

# Technology-Enhanced Collaborative Writing (TECW): Malaysian ESL Teachers' Challenges and Strategies

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**Abstract.** Researchers have increasingly turned their attention toward Technology-Enhanced Collaborative Writing (TECW) as a valuable tool for second language acquisition. Despite the rapid adoption of technology in education, there exists a notable research gap concerning the challenges and strategies encountered by Malaysian ESL (English as a Second Language) teachers when incorporating technology into their collaborative writing classrooms. This paper seeks to bridge this gap by shedding light on the specific challenges faced by ESL teachers in Malaysia and the strategies they employ to integrate technology effectively into collaborative writing instruction. The research employs the Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2) Model to measure these challenges, employing qualitative data collection methods through interviews with four ESL teachers situated in Kuala Lumpur's Keramat District, all of whom are participants in the Bring-Your-Own-Device (BYOD) pilot program. These findings emphasize the strategies needed for ESL teachers to elevate the quality of their instruction aspects. Ultimately, this research hopes to provide valuable insights to guide teachers in crafting context-specific guidelines for TECW procedures and offers a foundational framework for enhancing ESL instruction in the Malaysian context.

## 1 Introduction

There is no doubt that English is a compulsory subject in Malaysian students' educational programs, which spans their primary and secondary school years and lasts eleven years. In Malaysian schools, the English language curriculum emphasizes the development of four basic language skills: listening, speaking, reading, and writing. These fundamental abilities are carefully taught to young students so they can become fluent English speakers. Despite years of study and committed attempts to acquire English, many students continue to have difficulties in obtaining higher levels of proficiency [1]. This raises awareness of the issue with English language education and learning.

Teachers play an important role in engaging with students and scaffolding their learning process to assist them in enhancing their English language skills in the classroom [2]. Learning to write in a second language, on the other hand, is a tough task. This is because

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writing is a non-linear process; it is considered one of the most difficult language skills to learn [2]. Several studies have revealed that teachers' lack of writing pedagogical skills, as well as poor approach selection while teaching writing, lead to ESL students' failure to write [3]. For these reasons, ESL teachers find it challenging to teach writing.

To ensure a smooth and successful educational journey, educators all over the world have adopted a variety of ways and models for teaching and studying writing in English. Teachers have devised a variety of learning activities to meet the writing demands of English as a Second Language (ESL) students, taking into account their various backgrounds and linguistic proficiency.

Writing has traditionally been regarded as a solitary task best completed by the writer alone. However, there has been an increase in interest in collaborative writing among scholars and educators over the years, which may be summarized as the engagement of two or more writers in the development of a single document. Collaborative Writing is an endeavor in which co-authors actively participate in every aspect of the writing process, collaboratively shouldering accountability for and ownership of the entire text created [4]. These features distinguish collaborative writing from cooperative writing. There is the possibility of task division in cooperative or team writing endeavors when each team member handles a different area of the text or takes control of a certain sub-task (such as gathering information or revising the final draft).

In recent years, the educational landscape has changed considerably, owing mostly to the broad adoption of digital learning, which has quickly become the "new thing" in many areas of the world [5]. This paradigm shift in the delivery of education has resulted in a tremendous transformation in the conventional values of education all over the world. Through the introduction of BYOD, which stands for "Bring Your Own Device," many schools are now entirely in favor of employing personal devices in a way that allows for customized learning [6]. Students are required to bring their own technology to class that they already own and use outside of school, rather than the school providing them with equipment such as sets of laptops and tablets or a computer lab.

The establishment of a policy that allows pupils to bring their own devices to school opens up new potential for collaborative writing with technology. This novel technique enables students to embrace the power of technology and cooperate effortlessly, thereby increasing the value of their learning experience. Students can effortlessly navigate the world of group writing and create an active learning environment by smoothly incorporating technology into the collaborative process. The advantages of this technique assist not only students but also teachers. Technology-enhanced collaborative writing (TECW) can be utilized effectively in writing classrooms to develop and create engaging lessons. Teachers can better design and manage collaborative writing sessions with the use of digital tools and conferences, allowing students to strengthen their writing abilities.

Despite the potential benefits of Technology-Enhanced Collaborative Writing (TECW), there appears to be little study on its use in Malaysian secondary ESL (English as a Second Language) classrooms particularly. The scarcity of studies in this field limits teachers' ability to completely comprehend the impact and potential obstacles of utilizing technology-enhanced collaborative writing instruction to ESL students. Technological advancements in education are unavoidable, as technology has become a vital component of our daily lives. Students in the new generation are becoming more tech-savvy and have a high level of technological literacy.

Thus, the study focuses on identifying ESL teachers' challenges and strategies for using technology in collaborative writing classes for the new generations of ESL students. There are two main research questions for this study.

1. What are the challenges experienced by upper secondary ESL teachers in integrating technology in their collaborative writing classrooms?

2. What are the strategies employed by upper secondary ESL teachers to overcome these challenges?

## **2 Reviews of Literature**

### **2.1 Collaborative Writing**

Collaborative writing refers to the process by which two or more students work together to create a single text [4,7,8]. Involving students in content negotiation, feedback exchange, and joint decision-making allows them to pool resources, apply knowledge, practice skills, and engage in self- and peer-reflection throughout the process [7,9]. Some of the processes included in the process are planning, drafting, writing, and revising [10]; all group members must contribute without any division of labour [4]. Collaborative writing is a project in which co-authors actively participate at every stage of the writing process, shouldering mutual accountability for and ownership of the entire text produced. These features distinguish collaborative writing from cooperative writing. There is the possibility of task division in cooperative or team writing endeavours when each team member tackles a different piece of the text or takes control of a certain sub-task.

### **2.2 Technology-Enhanced Collaborative Writing (TECW)**

During the previous decade, the rapid rise of digital technology and the introduction of Web 2.0 apps has resulted in a significant increase in collaborative writing practices in the field of second language (L2) acquisition [4]. These technologies have ushered in a new era of language instruction, changing the way students approach writing assignments and fostering a dynamic learning and engagement environment.

The incorporation of multimedia support and novel engagement methods has empowered students, providing them with crucial aid throughout the writing process [11]. The adoption of technology-enhanced collaborative writing (TECW) has emerged as a viable and effective technique for fostering L2 language development as educators and academics navigate this new era [0]. The dynamic interaction between technology and collaborative writing not only improves language skills but also fosters critical thinking, creativity, and communication capacities in students. Furthermore, it promotes a learning environment that reflects real-world circumstances in which teamwork and effective communication are essential abilities.

### **2.3 Challenges in Technology-Enhanced Collaborative Writing (TECW)**

Incorporating technology, particularly Bring Your Own Device (BYOD), as a teaching tool in the writing classroom involves several variables that can affect its effectiveness. One important element is the level of education and self-efficacy of educators, as well as their technology knowledge and classroom atmosphere.

Teachers who lack certain technological abilities might encounter challenges when attempting to develop appropriate resources for teaching [12]. Insufficient technological prowess could hinder the seamless integration of technology into the classroom. Much research has highlighted computer-related issues (e.g.,[13]). This study discovered that student participation was the most important issue for the participating teachers, leading to the conclusion that instructors had difficulty directing the class during online learning. A recent study supports the teachers' lack of technological skills and poor technology aid when transitioning from face-to-face to online instruction [14]. This supports earlier research findings that there were issues with internet connectivity during online learning [15].

The challenges of restricted and obsolete equipment pose significant hurdles in the realm of education, echoing the concerns highlighted by [16]. One of the critical issues at hand is that many educators find themselves equipped with outdated devices that lack compatibility with the diverse range of online platforms essential for effective lesson delivery.

The information acquired from their responses demonstrates a clear lack of teaching efficacy among teachers, emphasizing the crucial need for comprehensive instructional technology training. This observation supports Denniston's claim that weariness is a significant contributor to poor teacher performance [17]. These findings not only support Denniston's views but also enhance our understanding by revealing an important link to other research that delves into the complex relationship between English ability, cumulative teaching experience, and the impact on instructors' confidence levels when tasked with teaching writing skills [18]. In this field of study and development, many learning benefits have been established, including increased satisfaction, greater academic achievement, and the development of higher-order thinking skills [19]. Managing a class of excited children, on the other hand, is a difficult task. When conducting TECW, teachers may find it difficult to maintain classroom management and student involvement. Educators may use technology to promote writing reflection, learning community, engagement, and writing motivation [10].

## **2.4 Strategies for Overcoming the Issues**

Previous studies showed that teachers may retain a good attitude and discover innovative solutions to problems by depending on their drive and love for teaching [20,21]. It was also discovered that the quality of curriculum in an online environment is determined by several aspects, including educators' level of understanding about technology use, how they educate, and their relationships with learners. The usage of ICT resources by experienced professionals' results in a rich learning experience, which has a substantial impact on productivity and performance [22].

With respect to educator characteristics needed for online education, the majority of participants felt that time management ability, technical expertise, and computer literacy were key characteristics of practitioners pursuing online education [23]. Similarly, more than 60% of participants said that effective online teaching and learning required a strong work ethic, great communication skills, and a goal-oriented learning style. Half of the participants identified academic preparation, personal dedication, independence, and accountability as vital for effective online teaching.

## **3 Methodology**

This research employed a qualitative research methodology and multiple case studies to examine the challenges and strategies faced by ESL teachers in technology-enhanced collaborative writing classrooms.

### **3.1 Participants**

This study included four ESL upper secondary school teachers from the District of Keramat in Kuala Lumpur, Malaysia. They were made up of four female teachers with a range of teaching experience ranging from five to more than ten years. All participants have one thing in common: they are English teachers who use technology and Bring Your Own Device (BYOD) as teaching aids in collaborative writing contexts. Each of the teachers has at least two years of experience with Bring Your Own Device (BYOD) in the classroom.

### **3.2 Research instrument**

The three research instruments used in this study are semi-structured interviews, an open-ended questionnaire, and a document (WhatsApp thread of discussions). These instruments were adapted from other reports [24-26], which utilize Venkatesh's Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2) model [27].

### **3.3 Research Procedure**

An expert from Universiti Kebangsaan Malaysia with ten years of experience teaching TESL teacher trainees assessed the semi-structured interview questions. Each interview was one hour in length. Following the interview, the responses of the participants were transcribed. The transcriptions were then returned to the respondents to be validated. The same expert also reviewed the open-ended questions. After each of the four respondents completed the open-ended questionnaire via Google form, a copy of their responses was returned to them for validation. The researchers examined participants' interactions in the comment section as well as their thread of communications in the individual WhatsApp session with the researcher.

### **3.4 Reliability and Validity**

The triangulation of data using more than three research instruments is another measure to verify the validity and reliability of the research. Respondents were given pseudonyms to maintain confidentiality and to adhere to research ethics. T1-R4 are the pseudonyms used by all four respondents. The respondents were informed of the purpose of the research and the activities that will take place throughout the study.

## **4 Results and Discussion**

This section presents the findings of RQ (1) -to identify the challenges experienced by the upper secondary ESL teachers in their Technology-Enhanced Collaborative Writing (TECW) classroom. RQ (2) -to identify the strategies employed by the upper secondary ESL teachers to overcome the challenges. The findings are summarized by the two research questions addressed in the paper.

### **4.1 Question 1: "What are the challenges experienced by upper secondary ESL teachers in integrating technology in their collaborative writing classrooms?"**

The answers to research question 1 are divided into three themes: a) Teachers' self-efficacies, b) Learning environment, and c) Technical aspects. The interview results indicate that the teachers rated their knowledge and skills in teaching collaborative writing via the use of technology and with the aid of BYOD as intermediate.

#### **4.1.1 Teachers' Self-efficacies**

*...I am **not so good with technology**; I sometimes face problems especially technically... (T1)*

*Yes. **I am not really good with technology.** So, I just stick to what I know and am familiar with. I usually like to use Google Docs and Google presentation (T2)*

The information obtained from their responses reveals a distinct lack of teaching efficacy among teachers, highlighting the critical need for thorough instructional technology training. This observation is consistent with Denniston's (2020) argument that fatigue is a substantial contributor to poor teacher performance. These findings not only confirm Denniston's observations but also broaden our understanding by exposing a vital connection with Alford's research [18]. Alford's research dives into the complex relationship between English competency, cumulative teaching experience, and its resulting impact on instructors' confidence levels when entrusted with teaching writing skills.

Another response gathered from respondents suggests that they must adjust to a new sort of instructional technology. Teachers experience difficulties transferring to Technology-Enhanced Collaborative Writing (TECW) instruction due to their inability to adjust to the new learning environment. The transition is difficult for them. They have spent years in traditional classrooms and are finding it especially tough to reinvent their teaching approaches for technology-enhanced instruction. Their resistance or fear of technology, particularly digital tools and online platforms, limits their capacity to provide writing instruction successfully. Inadequate training prevents them from adequately utilizing digital materials and interactive platforms in their teaching. The rapid adoption of digital technology required for TECW may produce sentiments of doubt, worry, and anxiety among the teachers, thereby impacting their instructional delivery and overall confidence in using technology effectively. Two (2) of the participants who faced this problem noted this.

*...I am **used to the old way.** I am old school. So, I just stick to what I know and am familiar with.... I am **not really that tech-savy**....(T3)*

*...Some apps are new and I am not familiar. I find it **hard to adapt** to the new form of teaching. The students are better, in fact. ....(T1)*

A recent study supports the notion that lack of technological expertise and insufficient help in utilizing technology [14]. To relate to the setting of this study, some English teachers' unfamiliarity with TECW poses a significant barrier to efficiently conducting classes. This is supported by the construct in the UTAUT 2 Model, which are habits that will be seen in the context of English teachers' poor behavior when using technology.

#### 4.1.2 Learning Environment

Through collaborative activities and the facilitation of information and expertise sharing, TECW enables and facilitates L2 learning. Many learning benefits are demonstrated in this field of study and development, such as enhanced satisfaction, improved academic accomplishment, and the development of higher-order thinking skills. Managing a class of enthusiastic kids, on the other hand, is not an easy endeavor. Classroom control and student engagement can be difficult for teachers to achieve when performing TECW. All four teachers faced the same issue when conducting their TECW lessons.

*...Children are playful. **They love to temper with their friends' work.** To overcome this problem, I will share or assign 1 particular link for only 1 particular group. (T1)*

- ...The distraction. Instead of doing what they are supposed to do, **they will play games online**, or instead of looking for information, they will surf the net and go all over the place.... In a group, sometimes only 1 or 2 who concentrate on others will be distracted. (T2)*
- ...Nobody listens. **They are busy doing other things**. Instead of listening or working on their task. (T3)*
- ... Instead of collaborative writing, **they sometimes would do their own things**. (T4)*

Much research has raised computer-related issues. This study discovered that student participation was the most important issue for the participating teachers, leading to the conclusion that instructors had difficulty directing the class during TECW. Their education may be more effective if they build a classroom setting and use a learning platform that allows students to easily communicate and co-author with classmates while also allowing them to be creative. Teachers should observe and monitor students while they are working on a writing project, and they should encourage students to share and accept constructive comments from their classmates. Because technology can be used to improve writing reflection, learning community, engagement, and writing [10], educators may employ them.

#### 4.1.3 Technical Aspects

Educators face challenges, with one significant hurdle being the issue of unreliable internet connectivity. This connectivity issue hampers access to online resources, disrupts live sessions, and renders assignment sharing practically impossible. The impact of this weak internet connection extends to the TECW, adversely affecting both language teachers and their students. Poor internet access has particularly severe repercussions in the field of English language teaching. It is difficult for teachers to gain access to critical platforms and materials for effective instruction. As a result, students have an inequitable learning experience since the limits imposed by a poor internet connection prevent the seamless delivery of educational content and interactions. Addressing this connectivity issue is critical for establishing a more inclusive and fairer educational environment for both English language teachers and students.

- *Poor Internet connection*

- ... My school internet connection is sometimes lacking or very slow. Usually, I will ask my students to pre-watch certain videos at home. I will ask the students to do their research at home. (T1)*
- ...When there are a lot of users at the same time, **the internet will be slow**. It's difficult to download anything. (T2)*

*...The internet sometimes **is not connectable**. I have to ask someone to restart the router. This will interrupt the lessons. (T4)*

Due to a poor internet connection, both students and teachers experienced insurmountable challenges, and the process of online English teaching and learning was disrupted. This supports earlier research findings that there were issues with internet connectivity during online learning [15]. This finding is related to the facilitating conditions in the UTAUT 2 Model, which emphasizes the need to have appropriate resources and guidance for instructors to use technology in online learning [27]. Furthermore, integrating technology into the writing classroom can be a time-consuming process, particularly for teachers who are unfamiliar with technology. Some educators may struggle to adapt to new digital tools,

perhaps resulting in a time constraint in delivering their lessons. This highlights the importance of providing enough teacher training and support to achieve effective technology integration [28].

- *Outdated Devices*

The difficulty of not having appropriate devices has a substantial impact on English teachers' teaching and learning efforts. The lack of proper hardware, such as modern laptops or current tablets, along with poor internet access, limits educators' capacity to conduct effective online English classes and engage language learners. Because these devices lack appropriate processing power and screen size, instructors are limited in their ability to present interesting content, resulting in a less dynamic learning environment. Furthermore, outdated gadgets and inadequate internet connection impede educators' flexibility and mobility when conducting TECW. Two (2) of the people who faced this problem emphasized this.

*... I have quite **an old version of laptop**. I had to borrow from my family members, or else I could not carry out the lesson. (T4)*

*... My gadget is also outdated. The screen was too small. It hurt my eyes. I have been forced to buy a new one since then. (T1)*

The findings on restricted and obsolete equipment issues mirrored those of a recent report that most educators have or are prepared with old devices that do not support the majority of the online platforms available to conduct the lesson [16]. In the context of this study, they also stated that a lack of adequate technology can limit English instructors' ability to conduct online English classes and successfully engage language learners. This difficulty is related to the conducive conditions established by the UTAUT 2 model; the lack of appropriate technology devices reduces the success of English teaching in TECW and emphasizes the need for technological instruments to guarantee successful teaching and learning.

## **4.2 Question 2: “What are the strategies employed by the upper secondary ESL teachers in their Technology-Enhanced Collaborative Writing (TECW) classroom?”**

### *4.2.1 Self-motivated*

Self-motivation is a critical technique for English language educators as they navigate the TECW obstacles. Challenges with technology and limited student engagement, teachers must rely on their motivation to stay focused and resilient. They can embrace change, see obstacles as opportunities, and generate innovative solutions because they are self-motivated. They encourage student participation by approaching teaching sessions with excitement. Teachers could have better class control by aiming to be more organized and disciplined. By establishing clear goals and prioritizing tasks, students would be more manageable. Intrinsic motivation can boost their resilience and commitment to offering high-quality education. This inner drive enables them to overcome challenges and provide relevant learning experiences for students while maintaining a cheerful attitude. Two (2) of the participants show this:

*... Even though the students sometimes do not like to work in groups and join collaborative writing activities, **I cannot give up and try to motivate them and myself**. (T3)*



*... Everyone is very helpful. They may not involve me directly, but indirectly, at least they give me moral support and encouragement. I feel strong with their support. (T2)*

English language instructors can use self-motivation and intrinsic motivation to overcome the challenges of TECW. Previous research showed that teachers may retain a good attitude and discover innovative solutions to problems by depending on their drive and love for teaching [20,21].

This could be related to the UTAUT 2 Model constructs of habit (good behavior of English instructors in using technology to conduct collaborative writing workshops.) and hedonic motivation (the influence of happiness in conducting collaborative writing sessions utilizing technology).

#### 4.2.2 Self-exploratory

To adapt to the changing educational world, teachers must continually investigate new tactics, resources, and ideas. Seeking out professional development opportunities, participating in webinars, and participating in online discussion groups are all critical steps in this process. Furthermore, embracing trial and error enables educators to constantly improve their teaching practices by finding what works best and making appropriate adjustments based on feedback and observations. These practices would be the best strategies to discover the greatest ways to fit their teaching style and learner needs. Two (2) of the participants show this:

*...I will just take my time to explore by watching **YouTube** or asking my colleagues who are familiar with that particular app. (T1)*

*... I join the teachers' **Telegram** or **FB** groups to look for ideas or to post any of my concerns. (T3)*

These tactics not only increase student engagement and motivation, but also generate a dynamic and interesting learning environment that promotes language growth and a love of learning English. This could be related to the habit construct in the UTAUT 2 Model.

## 5 Limitation

Regarding the research limitations, the study acknowledges a small sample size and a focus on English teachers in the Keramat district involved in a Bring-Your-Own-Device (BYOD) pilot program. In order to improve the research generalizability, future studies should consider larger and more diverse participant groups. The research's regional specificity underscores the need for adjustments to cover teachers in similar programs nationwide, recognizing potential variations in experiences based on regional contexts, infrastructure, and educational policies. Acknowledging and addressing these limitations is essential for guiding future research toward a more comprehensive understanding of the implications of BYOD programs for English teachers across different regions.

## 6 Recommendation

The TECW has shown promise in identifying the issues and techniques faced by ESL teachers, but there is still an opportunity for additional research in this area. Researchers

could investigate the impact of technology integration on English language educators' teaching practices and pedagogical approaches in the future, as well as the experiences of English language learners during TECW. Students' involvement, motivation, and happiness with TECW, as well as their preferences for various teaching approaches and digital resources, might all be investigated in this study. Finally, research might look into the long-term effects of TECW on English language teachers and students. This long-term study might compare the academic improvement and linguistic development of pupils who received TECW to standard classroom education.

## 7 Conclusion

The research focused on examining challenges faced by educators in the Keramat District, Kuala Lumpur, during the implementation of Technology-Enhanced Collaborative Writing (TECW). It sought to identify these obstacles and highlight the strategies employed by educators to overcome them. The adoption of TECW posed a significant challenge, requiring a shift from traditional teaching methods and facing obstacles such as self-efficacies, learning environment issues, and technical constraints. Teachers

In the district had to proactively address these challenges by implementing innovative strategies. The study emphasized the crucial role of self-motivation and self-exploration in mitigating challenges and optimizing the benefits of TECW, ultimately contributing to the delivery of high-quality education and the efficient integration of technology into collaborative writing classrooms.

This research not only enhances our comprehension of the challenges encountered by ESL teachers when implementing Technology-Enhanced Collaborative Writing (TECW) but also offers valuable insights into the preparation of ESL teachers for integrating technology into their collaborative writing classrooms. By employing qualitative interviews, the study fills gaps in the existing literature on TECW and provides a thorough understanding of the issues faced by ESL teachers.

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