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Mitigating Plagiarism in ESL Academic Writing: Evaluating the Efficacy of Educational Intervention

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ABSTRACT

Background: Plagiarism is a serious academic misconduct demanding mitigation to uphold the integrity of original work. Undeniably, with the advancement of technological age, plagiarising becomes easier and harder to detect. However, the reliance on technology significantly rises the likelihood of fostering academic dishonesty among the students. Therefore, it is imperative to disseminate explicit education on plagiarism reduction strategies, particularly on the importance of mastering correct referencing techniques.

Purpose: The present study applied a mixed-method approach to explore the effectiveness of an intervention called Educational Intervention (EI) on enhancing ESL students' academic referencing skills namely in in-text citation abilities, paraphrasing skills and writing reference list using APA style.

Method: The EI consisted of explicit instruction that involved structured teaching sessions integrated with two primary instructional strategies: lectures and practical exercises on referencing in academic writing. A total of 70 participants participated in the study. Data collection involved administering tests, assigning exercises and assignments, and conducting focus group interviews. The study utilised a quasi-experimental design to analyse the effectiveness of the intervention. Quantitative data were analysed using one-way ANOVA and paired sample t-test to assess the effectiveness of the EI. Qualitative data were examined through thematic analysis to explore participants' experiences and perceptions.

Results: Data analyses of the plagiarism test indicated that the experimental group showed significantly greater improvements in referencing skills compared to the control group, with statistical significance at $p < .05$ for all assessed skills. However, findings for the gathered exercises and assignments demonstrated improvements but not statistically significant in their referencing skills except for paraphrasing. Nonetheless, feedback from focus group interviews indicated positive responses toward EI and its role in enhancing referencing skills.

Conclusion: Overall, while EI proved effective in enhancing ESL undergraduates' referencing skills, there remains room for improvement to fully realize its potential. The study holds a global importance of imparting explicit education on referencing skills, offering educators worldwide a strategic measure aimed at reducing plagiarism act.

KEYWORDS

Plagiarism, Educational Intervention (EI), English as a Second Language (ESL), Academic Writing, Higher Education.

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INTRODUCTION

Plagiarism is a serious academic misconduct that is becoming increasingly prevalent in the academic landscape (Macdonald & Carroll, 2006; Puga, 2014; Shahabuddin, 2009). Research across various continents including Pakistan (Ramzan et. al, 2012), South Africa (Singh

et.al, 2020) and Australia (Smedley, Crawford & Cloete, 2015; 2019) has reported a rising trend of plagiarism among undergraduates in higher education institutions. In Malaysia, several studies have similarly reported that plagiarism is an alarming issue within universities, with a growing number of cases being recorded among undergraduates (Abusafia et

al., 2018; Al-Shaibani et al., 2016; Mustapha et al., 2017; Zejno, 2018). This widespread academic misconduct highlights that plagiarism is a global issue, affecting learners worldwide who engage in it extensively within their institutions.

Vuori et al. (2004) pointed out that plagiarism is not just about breaking rules, it is influenced by various cultural and educational factors. In Malaysia, students often struggle with plagiarism as their previous school system does not fully prepare them for the demands of university, where critical thinking and analytical skills are crucial (Yang & Lin, 2009). Unlike more homogenous educational systems, Malaysian universities are characterised by their multiethnic, multicultural and multilingual student populations, where learners navigate complex linguistic and cultural landscapes. This diversity adds another layer of difficulty as different students may have varying understandings of academic integrity and plagiarism. It highlights the importance of considering each students' background when addressing plagiarism (Sowden, 2005). Strict adherence to academic integrity in Malaysian universities can also be overwhelming. This challenge is greater for students learning in English, as it is their second language. According to Riasati and Rahimi (2013), many students find it challenging to write academically in English, especially when it comes to understanding and using complex academic texts. This struggle is compounded by their low proficiency in the target language, which can lead them to plagiarise to cope with academic pressures and deadlines (Mohd Habali & Fong, 2016; Al-Zubaidi & Richards, 2010; Mousavi & Kashefian-Naeeni, 2011).

The present study was motivated by the positive outcomes reported by Smedley et al. (2015) regarding the effectiveness of an intervention known as Educational Intervention (EI) in enhancing students' referencing skills. Building on these findings, this study aims to evaluate the effectiveness of Smedley et al.'s EI with a different population. The focus is on improving students' skills in writing in-text citations, paraphrasing and compiling reference lists in APA style. These skills are critical for reducing instances of plagiarism among English as a Second Language (ESL) undergraduates. The research will address the following questions:

RQ#1: How far does the use of EI improve ESL undergraduates' in-text citation abilities?

RQ#2: To what extent does the use of EI improve ESL undergraduates' para-phrasing skills?

RQ#3: To what degree does the use of EI improve ESL undergraduates' abilities to write a correct reference list using APA style?

RQ#4: What are ESL undergraduates' perceptions of the use of EI in improving their abilities to write in-text citation, paraphrase and write a reference list using APA style?

LITERATURE REVIEW

Social Constructivism Theory

Learning is a process that involves facilitators who aid learners in gaining knowledge on various topics. Lev Vygotsky's (1934) theory of social constructivism posits that the construction of knowledge occurs within the learners' social context. Vygotsky argues that the process of knowing is significantly influenced by others that are mediated through community and culture. According to Au (1998), the roles of culture and context in society such as interactions with peers, teachers, family, and the broader environment contribute to the learning process. Guidance from a more knowledgeable individual fosters social interaction, underscoring the importance of social contexts in governing the learning process. Thus, acquiring knowledge in a specific area often requires expert guidance to ensure that learners achieve a full understanding of the subject. This concept is reflected in the Zone of Proximal Development (ZPD), a key element of Vygotsky's Social Constructivism Theory. The ZPD refers to "the difference between the child's actual level of development and the level of performance achieved in collaboration with adult" (p.209). The theory suggests that learners acquire knowledge more effectively through joint efforts with an expert. This process helps them with the internalization of new concepts, methods and skills. Roosevelt (2008) argues that, from a Vygotskian perspective, the primary goal of learning is to use mediating activities or tasks with the assistance of a facilitator to create culturally meaningful learning experiences. Learners are expected to collaborate with more competent individuals or peers to complete assigned tasks. This approach suggests that optimal learning occurs when learners can complete similar tasks independently after receiving initial guidance. This process helps expand their ZPD for that activity.

In short, social constructivism posits that learning occurs when learners engage in interactions with peers or experts while addressing real-life tasks (Woo & Reeves, 2007). Social constructivism serves as the theoretical framework for this study. It explores the process of acquiring scientific concepts, specifically the development of referencing skills. This theory is also pertinent to the study, given the involvement of experts in facilitating the acquisition of the subject matter.

Using Educational Intervention (EI) to Reduce Plagiarism Act

Malaysian researchers have also addressed the issue of student awareness of plagiarism in higher learning institutions (Mohamed Mohan et al., 2020; Noorashikin Hussein et al., 2016; Zejno, 2018). However, limited efforts have been made to implement and evaluate intervention strategies aimed at reducing plagiarism among students. Khazriyati (2016) examined the effectiveness of a 'course talk' on plagiarism in

reducing plagiarism among Malaysian university students, finding it successful in raising awareness about the severity of plagiarism. Nevertheless, the study did not address issues related to students' ability to reference sources correctly.

Educating undergraduates about plagiarism and its implications is crucial for ensuring that they understand the seriousness of such act. Smedley et al. (2015) conducted a quantitative study with 150 nursing students. They received EI, which included lectures and exercises on academic writing, understanding plagiarism, and proper referencing. The results indicated that participants generally showed improvement in their knowledge and understanding of plagiarism, including referencing skills, after the intervention. Furthermore, the researchers noted improvements in paraphrasing and assignment referencing in the semester following the intervention. In a subsequent study in 2019, the researchers extended their evaluation of the EI and again found positive outcomes in students' understanding of referencing skills post-treatment.

A literature review by Fatemi and Saito (2020) on unintentional plagiarism revealed deficiencies in support programs, particularly regarding the time spent on contact and educating students on the importance of proper referencing techniques. Sowell (2018) noted that academic referencing proficiency can be time-consuming and complex, requiring students to learn and adhere to specific rules, especially when dealing with formatting. As undergraduates transition from secondary school to academic writing at the university level, they may find academic referencing unfamiliar and challenging. Akakura (2012) emphasised that these rules should be explicitly taught with a consistent focus during instruction. Providing students with thorough education on these rules is essential to ensure they receive adequate exposure (Bennett et al., 2011; Culwin, 2006; Schuetze, 2004).

Academic referencing requires mastery of three key skills: writing in-text citation, paraphrasing and compiling a reference list. These skills demand adherence to specific formats and rules to maintain consistency and comply with standard guidelines. Blum (2009) argued that learning proper citation is challenging and requires a deliberate and meticulous teaching approach. Additionally, incorporating practical exercises into instruction has been identified as an effective strategy for enhancing referencing skills. According to Landau et al. (2002), engaging students in paraphrasing exercises increased their awareness of plagiarism and guided them toward producing accurate paraphrases. Stander (2020) further supported this approach, highlighting the positive impact of exercises on students' paraphrasing techniques. Moreover, studies by Moniz et al.'s (2008) indicated that integrating lectures with practical exercises effectively enhances students' understanding of plagiarism and improves their referencing skills. Thus, the combination of lectures and exercises proves to be an effective approach for teaching correct reference writing.

Teaching and exercises alone do not provide students with a complete understanding of citation rules, but incorporating feedback is essential for evaluating their performance. Fazilatfar et al. (2018) found that while students improved in following standard citation rules, they still made errors in citation writing. The lack of feedback on their citations may contribute to these errors, supporting Pecocari's (2006) argument that insufficient feedback can lead students to incorrectly assume their citations are accurate. Wingate et al. (2011) and Hortsmanhof and Brownie (2013) also emphasise the importance of feedback in helping students achieve correct academic writing.

Furthermore, the internet has consistently been identified as a factor that increases the risk of plagiarism among students due to the easy access to information and websites enabled by modern technologies (Dias & Bastos, 2014; Lilliana Cuervo-Sánchez & Etxague, 2023; Ramzan et al., 2012; Sprajc et al., 2017). For example, tools like QuillBot poses a potential risk which may expose students to excessive reliance and hinder them from fully mastering their writing skills. However, Kusuma (2020) offered a different perspective. He suggested that QuillBot helped teachers and students by providing paraphrasing support that might be difficult to do manually. This assistance can reduce plagiarism in writing. Technological advancements can help writers produce well-structured work that follows the necessary rules. However, over-reliance on these tools may eventually harm their ability to create original content.

Based on the issues and literature discussed, the present study aims to underscore the importance of providing explicit instruction on proper reference writing as a strategy to reduce plagiarism in students' academic work, particularly in this era of rapid technological advancement.

METHOD

Research Design

This study utilised a quasi-experimental design to collect data. According to Price et al. (2014), quasi-experimental studies resemble true experimental research but differ in that they do not involve random assignment. Participants were divided into two groups: an experimental group and control group. The experimental group received the EI treatment, while the control group was taught using the implicit instruction method currently employed in the class. Pre-tests and post-test were conducted to evaluate the effectiveness of the intervention.

Participants

This study was conducted at a private university in Malaysia, employing a purposive sampling technique to select participants. Purposive sampling allows researchers to target

individuals who possess specific traits relevant to the study (Turner, 2019). Participants were selected from a pool of 100 ESL undergraduates enrolled in an English Academic Writing (EAW) course during that semester. The participants had the flexibility to choose their group based on their semester timetable, resulting in the use of intact groups. Consequently, participants were assigned to groups according to the available EAW course sections. All participants were from different academic programs, and informed consent was obtained from them prior to the experiment. A total of 70 undergraduates participated in the study, with each group-experimental and control consisted of 35 participants.

Research Procedure

The experimental group received explicit instruction that involved structured teaching sessions integrated with two primary instructional strategies: lectures and practical exercises. These sessions were carefully designed to enhance the participants’ ability to accurately perform in-text citation, paraphrasing, and compile reference lists according to APA guidelines. The instructional content was prepared using two key resources: “Writing Academic English” by Alice Oshima and Ann Hogue (2006) and the instructional guide “Avoiding Plagiarism, Self-Plagiarism, and Other Questionable Writing Practices: A Guide to Ethical Writing” by Miguel Roig (2015).

The explicit instruction was divided into two distinct stages. In the first stage, participants were provided with theoretical knowledge and practical techniques related to APA style through interactive lectures. These sessions were conducted by an experienced English language instructor who encouraged active participation and discussions among students, fostering a collaborative learning environment. Students were also guided to locate relevant information from various sources, including books, journal articles, and online materials such as newspaper articles and webpages. In the second stage, participants engaged in a series of practical exercises designed to test their ability to apply the knowledge gained during the lectures. These exercises focused on writing in-text citations, paraphrasing, and creating reference lists using APA style.

In contrast, the control group received implicit instruction. This approach did not involve direct teaching or detailed explanations of the targeted writing skills. Instead, participants were exposed to in-text citation, paraphrasing, and APA referencing through reading journal articles and academic papers. The instructor for the control group provided various reading materials but did not offer explicit guidance or engage interactively with the students. Participants were expected to observe and emulate the writing techniques and referencing formats presented in the readings independently.

While the experimental group’s instruction was characterized by high levels of interaction between the instructor and students, as well as among the students. In contrast, the control group had minimal interaction. The instructor’s role was limited to overseeing the reading sessions.

Table 1 below shows the comparison of instructional approaches utilised in this research.

Research Instrument

Three instruments were utilized in this study: the Avoiding Plagiarism Test (APT), participants’ documents in the form of exercises and assignments, and a focus group interview. The APT, which consisted of 50 questions in multiple-choice and true-or-false formats, was adapted from an online test available on the library website of Royal Roads University in 2021. Adaptations were made to ensure that the questions were contextually relevant to the participants. However, the original test is no longer accessible, as the website has transitioned to a new format featuring pop quizzes as of 2024¹. See Appendix A for a selection of sample questions for the APT test. The test measured participants’ understanding and ability to write in-text citations, paraphrase, and create reference lists in APA style, aiming to reduce plagiarism in ESL undergraduates’ academic writing. Before the main study, a pilot test was conducted with 30 participants to assess the reliability of the APT. To assess the reliability of the questionnaire used in this study, a test-retest reliability method was employed. Pearson Product-Moment correlation coefficient was utilised, and the result of the test demonstrated a reliability

Table 1
Summary Comparison of Instructional Approaches

Aspect	Experimental Group (Educational Intervention)	Control Group (Implicit Instruction)
Instructional Strategy	Explicit teaching via lectures and exercises	Passive exposure through reading materials
Content Focus	In-text citation, paraphrasing, APA reference lists	In-text citation, paraphrasing, APA reference lists
Interaction	High (instructor- student, student-student)	Low (minimal instructor -student interaction)
Instructor Role	Active (lecturing, guiding)	Passive (overseeing sessions)

¹ For further details see Royal Roads University, Quoting, summarizing, and paraphrasing (2024) at <https://libguides.royalroads.ca/quoting>.

bility coefficient of $r = .607$. This confirmed that the APT was reliable and consistent over two-time points.

The second instrument involved collecting written evidence in the form of exercises and assignments focused on the referencing skills addressed in the study. These collections were conducted three times which were during Week 4, Week 8 and Week 12 over a 14-week period, specifically with the experimental group, as the control group did not engage in exercises as part of their instruction.

Qualitative data was gathered through a semi-structured focus group interview with 18 participants from the experimental group. A total of 10 questions were designed based on Adams (2015) guidelines. These guidelines emphasized the formulation of open-ended questions aligned with the research themes and the incorporation of prompts to enhance participant engagement and facilitate deeper exploration of the topics. The questions focused on capturing participants' view on the intervention's effectiveness, exploring their experiences and challenges during the process and collecting suggestions for improvement. See Appendix B for a complete list of the interview questions. The interviews were recorded using an audio recorder and later transcribed for analysis.

Analysis

The participants' test scores from both the pre-test and post-test of the APT, along with their exercise and assignments scores were analysed using one-way ANOVA and paired sample t-test. These two statistical tests were used to evaluate intervention effectiveness by analysing differences within and between groups. Meanwhile, the transcript from the focus group interview was analysed using thematic analysis to generate the qualitative findings of the study. It began with thoroughly reading the interview transcripts to become familiar with the data and note initial impressions. Key data was then organized and coded. The codes were later grouped into themes, which were reviewed to ensure coherence and distinctiveness. Finally, themes were defined to capture their core meanings and findings were reported to support study triangulation.

Table 2

Result of One-Way ANOVA for Pre-Test and Post-Test (In-Text Citation)

APT	Group	N	M	SD	df1	df2	F	Sig.
Pre-test	Experimental Group	35	14.686	4.086	0.400	1	68	.148
	Control Group	35	15.086	4.861				
Post-test	Experimental Group	35	19.086	5.453	4.000	1	68	10.593
	Control Group	35	15.086	4.810				

RESULTS

The results are presented in alignment with the research questions guiding this study. This section provides an analysis of the inferential statistics obtained from the APT tests and excerpts from the interview transcript to support each of the formulated research questions.

The Effectiveness of EI on In-text Citation Abilities

The first research question investigates the effectiveness of EI on participants' ability to write correct in-text citation. Table 2 presents the results of a one-way ANOVA for both pre-test and post-test of the experimental and control groups. The one-way ANOVA results for the pre-test showed no significant difference between the experimental and control groups. The scores were not significant at $p > .05$ ($F(1, 68) = .148, p = .702$). This finding suggests that participants in both groups had similar levels of knowledge about writing in-text citations before the intervention. Meanwhile, the post-test results showed that the mean score for the experimental group was higher than that of the control group, with a mean difference of $MD = 4.000$. The table also indicates a significant effect of the EI on participants' APT score for in-text citation questions, with $p < .05$ ($F(1, 68) = 10.593, p = .002$). This result demonstrates that the treatment administered to the experimental group was more effective, as reflected in the higher and statistically significant APT mean score for the experimental group.

Table 3 illustrates the results of the paired sample t-test of for the APT scores of participants in the experimental group. The p-value for this pair was $p < .05$ ($t(34) = -3.845, p = .001$), indicating that the scores were statistically significant. Cohen's d was estimated at $d = 1.221$, which is considered a large effect according to Cohen's (1992) guidelines. This finding suggests that the treatment was effective in improving participants' ability to write in-text citation as evidenced by the significant improvement in their APT score post treatment.

Table 4 depicts the results of the repeated measures ANOVA for the exercises and assignments completed by partic-

ipants in the experimental group. The results indicate that the mean scores of participants' exercises improved over time, increasing from M = 6.600 in EA1 to M = 7.086 in EA2, and finally to M = 7.514 in EA3. This trend suggests an improvement in participants' ability to write in-text citations towards the end of the intervention. However, Cohen's d was estimated at d = 0.230, which is deemed a small effect. The mean scores for participants' exercises and assignments showed minimal improvement. The increase was statistically insignificant with a p-value of 0.326, which is greater than 0.05. Therefore, it can be concluded that the intervention had a statistically insignificant effect on the ESL undergraduates' ability to write in-text citation in their exercises and assignments (F (2, 68) = 1.139, p = .326).

The Effectiveness of EI on Paraphrasing Skills

The second research question examined the effectiveness of EI in improving participants' ability to write correct paraphrase. A one-way analysis of variance (ANOVA) was conducted on the pre-test and post-test scores for paraphrasing questions in the APT for both participants in the experimental and control groups. The results are presented in Table 5. The pre-test results indicated insignificant difference at $p > .05$ (F (1, 68) = 1.603, p = .210), suggesting that the pre-test scores between experimental and control groups were not significantly different. This finding implies that participants' paraphrasing skills were at a similar level in both groups

before the study began. Further analysis of the post-test scores revealed that the experimental group (M=19.086) outperformed the control group (M = 13.086) with a mean difference of = 6.000, indicating that participants in the experimental group performed better on the APT compared to those in the control group. The difference in scores between the groups was also statistically significant at $p < .05$ (F (1, 68) = 21.975, p = .000). This data demonstrates that EI was more effective in improving participants' ability to write correct paraphrase in the APT than the implicit instruction used in the control group.

The APT score for the pre-test and post-test in the experimental group were further analysed using a paired sample t-test, as shown in Table 6. The analysis revealed that the improvement in scores was statistically significant at $p < .05$ (t (34) = -4.449, p = .000) with an estimation of Cohen's d at d = 1.215, indicating a large effect. Therefore, this result confirms that the implementation of EI was effective in enhancing participants' paraphrasing abilities, as evidenced by significant improvement in the participants' APT score post intervention.

Table 7 presents the analysis of the repeated measures ANOVA for the exercises and assignments on paraphrasing skills within the experimental group. The results showed a steady increase in the average mean score, from M =3.514 for EA1 to M = 5.486 for EA2, and finally to M = 6.300 for

Table 3

Result of Paired-Sample T-test for the Pre-Test and Post-Test of the Experimental Group (In-Text Citation)

	N	SD	SEM	t	df	Sig.	d.	
Pre-test – Post-test	35	-4.400	6.770	1.144	-3.845	34	.001	1.221

Table 4

Result of Repeated Measures ANOVA for Exercises and Assignments of the Experimental Group (In-Text citation)

	N	M	SD	df1	df2	F	Sig.	d.
Exercise/ Assignment 1 (EA1)	35	6.600	2.603	2	68	1.139	.326	0.230
Exercise/ Assignment 2 (EA2)	35	7.086	2.454					
Exercise/ Assignment 3 (EA3)	35	7.514	2.884					

Table 5

Result of One-Way ANOVA for Pre-Test and Post-Test (Paraphrase)

APT	Group	N	M	SD	df1	df2	F	Sig.	
Pre-test	Experimental Group	35	14.229	5.504	1.600	1	68	1.603	.210
	Control Group	35	12.629	5.059					
Post-test	Experimental Group	35	19.086	5.431	6.000	1	68	21.975	.000
	Control Group	35	15.086	4.810					

EA3. This trend indicates a gradual improvement in participants' ability to write paraphrases in their exercises and assignments throughout the intervention period. Cohen's *d* was also estimated at $d = 1.485$, signifying a large effect. The analysis further reported that the substantial improvement in scores for the exercises and assignments was statistically significant at $p = .000$. Therefore, these findings indicate that EI was effective in enhancing participants' ability to write correct paraphrases in their exercises and assignments ($F(2, 68) = 48.561, p = .000$).

The Effectiveness of EI on Writing Reference List using APA style

The third research question aimed to evaluate the effectiveness of Smedley et al.'s (2015) EI in improving ESL undergraduates' abilities to write a correct reference list using APA style. A one-way ANOVA was conducted on the pre-test and post-test scores of the APT for both the experimental and control groups, with the results presented in Table 8. The pre-test results showed a p -value of $p > .05$ ($F(1, 68) = 3.786, p = .056$), indicating no significant difference between

the groups. This suggests that the participants in both groups had a similar level of knowledge regarding APA-style reference lists before the intervention. Subsequently, another one-way (ANOVA) was performed to assess the effectiveness of the intervention by comparing the post-test APT scores between the experimental and control groups. The data revealed that the mean score for the experimental group ($M = 19.943$) was higher than that of control group ($M = 17.200$), with a significant difference between the groups at $p < .05$ ($F(1, 68) = 8.011, p = .006$). This finding indicates that participants in the experimental group performed better in writing a reference list using APA style than those in the control group.

The post-test data of the experimental group were further analysed using a paired sample *t*-test to determine the effectiveness of the intervention specifically on writing a correct reference list. Table 9 presents the analysis, which shows a significant difference in scores at $p < .05$ ($t(34) = -7.737, p = .000$). Cohen's *d* was estimated at $d = 1.577$, indicating a large effect. Thus, the APT data suggest that the EI was ef-

Table 6

Result of Paired-Sample T-test for the Pre-Test and Post-Test of the Experimental Group (Paraphrase)

	N	SD	SEM	t	df	Sig.	d.	
Pre-test – Post-test	35	-4.857	6.459	1.092	-4.449	34	.000	1.215

Table 7

Result of Repeated Measures ANOVA for Exercises and Assignments of the Experimental Group (Paraphrase)

	N	M	SD	df1	df2	F	Sig.	d.
Exercise/ Assignment 1 (EA1)	35	3.514	1.915	2	68	48.561	.000	1.485
Exercise/ Assignment 2 (EA2)	35	5.486	1.502					
Exercise/ Assignment 3 (EA3)	35	6.300	1.030					

Table 8

Result of One-Way ANOVA for Pre-Test and Post-Test (Reference List Using APA Style)

APT	Group	N	M	SD	df1	df2	F	Sig.
Pre-test	Experimental Group	35	14.743	3.665	1	68	3.786	.056
	Control Group	35	16.400	3.457				
Post-test	Experimental Group	35	19.943	3.741	1	68	8.011	.006
	Control Group	35	17.200	4.344				

Table 9

Result of Paired-Sample T-test for the Pre-Test and Post-Test of the Experimental Group (Reference List Using APA Style)

	N	SD	SEM	t	df	Sig.	d.	
Pre-test – Post-test	35	-5.200	3.976	.672	-7.737	34	.000	1.577

fective in improving participants' ability to write a reference list using APA style after the intervention.

Additionally, a repeated measures ANOVA was conducted on the exercises and assignments submitted by the experimental group to explore whether a significant change occurred in participants' ability to write a correct reference list using APA style. The results are displayed in Table 10. The mean scores of the participants increased from $M = 5.857$ in EA 1 to $M = 5.971$ in EA 2, and finally to $M = 6.586$ in EA 3, indicating a gradual improvement in their ability to write correct reference lists over the course of the intervention. However, the effect size, measured by Cohen's d was estimated at $d = 0.197$. This indicated a small effect size. Despite the observed improvement, the change was not statistically significant $F(2, 68) = .729, p = .486$. Therefore, it cannot be proven that the use of EI significantly improved ESL undergraduates' ability to write a reference list using APA style in their exercises and assignments.

ESL Undergraduates' Perceptions on the Effectiveness of EI on their referencing skills

The fourth research question was to identify the ESL undergraduates' perception on the use of EI in improving their referencing skills. Four key themes emerged from the transcriptions. These themes include the positive aspects of EI, the negative aspects of EI, the impact of EI on students' abilities to write in-text citations, paraphrasing and compiling reference lists according to APA style, and their overall opinions on the benefits of EI as an initiative to prevent plagiarism in academic writing.

Positive Aspects of EI

A common theme among the responses was that the intervention provided crucial initial exposure to the concept of plagiarism and strategies to avoid it. Participants indicated that this was their first experience learning about plagiarism prevention, with the EI intervention serving as an essential introduction to the topic (T1 and T2).

T1: "It is my first time learning on how to avoid plagiarism. So, the lectures and exercises help me a lot" (P1)

T2: "This is my first time knowing all the elements regarding plagiarism" (P6)

Participants also highlighted the practical benefits of the lectures and exercises. Some indicated that the resources particularly useful when completing tasks that required accurate referencing (T3, and T4). Meanwhile, the knowledge gained from EI was also noted to have broader applicability with participants mentioning that the skills learned could utilised in other subjects as well as future writing projects (T5 and T6).

T3: "For me, the EI helps me to provide exposure to the formats on how to write reference correctly" (P5)

T4: "I always referred to the lecture notes because it is simpler and easier to understand than using reference books which tend to be lengthy" (P8)

T5: "The information that I gained from EI can also be applied for other subjects" (P6)

T6: "Recently, I am able to apply the knowledge that I gained from EI on my finance report assignment" (P15)

Negative Aspects of EI

Nonetheless, EI has its own loopholes. Participants expressed a need for more discussion sessions to clarify their understanding and address mistakes (T7). Some also added that they need more examples or sample answers to enhance their comprehensions (T8).

T7: "I need more discussion sessions to avoid confusion on the mistakes that I made" (P4)

T8: "I think more examples and sample answers will help me to reach full understanding of the topic" (P10)

Other concerns included the lack of variety in the exercises and the need for more engaging visual aids. Some participants suggested incorporating a wider range of exercises (T9) and visual tools like mind maps to aid in learning (T10)

Table 10

Result of Repeated Measures ANOVA for Exercises and Assignments of the Experimental Group (Reference List Using APA Style)

	N	M	SD	df1	df2	F	Sig.	d.
Exercise/ Assignment 1 (EA1)	35	5.857	4.110	2	68	.729	.486	1.485
Exercise/ Assignment 2 (EA2)	35	5.971	2.203					
Exercise/ Assignment 3 (EA3)	35	6.586	2.328					

T9: "Variety of exercises maybe can be integrated so that it can provide more guidance on the types of questions that will be asked" (P12)

T10: "I think the EI can be improved by adding on some visual notes like the mind map. It will be easier for me to remember the format" (P18)

Impact of EI on Students' Abilities to Write In-Text Citations, Paraphrasing and Compiling Reference Lists according to APA Style

All participants agreed that the EI significantly enhanced their ability to accurately write in-text citation, paraphrasing and compiling reference lists in APA style.

Overall Opinions on the Benefits of EI as an Initiative to Prevent Plagiarism in Academic Writing

The interview concluded with participants sharing their overall assessment of the EI's importance in helping them avoid plagiarism in their academic writing. Participants unanimously agreed that the intervention was valuable as it provided them with essential knowledge to effectively prevent plagiarism in their work.

DISCUSSION

Based on the result, it was reported that participants who underwent EI demonstrated a statistically significant increase in mean scores on their post-test for in-text citation skills. The mean score for the experimental group was higher than the control group. This indicates that EI was more effective in improving the ability to write in-text citations compared to the implicit teaching methods used in the control group. Focused teaching by the instructor on how to correctly write in-text citations provided learners with essential knowledge and skills. This aligns with Teeter's (2015) assertion that the learning process involves active roles from both instructors and learners. Since writing in-text citations requires adherence to specific formats and rules, expert guidance is crucial for demonstrating the correct techniques. Interviews showed that this was the participants' first exposure to plagiarism. This highlights the need for structured education to effectively teach essential skills, such as writing in-text citations.

The findings of this study demonstrated that sufficient exposure to the skill through a series of lectures and exercises significantly improved the learners' ability to write in-text citations. This aligns with Blum's (2009) argument that mastering proper citation is challenging and requires "slow, careful teaching" (p.13). The guidance provided by knowledgeable instructors underscores the importance of social contexts in achieving the learning objectives, specifically the

ability to write accurate in-text citations. This suggests that explicit teaching is more effective than implicit methods, as learners need specific guidance on adhering to academic referencing formats. However, the study also revealed contrasting result when analysing the exercises and assignments. Although the scores for in-text citation improved across the collections, the change was not statistically significant. This lack of significance was attributed to small differences in mean scores and persistent mistakes in applying standard citation rules. Participants often confused in-text citations within the text and outside the text, applying the same format incorrectly across their submissions. The most common error was the misplacement of parentheses in citations. Fazilatfar et al. (2018) identified this challenge as well, noting that students continued to make citation errors despite showing improvement. The lack of feedback was highlighted as a key factor contributing to these persistent errors. Pecocari (2006) argued that insufficient feedback could lead students to mistakenly believe their citations are correct. This study's focus on lectures and exercises without incorporating feedback sessions likely contributed to the ongoing uncertainty among participants. Without feedback, participants only attended lectures and completed exercises. This lack of feedback may have prevented them from fully internalizing correct citation practices. Engaging instructors to review and provide feedback on learners' work could help students recognize and correct their citation errors. This approach may reduce the likelihood of them repeating the same mistakes. This aligns with the arguments of Wingate et al. (2011) and Hortsmanhof and Brownie (2013), who emphasize the necessity of feedback in guiding students toward accurate academic writing.

The results indicated that the use of EI had significantly improved participants' paraphrasing skills as evidenced by the statistically significant increase in their post-test mean scores. The experimental group performed better than the control group. EI proved to be more effective in improving the ability to write correct paraphrases compared to the implicit teaching method used with the control group. Having a knowledgeable instructor demonstrate proper paraphrasing techniques helped students to understand and master the topic. This enabled them to paraphrase correctly. This scenario aligns with Vygotsky's concept of the Zone of Proximal Development (ZPD) (1978), where the instructor acts as a facilitator, guiding students as they acquire new knowledge. Introducing and educating students on essential topics, such as proper paraphrasing techniques, should be a priority. Interviews conducted during the study revealed that participants were initially unaware of these referencing skills. Fatemi and Saito (2020) highlighted that insufficient explicit instruction can lead to unintentional plagiarism due to a lack of awareness among learners. Therefore, the findings of this study underscore the importance of explicit teaching, as it was shown to be effective in improving participants' paraphrasing skills following the intervention. Sowell (2018) further emphasised that mastering proper academic

referencing can be challenging and time-consuming, requiring a collaborative effort between teachers and students for successful learning outcomes.

The results from the paraphrasing exercises and assignments indicate a statistically significant improvement in participants' performance, as shown by the increasing trend in mean scores over time. Participants demonstrated a better ability to write their own paraphrases without heavily relying on the original texts. However, inaccuracies in their work were mainly due to low English proficiency. This issue was beyond the scope of the study. Notably, most submitted paraphrases reflected the participants' efforts to accurately retain the original meaning without using the exact wording, and they also included proper source acknowledgement. Given that effective paraphrasing requires students to use their own words, incorporating only lectures proved insufficient. Consequently, additional exercises were implemented to help participants fully grasp the skill. This approach significantly improved their paraphrasing abilities. The outcome aligns with previous research by Landau et al. (2002). Their study found that engaging in paraphrasing exercises increased students' awareness of plagiarism and guided them in creating appropriate paraphrases. Similarly, a more recent study by Stander (2020) supported this, reporting that paraphrasing exercises enhanced students' abilities to accurately paraphrase. However, concerns were raised regarding the potential impact of internet accessibility on the study's findings. The availability of online paraphrasing tools such as QuillBot and Paraphrasing-tool may have influenced participants to produce plagiarism-free paraphrases through simple copy-pasting, rather than by developing their own writing skills. Kusuma (2020) noted that while QuillBot can assist teachers and students in generating paraphrases they might struggle to write manually, overreliance on such technology can lead to unoriginal work and hinder skill development. Since this study was conducted online, it was challenging to completely prevent access to these tools. To obtain more valid findings on the effectiveness of the intervention, future studies should be conducted in a controlled physical environment. This would minimise external variables like internet access.

This study also explored the skill of constructing a reference list using APA style. The findings revealed that participants in the experimental group achieved higher mean scores on questions related to APA reference list formatting in their post-test compared to their pre-test. Moreover, the experimental group outperformed the control group. This suggested that the EI method was more effective than the implicit teaching method used in the control group in improving the participants' ability to write a reference list using APA style. The success of the EI method can be attributed to its structured approach. Explicit instruction on APA format was delivered through a series of lectures and exercises. Akakura (2012) emphasises that teaching rules explicitly is essential and should be prioritised in instructional

design. In this study, lectures that detailed APA formatting rules and guidelines were conducted to ensure that participants first gained a thorough understanding of the necessary conventions. This foundation is crucial as educating students on the rules and formats of APA style helps them acquire the functional knowledge required to apply these rules accurately in their writing (Bennett et al., 2011; Culwin, 2006; Schuetze, 2004). APA style varies depending on the type of source being cited whether it is a journal article, website, book, or other materials. The intervention's exercises allowed participants to practice different techniques, strengthening their ability to accurately construct reference lists. This improvement in understanding and applying APA style is consistent with the findings of Moniz et al. (2008). Their research showed that lectures and exercises were effective in enhancing students' knowledge of plagiarism and developing their referencing skills.

A different outcome was observed in the analysis of the exercises and assignments related to writing a reference list using APA style. Although the mean scores for these tasks showed a gradual increase over time, the improvement was not statistically significant. This lack of significance could be due to the minimal differences in mean scores from the first to the last collection, leading to an overall insignificant result. The primary issue seemed to be the participants' difficulty in adhering to the correct APA conventions, as inaccuracies in the presentation of the reference lists were still apparent in their submission. Similar findings were reported by Smedley et al. (2015) who noted that while students showed some improvement in writing references for their assignments, persistent issues with APA formatting remained evident. However, this study's intervention may have been insufficient in this regard, as participants expressed the need for more examples and discussion sessions in the future. Additionally, the lack of visual aids, such as mind maps, was identified as a contributing factor to the results. Participants suggested that incorporating more visual tools could help them better understand and memorise APA format guidelines.

It is also crucial to recognize that the use of technology, particularly the internet, may have undermined the participants' efforts to produce original work. The internet has long been associated with an increased risk of plagiarism, as the accessibility of information and websites has been greatly facilitated by new technologies (Dias & Bastos, 2014; Lilibana Cuervo-Sánchez & Etxague, 2023; Ramzan et al., 2012; Sprajc et al., 2017). The availability of websites like "Citation Machine" and "Cite this for Me" which offer free citation generation, may have contributed to the minimal differences in participants' scores, leading to an insignificant improvement in their citation skills. While it might be assumed that these websites would assist participants in correctly formatting citations and reference lists according to APA style, the findings suggest otherwise. Participants continued to make errors in their references for exercises and assignments, despite having access to these online tools during the study,

which was conducted using online platforms. This unrestricted access likely limited the researcher's ability to control the use of the internet during the intervention. One possible explanation for these findings is the participants' lack of understanding regarding the sources they needed to cite. The requirement to cite various types of materials such as books, journal articles, magazines and web-based contents which each with different formatting rules, may have led to confusion. This confusion could have resulted in incorrect information being input into the citation websites that lead to errors in the generated reference lists.

The interviews with the participants revealed that the EI significantly improved their referencing skills. They described the intervention as beneficial, noting that it enhanced their ability to accurately reference sources and provided valuable guidance for completing their tasks. Despite the benefits of the EI intervention, participants identified areas for improvement, particularly the need for more discussion sessions and feedback. They emphasised that additional examples and guidance would enhance their understanding of the topics. This aligns with Fazilatfar et al. (2018), who found that insufficient feedback contributed to incorrect citations in student work, underscoring the necessity of follow-up guidance.

CONCLUSION

This study concludes that EI is effective in enhancing ESL undergraduates' understanding of plagiarism, particularly in developing their referencing skills, such as in-text citation, paraphrasing, and writing reference lists using APA style. However, the credibility of the intervention could be improved to achieve optimal effectiveness, given the mixed findings reported. Enhancements, such as the integration of feedback sessions as suggested by the participants could lead to more significant improvements in the undergraduates' referencing skills. This study underscores the global importance of providing explicit education on referencing skills, offering educators a strategic approach to reducing plagiarism, particularly in ESL contexts.

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It is also crucial to consider that ESL learners might have encountered challenges during the EI process due to their limited English proficiency. This limitation could have made it difficult for them to fully master the required skills. To fully understand the English text was one thing, but to critically use it as a source in their writing adds another level of difficulty. This struggle was evident in the participants' paraphrasing tasks. Many had trouble constructing grammatically correct paraphrases, likely due to limited grammar and vocabulary. However, this issue was not thoroughly discussed in the study, as its scope was limited to addressing referencing skills.

Future research could incorporate improved measures that address both the lack of knowledge and skills related to plagiarism, and the limited English proficiency of ESL learners. This dual focus could help to reduce plagiarism more effectively. Besides, the present study was also limited to a period of 14 weeks which was relatively enough to bring out findings. However, a longitudinal study would be better in establishing the effectiveness of the intervention. Future studies could opt for a longitudinal approach to see if extended instruction leads to greater improvement in undergraduates' referencing skills.

DECLARATION OF COMPETING INTEREST

None declared

AUTHOR CONTRIBUTIONS:

Nazirah Mahmud: conceptualisation; formal analysis; investigation; methodology; project administration; resources, validation; visualization; writing - original draft; writing - review & editing.

Mohd Haniff Mohd Tahir: conceptualisation; formal analysis; supervision; validation; visualization; writing - reviewing & editing.

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APPENDIX A

Avoiding Plagiarism Test (APT)

The test utilized both true/false and multiple-choice formats and comprised four sections:

1. Section A: Background knowledge of plagiarism
2. Section B: In-text citations
3. Section C: Paraphrasing
4. Section D: Reference List

Below are selective questions for each section. Full access to the complete set of questions will be available upon request.

Section A: Background knowledge of plagiarism

1. Plagiarism can be defined as
 - A. Paraphrasing another's idea with explicit attribution to the author
 - B. Acknowledging the sources where your ideas build upon by using their exact words.
 - C. Representing another person's work as your own.
 - D. None of the above.
2. What **BEST** describes the rightness or wrongness of plagiarism?
 - A. It is always wrong because it is considered as an act of theft and fraud.
 - B. It is not a right or wrong kind of act.
 - C. In certain situations, plagiarism is acceptable.
 - D. It is not wrong to commit plagiarism.

Section B: In-text citations

3. In-text citation is **NOT COMPULSORY** in the writer's body of text even though the writer uses outside resources to support his/her arguments in the paper (True/ False)
4. When do you use "et al." in your work?
 - A. When the work has more than two authors and being mentioned for the second time in your body of text.
 - B. When the work has more than two authors and is being mentioned for the first time in your body of text.
 - C. When you want to decrease the number of words of your body of text
 - D. All of the above.

Section C: Paraphrasing

5. A paraphrase has quotation marks around it. (True/ False)
6. Which of the following should you **NOT** do when paraphrasing?
 - A. Restate your information and ideas accurately.
 - B. Use your own language and style.
 - C. Reference the source.
 - D. Change just one or two words in a sentence.

Section D: Reference List

7. Reference list is important as it allows readers to have access to the same sources for themselves. (True/ False)

Royal Roads University. (n.d.). Create a preliminary document plan.
<http://library.royalroads.ca/writing-centre/writing-essay-start-here/create-preliminary-document-plan>

8. Determine what is the type of resource for the reference list provided above.
 - A. Wiki post
 - B. Blog post
 - C. Technical or research report
 - D. Webpage

APPENDIX B

Focus Group Interview Questions

1. Tell me about your experience as a participant in the Educational Intervention (EI).
2. What are the positive aspects that you like about the intervention?
3. What are the negative aspects that you do not like about the intervention?
4. Did the EI help you to improve your ability to write in-text citation correctly? If yes, why. If no, why?
5. Did the EI help you to improve your ability to write paraphrase accurately? If yes, why. If no, why?
6. Did the EI help you to improve your ability to write a reference list using APA style correctly? If yes, why. If no, why?
7. In your judgement, do you think that the EI benefits you?
8. Why do you think that way? (prompt)
9. Do you think that the EI is a good initiative to help you to avoid plagiarism act?
10. Why do you think that way? (prompt)