

# The Development of TPACK-Based Learning Media to Enhance the Skills of Written Communication

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## Abstract

The research aims to develop a model of existing essay writing teaching materials. In this research, the authors used a research and development (R&D) approach to analyze and demonstrate technology as a solution to a crucial problem in teaching essay writing. Data were obtained through interviews, questionnaires, and observations. To find out the feasibility of the model to be developed, several assessment steps were carried out, namely expert/expert testing, one-on-one trials, small group trials and testing the effectiveness of teaching material models. Based on the test results, the findings of this research indicate that a new teaching material model that can stimulate lecturers and students to learn essay writing is needed. To sum up, to make an effective and enjoyable instructional process, it is necessary to be concerned with instructional methods that are varied and liked by students.

**Keywords:** TPACK, essay writing, technology

## 1. Introduction

The competence and skills of teachers and the entire educational system are crucial for the success of teaching and learning activities, particularly in incorporating multimedia technology as a supportive tool. However, there are difficulties and barriers arising from students' lack of motivation in engaging with the lessons due to unappealing teaching materials and media. Typically, instructors in the classroom solely rely on dull teaching materials. Therefore, it is necessary to modify the unstimulating teaching materials by incorporating and utilizing technology.

A lecturer in practicality should possess the ability to create and produce teaching resources that aim to enhance student engagement in the learning process, specifically in relation to the fundamental skills outlined in the curriculum. Among these skills, one of the key competencies is the development of students' essay writing abilities. Furthermore, the art of essay writing necessitates an effective and imaginative teaching approach and the design of engaging learning materials to prevent student disinterest.

Some information about the instructional resources for writing can be gathered through interviews with English students. These interviews reveal that students' lack of interest and proficiency in essay writing is caused by the unappealing models and approaches used by their teachers. Both the delivery methods and the teaching materials themselves are seen as unattractive. To address this issue, it is suggested that innovative teaching materials that incorporate technology should be used. These materials can help teachers and students engage more actively in the learning process.

The integration of technology in writing instruction is not only seen as a means to reinforce the skills needed for the final project but also as an important skill that teachers should possess. Zhang and Tang (2021) argue that the use of TPACK, as well as other studies conducted by Cahyono, Yudi, Dewi, Oktafina, and Kurnianti I (2016), have shown that TPACK-oriented courses can benefit EFL teachers in Indonesia and improve the quality of English language instruction. This view is also supported by Drajadi, Tan, Haryati, Rochsantiningsih, and Zainnuri (2018) and Redmond and Lock (2019), who argue that TPACK is essential for 21st-century learning and can enhance the quality of English language instruction.

Teaching materials that incorporate the TPACK strategy are considered interactive and effective in improving students' essay writing skills. For instructors, these materials can expand their knowledge in terms of integrating content through technology, provide teaching variations, and support student-centered learning. Therefore, this study aims to develop

teaching materials for writing essays using the TPACK strategy that align with the needs of university-level writing skills. The research seeks to answer the question: What are the specific needs for teaching materials in the English Education study program?

To gain a deeper understanding of these needs, the study will review and discuss the requirements for teaching materials in writing essays. This will be followed by an explanation of essay writing, TPACK, and technology in education. Once the fundamental theories have been established, the research methodology will be explained and the results will be presented. These results will then be discussed and analysed in relation to the theories, leading to a conclusion.

## 2. Literature Review

### 2.1 Essay Writing Challenges

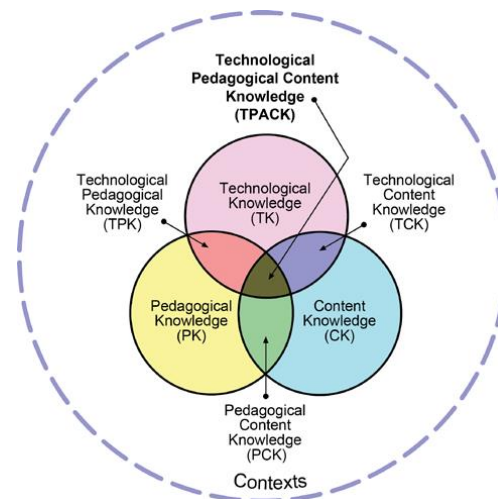
The acquisition of essay writing skills facilitates the academic performance of students (Zhang, 2013) as both a medium for learning and a tool for expressing and communicating their ideas about their experiences and the development of knowledge in academic fields (Coffin et al., 2005). This implies that writing skills are not only beneficial for academics but also for social life. Writing also involves a cognitive process (Nishino & Atkinson, 2015) that necessitates creativity (Nosratinia & Adibifar, 2014) and critical thinking (Smirnov, 2015; Zhang, 2013).

Despite the importance of learning to write essays, many students still struggle with developing ideas, connecting paragraphs using their ideas, and selecting appropriate vocabulary for their writing. Grapin & Llosa (2020) support this notion, stating that developing ideas, organizing paragraphs, and using suitable vocabulary are challenging for some students, particularly when describing an object or reporting. Only a small number of students comprehend the essay structure discussed in writing courses. They understand the general and specific functions of each paragraph. However, most of them encounter difficulties in organizing the text, formulating clear thesis statements, providing supporting paragraphs that align with the thesis statement, and concluding the essay effectively. Additionally, grammatical errors such as subject-verb agreement, improper word order, misuse of parts of speech, errors in conjunction usage, and incorrect sentence formation (simple, compound, complex) are still prevalent. These errors significantly impact the quality of student writing. Furthermore, many students have a limited academic vocabulary, evident in the repetition of words and inappropriate word choices. Incoherence between paragraphs is frequently observed in their writing, and a fundamental issue with a significant impact is the selection of inappropriate topics that fail to accurately represent the content of the writing.

Moreover, the challenges encountered by educators when instructing writing courses stem from both student and content perspectives. From the student perspective, instructors appear to struggle in attaining learning objectives due to variations in students' comprehension abilities. Additionally, in terms of content, the approach to teaching writing remains conventional, primarily consisting of providing explanations, examples, and subsequent analysis by students, which tends to render them passive and disinterested. Recognizing the issues inherent in writing instruction, it is imperative to implement improvements. These enhancements can be achieved through the refinement and expansion of the syllabus, the implementation of classroom strategies, and the development of instructional materials (Kervin, 2015). The availability of instructional materials that align with the learning needs is anticipated to be instrumental in addressing the challenges encountered in the learning process. In his research article, Fidelia, O.A (2017) emphasizes the significance of writing essays, highlighting that proficient English performance signifies strong English skills. Furthermore, integrating technology into teaching materials is seen as a means to facilitate essay writing instruction. This is particularly important as students often receive abstract explanations about essays in class without clear guidelines.

### 2.2 TPACK

The TPACK framework has emerged to "capture some of the essential qualities of knowledge required by teachers for technology integration in their teaching, while addressing the complex, multifaceted and situated nature of teacher knowledge" (Mishra & Koehler, 2006, p. 1017). Mishra and Koehler's (2006) formulation of the technological, pedagogical and content knowledge (TPACK) framework is an expanded version of Shulman's (1986) categorizing teacher's knowledge about technology in effective teaching. TPACK consists of three knowledge domains, which includes technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK). Furthermore, all these three bodies of knowledge intersect to form pedagogical content knowledge (PCK), technological content knowledge (TCK), and technological pedagogical knowledge (TPK). PCK refers to how teachers teach specific content-based material to students. TCK is how teachers choose and then use technologies to teach specific content knowledge, while TPK primarily addresses how teachers use specific technologies when they are teaching a specific subject matter. Therefore, the framework of TPACK is as follows.



The TPACK framework highlights the intersections of the knowledge elements crucial to teachers' technology incorporation. It has significant potential to guide graduate students in the field of educational technology to organize and reflect on their advanced knowledge, skills, and experiences related to technology incorporation (Ching, Yang, Baek, & Baldwin, 2016).

TPACK also fosters a positive mindset and provides an opportunity to further enhance their knowledge and skills for technology incorporation (Redmond & Lock, 2019). TPACK offers support for approaches to English language teacher education that aim to integrate TK, PK, and CK, rather than introducing them separately, and that emphasize the ways in which emerging and established technologies can be utilized to represent language and provide opportunities for communication that are known to enhance language acquisition (Bostancıoğlu & Handley, 2018).

To implement TPACK in the teaching and learning process, teachers should consider designing the curriculum under TPACK to enhance positive experiences, understand how technology can impact ELT among English teachers, and teach with technology using pedagogical decisions. They should also transfer what they have learned in workshops to their teaching in classrooms (Ansyari, 2015; Illi et al., 2019; and Tai & Chuang, 2013). The integration of the English language into the Indonesian curriculum is discussed, followed by the process and influence of globalization on English teachers' knowledge of teaching the English language in the 21st century. Lastly, the issues and challenges, as well as strategies and actions to overcome barriers to implementing effective pedagogy by English teachers in teaching, are addressed (Limbong, 2017).

Some studies have also discovered that participants had favorable experiences in TPACK professional development programs and a significant correlation between individual creativity and TPACK, while individual creativity becomes a significant predictor of TPACK abilities (Coklar & Ozbek, 2017). Another study found that there were notable disparities between inexperienced teachers and experienced teachers. Experienced teachers had significantly higher scores in terms of pedagogical knowledge and pedagogical content knowledge subscales. In contrast, inexperienced teachers had significantly higher scores considering their technological knowledge, technological content knowledge, technological pedagogical knowledge, and TPACK. The qualitative results demonstrated that inexperienced and experienced EFL teachers preferred different professional development programs tailored to their needs (Nazari, Nafissi, Estaji, & Marandi, 2019).

TPACK also embrace and enhance the teacher's confidence, opportunity, and improve literacy (Ramanair et al., 2017; Kurt, Akyel, Kocoglu, & Mishra, 2014; Irmida & Atun, 2018; Khany, Aliakbari, & Hajizadeh, 2018; Drajadi, Tan, Haryati, Rochsantiningsih, & Zainnuri, 2018). Most of them perceived ICT positively, viewing it as a beneficial rather than threatening force. To them, ICT has been an appealing source that provides learning resources, fosters communication and collaboration, and enhances teaching-learning activities. Those who expressed their concern over ICT mentioned the significance of teachers' upgrading their ICT skills and called for institutional support for the teachers. (Djiwandono, 2019).

A study conducted by Redmond & Lock (2019) found that it is important for teachers to have opportunities to engage with the TPACK constructs and apply this framework in their teaching. Reflecting on their experiences and outcomes can help future teachers refine and design learning experiences that intentionally incorporate technology. It is not just about determining which technology to use. Some studies suggest that further research should support approaches to English language teacher education that aim to integrate TK, PK, and CK together, rather than introducing them separately. These approaches should also emphasize how emerging and established technologies can be used to

represent language and provide opportunities for communication that promote language acquisition (Bostancıoğlu & Handley, 2018).

In conclusion, teachers need the opportunity to practice applying TPACK in their teaching and learning. This can be achieved through clearer and more defined syllabi that incorporate TPACK. One of the main challenges is that teachers often feel overwhelmed with the amount of information and guidance on how to implement TPACK, especially since it was originally developed for non-language fields. Therefore, teachers would benefit from having a syllabus that serves as a guide for applying TPACK. This study aims to investigate the use of TPACK in teachers' syllabi for teaching and learning processes.

### *2.3 Technology for Writing Essay*

According to Almelhi (2021), learning management systems (LMSs), also known as e-learning platforms, have been consistently recognized as having potential benefits in the field of English language education for various reasons. These platforms can provide opportunities for authentic communication, similar to real-life educational settings. The intended audience for written output in these platforms is not limited to writing instructors, but can include fellow student writers and other individuals in online platforms like blogs, Twitter, Facebook, and other social media. These forms of media can create emerging authors with real-life readerships.

In an LMS and its associated social media platforms, which have a growing community of digital learners, students have more chances to express their ideas and thoughts. They can interact with readers who have similar opportunities to read their posts and provide direct feedback to the authors (Benson & Reyman, 2009; Du & Wagner, 2007; Kavaliauskienė, Anusienė, & Mažeikienė, 2006; Oravec, 2002; Ward, 2004). Research suggests that the use of LMSs has been found to enhance students' writing skills and subskills, while also creating a stimulating and motivating learning environment for developing writing abilities in language learners (Pinkman, 2005; Zheng, 2012). LMSs can also enhance learners' independence (Ward, 2004) and serve as a reliable alternative to learning logs, where language students can document their progress in writing (Du & Wagner, 2007).

## **3. Research Method**

In this investigation, the scholar concentrates on utilizing exploration and development techniques (R&D). Exploration and Development as a methodical examination to advance and assess procedures with a view to building up an empirical premise for the making of instructive and non-instructive items. Stages and techniques use ADDIE exercises (Analysis, Design, Development, Implementation, and Evaluation) as the plan of this exploration. Since this exploration is a beginning phase from the five stages above, the exploration that will be led is an investigation of necessities (necessity analysis). The subjects in this exploration were understudies of the English Education study program at Lakidende University semester IV 2021/2022 and 2022/2023 who took a composing course. Exploration information were acquired utilizing surveys and organized meetings with speakers and understudies in regards to their learning necessities. The exploration results are accounted for as illustrative insights, to be specific by showing factual information and a clarification of the information.

## **4. Results and Discussion**

In this investigation, the researcher conducted an analysis to ensure the development of new instructional resources that meet the requirements of teachers and students. This was done by observing the classroom environment and determining the necessity for more effective and efficient teaching materials for essay writing. Initial investigations involved conducting surveys at Lakidende University.

The participants in this recent study were instructors and students in the fourth semester of the English education program, specifically in the course on Writing for Academic Assignments at Lakidende University. Additionally, instructors and students in English education in the fourth semester were also included. The preliminary research began in October 2022.

The purpose of conducting this preliminary study was to assess the current use of teaching materials by instructors and students. This was done by directly asking the instructors about the strengths and weaknesses of the current learning resources. The goal was to determine whether these resources are suitable or if additional teaching materials are needed based on the requirements of the instructors and students.

### *4.1 Needs Analysis of English Essay Writing Teaching Materials Currently*

The requirement analysis of teaching materials for instructing the composition of essays for professors and learners is to determine the most recent and genuine circumstances in the field and the demands of teaching materials that are expected to be in line with the requirements of professors and learners. Based on the findings of data analysis, it was discovered that 100% of the professor's required diversification in both subjects and teaching materials that were

capable of accommodating the teaching and learning process in the classroom and suitable for technological advancements. Professors necessitate teaching materials that can aid learners in comprehending writing, especially essays, and also necessitate e-learning as a learning resource that will subsequently enable learners to possess the ability to resolve problems in a critical, creative, communicative, and collaborative manner, as well as more effectively and efficiently, which pertains to learning in this digital era. Professors require instructional designs and strategies or teaching methods that are suitable, pertinent, and up-to-date in writing teaching materials to make them more comprehensive and innovative in order to render the learning process more active, engaging, and interactive in relation to the appearances and complete content of guidelines and the process of writing an essay.

On the other hand, from the perspective of learners, they anticipate innovative and varied teaching materials. Based on the findings of data analysis, it was revealed that only 30% of learners possessed textbooks or handbooks, which resulted in 75% experiencing difficulties in learning the sub-materials of essay writing from the utilized book. This was connected to the inadequacy of the material, lack of explanation, and format of the book used, among other factors. Consequently, 40% stated that they did not feel facilitated or enthusiastic about the book. Meanwhile, based on learners' assessments of the teaching materials employed by professors, it was stated that 60% of learners evaluated that professors had utilized specialized teaching materials for essay material but they were still limited, and 80% of learners still encountered difficulties in comprehending the material through the teaching materials and methods employed by professors. Thus, 70% claimed that the essay writing material was challenging to grasp. Learners require the ability to study independently anywhere, necessitate a variety of subjects encompassing various types of writing, and also anticipate being able to communicate verbally and in writing. Furthermore, learners require assistance in completing assignments and engaging in digital-based activities, which is evident in the fact that 95% of learners require alternative teaching materials and 85% are in agreement if interactive teaching materials.

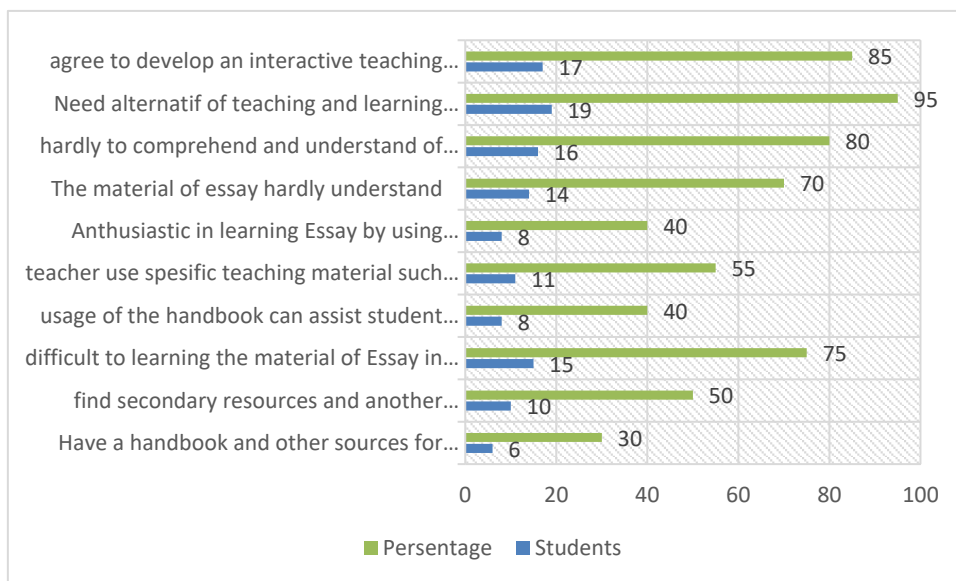


Figure 1. The Data of Students of Need Analysis

The assessment of needs is not only provided to students but also provided to instructors to assist with information regarding the evaluation of the requirements for teaching materials. In the second table below, the instructor mentioned that the educational process was progressing smoothly but the educational process underwent a transformation when the traditional method of learning shifted to the demand for e-learning, which necessitated independent learning and internet-based learning, requiring students to engage in self-directed learning in order to explore knowledge. Additionally, instructors are directed to directly provide and facilitate the provision of new teaching materials that can enhance student capabilities, are easily obtainable, captivating, and efficient and groundbreaking.

Table 1. The Data of Lecturer of Need Analysis

No	Question	Respondent				Total	Presentation (%)
		1	2	3	4		
1	How is your observation of the learning process in lectures at your university, is it going well?	1	1	1	1	4	100%
2	Are the facilities on the campus where you teach complete?	1	0	1	0	2	50%
3	Do you only use one source of teaching material in teaching writing courses?	0	1	0	0	1	25%
4	Are you looking for materials other than the handbooks to assist you in teaching a material, through modules or the Internet for example?	1	1	1	0	3	75%
5	Do the teaching materials used the needs in teaching lectures?	0	0	0	0	0	0
6	Do you teach students use special teaching materials to discuss the material (eg modules, videos, teaching aids and others)?	1	0	1	0	2	50%
7	Are the teaching materials that you use in accordance with the needs of the course?	0	0	0	0	0	0
8	Does that book make it easier for students to better understand the teaching material?	0	1	1	0	2	50%
9	Do you need alternative teaching materials that can be used to learn English essays in an easier and more interesting way?	1	1	1	1	4	100%
10	Do you need new teaching materials that are effective and innovative?	1	1	1	1	4	100%
11	Have you ever tried to compile your own teaching materials to be used?	1	0	1	1	3	75%
12	Do you use course learning and syllabus in teaching?	1	1	1	1	4	100%
13	Do you teach writing follow the course learning?	1	1	1	1	4	100%
14	Do you trial the teaching materials that will be tested before conducting mid test and final test?	1	0	1	1	3	75%
15	Do you agree that interactive teaching materials developed such as an application for writing essays in English so that lecture material becomes easier to understand?	1	1	1	1	4	100%

Based on the findings of surveys and interviews with instructors, the following information is ascertained:

Firstly, lecturers still rely on teaching resources such as books as reference materials in the classroom. The challenge with using books as teaching materials is that they are not updated to align with current learning conditions. Secondly, the teaching approach is more teacher-centered, which results in students being less engaged when the lecturer explains the content. Additionally, there is a lack of standardized essay writing materials that provide clear steps and processes for writing a comprehensive essay. These materials should include examples and visual aids, such as videos, to facilitate the learning process. Thirdly, there is a need for new teaching materials that cater to the needs of both students and lecturers. These materials should enhance students' skills and promote self-directed learning and autonomy in essay writing. Lastly, students should have quick and easy access to essay learning videos.

Based on the aforementioned information, it is evident that writing courses still rely on traditional methods. Therefore, the researcher aims to develop teaching materials for writing essays that incorporate technology, particularly e-learning. This approach will make the learning process more dynamic and align with the intended learning outcomes.

During the preliminary study's identification section, it was observed that lecturers do not adhere to appropriate teaching and learning practices that are tailored to the context and content being taught. This issue is not limited to one class but is evident in two classes within the English Language Study Program at Lakidende University. Additionally, lecturers do not possess teaching materials that cover English essay writing, resulting in a monotonous and less interactive learning system. Therefore, the researcher concludes that the existing teaching materials require enhancements and should be developed in line with the advancements in e-learning. This will ensure that they are innovative and interactive teaching resources.

In addition, besides conducting interviews, researchers also made observations at the university. The findings of the observations revealed that the utilization of instructional materials did not align with the cognitive level that should be studied, resulting in a lack of information and knowledge about essay materials in writing courses. Furthermore, it was discovered that the utilization of teaching methods that were still very conventional, specifically the use of lecture method, only managed to engage around 10% of the students. In this learning method, students appear to be passive observers where in the process of learning writing, particularly writing essays, students are merely provided with

explanations through lectures, taking notes on the material, and referring to books that are not contextually appropriate. As an evaluation of the study's outcomes, it was explained that students' retention of essays and the types of lessons focused on lecture and note-taking methods, while the rest of the information was not retained in the students' memory. Apart from instructional materials, there are other tools that are also vital components in supporting the achievement of learning objectives. The specific tool in question is the learning syllabus, which provides instructions for the utilization of instructional materials in the classroom. The syllabus created by the lecturer must align with the material requirements for the students in the class.

The findings of the previous study concluded that the course instructors relied heavily on the syllabus available on the internet, resulting in a lack of specificity and failure to meet the needs of the class. The preliminary study also revealed that the lecturers did not possess sufficient guidebooks for using instructional materials to enhance the learning process in the classroom.

Next, the needs of instructional material models were analyzed through surveys and interviews. The key interview questions related to the needs analysis of the desired learning model are as follows: 1) the tools used for teaching and learning; 2) the lecturer's assessment of the new tools used; 3) the evaluation of the compatibility between the teaching materials and the lesson topics; 4) the strengths and weaknesses of the instructional materials used; and 5) the desired format of the instructional materials according to the lecturer.

Based on the results of the needs analysis, the following conclusions can be drawn:

Initially, it is imperative to create instructional resources for novel composition writing that adapt to and cater to the needs of students, particularly in relation to the availability of teaching materials such as e-learning. Consequently, there is a requirement for educators who can complete the explicit steps of the writing process, providing various types of texts, ideas, and a comprehensive writing structure with interactive examples as instructional materials to support the teaching and learning process and also enhance learning outcomes.

In addition, educators require guidance in implementing the teaching and learning process, serving as a foundation of competence and indicators to direct students' essay writing. This ensures that the implementation of teaching and learning is more cohesive and evident. The aforementioned guidelines must align with the stages of essay writing in order to achieve the learning indicators.

Lastly, students require instructional media that serve as a guide to enhance, stimulate, and ignite enthusiasm for learning to write essays. These resources should also function as an alternative learning source that can be utilized individually or in groups, and can be accessed anytime, anywhere, and without limitations when searching for teaching materials.

Based on the information provided, it can be inferred that there is a requirement for English instructors and a desire for the creation of teaching resources that are tailored to meet the needs of learners and align with technological advancements. Consequently, there is a need for instructional designs, strategies, and teaching methods that are suitable and pertinent to contemporary learning. The objective of developing such teaching materials is to enhance proficiency in writing, particularly in various forms of interactive and impactful essay texts. This will enable students to access different types of essay texts from any location, promoting self-sufficiency and motivation in writing. Furthermore, students also desire online learning opportunities that can be independently accessed through internet-connected smartphones, allowing them to adjust their study time. The findings of this needs analysis serve as a solid foundation for the development of teaching materials that cater to the requirements and expectations of English instructors in teaching essay writing. Consequently, researchers aim to assist instructors in overcoming their teaching challenges by creating e-learning-based teaching resources for writing essays that are more engaging.

## **5. Conclusion and Recommendations**

In conclusion, essay writing should be mastered by students. It is important to provide any learning components to enhance students' mastery in writing essay. One of them is instructional materials as the learning source. The context of instructional materials should be developed based on the need analysis focused on student centred approach. The findings inform the teachers or the curriculum designers to identify students' perspective by promoting their self-directed learning to instructional materials context, and it helps them to uplift their knowledge and skill in essay writing. The context of instructional materials must be relevant to students' learning goal, especially in essay writing. By the end, it is a must to make sure that the designed instructional materials should be focused on applying e-learning based in order to facilitate the student to express their ide of essay writing. Therefore, need analysis is the ground on which instructional materials can be developed in order to lead students' motivation and proficiency in essay writing.

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**Authors contributions**

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**Data sharing statement**

No additional data are available.

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