

THE USE OF COMPUTER-ASSISTED LANGUAGE LEARNING (CALL) TO TEACH ACADEMIC WRITING FOR HIGHER EDUCATION STUDENTS

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Abstract

CALL (Computer-Assisted Language Learning) has become an essential part of language learning, mainly due to its flexibility, support for independent learning, and provision of authentic materials. However, it also presents challenges such as usability issues, high costs, and limited face-to-face interaction. This study aims to improve final-year civil engineering students' understanding of academic abstract writing through the use of CALL. The method employed is a text-based approach, focusing on the use of the simple present tense, paraphrasing techniques, and digital tools such as Padlet and Quizizz. The learning process consists of pre-learning, in-class activities, and post-learning stages. The findings show that CALL supports students in understanding abstract structures and enhances their writing skills, although challenges like limited vocabulary and reliance on machine translation persist. Therefore, it is important for future researchers to involve instructors actively and provide guidance on CALL usage to optimize learning outcomes.

Keywords: Computer-Assisted Language Learning (CALL); Academic Writing; Learner Autonomy.

Abstrak

CALL (Computer-Assisted Language Learning) kini menjadi bagian penting dalam pembelajaran bahasa, terutama karena fleksibilitas dan dukungannya terhadap kemandirian belajar serta penyediaan materi otentik. Meski begitu, ada tantangan seperti kesulitan penggunaan, biaya tinggi, dan minimnya interaksi langsung. Penelitian ini bertujuan untuk meningkatkan pemahaman mahasiswa teknik sipil tahun terakhir mengenai penulisan abstrak akademik dengan memanfaatkan CALL. Metode yang digunakan adalah pendekatan berorientasi teks, dengan fokus pada penggunaan simple present tense, teknik parafrase, serta penggunaan alat seperti Padlet dan Quizizz. Proses pembelajaran dibagi menjadi tahap pra-pembelajaran, kegiatan kelas, dan pasca-pembelajaran. Hasil penelitian menunjukkan bahwa CALL membantu mahasiswa dalam memahami struktur abstrak dan meningkatkan keterampilan menulis, walaupun masih ditemukan kendala seperti keterbatasan kosakata dan ketergantungan pada terjemahan otomatis. Oleh karena itu, penting bagi peneliti lain untuk melibatkan peran aktif pengajar dan memberikan panduan dalam penggunaan CALL guna mengoptimalkan hasil pembelajaran.

Kata kunci: Computer-Assisted Language Learning (CALL); Penulisan Akademik; Kemandirian Belajar

INTRODUCTION

The development of technology leads to the popularity of Computer-Assisted Language Learning (CALL) to support English language learning. Since its emergence in language learning, CALL provides numerous language learning features that transform the conventional class into fascinating learning. This way of learning can also reduce the difficulty of learning writing which requires linguistic competence as the fundamental language knowledge.

The process of learning writing for the students in the level of higher education can be supported by using CALL, particularly in learning academic writing. Over the past years, higher education students had to achieve a minimum score on a foreign language test to graduate from university. The students should also learn writing skills for academic purposes, such as writing an abstract of a final project or paper of international journals or seminars.

The use of CALL to teach academic writing within the concept of text-oriented approach can also be implemented for higher education students. Although the text-oriented approach focuses on grammatical accuracy and clear exposition (Hyland, 2009), it can be used in the initial steps of writing class considering the English proficiency level of higher education students in Indonesia. In the early period of learning writing, the students can learn from the basic step to write academic writings, focusing on the linguistic form of the text and the implementation of grammatical rules in text.

The application of CALL has extremely surged since early 2020 as the outbreak of covid-19 virus that limits people's mobility and face-to-face contact to prevent the spread of the virus. That policy of social distance has urged the movement of learning from conventional classroom to online learning. This online learning has widely been becoming prominent as the people experience the advantages from the unprecedented condition. Therefore, this essay will explain the use of Computer-Assisted Language Learning (CALL) to teach academic writing within text-oriented approach for Higher Education Students in Indonesia.

This essay will cover the introduction, literature review, background of context, and practical application of teaching writing. Literature review comprises learning and teaching writing, academic writing for higher education students, text-oriented approach in teaching writing, and CALL for teaching writing. Background of context discusses the explanation of learners, the aim and objective, and materials. Practical application of teaching writing elaborates the implementation and issues arising and the solutions to the challenges using of CALL teach academic writing within text-oriented approach for Higher Education Students.

Learning and Teaching Writing

The learners of English as a Foreign Language (EFL) perceive writing as the hardest one amongst language skills (Kroll, 2001). The learners should initially understand linguistic features, a fundamental aspect in writing (Blackwell & Martin, 2011). The knowledge of linguistic competence determines writing proficiency, which requires explicit pedagogy in grammar and lexis (Hinkel, 2006, p. 124). McKay (1993, as cited in Hinkel, 2006) emphasizes that writing instruction covers grammar and vocabulary in course design to enable learners to communicate relevant and acceptable. Having acquired linguistic competence, the learners can continue to learn knowledge in writing for specific purposes, situations, and audiences (Fulwiler, 2002).

Kroll (2001) states that there are two components of the learning process in writing; writing and feedback. The teachers initially ask the students to write so they can check student's writing. Then, feedback will be provided upon their writing as a reflection to identify the weaknesses of the writing, which can gradually elevate students' writing skills.

Seow (2002) outlines that the process of writing, assumed as an individual activity, consists of four main stages; planning, drafting, revising, and editing. The main stage of the writing process does not work in linear lines but rather in a recursive manner (Seow, 2002; Harmer, 2004). Those stages are supported by the three external stages related to teachers' responses, responding, evaluating, and post-writing.

Table 1.
The Process of Writing (Seow, 2002)

Stages		Activities	
Students	Teachers		
Planning		generate tentative ideas and gather information	
Drafting		attempt to write focusing on the fluency of writing	
	Responding	teacher's quick initial reaction to students' drafts	
Revising		review texts based on the feedback given	
Editing		check language features and accuracy of materials	
	Evaluating	give an evaluation as an interpretation of the task	
	Post-writing	present and share writing	

Academic Writing for Higher Education Students

As a part of English for Academic Purposes (EAP), the need for academic writing competence highly raises awareness from university stakeholders. The role of EAP is perceived as essential to assist the students in their study and research (Flowerdew & Peacock, 2001), which heavily use academic writing as the medium to transfer information and knowledge. This demand urges the students to learn standard text to gain a more advanced academic writing level for their studies.

Teaching academic writing relates to English for Academic Purposes which initially begin with a needs analysis. At first, the teachers have to understand students' general ability in English and specific basic writing competencies (grammar and vocabulary), which formed as need analysis linking to the aims and objectives of an academic writing course and wants from the students. The students in academic writing class have generally taken basic courses related to English language skills. They need to elevate their writing competence for academic purposes or particular reasons (Escribano, 1999).

Being identified as "scientific and technical writing" (Shaw & Liu, 1998), academic writing contains serious thought with complex sentences style in a clear and well-planned organisation, intended for scholarly readers. It does not tolerate grammatical errors and inaccurate technical and academic vocabulary. In addition, academic writing has various general patterns: introduction, elaboration of main

ideas or arguments, and conclusions (Jordan, 1999). However, teaching academic writing for higher education students faces numerous challenges as academic writing has different levels of formality; reader, content, style, organisation, grammar, and vocabulary (Hamp-Lyons & Heasley, 2006).

There are some solutions to overcome the challenges of teaching academic writing. To begin with, the teachers can select some distinctive approaches, which are different from the approaches used in teaching other types of writing. In addition, the approaches should also consider the students of higher education as learners who need support and guidance. This consideration determines the use of modelling and stimulating with meaningful activities and practice (Grabe & Kaplan, 1996) as they do not have much time to learn. Therefore, considering the importance of learning as adult learners, higher education students should know and practice various texts and tasks.

Text-Oriented Approach in Teaching Writing

Text-oriented approach, or product-focus approach (Richards, 1990), was popular in the 1960s, concurrently with the domination of audiolingual method in language teaching instruction (Raimes, 1991). The use of "text-oriented approach in teaching writing is tangible and analysable by viewing it as a textual product" as it examines the text by identifying the standard surface features or discourse structure (Hyland, 2009, p. 8).

The text-oriented approach is still used, particularly for beginner learners, although it is the earliest approach of teaching writing. Text-oriented approach emphasises grammatical accuracy and clear exposition of the criteria (Hyland, 2009). The text-oriented approach is implemented by reinforcing accuracy in grammatical rules with the sequence of structured tasks. By focusing on grammar, the learners, who are assumed in the level of novice writers, can practice their knowledge of grammatical features that they have learned beforehand.

This approach also uses "controlled composition" or "guided writing" as the focus is on practical practice in the production of various types of texts and the prevention of mistakes (Richards, 1990). The text-oriented approach provides the

model text as an example for the students to imitate its linguistic forms (Raimes, 1991). The imitation of the text model enables the students to minimise errors and mistakes (Richards, 1990). Raimes (1991, p. 409) states that the exercise of this approach emphasises imitation of the text form, "using writing from an outline, paragraph completion, identification of topic and support, and scrambled paragraphs to reorder". In this way, the "students see the connection between what they are trying to write and what they need to write it" (Raimes, 1983, p. 8), or "what their final products should or should not look like" (Urquhart & McIver, 2005, p. 149). Urquhart and McIver (2005) state that the students are expected to collect ideas, that will be useful for their writing after they have completed reading and analysing the model text.

Johns (1997, pp. 93) states that the students can start to examine "how texts fit into a broader social context: of a classroom, a disciplinary community, or a larger culture" after learning numerous features in the text "as purposeful rather than arbitrary, as situated and generic rather than autonomous". Working with complete texts in this way, according to Thornbury (1997), enables consciousness-raising on a variety of levels, including discourse, grammar, and lexis, within a form-focused or meaning-focused syllabus.

However, there have been critiques over applying a text-oriented approach, such as the high reliance on accuracies such as the use of tenses, which is perceived inadequate to write a proper scientific paper, or general academic writing (Suharno, 2001). In addition, the learners obtain a lack in writing, which nurtures them to gain a more advanced level in writing (Richard, 1990). The teachers should anticipate drawbacks with solutions to deal with students' proficiency with the target of learning.

Computer-Assisted Language Learning (CALL) for Teaching Writing

The use of CALL is language teaching and learning has progressively emerged as the result of technological advancement. CALL is defined as "any process in which a learner uses a computer and, as a result, improves his or her language" (Beatty, 2010, p. 7). Its existence as a tool allows the learning process to advance and create higher innovation (Byram et al, 2001).

There are three main stages of historical progress in CALL; behaviouristic/structural, communicative, and integrative CALL (Warschauer & Healey, 1998) as presented in Table 1. The stage represents the advancement of technology linked with pedagogical approach in language learning. The era of behaviouristic/structural CALL is concurrent with the existence of the mainframe. The time of communicative CALL is linked with the use of PCs, and integrative CALL is supported by the rapid advance of multimedia and the internet.

The Three Stages of CALL

Stage	1970s-1980s: Structural CALL	1980s-1990s: Communicative CALL	21st Century: Integrative CALL
Technology	Mainframe	PCs	Multimedia and Internet
English-Teaching Paradigm	Grammar-Translation & Audio-Lingual	Communicate Language Teaching	Content-Based, ESP/EAP
View of Language	Structural (a formal structural system)	Cognitive (a mentally-constructed system)	Socio-cognitive (developed in social interaction)
Principal Use of Computers	Drill and Practice	Communicative Exercises	Authentic Discourse
Principal Objective	Accuracy	And Fluency	And Agency

Figure 1. The Three Stages of CALL (Warschauer, 2000)

The rapid changing of technology can decisively influence the development of CALL. In the early notion of using computers in language learning, language learning works within the boundary of technology. It runs without limitation that the learners face beforehand. In the years later, CALL, supported by technology, bridges people across places and times and escalates the number of foreign language learners.

Furthermore, CALL provides numerous advantages for the learners with flexibility and convenience with the time and place, broad access to communicate and interact with the teachers and other students, learner autonomy, helpful features, and authentic learning materials (Liu, 2013). In "authentic communicative

environments", the students can experience all four language skills (Warschauer & Healey). Kutlu (2013) states that CALL supports the learners in developing writing skills as the students perceive that computer use enhances creativity and improves their writing skills. In addition, CALL assists the learners with valuable features integrated into writing, such as spelling and grammar correction and thesaurus function (Beatty, 2010).

However, CALL has disadvantages as its use can be less user-friendly, more expensive, ineffective, insufficient interpretation and comprehension, unexpected and unprecedented learning (Al Mukhallafi, 2014). There are also health issues, lack of face-to-face communication, less supportive tools and medium, and the difficulty of quality control upon teaching and learning process (Liu, 2013). The problem also occurs in authenticity with unfamiliar idiomatic expressions perceived as too complex and unsuitable for the students, grammatical errors and inaccurate information that has not been checked, and useless contents that are very thick and intimidating (Teeler & Gray, 2000).

Topacio (2018) argues that the weaknesses of CALL are limitation of access to the internet, distractions, online-related distractions, lack of autonomous study habits, lack of guidance and communication, and lack of academic atmosphere and focus. Rahmawati (2016) adds the limitation of CALL within the context of education in Indonesia, such as time management, perception, organisation of interaction, high cost, and outcome-oriented. In addition, "teachers who are accustom to face-to-face learning find it difficult to manage their time in learning how to use computers or new technology" (Miftachudin, 2012).

Despite its advantages and disadvantages, the application of CALL in language learning, mainly writing, cannot be avoided as the advancement of technology, which urges people to use it. An unpredicted situation in which the learning process cannot be conducted in the class has been happening since early 2020. The situation has been forcing the conventional class to move into digital learning because of the outbreak of Covid-19 virus. The establishment of the

teaching and learning process, including language learning, heavily relies on using CALL following the policy of social distance to prevent the spread of the virus.

A summary of fundamental principles

Academic writing plays an essential role as the medium to transfer information and knowledge and gives a decisive impact to the students of Higher Education in the success of study and research. The complexity of academic writing adds students' anxiety in writing, which has been perceived as the most challenging skill to learn in a foreign language. A text-oriented approach in writing has been promoted to assist the process of teaching and learning for beginner learners. In addition, the use of CALL to teach academic writing has gained popularity in recent years as the impact of the rapid development of sophisticated technology and accessible internet.

Learners

In this context, the learners are non-native speakers in the fourth-year study at the private university with a range of ages between 21-23 years old. The number of students in the class is 15 people from the homogeneous study (undergraduate programme in civil engineering) with A2 level (elementary) of English proficiency. The class with a similar study and level is efficient language learning (Nunan, 1988). Since elementary schools, they have generally learned basic English; however, English is used only in classroom activities. The students are also subject to write the abstract of their final project in English. In this case, the students obtain additional English writing classes to translate the abstract into English.

The Aim and Objective

This material aims to enable the students of Higher Education, who wish to escalate their level of English, to use basic features of academic writing. The objective is to implement the use of CALL to teach academic writing, particularly an abstract, within a text-oriented approach for Higher Education Students.

Materials

The material is writing abstracts focusing on structure, content, and language function. Wallwork (2013) proposes two types of structures in the

abstract; the first consists of introduction, background, result, and implication, while another one covers introduction, background, methodology, results, and implications. The second type of structure is because of the appropriateness and convenience with the context.

Second, the writing content comprises paraphrasing sentences from the resources (Swales & Feak, 2012). Paraphrasing has important rules for writers to avoid plagiarism as the original text, the source of writing, is altered in the writer's way without changing the meaning (Bailey, 2006). Bailey states that there are three techniques in paraphrasing; changing vocabulary, changing word class, and changing word order.

Third, the material about language functions discusses the use of tenses, particularly simple present tense, which frequently occur in abstract and full text (Malcolm, 1987, as cited in Swales, 1990). The use of tenses in academic writing is also differentiated by the concept of time and temporal and non-temporal factors (Suharno, 2001). Although the use of tense in academic writing varies between scientific and non-scientific writing, this essay focuses on simple present to simplify students' understanding and exercises within the text-oriented approach. In addition, the use of simple present tense, which is popular in scientific writing (Swales, 1971), also suits the context of this essay in civil engineering.

RESEARCH METHOD

This research used qualitative library research method. The data were taken from books, journals, and online articles that talk about Computer-Assisted Language Learning (CALL), academic writing, and text-based approach. The writer chose the sources that are related with English Language Teaching (ELT), especially in Indonesian university context.

The sources were selected because they are useful and trusted. After collecting the data, the writer read and studied the contents to find important ideas, advantages, problems, and examples about how CALL is used in teaching academic writing. These ideas were then used to support the discussion in this paper. This research is a conceptual paper and not based on classroom action or field research.

Therefore, the data and explanation come from theories and previous research, not from experiment or observation.

RESULTS AND DISCUSSION

Practical Application of Teaching Writing

The practical application contains three steps; pre-activities, activities, and post-activities. **1. Pre-activities** (identifying students' wants and current ability). In the initial step, the teacher determines students' wants and current level in writing. Then, the students anonymously write their hope, difficulty, and anxieties in Padlet.com (Appendix, 1, Point 1, p. 14). The students need to understand what they have to know to improve their writing skills (Hutchinson & Waters, 1987). Hutchinson and Waters say that this activity of need analysis, is designed to help the students determine expectations in learning and recognise the needed skills. Thus, the teacher can make sure they are aware of what they can and cannot do to learn take consideration in preparing the materials and methods of teaching.

Having competed for the first task in pre-activities, the students continue to work on the second task, which is completing the questions to measure students' language level in grammatical and vocabulary knowledge using Quizizz.com (Appendix 1, Point 2, p. 15). This activity is established as inductive learning for the students, perceived as adult learners. The questions on grammatical knowledge cover the use of the tense, particularly simple present in the form of active sentence and passive voice. Furthermore, vocabulary questions comprise seven categories; fill in the gaps, choose the right word, finish the sentence, word substitution, choose the best word, and make a collocation (Porter, 2007).

The processes of pre-activities rely on the application of web-based learning conducted by the students who work individually. Then, they should finish the tasks before the class begins. Therefore, they have slightly prepared the fundamental knowledge to start learning writing in the classroom. 2. Activities (establishing the process of teaching and learning writing). The establishment of a writing class is conducted using internet-based applications, such as Zoom, Teams, or Google

Meet, which have been commonly used and can be chosen based on the availability of the teacher and students.

The set of tasks and exercises on academic writing (abstract), conducted using CALL based on the materials (structure, content, language functions) and stages of teaching writing, was promoted by Seow (2002). Seow proposes the four main stages; planning, drafting, revising, and editing and three additional external stages; responding, evaluating, and post-writing (Appendix 2, pp. 19-20).

In the step of planning, the teacher collects ideas from students' project to elicit the information (Appendix 2, Point a). Then, the process of drafting uses Padlet.com as a medium to write the texts after explaining tenses, academic word list (Uefap.com), and structure of abstract (Appendix 2, Point b). The teacher continues the step to responding in which the students are asked to read other students' work and react to others' drafts (Appendix 2, Point c).

Further, as some students' work analyse together, the process of revising involves reviewing and comparing students' draft with the model text (Appendix 2, Point d). Then, the process of imitation is conducted in the step of editing before the evaluation from the teacher (Appendix 2, Point e). The step of evaluation enables the students to express their opinion (Appendix 2, Point f). The last, the teacher asks the students to read other students' works and ask them to paraphrase one of them (Appendix 2, Point g). **2. Post-activities (training students' writing with knowledge of text construction).** In the post-activities, the teacher asks the students to take one of others' work and paraphrase it for homework (Appendix 2, p. 20). This activity is one of the advantages of CALL, which provides flexibility and convenience with the time and place and promotes learners' autonomy in learning (Liu, 2013). By this activity, the students are expected to train themselves in writing academic texts, which are then discussed in the next meeting as the solution for ineffective time management in CALL mentioned by Rahmawati (2006).

An Exploration of Issues Arising and The Solutions

At first, the students may pragmatically write the text using google translate in which the students simply copy and put the text in that internet service. The students ignore the appropriateness of word order, grammatical features, level of certainty and other characteristics of academic writing due to the tendency to finish the tasks in short time and low level of students' English proficiency. The teacher is encouraged to give the students an understanding that learning writing needs process as the set of activities that have been presented. The process of learning will gradually enable the students to write academic writing.

The next issue deals with applying a text-oriented approach, which mainly highlights accuracy in the use of simple present tense (Suharno, 2001). However, the use of simple present is actually designed for the beginner students as it has been explained in the context. Therefore, the students need to compare their writing with model text (Appendix 4, p. 22) which can generate students' understanding of various tenses in academic writing. In addition, they can learn the application of other tenses after finishing the material in this context.

The problem with the lack of vocabulary has led the students to the incapability of writing in English. The solution for this issue proposes the students to use the embedded program in word application on personal computers and laptops. They can also use a web-based application such as Thesaurus.com to look up the synonym of the words to assist them in paraphrasing the sentences. The use of Thesaurus.com provides word choices for the students regarding the appropriateness of vocabulary to replace others (Appendix 5, p. 23).

Furthermore, the issues mentioned in the literature review (see *CALL for Teaching Writing*, page 6) include perception, high-cost, less user-friendly, insufficient interpretation and comprehension, less supportive tools and medium, and other problems have been less relevant in this context. The advancement of technology has mostly solved the problems that become barriers to CALL's implementation in teaching writing beforehand. However, the teachers should be aware of the problem that deals with educators' roles within the advance of

technology that enable the students to learn individually. Therefore, there should be values of learning in teaching writing which cannot be replaced by the unthinkable progress of technology such as Artificial Intelligence (AI) that provide features in education without much effort of thinking.

CONCLUSION

In conclusion, the use of Computer-Assisted Language Learning (CALL) to teach academic writing is invaluable, especially for higher education students in Indonesia. Writing is one of the most difficult skills to learn in English, and academic writing is even more complex. Using a text-oriented approach can support beginner students because it focuses on grammar and writing structure. CALL provides many benefits, such as flexibility, useful features, and real examples, which help students learn better. Even though CALL also has some problems, like internet access and lack of interaction, teachers can prepare excellent plans to overcome them. By using CALL and the text-oriented approach together, students can improve their writing step by step, starting from the basic knowledge until they are able to write a good academic abstract. This combination is a favorable solution to assist non-native English learners develop their writing skills in the digital age.

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