

**JOURNAL OF INFORMATION  
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MANAGEMENT (JISTM)**[www.jistm.com](http://www.jistm.com)**THE USABILITY EVALUATION OF ONLINE TRAINING  
PLAGIARISM MODULE USING ICCEE APPROACH FOR  
ACADEMIC WRITING BEGINNERS**

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**Abstract:**

Plagiarism is one of the issues commonly observed in academia, particularly in academic writing. Academic writing is challenging, especially for beginners who have just begun to learn how to write a research-oriented article. Compared to other genres of writing, academic writing has its own rules and organization. Previous studies have shown that students tend to plagiarize when writing their academic papers. The existing modules that serve as a reference for academic writing are lacking in content which emphasizes the importance of academic integrity. Realizing this phenomenon, a module called the Online Training Plagiarism Module was developed using the Identify-Choose-Create-Engage-Evaluate (ICCEE) approach in order to help beginners to write good papers with integrity and avoid plagiarism. A survey approach was used in this study to evaluate the usability of the Online Training Plagiarism Module. A total of 70 first year postgraduate students participated in this study and those students can be categorized as beginners in academic writing. A usability questionnaire adapted based on USE instrument was used to assess four aspects, which are usefulness, ease of use, ease of learning, and satisfaction. The findings show that the usability level of the proposed module is high among the beginners. Therefore, using the Online Training Plagiarism

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Module for academic writing beginners is both relevant and acceptable, allowing beginners to use it as a reference in academic writing courses.

**Keywords:**

Usability, Plagiarism, Online Module, Higher Education

**Introduction**

Academic writing is a mandatory requirement for students in most, if not all higher institutions of learning. Regardless of whether it is in the form of writing, essays, research articles, reports, dissertations, or theses, students in the undergraduate and postgraduate levels need to have the ability to write academically. Nevertheless, academic writing can be challenging for those who are just beginning to write a research-based articles. This is not surprising, because compared to other genres of writing, academic writing has its own rules and organization (Hyland 2003). Students who are academic writing beginners not only face challenges in writing, but at the same time they face challenges adjusting to their new life and environment in a college setting. Due to these challenges, either intentionally or unintentionally, students sometimes may tend to resort to plagiarism in completing their academic writing tasks. This is supported by previous studies which show that plagiarizing is one of the major issues in academic writing (Curtis & Vardanega 2016).

**Literature Review*****Plagiarism***

Plagiarism, when associated with the etymology of the word from Latin ‘plagiarius’, can be defined as theft or copyright abuse (Howard ,1995). Other studies define plagiarism as a form of cheating, academic fraud, and fabrication (McCabe, 2005). Reference (Yeo, 2007) on the other hand, defined plagiarism as stealing, through copy-and-paste, words, texts, or someone else’s ideas and passing off as one’s own without proper acknowledgments of the source. Looking at the various definitions that exist, (Perry, 2010) concludes that so far there is no standard definition of plagiarism as most of it depends on the policy of a certain institution. However, it can be suggested that most of the existing definitions of plagiarism relate to improper citation and cheating (Amiri et al., 2016) by taking unethically, ideas or texts from others and passing them off as one’s own (Gullifer et al., 2014).

***Plagiarism In Higher Learning Institutions***

Plagiarism is a concern for higher learning institutions all over the world (Curtis & Vardanega 2016), (Marcus & Beck, 2011). Due to the advancement of technology, there has been an increase in student plagiarism, and it has become more challenging for higher learning institutions to handle (Elander et al.,2010; Gullifer & Tyson, 2010). Colleges and universities spend energy, money, and other resources to take care of this issue (Gullifer & Tyson, 2014).

Despite previous research on the issue of plagiarism that has been conducted since the year 1960s (Cummings et al., 2002) plagiarism is still on the rise (Owunwanne et al.,2010). It was shown that plagiarism occurs every year in all field of studies whether sciences, social sciences, or arts (Aasheim et al., 2008; Molnar et al. 2008). Additionally, the research focuses on prevalence rate, factors students plagiarize, and strategies to prevent or detect plagiarism (Evans, 2006).

Even though plagiarism is a complex process (Ehrich et al., 2016), previous studies show that one of the major factors students involved in plagiarism or academic dishonesty is a lack of knowledge and awareness of what constitutes plagiarism (Voelker et al., 2016). Students lack understanding about plagiarism and how to avoid it, as plagiarism can occur in a variety of ways and levels (Batane, 2010; Probett, 2011). Studies show that students can be confused with regards to behaviours that constitute academic dishonesty, as some may come from backgrounds or countries with different values and languages (Gullifer & Tyson, 2010). They also found that because students do not understand plagiarism, they may do it unintentionally (Insley, 2011). Plagiarism may be committed due to confusion on how to integrate and reference sources that they refer to (Gourlay & Deane, 2012). This supporting evidence (Yeo, 2007) found that although students can provide an acceptable definition of plagiarism, they have a limited skill in the application of avoiding plagiarism. In this study, students were unsure of referencing, citing, and quoting. Studies by (Hu & Lei, 2012) and (Kier, 2014) checked the students' ability to recognize plagiarism and to paraphrase sentences. These studies found that students faced challenges when determining what plagiarism is. Challenges were also faced due to their lack of ability to paraphrase. Understanding factors that lead to student plagiarism is important as it facilitates the development of strategies and tools to encourage academic integrity among students (Gullifer & Tyson, 2010).

### ***The Consequences Of Plagiarism***

Plagiarism can be regarded as an academic crime, particularly the copyright abuse. Husain (Husain et al., 2017) shows how plagiarism cases in the USA have reached courts, and thus, this extends beyond the academic sphere. In other words, plagiarism can be equal to theft. Fishman (Fishman, 2009) quoted the definition of plagiarism from the perspective of jurisdiction as the 'appropriation of property of another with intent to deprive the rightful of its use'. Other studies have looked at plagiarism as a form of cheating, academic fraud, and fabrication (McCabe; 2005; Ashworth et al., 2009).

There are also other scholars who have defined plagiarism based on the actions such as stealing other's ideas through copying words or texts and passing as one's own without acknowledging the other's work (Park, 2005; Yeo, 2007). As the understanding of plagiarism is one of a wrongdoing, the consequences for academic misconduct such as this, as previously reported in literature, are disciplinary actions that include reporting of the misconduct, investigations, penalties/punishments.

### ***Methods Taken By Academic Institutions To Overcome Plagiarism Issue***

To overcome the plagiarism issue, most academic institutions view plagiarism as serious and come up with policies, guidelines, and systems to ensure academic integrity. This includes implementing and monitoring formal policies and procedures in place, introducing the subject of plagiarism in induction/orientation courses related to academic writing, developing assessment tasks that are focused on deterring plagiarism, and signing contracts related to academic integrity (Javaid et al, 2021; Khathayut et al, 2022; Drisko, 2022). Overall, the approaches can be concluded as having elements of information-giving/training, designing assessment tasks, and evaluations that deter plagiarism, penalties, detection through software and other forms of technologies (McCulloch & Indrarathne, 2023), and changing the university culture particularly when there are new trend in easing the process of researching and writing through the use of Artificial Intelligence or AI-based chatbots such as the ChatGPT AI language model (King & ChatGPT, 2023).

### ***Plagiarism Online Training Module For Academic Writing Beginners***

Previous studies show that efforts to increase knowledge and awareness about academic integrity or specifically, plagiarism, have been conducted at various higher institutions of learning. Plagiarism may not be completely preventable; however, students may benefit from receiving interventions in the form of educational strategies (trainings) that help them learn more about plagiarism and ways to avoid it through paraphrasing and referencing skills (Insley, 2011). These efforts include face-to-face or online training. Types of online trainings related to plagiarism or academic integrity are such as online tutorials, websites with information on academic integrity, workshops, or individual courses (Dee & Jacob, 2012; Stagg, 2013; Hodgkinson et al., 2016). Readily available external MOOCs on academic integrity also exist for similar purposes (Stephens 2015).

The term MOOC was coined by (Downes, 2013) when describing an experimental online course namely “Connectivism and Connective Knowledge”. MOOCs or Massive Open Online Courses provide online courses that are free and open, and are able to accommodate a large number of students worldwide via online (Kaplan & Haenlein 2016). It is considered a good tool in delivering knowledge and developing skills. Many courses are offered online through various MOOC platforms such as Udacity, edX, Coursera, FutureLearn, and OpenUpEd, and even other universities which have experimented with MOOCs integration (Bruff et al., 2013). Overall, MOOCs as a technology, helps improve the quality of education through effective and extensive delivery (Ebben et al. 2014).

Benson (Benson et al., 2019) concluded that there is lack of studies on the effectiveness of institutional e-learning tutorials for preventing academic misconduct, and certain policy content is missing. Additionally, most of these trainings are in the English language. Realizing this, a specific module using the ICCEE approach was created to help beginners in writing good papers with integrity. The aim of this study was to investigate the usability of the MOOC Online Training Plagiarism Module based on the ICCEE approach for academic writing for student beginners. Usability of modules is important to evaluate as there are very few online courses that are offered in regard to the topic of plagiarism, and thus identifying the usefulness of an e-learning tool such as the Online Training Plagiarism Module would prove to be helpful.

### **Training on Plagiarism E-Module**

The Online Training Plagiarism Module was developed due to the increasing number of students involved in academic writing misconduct, especially because of their lack of knowledge in academic integrity, specifically plagiarism. The module was created in a Malay version for beginner students with the aim of helping them navigate through their journey in academic writing within the research context. Beginner students can access the Online Training Plagiarism Module through Massive Open Online Courses (MOOCs) at <https://www.openlearning.com/courses/e-plagiat>, as shown in Fig. 1.



The screenshot displays the interface of an online training module for plagiarism. The top banner includes the logo 'Bacalah, Fikirkan, Tulis, Semak' and the title 'Modul Plagiat'. The main content area is divided into three sections:

- Top Section:** A large graphic with the letters 'B', 'F', 'T', 'S' in colored boxes, a 'Plagiat' logo with a red prohibition sign, and the text 'Baca Fikir Tulis Semak'.
- Middle Section:** A progress bar for 'Etika dan peraturan plagiat' (Completed: 4 of 4). Below it are four icons representing 'Kandungan', 'Video Pembelajaran', 'Uji Minda', and 'Kongsi Sumber'.
- Bottom Section:** The content of 'Modul 2: Memahami Persekitaran Plagiat' and 'Modul 3: Parafraza, Ringkasan, Citation dan Quoting'.

**Modul 2: Memahami Persekitaran Plagiat**

Sinopsis: Dalam Modul ini pelajar akan diterangkan mengenai definisi, jenis-jenis, sebab-sebab dan teknik mengelak plagiat

Baca dan fahami setiap maklumat bagi meningkatkan kesedaran dan pengetahuan anda tentang plagiat

- Definisi plagiat
- Jenis-jenis plagiat
- Sebab-sebab plagiat
- Teknik mengelak plagiat

**Modul 3: Parafraza, Ringkasan, Citation dan Quoting**

Modul ini akan menerangkan tentang parafraza, ringkasan, petikan dan kutipan. Dalam modul ini juga terdapat senarai nota yang boleh dimuat turun oleh pelajar.

**Hasil pembelajaran:**

- Pelajar dapat memahami proses Parafraza, Ringkasan, Citation dan Quoting
- Pelajar dapat membuat latihan Parafraza, Ringkasan, Citation dan Quoting

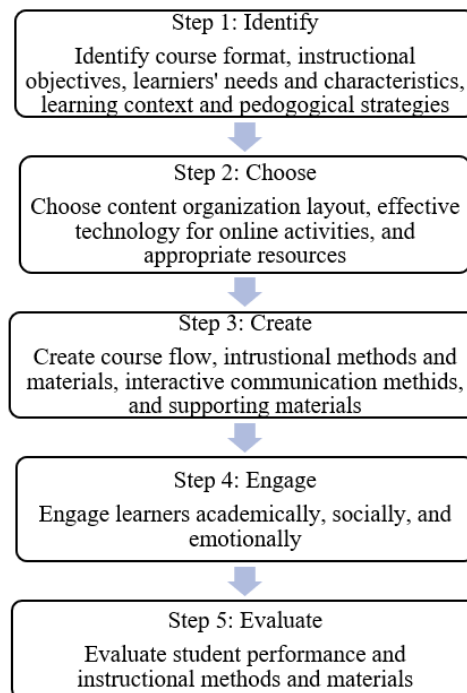
- Parafraza
- Ringkasan
- Petikan (Citation)
- Kutipan (Quoting)

Fig. 1. Interface of Online Training Plagiarism Module

The ICCEE instructional design paradigm, first introduced by Chen (2016) was used to create the online training plagiarism module. The ICCEE instructional design model provides the researchers with a clear guideline for effective implementation of instruction as it follows a linear process of “Identify-Choose-Create-Engage-Evaluate (ICCEE)” steps. The ICCEE model can be seen as a process that involves a cycle of continuous steps throughout the instructional planning and implementation stages. The instructional design, phases are summarized by the acronym ICCEE; hence it is easy to follow and acts as a simple guide. Fig. 2 below shows the framework based on the ICCEE model to describe the design and development of the Online Training Plagiarism Module.

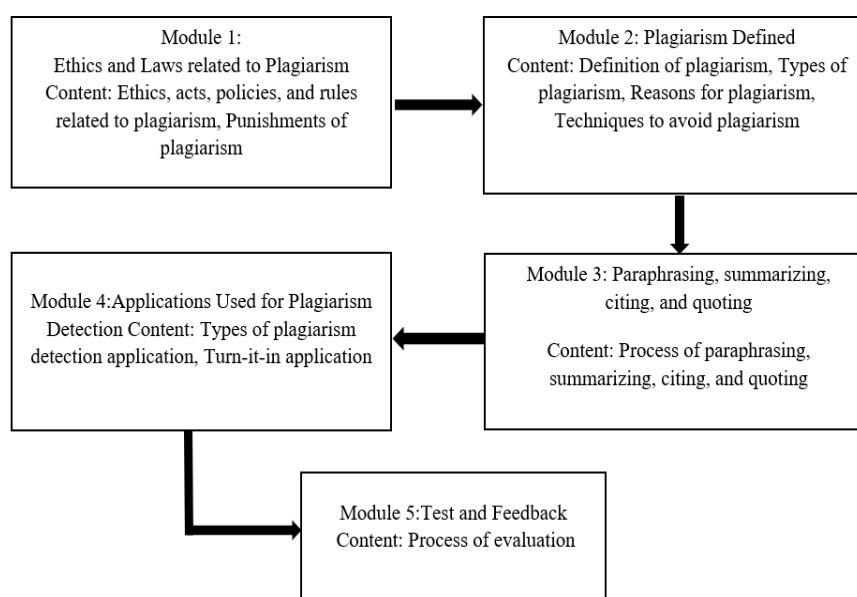
Additionally, the module also was developed based on three major theories. The first theory is the Constructivist Theory using the Select-Organize-Integrate (SOI) model (Mayer, 1999). This theory consists of three levels which are selecting, organizing, and integration. It was referred to in determining the module’s design such as the format, the use of icons, choices of words and effect, use of graphics, animation and examples, and others. The next theory is Garrison’s Self-Directed Learning model (Garrison, 1997). This framework addresses self-management within contextual control, motivation, and self-monitoring that focuses on cognitive responsibility. Additionally, Zaharias’s Usability Online Learning theory was referred to in the development of the Online Training Plagiarism Module (Zaharias, 2009). In this theory, elements of content, learning support, visual design, navigation, accessibility, interactivity, and learnability are major factors that are being considered.

Five steps were used in developing the Online Training Plagiarism Module using the ICCEE model, beginning with identify, choose, create, engage, and evaluate. In Step 1 the researchers identify the course format, instructional objectives, learner needs and characteristics, learning content, as well as pedagogical strategies. Step 2 allows the researchers to select the content and course organization for the module. Step 3 follows by helping the researchers focus on the production of instructional materials. Step 4 involves engagement with students in the academic writing course. Finally, Step 5 focuses on the evaluation of the performance and instructional methods in the course.



**Fig. 2. ICCEE Instructional Design Model**

The Online Training Plagiarism Module consists of five series of smaller modules. Modules 1 and 2 are theoretical and contain basic information about plagiarism, while Modules 3 and 4 consist of more hands-on applied content relating to plagiarism. Module 1 covers the ethics and laws related to plagiarism, followed by Module 2, which covers detailed information about what plagiarism is. Module 3 comprises of practice and instances of paraphrasing, summarizing, citing, and referencing. Module 4 contains the applications used for plagiarism detection. Module 5 contains the process of evaluation. A summary of the Module's five series can be seen in Fig. 3.



**Fig. 3. The Five Series in Online Training Plagiarism Module**

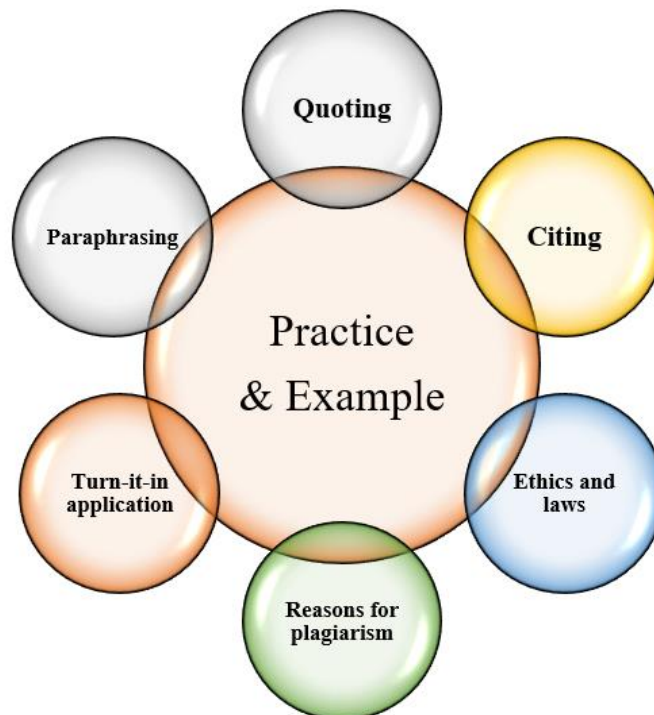
Plagiarism Module is presented using infographics to help students learn more effectively, as described in Fig 4. Infographics can be used to assist students learn more efficiently and to describe the teaching process (Shafipoor et al.,2016).



Fig. 4. Plagiarism Module in Online Training: Infographic Presentation

Practices and examples were integrated into the Online Training Plagiarism Module as shown in Fig. 5, to provide exposure to students on the four major techniques in avoiding plagiarism such as paraphrasing, summarizing, citing, and quoting; four major techniques in avoiding plagiarism. This provides students opportunities to gain experience in the processes involved according to practice-based learning or experiential learning approach. The practice-based learning reflects a four-stage model that consists of concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984).





**Fig. 5. Practice And Examples In The Module**

### **Research Methodology**

The aim of this study is to evaluate the usability of the Online Training Plagiarism Module. Therefore, the method adopted as the research design for this study is a survey method. A total of 70 postgraduate students comprising master's and doctoral students were selected using purposive sampling. Purposive sampling is a method of gathering the most accurate data by selecting respondents who are most likely to have the necessary experience to provide accurate data and relevant insights on a certain topic (Denscombe, 2010). In this study, the criteria for selection of the samples included (1) active students (masters and doctoral), (2) students enrolled in academic writing as part of the requirement in their program, and (3) those who have taken part in the Online Training Plagiarism Module course. A sample size as small as five is appropriate for usability testing within a fairly homogenous group of respondents, because a higher number of users tends to generate duplicating information (Barnum, 2002).

A usability questionnaire to evaluate the module was formulated based on an adaptation of the USE instrument proposed by Lund (Azul, 2016). The USE instrument consists of 16 items and is categorized into four primary domains, which are usefulness, ease of use, learnability, and satisfaction. The items from this instrument were sought for permission to use, modify, and translate. After approval, the questionnaire was adapted and reviewed by experts.

A pilot study was conducted before carrying out the actual data collection to ensure the finality of the instrument and to verify validity and reliability of the items. Cronbach's Alpha coefficient were calculated for all sub-scales. The values for all the sub-categories were above 0.7, and this shows that the instrument is a reliable tool that can measure all constructs (Hair, 2010). The results are shown in Table 1.

**Table 1: Result of Cronbach's Alpha**

Domains	Number of Items	Cronbach's Alpha
Items	16	0.943
Constructs	4	0.905

The finalized instrument consisted of 16 items measured with a five-point Likert scale ranging from the lowest range, 1, representing Strongly Disagree, to the highest range, 5, representing Strongly Agree. Actual data collection was conducted in June 2018. The questionnaire was then disseminated to the 70 respondents after they had attempted using the Online Training Plagiarism Module through a two-day course in order to evaluate the usability of the module.

### ***Experiment Result***

Evaluation of the usability for the Online Training Plagiarism Module was based on the four domains of usefulness, ease of use, learnability, and satisfaction. The outcome of the Online Training Plagiarism Module usability evaluation had been based on the interpretation of 5 categories which were scaled as follows: 1.0 – 1.79 (very low), 1.80 – 2.59 (low), 2.60 – 3.39 (moderate), 3.40 – 4.19 (high), and 4.20 – 5.0 (very high). The results, as shown in Tables 2 to 5, found that all items successfully obtained mean scores exceeding 4.0 (out of 5.0), which reflect high levels, for the context of usefulness, ease of use, learnability, and satisfaction.

### ***Usefulness***

Table 2 shows that the Online Training Plagiarism Module is very high in its usefulness (mean between 4.69 and 4.76). This shows that the students believe that using the module would enhance their knowledge in academic writing, especially plagiarism. Students feel that the module is useful as they are able to increase their understanding, resolve their problems, and it saves their time by finding information about plagiarism.

**Table 2: Online Training Plagiarism Module Usefulness Mean and Level Based on Item**

Item	Statement	N	Mean and level
<b>USEFULNESS</b>			
1	This module helps increase my understanding in plagiarism.	70	4.70 (very high)
2	This module is very useful.	70	4.76 (very high)
3	The module helps resolve my problems in plagiarism.	70	4.69 (very high)
4	The module saves my time by finding information about plagiarism.	70	4.74 (very high)

### ***Ease of use***

The Online Training Plagiarism Module is also very high in ease of use as shown in Table 3. This shows that the module is easy to follow, user-friendly as it provides clear instructions, well-structured, and comprehensible. It is also easily accessible for all users. The Online Training Plagiarism Module helps students to simplify content, save time, fulfil their needs, and carry out research as desired.

**Table 3: Online Training Plagiarism Module Ease of Use Mean and Level Based on Item**

Item	Statement	N	Mean and level
EASE OF USE			
5	This module is easy to follow.	70	4.69 (very high)
6	This module is easily accessible.	70	4.71 (very high)
7	The module provides clear instructions.	70	4.71 (very high)
8	The module has a well-structured format.	70	4.69 (very high)
9	I understand the terminologies used	70	4.67 (very high)

***Learnability/Ease of Learning***

Table 4 shows that the Online Training Plagiarism Module is high in its learnability/ease of learning (mean between 4.69 and 4.76). The module enables students to learn easily, helps them be skilful at doing exercises, and saves their time.

**Table 4: Online Training Plagiarism Module Ease of Learning Mean and Level Based on Item**

Item	Statement	N	Mean and level
EASE OF LEARNING			
10	It is easy for me to learn using this module.	70	4.60 (very high)
11	I became skilful using the simple exercises in the module.	70	4.60 (very high)
12	I learned to use this module quickly.	70	4.69 (very high)

***Satisfaction***

Table 5 shows that the Online Training Plagiarism Module is high in its satisfaction (mean between 4.69 and 4.76). It was shown that students were very satisfied using the module as they indicated that they would recommend it to their friends and continue using it. They also provided positive feedback on the module, that it meets their expectation.

**Table 5: Online Training Plagiarism Module Satisfaction Mean and Level Based on Item**

Item	Statement	N	Mean and level
SATISFACTION			
13	I am very satisfied using this module.	70	4.60 (very high)
14	I will recommend this module to my friends.	70	4.70 (very high)
15	This module works as I want.	70	4.59 (very high)
16	I will continue using this module.	70	4.54 (very high)

## Discussion

Overall, the results show that the Online Training Plagiarism Module is highly favourable among the respondents. It can be concluded that the module is beneficial for students undertaking academic writing courses, as the module design is based on the students' level of cognitive ability. The Online Training Plagiarism Module has adopted the ICCCE steps to draw the students' attention and to provide them with an authentic learning experience in academic writing, specifically plagiarism.

As mentioned in the introduction section, plagiarism is a widespread issue in academic settings. Students often resort to copying and pasting content from online sources or other students' work without proper citation or attribution, leading to academic misconduct and potentially severe consequences such as failing grades, suspension, or even expulsion. However, technology has also made it easier to detect and prevent plagiarism. One of the most effective tools for this purpose is a plagiarism learning module, which offers numerous benefits to help students avoid plagiarism and our Online Training Plagiarism Module is one of the examples of such solution.

Based on our findings, a plagiarism learning module can educate students about the importance of academic integrity and ethical writing practices. By explaining the meaning of plagiarism, its consequences, and ways to avoid it, the module can raise awareness and encourage students to take their academic work seriously. Additionally, the module can help students understand different citation styles, such as APA, MLA, or Chicago, and teach them how to properly use quotes, paraphrase, and reference sources in their writing. Further, a plagiarism learning module can offer feedback and guidance to students as they work on their assignments. Many modules can check for plagiarism in real-time as students type, highlighting any potential matches to online sources or previously submitted work. This feedback can prompt students to review their work and make any necessary changes before submitting their final draft, reducing the likelihood of accidental plagiarism.

Next, a plagiarism learning module can help instructors save time and effort in detecting plagiarism. Instead of manually reviewing each submission, the module can automatically scan and flag any potential instances of plagiarism, allowing instructors to focus on providing feedback on the content and quality of the work. This streamlined process can also reduce the risk of false accusations of plagiarism, as the module can provide evidence of any matches to external sources. Finally, a plagiarism learning module can promote fairness and equity among students. By using the same tool to check for plagiarism across all submissions, the module can ensure that each student is held to the same standard of academic integrity. This can prevent any accusations of favoritism or bias towards certain students, as all work is subjected to the same scrutiny.

## Conclusion

The Online Training Plagiarism Module functions as a complement to basic academic writing and aims to assist beginner level students in understanding the importance of integrity in academic writing. The module was designed according to the beginning students' level of cognitive ability, as an introduction to start their writing journey. The use of the ICCEE model supported by practice and examples is in line with the real-world research environment. Practice-based learning opportunities allow students to gain hands-on experience to link knowledge with action for practical competence. Additionally, providing examples may help hinder students from irrelevant information seeking processes, and may also help them

concentrate on studying the stages provided, thereby supporting them to build a long-term memory based on their own experience. This ascertains high usability of the Online Training Plagiarism Module, especially with the integration of practice and examples for students. Therefore, the use of the Online Training Plagiarism Module for academic writing beginners is indeed relevant and appropriate, thus fulfilling the usability amongst users to function as a reference in learning academic writing. As supported by studies done by (Azizul & Din, 2018; Ishak et al., 2018; Sobri, 2019) quality content contributes significantly towards good outcome to achieve meaningful learning and using the appropriate tool is very important in online learning (Ho et al., 2021). Writing is a practice that requires guidance (Ahmad et al., 2012), which comes from this module and students may develop a deeper understanding about plagiarism.

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