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## Devising Online Writing Services: An Exploration of an Academic Writing Class

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**Abstract.** As a part of a longitudinal study on the development of a web-based integrated writing service (WISSE), this article explores the most needed technological services in assisting students in their academic writing. This is a response to the widely available yet unintegrated online applications that have the potential to assist students' writing. This study involved four students, four teachers, and two stakeholders of academic writing classes at a prominent university in Indonesia. The Nominal Group Technique (NGT) was applied to explore beneficial features that could be embedded in the WISSE by taking into account the problems, solutions, and roles of online applications in academic writing. The collected field notes from the NGT were then analyzed using thematic analysis. The results revealed that the most needed online applications to feature in the WISSE are those that assist students during the outlining process, check for grammatical accuracy, and communicate ideas through face-to-face conferences with teachers. The demand for these features stem from the necessity of teacher feedback, especially in ensuring the coherence and validity of their ideas which is especially crucial for students since the online applications are considered lacking in providing such feedback. These findings suggest improvements in how and at which stage(s) feedback is provided throughout the WISSE learning process. The results of this study focally emphasize the importance of teachers' presence to provide human-based feedback to cater to students' critical thinking through the use of online writing assistants.

**Keywords:** academic writing; online applications; feedback; NGT; WISSE

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## 1. Introduction

When it comes to academic writing, challenges such as generating interesting topics, idea organization, vocabulary, and careful grammar control are apparent (Abdulkareem, 2013; Ahlstrom, 2017; Bowen & Thomas, 2020; Xie, 2020) especially among Indonesian English as a Foreign Language (EFL) learners (Nurkamto et al., 2022; Sudirman et al., 2020; Toba et al., 2019). The issues are further intensified due to the high enrolment of students in English as a Foreign Language (EFL) classes in many educational institutions in Asia and Africa (Clarence et al., 2014; Degeng et al., 2022). Fortunately, the progress of technology has introduced online applications like Quillbot, Grammarly, Padlet, and several automated writing assessment (AWE) systems that offer beneficial services to help students deal with academic writing difficulties. Various research has elucidated the benefits of online applications in facilitating students' academic writing. Fitria (2021) examined the effectiveness of Quillbot as a paraphrasing tool in assisting students in preventing plagiarism, whereas Jayavalan and Razali (2018) investigated the utility of Grammarly in sentence construction. Jong and Kim Hua (2021) demonstrated the efficacy of Padlet as a tool for evaluating students' writing proficiency. The studies conducted by Dwigustini et al. (2021), Hadi et al. (2021), Lestari (2017), and Rosyada and Sundari (2021) have also shown evidence of the beneficial effects of online platforms such as Google Classroom, mobile assisted language learning (MALL), Canva, and Padlet on students' proficiency in academic writing.

The online applications, however, operate as separate services that require their users to switch from one page to another to work on a single academic writing manuscript. This may limit the capacity to which these services can assist in the learning process. Strobl et al. (2019) pointed out that standalone AWE applications tend to be imbalanced in the types of learning tools they offer. To balance out their learning needs, students often pay subscriptions for several online tools. Many AWE programs require paid subscriptions on a monthly or yearly basis even though these programs may only be needed for short-term use. This situation makes AWE tools even more difficult to access since students must subscribe to various online applications in order to fully benefit from AWE services. This also affects students' self-efficacy as mentioned in Zhai & Ma's (2022) research.

Currently, the teacher's and peer's presence remains crucial to balance the students' learning progression with their utilization of new technologies designed to assist in academic writing. Tusino et al. (2021) found that students in an Indonesian hybrid academic writing class needed direct or indirect language feedback for vocabulary and grammatical errors, and also wanted teachers to provide clear input, motivate them throughout their progression in their writing, and offer helpful feedback. Thus, the students showed interest and were more engaged when given assignments to do in pairs or small groups due to the need for feedback. Additionally, the students pointed out that online feedback and corrections from peers and teachers could improve their writing abilities. Even though students' writing abilities could be improved through feedback and correction using online AWE tools as shown in several studies (Li, 2021; Samosir & Daulay, 2023; Saricaoglu & Bilki, 2021; Waer, 2021), Li (2021) emphasized that

the role of the teacher to monitor students' writing through feedback is still imperative.

Although there is great potential for online applications in helping students overcome problems in academic writing such as grammatical accuracy (Saricaoglu and Bilki, 2021; Waer, 2021), efficiency and corrective feedback (Samosir & Daulay, 2023), increased critical thinking awareness (AlMarwani, 2020), and independent learning (Zhai and Ma, 2022), it would be more beneficial and effective if all of the AWE applications could be accessed through one website. This could enable students to make better use of the applications and at the same time improve the teacher's ability to monitor the student's progression in their academic writing skills. Driven by this motive, a web-based writing service called Writing Integrated Assessment (henceforth, WISSE) started to be developed in 2020 (Degeng et al., 2022; Hamamah et al., 2020) mainly to provide appropriate feedback responding to students' difficulties in writing within large academic writing classes. The WISSE is expected to provide a one-stop service for improving and monitoring students' academic writing progression in academic writing classes by reducing information attenuation and loss, improving system management efficiency (Zi-Chun, 2011), providing access to comprehensive services, information, and resources that helps individuals achieve their goals (Inge, 2006), and increasing retention and satisfaction of students by facilitating engagement and collaboration (Buultjens and Robinson, 2011).

A prototype of WISSE has already been initiated (Degeng et al., 2022) and evaluated (Hamamah et al., 2023). This prototype is designed based on the process writing principles and integrates the already available digital writing assistance application into one web page. However, the result of WISSE's user trials indicated that more distinctive features should be added. Most potential users for WISSE are students who were born in the digital era. The problems pertinent to their academic writing are reportedly novel. Among them are insufficient writing skills and unequal access to AWE services (Strobl et al., 2019; Toba et al., 2019). The integration of digital writing tools for academic writing is believed to have the potential to solve academic writing problems as it facilitates feedback provision and students' access to generate ideas in writing (Jokhio et al., 2020; Toba et al., 2019) and enhances students' critical thinking (AlMarwani, 2020).

The challenges of generating engaging themes, structuring ideas, utilizing terminology effectively, and maintaining meticulous control over grammar are readily apparent in English academic writing classes (Abdulkareem, 2013; Ahlstrom, 2017; Bowen & Thomas, 2020; Xie, 2020). This issue is made more difficult by the absence of individualized feedback and monitoring of student development, which is hindered by large class sizes (Clarence et al., 2014; Degeng et al., 2022). Meanwhile, there are online programs that possess the capacity to address academic writing difficulties. Studies have shown that students often cope with their academic writing challenges using AWE (Li, 2021; Samosir & Daulay, 2023; Saricaoglu & Bilki, 2021; Waer, 2021). However, none of the previous studies have developed an integrated web-based academic writing assistance program based on the needs of learners and teachers. To address these

challenges, the author began to outline the development of WISSE, a comprehensive academic writing website designed to assist teachers in providing feedback and monitoring student advancement by incorporating tools that facilitate academic writing (Degeng et al., 2022; Hamamah et al., 2023). To this end, it is important to examine which services warrant particular attention in the context of WISSE.

Explorations on students' challenges in academic writing along with the solutions and the use of digital writing assistance tools were the foci of this study which aims to explore potential features needed to refine and improve WISSE. To achieve the objectives of this research, four research questions were formulated:

- a. What are students' challenges in academic writing?
- b. What are the students' strategies to deal with challenges in academic writing?
- c. What are students' experiences in using online services to deal with their challenges in academic writing?
- d. What online services in a web-based writing platform are needed to adequately accommodate the needs and expectations of students?

## 2. Material and Research Method

A nominal group technique (NGT) under a qualitative approach was employed in this study to determine the most needed online applications to be embedded in the WISSE. The NGT was utilized due to its attributes which are suitable for addressing decision-making processes of specific challenges Lintang Sari et al. (2022). Following Srivastava et al.'s (2019) work, NGTs are believed to encourage integrative and comprehensive thinking to find solutions to challenges through small group discussion. The sample for this study comprised eleven participants selected through convenient sampling based on voluntary participation. The participants included five students from both graduate and undergraduate programs, four teachers from academic writing classes, as well as two stakeholders who were the Dean and the Head of the English Language Department at a prominent university in Indonesia. The graduate and undergraduate students appeared to have similar problems in academic writing. The stakeholders were in charge of curriculum design that the teachers implemented at the selected faculty. Thus, the sample of this study was considered enough to meet the criteria to answer the research question. All participants engaged in the NGT process to investigate challenges, strategies for coping with these challenges, experiences, and needs related to the use of online writing assistance applications aimed at enhancing students' academic writing.

The data collection procedure of NGT was conducted in five stages. The five stages which involved a combination of individual and group work to generate immediate action planning (as shown in Figure 1) were put forward. First, the participants were required to provide written responses to some questions via Google Forms. This step was intended to encourage participants to share their thoughts on the given topics without any debate or clarifications, as noted by Lintang Sari et al. (2022) who referred to this stage as "silent idea generation." The second stage was the exploration stage where participants engaged in a face-to-

face discussion to clarify their responses to the topics introduced in the Google Forms. The questions were related to the processes of academic writing in English. For example, students responded to questions such as “What are the challenges you often face while composing English academic writing?”, “How do you usually overcome the challenges?” and other related questions. The discussion was led by a facilitator assisted by a notetaker. During this stage, the facilitator read out the results from the Google Forms to further explore each participant's arguments.

The next stage was the clarification stage which allowed for a more in-depth discussion among the participants, taking into account each participant's arguments and minimizing certain participants' domination of the discussion. This resulted in a list of responses that summarized the NGT discussions. The fourth stage involved the participants voting for the best responses for each topic and then ranking them based on the voting result. Finally, the facilitator tallied the votes, and the final group decision was presented to the participants as a consensus. This process promotes participants' ownership of the results and reduces potential researcher bias in data analysis. The ranked items also serve as an actionable list for researchers (Chapple & Murphy, 1996) to improve the WISSE website. The total duration for the five stages was three hours. Based on the aforementioned activities, the data were collected in the form of field notes. The field notes were then analyzed using thematic analysis. The process of qualitative data analysis was based on Creswell (2012) that consists of (1) preparing the data, (2) reading through all the data, (3) coding the data based on certain events that appeared in the data, (4) creating themes based on the existing codes, and (5) interrelating themes to conclude.

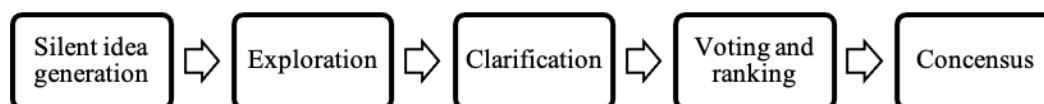


Figure 1: Data Collection Procedure

### 3. Results

Employing thematic analysis, the results of this research are presented under four themes: 1) challenges in academic writing, 2) strategies used to cope with the challenges, 3) experiences of using online applications for academic writing, and 4) the most needed online applications and features for WISSE.

#### 3.1 Challenges in Academic Writing

From the initial stage of the NGT that generated ideas from participants related to difficulties in academic writing, strategies used to cope with the difficulties as well as experiences in employing online applications in academic writing, various challenges were identified. Five priority issues (Table 1) were agreed upon by all participants after the exploration, clarification, voting, and ranking stages.

**Table 1: Challenges in Academic Writing**

<b>Participants</b>	<b>Challenges in academic writing class</b>	<b>The most crucial challenges in the academic writing class</b>
Students	Grammar Coherence Idea organization Plagiarism Vocabulary	Large number of students Coherence Validity of ideas Grammar Plagiarism
Lecturers	Grammar Plagiarism Coherence Provision of detailed feedback A large number of students	
Stakeholders	A large number of students Monitoring students' progression Coherence Grammar Plagiarism	

The issue of large language class sizes has been a common problem in EFL contexts (Jokhio et al., 2020). Participants in this study agreed that this situation led to many other challenges they faced in academic writing. As reducing the number of students inside a classroom seems impossible, the participants agree that the use of online applications can be of help to a certain extent. Thus, they focused on finding ways of how the online applications help them to deal with their challenges such as incoherent ideas, issues related to the validity of their arguments, grammar control, and plagiarism.

Initially, in sharing the challenges they encountered in academic writing, the students revealed that they had never been confident with their grammatical accuracy in writing as they believed that English grammar is complicated and confusing. Thus, they found that Grammarly is a very beneficial online application to help them cope with grammatical issues in their writing. On the other hand, the teachers had a different perspective. Although they acknowledged that Grammarly is beneficial not only for students but also for themselves, the teachers are worried that the students are highly dependent on the application and neglect their grammar learning. The students' grammar control also becomes a concern to the stakeholders who are also English teachers. They shared similar apprehension with the teachers about the use of Grammarly. However, the stakeholders appeared optimistic that careful monitoring of students' progression would help students be more aware of the importance of their grammar learning.

Then, issues about plagiarism emerged in the discussion. The students admitted that plagiarism issues in their academic writing stem from their difficulties in finding and citing related references, especially when writing argumentative essays. Their lack of reading about related topics in their writing and limited access to reputable journals had made them heavily rely on Google Scholar. While having barely enough knowledge about selecting qualified articles, this Google Scholar search led them to pick up any seemingly related previous studies,

regardless of the validity or trustworthiness of the ideas. This process ended up in assorted and ostensibly related ideas. When the students then compose these ideas in their papers, the result is often incoherent writing.

Having similar concerns about students' lack of coherence and plagiarism issues in their writing, the teachers reflected on their inability to intensively communicate students' challenges, find the root of the challenges, and provide the students with detailed feedback in their classes which have large number of students. The NGT was an eye-opener for the lecturers to find better strategies for dealing with the students' challenges as it suggested that the teachers could equip students with knowledge and considerations of how to utilize online applications to overcome writing difficulties. In addition, blended learning in which students' works, feedback, and revisions could be recorded and traced in a certain Learning Management System such as Google Classroom to monitor student's progressions could also be employed. This reflection parallels the concerns of the stakeholders who pointed out that monitoring students' progression would be challenging for the lecturers due to large class sizes in the faculty and their heavy workload. The final significant finding was that, when the participants were asked to rank the challenges in academic writing based on their importance, they agreed that the large class size is the core problem while issues on coherence, validity of ideas, grammar control, and plagiarism are ranked second, third, fourth, and fifth respectively. Since reducing the number of the students seems to be impossible due to major implications on management and financial aspects, effective feedback and continuous monitoring on students' progression are strongly urged to address the challenges.

### **3.2 Strategies used to Cope with the Academic Writing Challenges**

In the discussion throughout the exploration and clarification stages of the NGT, it was revealed that the students utilized a multi-step process to address their writing-related obstacles. They begin by reviewing their own work as expressed by Student 1:

*"I usually use thesaurus and Cambridge Dictionary to look for words and their synonyms... But sometimes I myself am still doubtful of the words there."*

Seeking models from reading texts was the next step, as mentioned by Student 2:

*"Like our habit of reading... articles written in English... we can understand what sentences or words or vocabulary there that can be used in a certain context."*

Finally, they got feedback from lecturers or other experts, as described by Student 4:

*"For peer review, we ask for our own friends, but sometimes we are still doubtful of their opinions... with experts we can take their opinions into consideration more."*

The students' statements reflect the important role of feedback in improving their writing. To aid in their writing process, students also rely on various online tools. They utilize Grammarly and Google Docs for grammar and usage corrections, as

well as Quillbot for paraphrasing and plagiarism checks. Student 5 also mentions using ProQuest to access articles with translations, stating, "*I usually use ProQuest... to translate difficult words.*" These insights into the participants' strategies demonstrate their resourcefulness in employing a combination of reviewing their own work, peer collaboration, online tools, and reading materials to overcome challenges in academic writing.

From the teachers' point of view, using specific assessment rubrics, employing online applications and peer discussions to generate feedback, and providing more collaborative writing activities help lecturers in providing feedback to the large number of students in their academic writing classes. Before the NGT, the teachers held the assumption that communicating a specific assessment rubric would clarify to the students the criteria of a good academic manuscript and that using online applications and peers to generate feedback would provide students with ample input to improve the quality of their manuscript. Thus, more collaborative writing activities were suggested. However, the NGT revealed that these efforts overlooked the students' other challenges such as issues on students' insufficient knowledge in finding qualified references, lack of coherence in their writing and plagiarism issues. Table 2 provides a summary of how students, teachers, and stakeholders tried to cope with challenges in academic writing, and how they all came to agree that familiarizing students with writing organization, guiding students in finding qualified reference, and blending the use of online applications to generate feedback and human-source are the most crucial strategies to cope with academic writing challenges. The strategies can be demonstrated by providing students with a template of the PEEL (Point, Elaborate, Example, Link) structure. Then, the students were provided with sources from reputable journals such as Scopus, Taylor and Francis, Web of Science, etc. to navigate students' citation. After that, students were asked to check their own composition using available online application such as Grammarly to ensure their grammar control.

**Table 2: Strategies to Cope with Academic Writing Challenges**

<b>Participants</b>	<b>Strategies to cope with academic writing Challenges</b>	<b>The most crucial strategies to cope with academic writing Challenges</b>
Students	Getting various sources (self, peer, teacher, and online applications) to generate feedback Reading more sample articles	Familiarizing students with writing organization Guiding students in finding qualified references Blending the use of online applications to generate feedback and human sources to cross-check the validity of the feedback
Lecturers	Using specific assessment rubrics Using online applications and peer to generate feedback Providing more collaborative writing activities	



Stakeholders	More practice and feedback Smaller class sizes Use of online applications Customized LMS for academic writing to monitor students' progression
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The stakeholders were aware of the challenges arising from the large number of students in academic writing classes. Even though they conceded that efforts to reduce the number of students in each class are a significant problem, they also acknowledged that some situations such as the limited number of classrooms and available teachers left them with no choice but to maintain the large class sizes. As a workaround to this issue, they urged the teacher to promote students' autonomous learning by providing the students with more practice and feedback and maximizing the use of online applications. By providing students with feedback and maximizing the use of online applications, teachers could help gradually increase students' self-regulation and autonomous learning skills. However, to maintain good monitoring of students' progression, the stakeholders also encouraged the lecturers to develop a learning management system (LMS) that enables them to perform their jobs more efficiently.

### 3.3 Experiences of Using Online Applications for Academic Writing

Summarizing the NGT discussion, Table 3 presents the participants' experiences of using online applications for academic writing. Looking at the data from Table 3, it can be observed that the students' and teachers' experiences with online applications for academic writing showed that online applications used to check grammar and spelling are the most beneficial applications for handling the students' challenges in academic writing. In addition, online applications that help with translation, paraphrasing, and plagiarism checks were also considered useful for both students and teachers of academic writing. Further discussions during the NGT revealed that although online applications such as Grammarly, Quillbot, and Turnitin were proven to be beneficial in helping students perform independent checking, the participants in this study agreed that depending on the feedback generated by online applications was not enough to produce a high-quality academic composition.

**Table 3: Participants' Experiences of Using Online Applications for Academic Writing**

Participants	Roles of online applications for academic writing	The most crucial roles of online applications for academic writing
Students	Checking grammar and spelling Translating Paraphrasing excerpts from articles	Helping independent checking  Notes:

Lecturers	Checking plagiarism Checking grammar and spelling	Online applications cannot help with the organization of ideas. Therefore, the teacher's role is mostly needed in helping students validate their ideas, organize their ideas for a coherent composition, and re-check the feedback generated by online applications.
Stakeholders	Helping teachers to provide feedback for students in a way that does not neglect students' improvement in academic writing skills, especially their critical thinking.	

The stakeholders pointed out that despite the benefit of online applications to provide more time-effective feedback for students, teachers should be alert of potential hindrance on students' critical thinking as the online applications provide instant help. This notion is in line with the students' and teachers' expectations that the teacher's presence should be of the most importance to help students validate their ideas, organize the ideas for a coherent composition, and re-check the feedback generated by online applications.

While students acknowledge the role of online applications in improving their writing, they emphasize that the language produced by online applications may not precisely convey their intended meaning. They recognize the importance of human intelligence in ensuring coherence in writing. Online applications are deemed useful for independent checking of grammar, spelling, and word structure. However, students find these applications lacking in terms of organizing ideas. Thus, it is not surprising when the participants bring up the importance of human generated feedback acquired from their teachers and peers. Despite these limitations, students appreciate online applications like Quillbot for their paraphrasing feature, which assists them in decoding English sentences. However, teachers should raise students' awareness that reviewing and cross-checking the results of the paraphrased sentences needs human input.

Student 1 aptly captures this sentiment, stating, "*AI-based applications are accurate and fast, with an extensive vocabulary, but lacks the human touch... online applications can result in robotic sentences.*" This viewpoint is in line with the findings of Gayed et al. (2022), who highlight that relying solely on online methods may have a limited positive impact on language learning or writing skills.

Student 2 echoes this sentiment, emphasizing that online applications like QuillBot may produce sentences that lack "the human touch" and fail to accurately represent the writer's intended ideas. Student 3 further supports this viewpoint, noting that while online applications help check minor issues, they fall short of refining the text and improving its quality.

Student 4 emphasizes the noticeable differences between texts produced by robots and those written by humans, highlighting the robotic and overly formal nature of online-generated content. This observation aligns with Park's (2019) research, which reveals limitations in AI-based English Grammar Checker programs in detecting common grammatical issues and providing accurate feedback.

The students' realizations of the limitations of online applications compared to human intelligence reflects their understanding of the importance of feedback and critical thinking skills. It also aligns with Su-Yeon Park et al. (2021), who emphasize the potential social problems that can arise from blind reliance on AI applications and the need for individuals to be aware of the associated risks. Overall, the students' experiences and perspectives underscore the need for a balanced approach, leveraging both online tools and human intelligence to achieve more proficient and detailed academic writing in English.

### 3.4 Most Needed Online Applications and Features for WISSE

The participants expressed appreciation for online applications in their academic writing endeavors, but they also identified certain limitations. When asked about their expectations for a centralized website to support online academic writing, they provided invaluable suggestions. Table 4 summarizes the most needed online applications and features for WISSE.

**Table 4: Most Needed Online Applications and Features for WISSE**

Participants	Most needed online applications for WISSE	Most needed features for WISSE
Students	Application for <i>outlining</i> (facilitating the organization of ideas, writing flow, and providing guiding questions for brainstorming)	Features that enable both one-on-one and group conferences between students and teachers for further discussions related to feedback given through WISSE
Lecturers		
Stakeholders		
	Automatic grammar and spelling check	Restricted access to manuscripts so that the feedback given is private; and cannot be accessed by other students
		Private messaging for one-on-one communication

The participants emphasized the need for assistance with outlining to help them organize their ideas, establish a writing flow, and provide guiding questions for brainstorming. They acknowledged the importance of pre-writing and highlighted how an outline contributes to sentence coherence. The students also emphasized the significance of automatic grammar and spelling checks, and they desired a centralized language service within the website. Despite the students' emphasis on online peer review, the demand for incorporating human-generated features post-review suggests a continued need for human intervention. Additionally, the students expressed the importance of conference services, which would enable them to engage in discussions with other users and receive input and suggestions for improving their manuscripts.

Student 4 articulated the need for a comprehensive website, stating, "A one-stop website for academic writing should have a grammar checker, spelling checker, plagiarism

*checker, and a translator tool. Additionally, a conference feature would be valuable for discussing papers with other users and receiving input and suggestions for improving manuscripts."*

Student 2 echoed this sentiment, emphasizing the importance of grammar and spelling checks, as well as a feature that assesses the coherence and flow of ideas in writing. They also emphasized the necessity of a discussion feature for engaging with lecturers and peers.

Student 1 highlighted the significance of a simplified template or outline in the pre-writing process, noting that organization plays a crucial role in writing. They emphasized that a template, combined with guidance from lecturers, would aid in revising ideas before refining the text. They also highlighted the importance of drafting to develop critical thinking skills and the ability to construct sentences and deliver coherent statements. Templates, according to Student 1, assist students in selecting ideas and make it easier for lecturers to guide the organization of their work. Student 3 further emphasized the value of a template, suggesting that it should include specific questions that students can answer to structure their ideas effectively.

The students' suggestions align with the importance of providing comprehensive and user-friendly resources for academic writing support. A centralized website incorporating the desired features would enhance students' writing process, promote effective organization of ideas, and facilitate collaborative discussions. Overall, the students' feedback highlights their expectations for a centralized website that offers essential services such as outlining, grammar and spelling checks, and conference capabilities. Integrating these features into a user-friendly platform would contribute to an improved academic writing experience for students.

The survey not only aimed to understand the resources used to support their academic writing but also sought their opinions on the features they would like to see in an academic writing evaluation website designed to provide feedback. The participants expressed concerns about the security of their writing when uploading it onto an application, fearing that it may be plagiarized by other users. The participants suggested implementing terms and conditions to protect user data from misuse and ensuring that access to manuscripts is restricted solely for feedback purposes as a possible solution. This approach would alleviate their worries and provide users a greater sense of security about their works not being plagiarized.

The participants also emphasized the importance of having access to a writing assistant for private discussions. They believe that having someone readily available to address any concerns or issues with their papers would be highly beneficial. Student 2 highlighted the significance of a contact person with a fast response time, stating, *"In my experience, a contact person with fast response is a favorite feature for many website visitors. If we have problems with our paper, a certain contact person can resolve it right away."* This feature would enhance the user experience and contribute to a more personalized and effective revision process.

Moreover, the participants expressed their desire for an interactive discussion page where users can comment on and discuss articles. Student 3 emphasized the value of input from both lecturers and peers, stating, "*On the discussion page, you don't have to wait long, as anyone can give their input to our manuscript. If other experts have the same expertise, they can be very helpful to assist us in our writing process.*" The interactive nature of this feature could facilitate collaboration and provide valuable insights from multiple perspectives.

Student 1 raised a valid concern regarding restricted access, suggesting that the system should allow limited access to the paper for a certain period to avoid unauthorized users accessing it. This approach could serve to strike a balance between getting peer and lecturer review from a variety of individuals and ensuring the security of the manuscript.

Additionally, Student 4 highlighted the importance of setting a deadline for comments on the paper. By establishing a timeframe, students can better manage their time and avoid unnecessary revisions. This feature could provide structure and efficiency to the feedback process.

While security issues have been an on-going problem in online educational platforms, the students expressed a need for a secure platform that allows restricted access to manuscripts for feedback, includes a contact person for private discussions, and provides an interactive discussion page.

Implementing these features would address their concerns, enhance the quality of feedback, and foster collaboration among users. In summary, the student's feedback highlights their expectations for an academic writing evaluation website that ensures the security of their work, provides a contact person for personalized discussions, and offers an interactive platform for engaging in meaningful discussions. Incorporating these features into the website would create an environment conducive to effective feedback and collaboration, ultimately benefiting the students' academic writing process.

#### **4. Discussion**

The NGT results revealed that the primary challenges in academic writing are related to the large class sizes, feedback provision, monitoring of students' progression, coherence in writing, grammar control, and plagiarism. These challenges are similar to those identified in previous studies by Cennetkuşu (2017) and Ilham et al. (2020). Grammar has been a long-standing issue in writing (Al Mubarak, 2017; Alharbi, 2019; Andrews et al., 2006; Ebadi & Rahimi, 2017, 2019; Lynch & Anderson, 2013; Suthiwartnarueput & Wasanasomsithi, 2012; Omar, 2019), studies by Al Mubarak (2017) and Alharbi (2019) indicate that imprecise use of nouns, pronouns, articles, prepositions, subject-verb agreement, and sentence structure are some of the most common issues among ESL and EFL students. Participants in this study reported similar challenges, including confusion with irregular plural nouns and subject-verb agreement due to the absence of verb changes in the Indonesian language. These findings align with

two widely discussed hypotheses about the acquisition mechanism of regular and irregular past-tense verbs in English: The Single Mechanism Storage Theory (SMST) proposed by Rumelhart and McClelland, and the Word-and-Rules Theory (WRT) put forth by Steven Pinker. The acquisition of English irregular verbs by adult EFL learners demonstrates a tendency towards regularization, which provides support for both the Single Mechanism Storage Theory and the Word-and-Rules Theory (Juan, 2011).

Regarding the issue of large class sizes leading to challenges in monitoring students' progression as well as feedback provision issues, participants in this research admitted that they have tried to get feedback for their writing using various strategies such as by doing self-regulatory checking, generating feedback from online applications and their peers. As for issues related to coherence, grammar, and plagiarism, the participants revealed that aside from using online applications such as Grammarly, Quillbot, and Turnitin, they also have tried to read more sample articles, use specific scoring rubrics, and work collaboratively with peers. Further, participants' experience of using online applications for self-regulated checking is beneficial, especially for information literacy, as highlighted by Prihandoko (2021). However, the participants also indicated that currently available online applications fall short in assisting them with idea organization and coherence. Studies by Shang (2022) and Al-Badi (2015) have also noted the limitations of online peer feedback and other factors such as L1 interference and cultural differences to students' problems with coherence in writing. Therefore, teacher feedback is essential to clarify any confusion and address issues that may arise from L1 interference or cultural differences.

Unlike previous studies that highlight the benefits of online applications in assisting students' academic writing (Lestari, 2017; Jayavalan and Razali, 2018; Fitria, 202; Jong and Kim Hua, 2021; Dwigustini et. al., 2021; Hadi et. al., 2021; and Rosyada and Sundari, 2021), participants in this research considered written corrective feedback from teachers as one of the most important components of academic writing for EFL students. The participants were also concerned with the accuracy of peer feedback. Only a few studies have highlighted similar issues by emphasizing the importance of oral corrective feedback in grammar, lexis, and phonological accuracy, as well as the motivational impact of teachers' feedback on students' self-correction (Shang 2022; Wirantaka, 2022; Syakira and Nur, 2022).

Based on the previously mentioned details, the participants of this study, suggested that WISSE should have additional features to help with the outlining process of their manuscripts. Furthermore, the participants also proposed the inclusion of discussion rooms on WISSE to support the monitoring and feedback provision on the organization of ideas generated from the outlining process. They suggested that these discussion rooms should allow for both public discussions among website users and private discussions between individual students and their feedback providers. This is significant to the learning process, as implementing the online interactive peer-review, peer-learning strategy may not only boost students' knowledge and abilities but also greatly improve their critical thinking tendencies and reflective thinking skills (Lin et al., 2021). However, the

disadvantages of public discussion concerning an academic paper should also be addressed. Discussing certain academic arguments in public may put some pressure on students who feel a lack of expertise on the subject they are researching which may potentially lead to unintended consequences such as harsh judgment by others, or even attracting hostile comments.

The challenges that students face in academic writing are common and similar to those found in previous studies. The participants in this study implemented various strategies to overcome these difficulties, including seeking feedback from multiple sources and utilizing online applications. However, they have identified the need for additional support in idea organization and coherence. To address this need, they recommend that the web-based integrated online application for academic writing, WISSE, should include features that enable them to work on their manuscript's outlining process.

In contrast to Cheng et al.'s (2015) study, the present study revealed that the students' metacognitive thinking was evident as they were open to discussions with classmates and professors. It is also claimed that metacognitive feedback messages have a role in the increasing writing performance of students. This finding was consistent with Chen and Tsai's (2009) finding that meta-cognitive feedback has a favorable effect on learning in the setting of peer evaluation. Furthermore, for mature learners such as master's degree students, Chen and Tsai (2009) argue that obtaining metacognitive feedback is more beneficial to the learners' writing performance. Furthermore, through public and private discussions on the interactive online writing assessment website, positive affective feedback may be beneficial for improving participation in peer evaluation activities and could encourage individuals to more consistently reassess their work. These findings appear to contest those from previous research that found cognitive feedback (e.g., direct correction) to be more beneficial in improving students' writing skills rather than affective feedback (e.g., praising comments) and metacognitive feedback (e.g., reflecting comments) (e.g., Cheng et al., 2015).

Additionally, the participants propose including discussion rooms on the application to facilitate both open and private discussions among the users. They also suggest the addition of feedback providers to promote communicative language learning and improve students' writing skills. This is supported by Lin et al. (2021), who, based on their analysis of the peer-review content, found that students using the online interactive peer-review approach were significantly better able to address specific needs of their peers in improving their writing than students who did not use the interactive online peer-review approach.

The online interactive peer-review approach seeks to facilitate assesses (students who get feedback from their peers) in expressing their perspectives and enable assessors (students who provide feedback for their peers) to determine the accuracy and helpfulness of their ratings and comments for assesses. During the interaction, both assessors and assesses have the chance to reflect, which subsequently enhances the accuracy of ratings and remarks and improves their

learning efficacy and analytical thinking. This opportunity for both the assessors and assessees to reflect on their comments makes the online peer-review approach different from the traditional peer-review approach. In the traditional peer-review method, assessors and assessees have a one-way interaction and assessors cannot receive any feedback from assessees. Thus, assessors are not able to reflect on their own feedback. The reflection opportunity enhances the quality of ratings and comments and boosts students' learning effectiveness and critical thinking. These recommendations have the potential to enhance the features of WISSE. The main goal of this application is to help enhance the quality of academic writing in English in the Indonesian context.

## 5. Conclusion

The increasing number of online applications designed to assist in academic writing presents both advantages and disadvantages for academic writing classes with a large number of students. These online applications can help students in getting feedback on their writing in terms of grammatical accuracy and similarity check. The online applications also help teachers check students' work and provide feedback, thus increasing effectiveness in teacher assessment. On the other hand, the available online applications work separately, requiring their users to purchase subscriptions and move from one application to another, leading many students to be hesitant in using these services. Moreover, the convenience provided by online applications can create a reliance on these services and impede the development of students' critical thinking skills. With this in mind, WISSE was created as a one-stop website that allows academic writing teachers to facilitate and monitor students' progression effectively by integrating the available online applications to provide feedback and at the same time encourage students' critical thinking. In this study, explorations of the needs of the students, teachers, and stakeholders of academic writing classes in a prominent university in Indonesia through NGT indicated the urgency of accommodating not only feedback generated from the online applications but more importantly feedback generated from teachers and peers. Relying solely on online applications is insufficient for enhancing students' academic writing proficiency. The involvement of teachers and peers greatly assists students, particularly in the areas of organizing their thoughts, finding qualified references, and ensuring the coherence of their writing. Nevertheless, due to the restricted sample size in this study, the findings cannot be generalized. It is strongly recommended that further studies be conducted. Security issues attached to the online applications also leave room for further research implementing a more diverse range of research methodologies and a larger number of participants.

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