementation of plagiarism policies are required. The principal policy regarding plagiarism in Indonesia is outlined in Regulation Number 17 (MOEC, 2010), which covers the definition of plagiarism and its types; to whom, when and where the regulation is imposed; preventive acts and penalties; as well as the procedures for penalising plagiarists. Looking closely at the definition and the types of plagiarism written in the regulation, it is evident that the plagiarism concept applied in Indonesia is similar to the plagiarism concept used in other countries. Plagiarism is defined as an act that intentionally or unintentionally uses other people's words or ideas, partly or wholly, without mentioning the source. This is categorised into unattributed direct quotations, unattributed paraphrasing, submitting works containing parts written by other people and self-plagiarism

(MOEC, 2010). Both university students and academics should know the definition and types of plagiarism, since the policy is in place to prevent plagiarism practices by these parties in Indonesian universities.

To be familiar with the plagiarism concept in the academic setting, several sources besides the policy document can be helpful, such as lecturers, other students, electronic mailbox/subject online, workshops and the internet (Gullifer & Tyson, 2014). Among these sources, the most recognisable source for students is their lecturers, who usually remind students to avoid plagiarism when completing their assignments (Gullifer & Tyson, 2014). However, the complete version of the plagiarism concept might not be discussed in detail by lecturers in general classroom situations, unless plagiarism issues are specifically discussed in the study unit, such as in academic writing units provided in most universities in Indonesia.

A study in a city university in Indonesia revealed that, although the plagiarism concept is discussed in the academic writing unit provided, significant cases of plagiarism are frequently found, such as copy-paste plagiarism, chained plagiarism and use of thesis writing services (Tangkelangi & Widyasari, 2015). Another study conducted in the same context investigated students' needs in relation to academic writing competences. It uncovered that discussions relating to avoiding plagiarism should be emphasised in the academic writing units provided (Tangkelangi, 2016). However, this study explores the extent to which students understand plagiarism. Therefore, this study is expected to provide information about students' understanding of plagiarism in relation to the plagiarism concepts that should be discussed in the academic writing units provided.

Based on the background above, the main aim of this study is to investigate students' understanding of plagiarism. However, recognising that the term "students' understanding" is an abstract concept (Walker, 2010), two sub-questions are formulated to capture variables that reflect this in a more tangible way. These sub-questions examine students' perceptions of the plagiarism concept and students' abilities to recognise plagiaristic practices. Furthermore, this study examines the status of gender and academic achievement on plagiarism understanding; whether male and female students have a different understanding of plagiarism and whether academic achievement is correlated to students' perceptions of plagiarism.

Method

Based on the objective of this study, a survey was chosen to gather data, as it can be used to access a significant number of participants, which allows for data generalisation (Babbie, 2010; Vanson, 2014). The population of this study is third-year students majoring in English Education namely 85 students, consisting of 65

female students and 20 male students. Considering this small number, all members of the population group were invited to voluntarily participate. The final number of students who voluntarily participated was 70, consisting of 53 female students and 17 male students. To collect data from the participants, a questionnaire was used, because it is the most frequently used instrument in survey research (Babbie, 2010; Bryman, 2012). Due to the time constraints for completing this study, the questionnaire used was not self-constructed, but was adapted from two existing questionnaires, which had been validated and used in previous studies investigating the same issue. The questionnaires adapted were constructed by Orim (2014) and Yang (2014), who examined university students' perceptions of plagiarism issues. To analyse the data for the first research question, asking about students' understanding of plagiarism, was answered through three different analyses: a thematic analysis, a Rasch model analysis and a descriptive statistical analysis. The thematic analysis was used to explore the students' definitions of plagiarism, which was qualitative data. Meanwhile, the Rasch model analysis was used to analyse the students' responses on the Likert-scale (five to one) statements in the questionnaire representing plagiaristic behaviours. Then, the descriptive statistical analysis was used to examine the students' understanding of citations and referencing, which are presented in nominal data. Next, the data showing the plagiarism understanding between gender were analysed by using t-test which was done by using Excel software. Finally, to investigate the correlation between students' achievement (students' GPA) and their plagiarism understanding, Pearson's r was chosen, as this can be used to test the correlation between two sets of interval data (Bryman, 2012; Gay et al., 2012).

Results

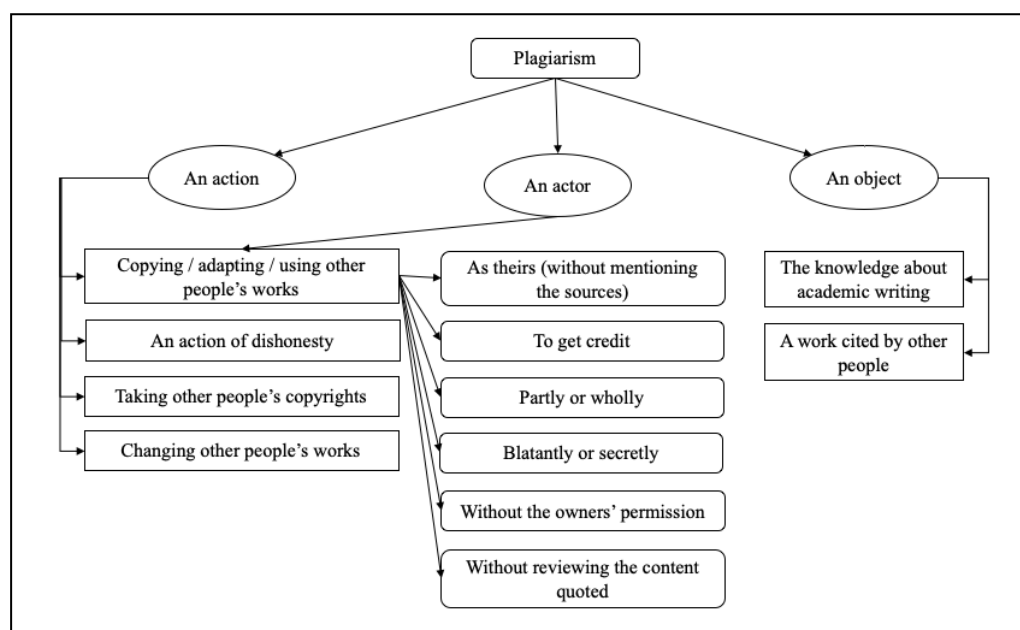
The data gathered in this study reveals several findings.

Students' understanding of plagiarism

In general, this study reveals that the third-year English Education students in the investigated context understand the basic principles of plagiarism. Their understanding is reflected through their responses toward the definition of plagiarism and plagiaristic behaviours, as well as their ability to recognise plagiaristic practices. A detailed description of the findings showing students' understanding of plagiarism is presented in the following two subsections; namely,

students' perceptions of the plagiarism concept and students' ability to recognise plagiaristic practices.

The students' responses to the questionnaire indicated that they have various ways of defining plagiarism and adequately understand several types of plagiaristic behaviour. In general, the students defined plagiarism as an act of *using, adapting, or copying other people's ideas or works as their own without mentioning the sources*. However, some students viewed plagiarism in different ways, including as *the act of copying other people's works without getting permission from the owners, the act of taking other people's copyright, the act of changing other people's work, the act of dishonesty and the act of using other people's works without reviewing the content cited*. Six students even perceived plagiarism as *the actors* copying or using other people's works, one student perceived plagiarism as *the knowledge* of academic writing and another student defined plagiarism as *a work* copied by other people. The range of students' definitions of plagiarism is presented in the following Figure



1 and the framework showing its thematic analysis is presented in Appendix 4 at the end of this paper.

Figure 1. The variety of themes in students' definitions of plagiarism

Interestingly, it was revealed that some students could provide a detailed description of what plagiarism is. Some students said that plagiarism includes copying another person's works partly or wholly, blatantly or secretly. For example,

participant number 22 defined plagiarism as an act done by people who use, copy, or adapt other people's ideas partly or wholly and claim the ideas as theirs without mentioning the source. Similarly, participant number 30 stated that plagiarism is the act of copying other people's works partly or wholly, without stating the source. Participant number 13 mentioned that plagiarism covers the copy-paste and cheating practices that are undertaken blatantly or secretly. Based on these definitions, it is identified that the students can identify several features of plagiarism; namely, (1) the act of using, copying, or adapting other people's works, (2) partly or wholly, (3) claiming the works as theirs, (4) without citing the sources, either (5) blatantly or secretly. However, a higher number of participants (12) merely provided a brief description of plagiarism: the act of using, copying or adapting other people's works. This indicates that some students have a different definition of plagiarism; some students define it in a detailed manner, while others define it more simply.

Importantly, it was also revealed that several types of plagiaristic behaviours were clearly understood by the students as actions that should not be undertaken; namely, *unattributed direct quotation* and *submitting works containing other people's work*. This is reflected in the students' responses to **factors 1, 3** and **5a** (see Table 1), showing that the students who *strongly disagreed* and *disagreed* significantly outnumbered the total number of students who *strongly agreed*, *agreed* and *doubted* statements 1, 2, 3, and 4 in the questionnaire. Statements 1 and 3 refer to **factor 1** "unattributed direct quotation (terms/words)", statement 2 refers to **factor 3** "unattributed direct quotation (ideas/concepts)", and statement 4 refers to **factor 5a** "submitting works containing parts written by other people". The students' responses to these statements indicate that most students consider unattributed quotation and submitting works containing parts written by other people as unethical actions in academic writing.

Table 1. Students' perceptions of the plagiarism concept

Factor	Statement	Response					Percentage
		SD (5)	D (4)	Db (3)	A (2)	SA (1)	
Factor 1	Statement 1	31	30	4	5	0	84.86
Factor 1	Statement 3	39	26	2	2	1	88.57
Factor 2	Statement 7	8	24	19	18	1	65.71
Factor 3	Statement 2	30	33	4	3	0	85.71
Factor 4	Statement 5	15	25	14	15	1	70.86
Factor 4	Statement 6	7	27	18	17	1	66.29
Factor 5a	Statement 4	42	21	7	0	0	90
Factor 5b	Statement 8	12	18	20	18	2	65.71

Note: SD = strongly disagree, D = disagree, Db = doubt, A = agree, SA = strongly agree

Nevertheless, even though most students knew that directly quoting people's words or ideas without stating the source should not be undertaken, only a few of them knew how to correctly use direct quotations. When the students were asked to identify what should be included to quote a source directly, only six out of 70 students correctly identified that quotation marks, an in-text citation and a reference list entry should be included. Other students chose "reference" only (27 participants), "quotation marks and reference" (18 participants), and "in-text citation and reference" (10) participants. This indicates that most students lack an understanding of how to correctly use direct quotations.

Concerning the students' responses indicating their understanding of other types of plagiaristic behaviours, it was found that they lacked an understanding of unattributed paraphrasing and self-plagiarism. Unattributed paraphrasing is reflected in **factors 2 and 4**, which were represented in statements 5, 6 and 7, while self-plagiarism is reflected in **factor 5b**, which was expressed in statement 8 in the questionnaire. The data in Table 1 shows that only half, or less than half, of the total participants *strongly disagreed* and *disagreed* with these statements (5, 6, 7 and 8). For example, only 30 out of 70 students *strongly disagreed* and *disagreed* with items 6 and 7, representing unattributed paraphrasing (**factors 2 and 4**), and the same number of participants *strongly disagreed* and *disagreed* with item 8, representing self-plagiarism (**factor 5b**). This indicates that issues related to unattributed paraphrasing and self-plagiarism need to be further explored by students.

Furthermore, when the students were asked how to paraphrase other people's

work, it was determined that most students did not know what should be included in this. This is shown in the students' responses to question 10, where only five out of 70 students correctly indicated that an "in-text citation and reference" should be included when paraphrasing other people's works. Other students chose "quotation marks" (11 participants), "reference" (15 participants), "quotation marks and reference" (11 participants) and 10 participants choose not to include anything. This implies that the students should further explore these issues related to citations and referencing.

Students' ability to recognise plagiarism practices

Related to the students' ability to recognize plagiarism practices, the students' responses to the questionnaire indicated that they can clearly recognise various practices of *unattributed direct quotations (factors 1)* and *submitting works containing parts written by other people (factors 5a)* as plagiarism. This is shown by the high percentages of the students' responses (77% to 94%) toward the statements representing these factors; namely, statements 12, 13, 14, 15 and 16 (see Table 2). The students who can identify the plagiarism actions in these statements significantly outnumber those who cannot. The spread of the students' responses to these items can be seen in Appendix 3 at the end of this paper.

Table 2. Students' ability to recognise plagiaristic practices

Feature	Item	Responses					Percentages (%)
		DP (5)	PP (4)	PNP (3)	DNP (2)	DK (1)	
Feature 1	Item 13	56	9	4	0	1	94
Feature 1	Item 16	43	17	7	0	3	87.71
Feature 4	Item 19	16	17	10	23	4	65.14
Feature 5a	Item 12	40	24	4	0	2	88.57
Feature 5a	Item 14	43	10	8	3	6	83.14
Feature 5a	Item 15	23	27	13	3	4	77.71
Feature 5b	Item 11	10	32	13	10	5	69.14
Feature 5b	Item 17	6	19	23	18	4	61.43
Feature 5b	Item 18	3	10	18	27	12	50
Feature 5b	Item 20	6	12	27	21	4	58.57

Note: DP = definitely plagiarism, PP = probably plagiarism, PNP = probably not plagiarism, DNP = definitely not plagiarism, DK = do not know

However, similar to the students' understanding of the plagiarism concept, it is revealed that students are less familiar with the factors related to *unattributed paraphrasing* and *self-plagiarism*, compared to the factors related to *unattributed direct quotation* and *submitting works containing parts written by other people*. This condition is clearly shown in Table 2, which displays that the number of students who can recognise the various practices of unattributed paraphrasing (**factor 4**) and self-plagiarism (**factor 5b**) as plagiaristic behaviours is significantly lower than those who cannot. For example, the number of students who responded "definitely plagiarism" and "probably plagiarism" to items 17, 18 and 20 (**factor 5a**), as well as to item 19 (**factor 4**) is less than 50% (around 13 to 33 participants) of the total number of participants. This means that the issues concerning *self-plagiarism* and *unattributed paraphrasing* should be explored more by the students, compared to the issues related to other types of plagiarism, such as *unattributed direct quotation* and *the submission of works containing another people's work*.

Plagiarism understanding by gender

After scoring the students' plagiarism understanding based on their responses to the statements in the questionnaire through the Rasch model, it was determined that the plagiarism understanding between male and female students was insignificantly different. Figure 2 below presents the spread of the students' scores of plagiarism understanding, combining their understanding of the concepts and their ability to recognise plagiarism behaviours. Even though one of the male students (participant 23) returned the highest score (94) and some female students (participants 15, 17, 34, 37 and 43) returned low scores (61 to 64), the rest of the participants returned scores that were insignificantly different.

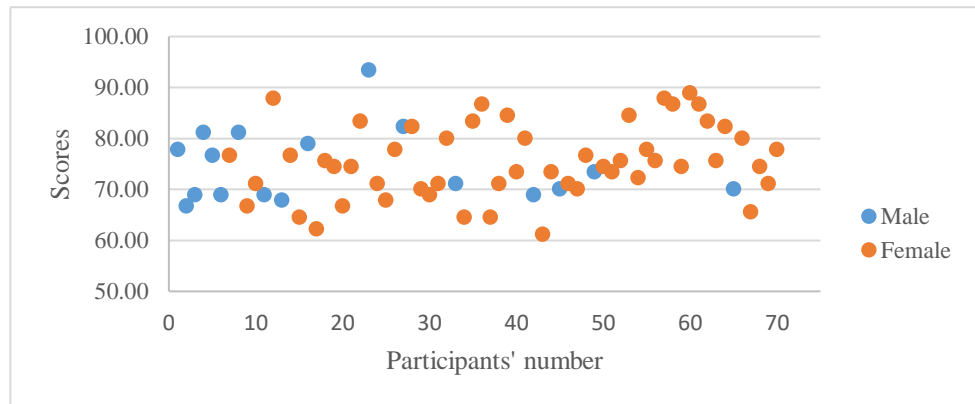


Figure 2. The spread of students' scores on plagiarism understanding

Furthermore, the insignificant difference between male and female students' understanding of plagiarism is also shown in the results of the statistical analysis. The mean score and the standard deviation of both groups (males and females) are considerably similar. The mean score of the male students is 74.44, with a standard deviation of 7.17, while the mean score of the female students is 75.41, with a standard deviation of 7.18. The distribution curves resulting from calculating the z-scores and the probability density function of the students' raw scores also identify that the two groups do not significantly differ. The distribution curves showing how the students' scores are positioned within the groups are presented in Figure 3 below.

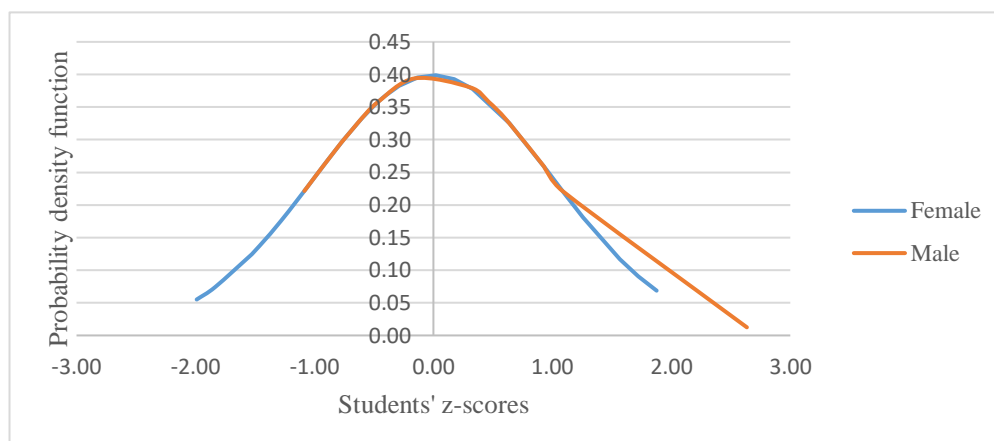


Figure 3. The distribution curve of the students' scores

Based on the curves in Figure 3, it is evident that both the males' and females' scores meet in a significant number of spots. Even though the scatter line of the male students seems to move over the positive side, while the female tends to be balanced on both the negative and positive sides, the scatter line shows that the difference is insignificant.

To ensure the findings depicted in Figures 2 and 3 above, a t-test for the two independent samples was calculated. The level of significance chosen was 0.01 ($\alpha = 0.01$) to conclude the findings of the analysis confidently. The t-test was calculated by using Excel to apply the formula of "t-Test: Two-sample assuming equal variances". The result shows that the t value is -0.48, with a degree of freedom (df) of 68, and its p-value is 0.63, which is extremely bigger than the level of significance (0.01). Based on this statistical analysis, it is concluded that the null hypothesis cannot be rejected, meaning that there is no significant difference between male and female students' understanding of plagiarism. The results of the t-test and p-value are presented in Table 3 below.

Table 3. t-Test: Two-sample assuming equal variances

	Male	Female
Mean	74.44	75.41
Variance	51.39	51.62
Observations	17.00	53.00

df	68.00
t Stat	-0.48
P(T<=t) two-tail	0.63
t Critical two-tail	2.65

Note: df = degree of freedom, t Stat = t - statistic, p = probability

Interestingly, the comparisons between gender relating to understanding the plagiarism concept and practices show that female students are better than male students at understanding the plagiarism concept, but male students are better at recognising plagiarism practices. This condition is shown in Table 4, which displays the mean score and the standard deviation of male and female students in understanding the plagiarism concept and practices. The mean score of the female students in understanding the plagiarism concept (78.21) is higher than that of the male students (74.12), but the mean score of the male students in identifying plagiarism practices (74.71) is slightly higher than that of the female students (73.17). However, the differences are insignificant because the p-values of the comparisons are higher than the level of significance (α) 0.01. Thus, it is confirmed that the null hypothesis stating “there is no significant difference between male and female students’ understanding of plagiarism” cannot be rejected.

Table 4. Students’ understanding of plagiarism and practices by gender

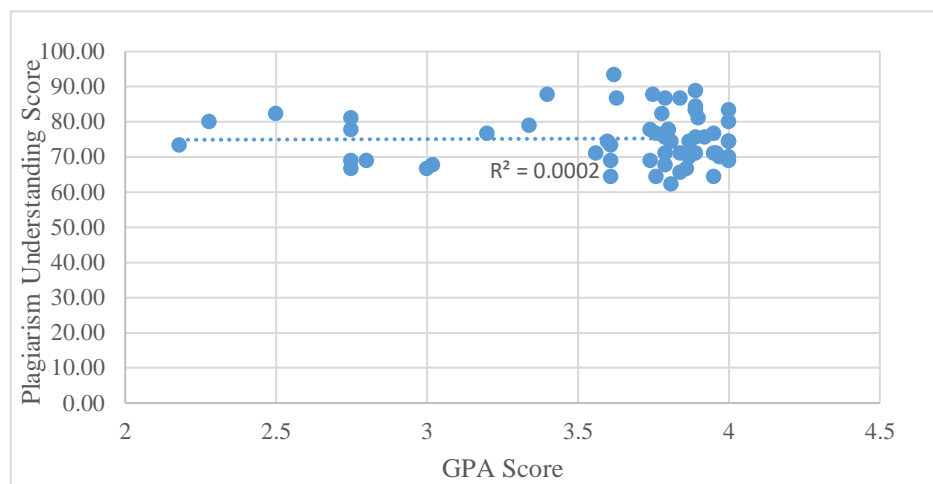
Variables	Male		Female		t-value	p-value
	Mean	Sd	Mean	Sd		
Concept	74.12	13.40	78.21	11.80	-1.13	0.27
Practices	74.71	9.62	73.17	8.80	0.58	0.56

Note: Sd = Standard deviation

Academic achievement and understanding of plagiarism

This study reveals that students’ academic achievement does not correlate with their understanding of plagiarism. This finding is shown in Figure 4 below, which displays the scatter plot of the two variables investigated; namely, the students’ academic achievement represented by their GPA scores and their scores of plagiarism understanding. Figure 4 shows that the distribution of plagiarism

understanding scores for students with low GPA scores (2.18 to 2.8) is relatively the



same as students with high GPA scores (3 to 4), even several students with a higher GPA (above 3.5) had a poorer understanding of plagiarism compared to students with a lower GPA.

Figure 4. Plagiarism understanding and academic achievement

Furthermore, the results of a correlational test using Spearman's Rho calculated in Excel confirms that academic achievement is not correlated with the students' understanding of plagiarism. It is found that the result of r is 0.015, which is significantly lower than 1. The r^2 value is 0.00024, which indicates that academic achievement is substantially uncorrelated with the understanding of plagiarism. The discussion of these findings is presented in the next chapter.

Discussion

Students' understanding of plagiarism

Based on the the findings above, it is revealed that plagiarism is not yet completely understood by the students surveyed. The definition of plagiarism provided by the students does not cover all five features of plagiarism as defined in Regulation Number 17 imposed by the Indonesian MOEC (2010). Most students covered only two features in their definition, such as "quoting other people's works" and "without stating the sources". The three other features were rarely mentioned by the students (*partly or wholly, to get credit or academic marks and intentionally or unintentionally*). All three unmentioned features are supplementary features that express the strictness of the regulation.

Even though the three features are supplementary, they do play an important

role in ensuring the maximum realisation of the regulation, particularly in the Indonesian context with its collectivist culture. A study conducted by Adiningrum et al. (2013) showed that matters of *intentional or unintentional plagiarism* frequently take part in the implementation of the plagiarism regulation in Indonesia. Emotional feelings of the academic staff in Indonesia are commonly involved, particularly concerning unintentional plagiarism actions (Adiningrum et al., 2013). Unexpectedly, this study uncovered that no one participant mentioned this feature. If the students do not consider this feature and the academic staff do not strictly impose the plagiarism regulation, unintentional plagiarism actions of students might be ignored, and students may deliberately claim their plagiaristic actions as unintentional behaviours to ensure they are free from consequences.

Similarly, the feature of “partly or wholly” was also less considered by the participants in this study. Only two out of 70 participants included this feature in their plagiarism definition. Although there is no study discussing how this feature is seen and internalised, issues related to the *partly or wholly* feature may take place due to emotional feeling as well, especially if related to partial plagiarism. Therefore, it is necessary to make the students recognise these “intentional-unintentional” and “partly-wholly” features of plagiarism, to moderate or eradicate the possibility of plagiarism cases related to these two complementary features being ignored or overlooked.

Moving to the students’ understanding of plagiaristic behaviours, it is important to notice that the results of this study are in line with the results of previous studies investigating the same issues in various contexts. The students participating in this study have a better understanding of *unattributed direct quotation* and *the submission of works containing parts written by other people* compared to *unattributed paraphrasing* and *self-plagiarism*. This condition has also been found in other universities, including universities in Aceh (Bahri & Trisnawati, 2018; Satria et al., 2017), Ponorogo (Nimasari & Gestanti, 2017) and Semarang (Prihantini & Indudewi, 2016), where the students recognised *unattributed direct quotations* (word-for-word) as plagiarism, but did not consider *unattributed paraphrasing* as plagiarism. Similar evidence has also been found in other countries, like the UK (Dawson & Overfield, 2006), Iran (Amiri & Razmjoo, 2016) and China (Hu & Lei, 2016), where university students can categorise unattributed direct-quotations as plagiarism, but are confused as to whether *paraphrasing other people’s*

ideas, views, and theories without stating the source is plagiarism. This condition reveals that unfamiliarity on *unattributed paraphrasing* as a plagiaristic behaviour is experienced by university students in various contexts.

Interestingly, even though the students in the investigated context have acknowledged that unattributed direct quotation should not be used, the previous studies in the same context show that the most frequent plagiarism cases found in students' writing is copy-paste practices, which involves unattributed direct quotation (Tangkelangi & Widyasari, 2015). This indicates that there are reasons that trigger students to continue engaging in plagiarism practices. According to previous studies conducted in various Indonesian university contexts, besides factors related to the acknowledgement of plagiarism, several other factors can cause the practice of plagiaristic behaviours, including technology development, culture, ignorance and lack understanding of citations and referencing (Adiningrum & Kutieleh, 2011; Agustina & Raharjo, 2017; Akbar, 2018; Chien, 2017; Prihantini & Indudewi, 2016; Zalnur, 2012).

It is recognised that technology development enabling students to engage in copy-paste practices is difficult to control, but the factors related to culture and ignorance can be progressively managed. Plagiarism is a relatively new issue in Indonesia and is not yet culturally rooted (Bradinova, 2006; Bretag, 2016). This adversely contributes to ignorance from academics relating to students' plagiarism behaviours (Agustina & Raharjo, 2017), but consistency and strong willingness from various parties (particularly from academic staff members) might lead to the expected condition where plagiarism practices can be significantly reduced.

More importantly, considering the findings of this study and previous studies, a limited understanding of citations and referencing might be the most influential reason for students' plagiaristic behaviours. This study found that less than 10% of the total participants understood how to quote or paraphrase other people's words or ideas appropriately. Thus, although students can acknowledge the basic plagiarism concept, they engage in plagiarism because they do not know how to undertake proper quotation, citation and referencing. A similar circumstance is also found in other universities, both within and outside Indonesia, such as Ponorogo (Nimasari & Gestanti, 2017), Semarang (Prihantini & Indudewi, 2016) and Taiwan (Chien, 2017), where the students' limited comprehension of quotation, citation and referencing adversely contributes to the large number of plagiarism cases. This indicates that it is necessary to provide activities and programs that support students to manage this issue.

Another finding of this study is related to students' unfamiliarity with self-plagiarism as an unacceptable act. Other studies conducted in various institutions

found a similar condition, where students and even academic staff are unfamiliar with self-plagiarism (Bradinova, 2006; Halupa & Bolliger, 2013, 2015; Vincent-Robinson, 2016). Interestingly, all university contexts where this condition takes place, including this study, have no clear and explicit regulations regarding self-plagiarism. This illustrates that the absence of clear and explicit regulations, either at the national or institutional level, can lead to unfamiliarity with self-plagiarism for both students and academic staff.

Plagiarism understanding by gender

Previous studies comparing male and female students' understanding of plagiarism have two positions. Bradinova (2006) found that students' understanding of plagiarism is not significantly different based on gender. Meanwhile, Jereb et al. (2018) and Putro (2016) reveal that the understanding of plagiarism is significantly different by gender, as female students outperform male students. The results of this study show that the plagiarism understanding of students in the context investigated is not significantly different by gender, which is in line with the findings of Bradinova (2006). This study and the study conducted by Bradinova (2006) show that female students outperform male students in understanding the concept of plagiarism, but not in a significant way. This suggests that special treatment for a particular gender is not necessary, since both male and female students have a significantly similar understanding of plagiarism.

Academic achievement and understanding of plagiarism

The findings of this study indicate that academic achievement is not correlated with students' understanding of plagiarism, which is in line with previous studies conducted in other contexts. The studies conducted in Taiwan by Chien (2017) revealed that both high- and low-achieving students are familiar with the basic principles of plagiarism. Similarly, the survey conducted by Bradinova (2006) in two different universities in the United States showed that these two variables are not correlated with one another, as both low-achieving and high-achieving students have a basic understanding of plagiarism. Thus, the results of the correlation analysis suggest that low- and high-achieving students should not be treated differently regarding plagiarism issues.

Conclusion

The results of this study conclude that students have a basic understanding of plagiarism. This is demonstrated by their brief definitions of plagiarism and in their responses toward plagiaristic behaviours. Some students can define plagiarism in detail, but the students who only define plagiarism in a simple way (such as “using or adapting other people’s works without stating the source”) and even in an incredibly modest way (such as “copying or taking other people’s works”) significantly outnumber those who can define it in detail (such as “intentionally or unintentionally using, partly or wholly, other people’s works without mentioning the source”).

Furthermore, the students’ responses to the various examples of plagiarism behaviours indicate that they are familiar with *unattributed direct quotation* and *the submission of other people’s works without stating the source* as plagiarism behaviours that should not be undertaken. However, more than half the total participants did not recognise *unattributed paraphrasing* and *self-plagiarism* as plagiarism behaviours. This indicates that students still have a limited understanding of several principles of plagiarism; namely, intentional-unintentional and partly-wholly plagiarism, unattributed paraphrasing and self-plagiarism.

Another essential point concluded in this study is that students’ plagiarism understanding is not significantly different between male and female students, and is not correlated with academic achievement. Even though females outperform males in understanding the concept and males outperform females in recognising plagiarism practices, the results of the t-tests comparing the scores of these two variables (conceptual understanding and ability to recognise plagiaristic actions) show that all p-values are bigger than the level of significance, 0.01 ($p\text{-value} > \alpha$). This means there is no significant difference between the two sample groups (males and females) regarding their understanding of plagiarism. Similarly, the results of Pearson’s r , which examines the correlation between GPA scores and scores of plagiarism understanding, reveal that there is no correlation between academic achievement and students’ understanding of plagiarism ($r = 0.015$). The results of these statistical tests indicate that gender and academic achievement do not relate to students’ understanding of plagiarism in the investigated context.

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