A Descriptive Study: Investigation of Plagiarism among Undergraduates in a Sino-US Cooperative University

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Article Info	Abstract
	Plagiarism is prevalent all over the world, especially in higher education. This quantitative-descriptive study investigated the reasons and gender differences for plagiarism among undergraduate students at Wenzhou-Kean University (WKU). To collect quantitative data, the random sample of 102 undergraduates at WKU answered questions about plagiarism in the online questionnaire. The results revealed that the development of technology and the Internet is the main reason for plagiarism. Surprisingly, the study found that students are confident with their citation skills. The participants reported that using additional materials to help with their online testing is easy during the COVID-19 pandemic. The COVID-19 pandemic has become another significant reason for plagiarism. In terms of gender differences, the results showed no significant difference in attitudes and behaviors toward plagiarism among WKU undergraduate students by gender. The study advises educational institutions like WKU should use both traditional solutions (e.g., failing the plagiarized assignment, giving suspension to student) and new solutions (e.g., using plagiarism tracking system) to deal with plagiarism.

Introduction

Plagiarism refers to copying someone's work without quotes and acknowledgment, providing wrong or incomplete citations, submitting other people's work as one's own and using one's own published work without proper citation (Roka, 2017; Selemani et al., 2018). Plagiarism is an unethical action that will bring consequences for individuals and have negative effects on higher education (AI-Thwaib et al., 2020; Akbar, 2018). Therefore, universities tend to be strict with the students who involved in plagiarism. For instance, some typical penalties and sanctions include warning and correction, students may face suspension or expulsion from the higher educational institution (Abraham & Torunarigha, 2020; Santiago et al., 2020). Once students commit plagiarism, the plagiarism behavior and their punishments will be recorded into student records, which also affects students' reputation and further influences their application for scholarships and recommendation letters. What's worse, plagiarism will not only have negative impacts on students' life in university, but also bring consequences to their future careers. For instance, students will face many difficulties and receive rejections if they apply for postgraduate study or any position in the future (Abraham & Torunarigha, 2020). Even though higher educational institutions apply different penalties to prevent students from plagiarizing, plagiarism is still

prevalent in higher educational institutions. Prior studies have reported that about 68 percent of undergraduates and 43 percent of graduates surveyed admit to plagiarizing on examinations or in written work (McCabe, 2005).

Students commit plagiarism for different reasons and the development of technology is the most significant one. According to Parker and Lenhart (2011), 89% of university presidents believed the Internet is to be blamed for the rapid growth of plagiarism over the decade. Indeed, people could not live without technology nowadays, so do university students. More and more institutions apply online learning and teaching platforms like Blackboard and Canvas to provide effective education to students. Technology like mobile phones, laptops and the Internet facilitate students' learning process. On the other hand, technology also provides convenience for copying and changes the way how students plagiarize (AI-Thwaib et al., 2020; Peytcheva-Forsyth et al., 2018; Sprajc et al., 2017). Traditionally, students may copy ideas and works from paper books or use cheat sheets to help with their exams. This process has been gradually changed to the easy access to others' electronic works on the Internet. It leads students to copy ideas without their thinking. Therefore, the development of technology is the most visible reason for plagiarism among university students (Jereb et al., 2018).

Another reason for plagiarism that has emerged in recent years is the COVID-19 pandemic. People never heard about the COVID-19 before 2020, but this factor has become significant for causing plagiarism. The COVID-19 pandemic has changed the way of learning (Simatupang et al., 2021). In-person courses are dominant in pre-pandemic periods. Due to the COVID-19 pandemic, most higher educational institutions have moved course delivery from face-to-face to online during the pandemic (Bilen & Matros, 2020). Online courses have decreased students' efficiency in learning because instructors could not effectively supervise if students are paying attention to the live lecture. In pre-recorded lectures, it becomes even more difficult to supervise students. The assessments of students' academic ability are also conducted online. Students have easier use of unpermitted assistance than in-person exams with online exams and they are more likely to cheat in online exams and assignments than in on-site ones (Janke et al., 2021). Everything is online during the pandemic period, and this makes it easier for students to commit plagiarism.

In terms of gender differences, men are no more tolerant of plagiarism than women (Bokosmaty et al., 2017). Gender is not a significant factor in the perceived reasons for plagiarism (Alimorad, 2020). Although there is no attitudinal difference toward plagiarism by gender, male and female students have different behaviors toward plagiarism. Witmer and Johansson (2015) mentioned that female students tend to deny cheating intentionally, however, male students commit cheating when they are caught. Female students were significantly more likely than male students to copy a few sentences to inspire their writing (Bokosmaty et al., 2017).

This study aimed to examine the causes of plagiarism among undergraduates. Besides, another purpose of the study was to find out the attitudinal and behavioral differences toward plagiarism by gender. Some recommendations for dealing with plagiarism were offered at the end. Most prior studies were conducted in western countries, and the participants were western university students. This study was conducted at Wenzhou-Kean University (WKU), which is a Sino-US cooperative university. WKU provides pure English-taught American curricula. Most undergraduate students received traditional Chinese secondary education prior to

entering WKU, so they are not familiar with the definition or types of plagiarism. Instructors work hard to introduce the knowledge of avoiding plagiarism in lower-level courses to avoid students committing plagiarism. However, some students still committed plagiarism after knowing consequences of plagiarism. According to this, this study aimed to address the following specific research questions:

- Why do undergraduate students at WKU commit plagiarism?
- Is there any attitudinal difference toward plagiarism by gender?
- Is there any behavioral difference toward plagiarism by gender?

Hypotheses

Research Question 2: Is there any attitudinal difference toward plagiarism by gender among WKU undergraduate students?

H_0: There is no significant attitudinal difference in plagiarism between male and female undergraduates at WKU.

H_1: Female undergraduate students are less likely to commit plagiarism than male students.

Research Question 3: Is there any behavioral differences toward plagiarism by gender among WKU undergraduate students?

H_0: There is no significant behavioral difference in plagiarism between male and female undergraduates at WKU.

H2: Female undergraduate students are less likely to commit plagiarism than male students.

Operational Definitions

Internet and Technology

Internet and technology refer to the use of Internet, web, mobile phones, and social media to gain electronic information. The indicators are searching for information online, sharing documents online, and translating different resources online.

Plagiarism

Plagiarism refers to an action of taking other people's ideas or words without proper acknowledgements and citations in academic essays. The indicators include taking other people's words or ideas without acknowledgements, providing wrong or incomplete references or citations, cheating on exams, and paying others to do assignments or essays for the student.

The COVID-19 Pandemic

The COVID-19 pandemic refers to the pandemic happened in 2020 and many higher education institutions provided education remotely. The indicators are the delivery of online courses, online examinations, and writing

essays online. The participants will be asked whether they have experienced online courses or online exams during the COVID-19 pandemic.

Methodology

Descriptive design was used in the study to determine the reasons for undergraduate students committing plagiarism. This study used a cross-sectional study design, which is suitable for investigating the popularity of a problem, and the purpose of this study was to find out the reasons for plagiarism among undergraduate students. Therefore, using a cross-sectional study design in this study was appropriate. In this study, the sample consisted of 102 undergraduate students from Wenzhou-Kean University (WKU). Among the study population, 49 were males and 53 were females. The researcher used simple random sampling in the study, which means each student had the same possibility to be selected by chance. An online questionnaire with binary response scale (yes/no) and four-point attitudinal Likert items were applied in this research to collect quantitative data. The answers to Likert items in the online questionnaire ranged from 1 (strongly disagree) to 4 (strongly agree). In order to make the items effective and credible, some Likert items were adopted from previous research and the adaptation was approved by the researchers (Ehrich et al., 2015; Janke et al., 2021; Jereb et al., 2018).

The researcher developed an online questionnaire and sent out the online questionnaire through social media for target respondents to access and respond. These platforms are the channel to collect and process the responses of questionnaires, which can provide complete evidence for the data analysis and results. Descriptive and inferential statistics were used in this study to provide a clear and in-depth data analysis. T-test was used to measure the differences by gender. The level of significance used for each test was set at 0.05. Mean and standard deviation (SD) were used to calculate the student's responses to the scaled questionnaires of plagiarism.

Results and Discussion

Demographic Profile

The total number of participants in this study was 102, which was around 3% of undergraduate students at WKU. Among the 102 participants, there were 53 females and 49 males. Females accounted for 51.96% and males accounted for 48.04% in this study. In terms of the respondents' distribution by major, participants in this study came from 13 different majors. Among the 102 participants in the study, 18.63% were Mathematical Science majors; 17.65% were Finance majors; 14.71% were Computer Science majors; 13.73% were English majors; communication and accounting majors were 7.84% each; 6.86% were Psychology majors; Global Business and Economics majors were 3.92% each. There was only one participant each from Architectural, Biology, and Management majors.

Internet and Technology as a Reason for Plagiarism

Table 1 displays the respondents' opinions of the reasons for plagiarism in terms of the Internet and technology.

From the data, most students agreed translating external sources from the Internet is easy ($\bar{X}$=3.55). It is worth noting that many students disagreed with the statement "I don't know how to cite the sources from Internet properly" ($\bar{X}$=2.27). This indicated that students were confident with their skills in citing external sources properly. Generally, WKU undergraduate students agreed that technology is a possible reason for plagiarism ($\bar{X}$=3.10). This finding is consistent with prior studies that found Internet and technology provide convenience for copying (Jereb et al., 2018; Sprajc et al., 2017). However, students' responses on how to cite the sources from Internet properly do not support the findings from Sprajc et al. (2017) that indicated students do not know how to cite properly.

Table 1. Internet and Technology

Descriptive Statements	Mean	SD	Scaled Response
It is easy for me to access to new technologies.	3.31	.58	Agree
It is easy for me to use multiple sources on Internet.	3.44	.64	Agree
It is easy for me to use translation software to translate sources from Internet.	3.55	.52	Agree
I don't know how to cite the sources from Internet properly.	2.27	.90	Disagree
I think technology is one of the reasons for plagiarism.	2.93	.75	Agree
Total	3.10	.83	Agree

Legend: Strongly Disagree (1.00-1.59); Disagree (1.60-2.59); Agree (2.60-3.59); Strongly Agree (3.60-4.00)

The COVID-19 Pandemic as a Reason for Plagiarism

Figure 1 presents how the COVID-19 pandemic affects students' studies. All respondents (100%) agreed that they took online courses during the COVID-19 pandemic, among them, 90.2% had experience in online exams during this period. It is clear that the pandemic has changed the way how students learn and take tests. However, more than half (56.86%) of the students disagreed with the COVID-19 as a reason for plagiarism.
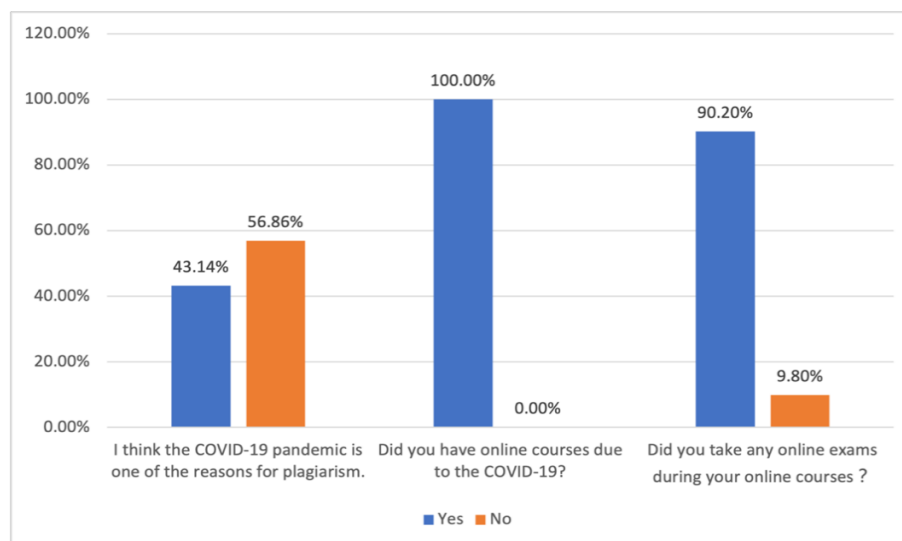

Figure 1. Influences of the Pandemic on Students' Studies

For those students who have taken online exams, their opinions of the reasons for plagiarism in terms of online testing during the COVID-19 pandemic were also collected, as Table 2 shows. Students agreed with using additional materials in online exams is easy ($\bar{X}$=2.67). However, they disagree with asking peers for help in online exams is easy ($\bar{X}$=2.55). The finding of this study shows that the COVID-19 pandemic has a huge influence on students' testing situations. During the pandemic, students could use external sources to help with their tests. In the findings above, although 56.86% of the participants disagreed with the COVID-19 as a reason for plagiarism, they committed plagiarism by using additional materials in online tests.

Table 2. Online Testing during the Pandemic

Descriptive Statements	Mean	SD	Scaled Response
It is easy to use additional materials (e.g., notes) to help me with online exams.	2.67	.87	Agree
It is easy for me to ask peers for answers during online exams.	2.55	.91	Disagree
Total	2.61	.89	Agree

Legend: Strongly Disagree (1.00-1.59); Disagree (1.60-2.59); Agree (2.60-3.59); Strongly Agree (3.60-4.00)

The finding of this study shows that students plagiarize easily during the COVID-19 pandemic because examinations have been moved from on-site to online. Similarly, prior findings also found out a great number of students took online exams during the summer semester of 2020 and students had several different dishonest behaviors (Janke et al., 2021). Prior research concluded that the shifts from on-site exams to online tests during the COVID-19 pandemic have a threat to academic integrity (Bilen & Matros, 2020; Janke et al., 2021).

Attitudinal Differences toward Plagiarism by Gender

Table 3 presents the respondents' different attitudes toward plagiarism by gender. Most male and female students disagreed with they wouldn't feel guilty when copying some sentences from previous works ($\bar{X}$=2.28). Students understand different types of plagiarism ($\bar{X}$=3.15) and plagiarism is against their ethical values ($\bar{X}$=3.28). Overall, students have a high level of understanding of plagiarism.

Table 3. Attitudes toward Plagiarism by Gender

Descriptive Statements	Mean	SD	Scaled Response
I know what plagiarism is and different types of plagiarism.	3.15	.64	Agree
Using others' work with their permission is okay.	2.62	1.00	Agree
I wouldn't feel guilty for just copying a few sentences from my previous papers.	2.28	.87	Disagree
Plagiarism is against my ethical values.	3.28	.67	Agree
Total	2.83	.90	Agree

Legend: Strongly Disagree (1.00-1.59); Disagree (1.60-2.59); Agree (2.60-3.59); Strongly Agree (3.60-4.00)

Table 4 shows the results of the t-test, which was performed to investigate the gender differences between WKU undergraduate students' attitudes toward plagiarism. The mean for male ($\bar{X}$=2.791) and female ($\bar{X}$=2.873), and the p-value (.307) of the WKU undergraduate students' gender in relation to their attitudes toward plagiarism. The p-value (.307) is less than the set level of significance (.05). Thus, the null hypothesis "There is no significant attitudinal difference in plagiarism between male and female undergraduates at WKU." is thereby accepted.

Table 4. t-test: Attitudinal Differences by Gender

	Male	*Female*
Mean	2.79081633	2.87264151
Variance	0.19882015	0.12168904
Observations	49	53
Hypothesized Mean Difference	0	
df	91	
t Stat	-1.0265449	
P(T<=t) one-tail	0.15367791	
t Critical one-tail	1.66177116	
P(T<=t) two-tail	0.30735581	
t Critical two-tail	1.98637715	

The findings display that there is no significant difference in attitudes toward plagiarism among WKU undergraduates by gender. The findings reveal that female and male WKU undergraduate students have similar attitudes toward plagiarism. The findings in this study are consistent with prior studies that show gender is not a significant factor in plagiarism (Alimorad, 2020; Bokosmaty et al., 2017; Jereb et al., 2018; Özbek & Çeyizi, 2017). Some historical studies conducted by other researchers found that men are more likely to commit plagiarism are artifacts of their times. (Bokosmaty et al., 2017).

Behavioral Differences toward Plagiarism by Gender

Table 5 shows the different behaviors toward plagiarism by gender. Participants agreed that they will copy some sentences from other people's essays to inspire their writing ($\bar{X}$=2.62) and they will admit their plagiarism act honestly if they are caught ($\bar{X}$=3.26). Students are honest about admitting plagiarism, but still, they copy others' work intentionally.

Table 5. Behavioral Differences toward Plagiarism by Gender

Descriptive Statements	Mean	SD	Scaled Response
I will copy a few sentences from other essays to inspire my writing.	2.62	.81	Agree
When I was caught plagiarism, I would admit my behavior honestly.	3.26	.72	Agree
Total	2.94	.83	Agree

Legend: Strongly Disagree (1.00-1.59); Disagree (1.60-2.59); Agree (2.60-3.59); Strongly Agree (3.60-4.00)

The t-test below was performed to find out the behavioral differences toward plagiarism among WKU undergraduate students by gender, as table 6 shows. The mean for male ($\bar{X}$=3.010) and female ($\bar{X}$=2.887) and the p-value (.190) of the WKU undergraduate students' gender in relation to their behaviors toward plagiarism. The p-value (.190) is smaller than the set level of significance (α = .05). Thus, the null hypothesis "There is no significant behavioral difference in plagiarism between male and female undergraduates at WKU." is thereby accepted.

Table 6. t-test: Behavioral Differences by Gender

	Male	*Female*
Mean	3.01020408	2.87735849
Variance	0.26551871	0.24909289
Observations	49	53
Hypothesized Mean Difference	0	
df	99	
t Stat	1.32064658	
P(T<=t) one-tail	0.09483203	
t Critical one-tail	1.66039116	
P(T<=t) two-tail	0.18966406	
t Critical two-tail	1.98421695	

The findings show that there is no significant behavioral difference toward plagiarism among WKU undergraduate students by gender. Female and male WKU undergraduate students have similar behaviors toward plagiarism. The findings in this study are not consistent with similar studies that show males and females have different behaviors toward plagiarism (Witmer & Johansson, 2015). Prior findings showed that female students are likely to deny cheating intentionally, while male students commit cheating honestly when they are caught (Witmer & Johansson, 2015). Another finding discovered that women were significantly more likely than men to copy a few sentences to inspire their writing (Bokosmaty et al., 2017). However, there is no gender difference in behaviors toward plagiarism in the findings of this study.

Conclusion and Recommendations

This study finds out that the rapid development of the Internet and technology, the COVID-19 pandemic are the main factors for plagiarism. Especially the COVID-19 pandemic, which has become a new factor in causing plagiarism recently. The result of the T-test of significant gender differences showed that there is no difference among WKU undergraduate students both in attitudes and behaviors toward plagiarism by gender. According to the findings, recommendations are given as follows:

- For educational institutions, they are expected to provide more face-to-face courses and on-site exams to students as the COVID-19 situation turns well.
- Educational institutions ought to combine both traditional solutions such as (e.g., failing the plagiarized assignment, giving suspension to student) and new solutions (e.g., utilizing plagiarism

tracking system) to deal with plagiarism.

- College students need to be aware of the seriousness of plagiarism and establish correct ethical values.

- College students should try they best to complete the assignments or examinations on their own. If necessary, they could ask their instructors for help.

- College students could improve their paraphrasing skills to avoid plagiarism, they need to paraphrase others' ideas in their own words with proper citations instead of copying.

- For instructors, they could change the way of assessing students' academic ability. For instance, take-home essays can be changed to timed essays during class to avoid plagiarism.

- Instructors should offer more academic or mental assistance to students during the pandemic.

The current study has the following limitations: This study only selected certain number of students as samples. The study was only conducted in a single Sino-US cooperative university, so the findings could not represent generalized results. The topic of this study is about plagiarism, which is a sensitive and triggered topic for students, so the anticipation is that students will not respond truthfully in the survey.

References

Abraham, O., & Torunarigha, Y. D. (2020). Academic dishonesty: examining the causes and consequences of plagiarism in higher educational institutions of learning. *International Journal of Innovative Social Sciences & Humanities Research* 8(4), 88-97. https://seahipaj.org/journals-ci/dec-2020/IJISSHR/full/IJISSHR-D-10-2020.pdf

Al-Thwaib, E., Hammo, B.H., & Yag, S. (2020). An academic Arabic corpus for plagiarism detection: design, construction and experimentation. *International Journal of Educational Technology in Higher Education*, *17*(1), 1-26. https://doi.org/10.1186/s41239-019-0174-x

Alimorad, Z. (2020). Examining the effect of gender and educational level on Iranian EFL graduate students' perceived reasons for committing plagiarism. *GIST – Education and Learning Research Journal, 20*, 109-133. https://doi.org/10.26817/16925777.769

Bilen, E., & Matros, A. (2020). Online cheating amid covid-19. *SSRN Electronic Journal.* https://doi.org/10.2139/ssrn.3691363

Bokosmaty, S., Ehrich, J., Eady, M., & Bell, K. (2017). Canadian university students' gendered attitudes toward plagiarism. *Journal of Further and Higher Education, 1-15*. doi:10.1080/0309877X.2017.1359505

Enrich, J., Howard, S., Tognolini, J., & Bokosmaty, S. (2015). Measuring Attitudes Toward Plagiarism: Issues and Psychometric Solutions. *Journal of Applied Research in Higher Education, 7* (2), 243-257. doi:10.1108/JARHE-02-2014-0013

Janke, S., Rudert, S. C., Petersen, Ä., Fritz, T. M., & Daumiller, M. (2021). Cheating in the wake of COVID-19: How dangerous is ad-hoc online testing for academic integrity? *Computers and Education Open, 2*, 100055. https://doi.org/10.1016/j.caeo.2021.100055

Jereb, E., Perc, M., Lämmlein, B., Jerebic, J., Urh, M., Podbregar, I., & Šprajc, P. (2018). Factors influencing plagiarism in higher education: A comparison of German and Slovene students. *PLOS ONE, 13*(8). doi:

10.1371/journal.pone.0202252

McCabe, D. L. (2005). Cheating among college and university students: A North American perspective. *International Journal for Educational Integrity, 1*(1). https://doi.org/10.21913/IJEI.v1i1.14

Özbek, O., & Çeyizi, S. (2017). University students' opinions on cheating and plagiarism. *European Journal of Education Studies, 3*(8), 323-335. doi:10.5281/zenodo.832326

Parker, K., & Lenhart, A. (August 28, 2011). *The Digital Revolution and Higher Education*. Pew Research Center: Internet, Science & Tech. Retrieved January 25, 2022, from https://www.pewresearch.org/internet/2011/08/28/the-digital-revolution-and-higher-education/

Peytcheva-Forsyth, R., Aleksieva, L., and Yovkova, B. (2018). The impact of technology on cheating and plagiarism in the assessment – The teachers' and students' perspectives. *AIP Conference Proceedings, 2048*(1), 020037-020037, doi: https://doi.org/10.1063/1.5082055

Roka, Y. B. (2017). Plagiarism: types, causes and how to avoid this worldwide problem. *Nepal Journal of Neuroscience, 14* (1), 2-6. doi:10.3126/njn.v14i3.20517

Santiago, A. B. B., Diño, M. J. S., & Caballero, M. E. (2020). Plagiarism in advanced educational research: reasons, extent, perceived penalty and severity. *International Journal of Business and Social Science, 8*(4), 121-124. https://ijbssnet.com/journals/Vol_8_No_4_April_2017/12.pdf

Selemani, A., Chawinga, W. D., & Dube, G. (2018). Why do postgraduate students commit plagiarism? an empirical study. *International Journal for Educational Integrity, 14*(7). doi:10.1007/s40979-018-0029-6

Simatupanga, M.S., Peterb, R., Murniartic, E., Maled, H. & Tambunsaribue, G. (2021). The plagiarism tendency during covid-19 pandemic. *Turkish Journal of Computer and Mathematics Education, 12*(14), 4600-4607. https://turcomat.org/index.php/turkbilmat/article/view/11381/8423

Sprajc, P., Urh, M., Jerebic, J., Trivan, D., & Jereb, E. (2017). Reasons for plagiarism in higher education. *Journal of Management, Information Systems and Human Resources, 50*, 33-46. doi:10.1515/orga-2017-0002

Witmer, H., & Johansson, J. (2015). Disciplinary action for academic dishonesty: Does the student's gender matter? *International Journal for Educational Integrity, 11*(1). doi:10.1007/s40979-015-0006-2

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