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مجلة البحث العلمي في التربية (JSRE)

دورية علمية محكمة تصدر عن كلية البنات للآداب
والعلوم والتربية - جامعة عين شمس.

الاصدار: ربع سنوية.

اللغة: تنشر المجلة الأبحاث التربوية في المجالات
المختلفة باللغة العربية والإنجليزية

مجالات النشر: أصول التربية - المناهج وطرق
التدريس - علم النفس وصحة نفسية - تكنولوجيا التعليم
- تربية الطفل.

الترقيم الدولي الموحد للطباعة ٢٣٥٦-٨٣٤٨
الترقيم الدولي الموحد الإلكتروني ٢٣٥٦-٨٣٥٦

التواصل عبر الإيميل

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استقبال الأبحاث عبر الموقع الإلكتروني للمجلة
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Utilizing the Social Constructivist Approach via Online Learning Environments to Enhance English Majors' Critical Writing Skills

Dr. Amr F. Abdelwahab*

Abstract

The current study aimed at investigating the impact of the social constructivist approach (SCA) via online learning environments on EFL students' critical writing skills. Sixty-four English major senior students were randomly chosen and assigned to an experimental group (n=32) and a control one (n=32). A pre-post critical writing test to assess students' level before and after the treatment, and semi-structured interviews to gather qualitative data were used as the study instruments. Findings indicated that using the SCA via online learning environments had a significant impact on the students' critical writing skills. Hence, curriculum designers and EFL instructors need to utilize the different features of the SCA, as well as incorporate various online learning tools, in order to enhance students' critical writing skills.

Keywords: Social constructivist approach, online learning environments, critical writing.

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توظيف المدخل البنائي الاجتماعي في بيئات التعلم عبر الانترنت لتنمية مهارات الكتابة الناقدّة لدى طلاب شعبة اللغة الانجليزية

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الملخص:

يعد المدخل البنائي الاجتماعي من اهم المداخل التي يؤكد عليها التربويون في مجال تعلم اللغة الانجليزية كلغة اجنبية، كما اهتم الباحثون بالتركيز على أهمية البعد الاجتماعي للتعلم عبر الانترنت في احداث التعلم . لذا تهدف الدراسة الحالية الى تقصي توظيف المدخل البنائي الاجتماعي في بيئات التعلم عبر الانترنت لتنمية مهارات الكتابة الناقدّة لدى طلاب الفرقة الرابعة بشعبة اللغة الانجليزية بكلية التربية النوعية، وتألّفت عينة البحث من (٦٤) طالباً و طالبة تم تقسيمهم الى مجموعتين (تجريبية ن = ٣٢، و ضابطة ن = ٣٢)، كما تمثلت أدوات الدراسة في اختبار الكتابة الناقدّة (لقياس مستوى الطلاب قلبياً و بعدياً في مهارات الكتابة الناقدّة ككل و كل مكون من مكوناتها)، وكذلك المقابلات شبه المنظمة للحصول على اجابات اكثر عمقا حول استخدام الطلاب للمدخل البنائي الاجتماعي في بيئات التعلم عبر الانترنت. و قد توصلت النتائج الى وجود فروق ذات دلالة احصائية بين متوسطى درجات المجموعتين التجريبية و الضابطة في اختبار مهارات الكتابة الناقدّة لصالح طلاب المجموعة التجريبية.

الكلمات المفتاحية: المدخل البنائي الاجتماعي; بيئات التعلم عبر الانترنت ; مهارات الكتابة الناقدّة.

Utilizing the Social Constructivist Approach via Online Learning Environments to Enhance English Majors' Critical Writing Skills

Introduction

Foreign language learning process implies utilizing various social, cultural, psycholinguistic and cognitive aspects; which contributes to the success of EFL learners. Such aspects, along with knowledge construction, need to be emphasized in order to help EFL learners recognize the logical organization of the content, reflect on their own and others' ideas, understand the learning environment, and engage in interactive learning communities. According to McKinley (2015) current trends in TEFL instruction advocate the use of social constructivist learning that promotes learners' participation in various joint activities, rather than being involved in individual language learning activities. Classes, therefore, are considered a society in which learning occurs through collaboration, peer interaction, and learners' choice of various authentic tasks and experiences. In addition, Mohammed and Kinyó (2022) stressed the importance of adopting the SCA as the basis to design and develop an effective learning environment.

Meaningful learning opportunities can occur when students are allowed to practice different tasks that are authentic and real-world-related. This can happen through social interactions, collaboration and exchange of knowledge that occurs between peers and experts. Students can also learn how to make decisions and solve problems similar to those of real life (McKinley, 2015). When students are engaged in collaborative authentic tasks, they are likely to gain the ability to manage their performances and enhance their top-level skills, especially their critical skills. They may also explore different points of view, learn how to deal with various problems through approaching them from different perspectives, and construct meanings or find solutions.

Teachers, during EFL writing classes, need to incorporate different socio-cultural conventions of written discourse in various collaborative learning settings. Such conventions focus on the interpersonal and communicative nature of writing, including how readers receive and process the given message (Abdelwahab, 2020b; Lantolf & Throne, 2006). In addition, when students recognize their social interactions, they become able to understand their position

and perspectives as compared to others within the target cultural community. Hence, students recognize the interpersonal and ideational relationships, as well as construct their cultural and academic identity when they attempt to make language choices in order to persuade readers (McKinley, 2015. p.6).

McKinley (2015, p.3) maintained that critical writing is considered a social activity that requires students to generate interactive discussions aimed to deepen their understanding, and sharpen their critical and reasoning abilities. This view emphasizes the role of constructive writers who evaluate opposing perspectives and generate a mutual construction of knowledge. Conyers (2010) affirmed that it is necessary for EFL students to enhance their critical writing abilities. Thus, they can develop their own perspectives and defend a certain position on the text based on their own background knowledge.

In spite of the importance of critical writing in EFL pedagogy, college EFL students face various challenges in developing their critical writing skills. Such challenges stem from the academic setting where they are exposed to other cultures, as well as factors related to their cultural and social identities. Similarly, EFL learners can be exposed to cross cultural arguments and face intercultural challenges (Gómez-Estern, Amián, Sánchez Medina, & Marco Macarro, 2010, p.232).

McKinley (2013) affirmed that EFL students lack the ability to write critically. They are unable to identify biases or make informed and logical decisions. They indicate their inactivity in different discussion-based activities, which prevents them from expressing their own thoughts, sharing their voices and questioning various ideas. They also show their avoidance in various social situations as they think that it is better to remain silent and not to ask questions. Cho (2022) also affirmed that despite the importance of critical writing, EFL learners have many misconceptions regarding the use of critical language skills and argument. They think that argument includes just taking an opposing stance through criticizing the views and ideas of others. EFL learners, on the other hand, need to be involved in practices that allow them to evaluate and analyze information rather than completely denounce others' points of view.

It is necessary for EFL students to demonstrate their abilities in critical writing. This may be achieved through fostering interaction and engaging students in social communication activities which require negotiation,

discussion, modification and rephrasing. Students should also learn how to validate authors' argument through distinguishing between relevant and irrelevant information, establishing a position toward the argument, and finally delivering argument in a coherent manner. Hence, it is vital to adopt approaches that stress constructed behaviour, scaffolding, collaboration and information transfer. The current study, therefore, attempted to utilize the SCA via online learning tools to develop English majors' critical writing skills.

Context of the problem

To make sure of the current study problem, a pilot critical writing test was administered to 75 English major senior students at the Faculty of Specific Education, Zagazig University during the academic year (2021-2022). It was found that 89% of the students exhibited low levels on the pilot critical writing test. They lacked the ability to (a) question the author's ideas, (b) develop an argument, (c) analyse and evaluate different ideas and information in the text, (d) compare and contrast authors' views, and (e) justify their claims. This result was supported by previous research. For example, Matruglio (2016) noted that EFL freshmen students were unable to write critically. They could not utilize information from different sources in order to support the given topic. They assumed that all ideas in the text were true and could be considered as facts. In addition, Bennett (2018) added that English language instruction does not pay adequate attention to examining and exploring critical writing skills. EFL students struggle to grasp the meaning of critical writing and face problems to demonstrate their critical skills in argumentative writing. They cannot also implement critical thoughts when writing their essays. Furthermore, Mohammed (2020), in her investigation of the critical writing skills, administered an EFL critical writing test on 30 EFL students. It was noted that the students could not raise any argument. They just produced descriptive paragraphs without even considering their points of view.

Statement of the problem

The problem of the study could thus be stated in the low level of English major senior students' critical writing skills. Thus, the study attempted to answer the following questions:

1. How can the SCA via online learning environments be utilized to enhance students' critical writing skills?
2. What is the impact of using the SCA via online learning environments to enhance students' critical writing skills?

Hypotheses

The following hypotheses were formulated:

1. There is a statistically significant difference at (0.01) level between the mean scores of the experimental group students and those of their control peers in the EFL critical writing skills post-test results, in favour of the experimental group students.
2. There is a statistically significant difference at (0.01) level between the mean scores of the experimental group students in the pre- and post-results of the EFL critical writing skills test, in favour of the post-results.

Significance of the study

The present study is expected to provide curriculum designers with insights into how to utilize the SCA and online learning tools to enhance students' critical writing skills. It may also assist them to incorporate different web-based cognitive tools that help students reduce the cognitive load and improve their critical skills. It may guide EFL instructors to stress the necessary critical writing skills when involving students in different writing tasks. In addition, it may help students recognize arguments, use evidence and support their claims when writing. Furthermore, the study may draw attention towards how to assess students' critical writing skills.

Definitions of terms

Critical writing

It is the process through which learners analyse and evaluate ideas from different sources on the basis of the given argument and evidence (Conyers, 2010, p. 45).

According to the present study, critical writing is a style of writing through which students engage in processes that allow them to critically examine written material, analyse arguments, comment on others' works and

consider every aspect of a problem. It also requires students to compare and contrast views, make claims and provide evidence, evaluate ideas and claims, and justify the use of certain claims.

Social- constructivism

It refers to a theory of knowledge construction through examining background information, understanding the world, rationalizing experiences and recognizing how the social world functions. Hence, meaning is co-constructed in coordination with other learners and the outside world (Leeds-Hurwitz, 2009).

According to the present study, it refers to engaging students in various instructional methods that help them activate and scaffold their schema, explore their ideas, and share their knowledge within an interactive learning community whether online or face-to-face. It also aims at supporting students in commenting, questioning, reflecting, reviewing, and finally communicating with peers or groups in authentic social contexts.

Review of Literature

Instruction in a foreign language does not merely aim at recognizing the teaching and learning of another linguistic system; rather, it aims at understanding the cultural and social knowledge, as well as assisting learners to examine their understandings through developing different critical approaches. Woodhouse and Wood (2022) suggested that foreign language programs are expected to emphasize critical pedagogy and, therefore, enhance students' ability to engage in teaching and learning situations as critical constructors of knowledge. Such language programs involve three main traits: (a) the language is used as a tool to enhance students' critical reasoning; (b) critical reasoning is provided within the foreign language classroom; and (c) independent learning and active engagement are fostered in students.

EFL writers need to experiment with various types of arguments and examine the presented ideas when attempting to persuade readers of the critical arguments within the text. They can utilize various arguments existing in a relevant source as the basis for their thoughts. Thus, they can mimic certain features of language and utilize different perspectives from the assigned sources (Abdelwahab, 2020a; McKinley, 2013). Besides, students can use different

ways to generate and develop interactive argumentative discussions, such as taking a stance based on their background knowledge, supporting this stance with source evidence, and then deciding on a particular stance in accordance with the evidence. Students can thus be engaged in tasks that allow them to produce inductive or deductive writing, autobiography, and authorial or discursal self (McKinley, 2015, p.5).

Critical writing contributes to encouraging students to become active constructors of their own learning and overcome various cultural and social discourses. This can occur through optimizing the social constructivist learning environment. According to this view, the instructor is no longer considered as the only source of learning (i.e., the one depositing concepts and knowledge in the students). Instruction is rather seen as a setting in which new knowledge, either represented in the experiences of students or grounded in the background knowledge of the teacher, is constructed through collaborative and meaningful interactions (Elola & Oskoz, 2011).

Recently, EFL writing research has stressed the importance of social constructivism concepts, such as Vygotsky's notion of scaffolding (Lötter & Jacobs, 2020; Mohammed & Kinyó, 2022). In addition, McKinley (2015, p.11) maintained that when scaffolding occurs through students' interaction with more knowledgeable or experienced peers, they become able to enhance their own skills in order to reach higher levels of competency. Scaffolding can take the form of focused assisted instruction, with extensive modeling, at the early stages. Such focused support is then reduced in order to allow students to actively engage in the writing process through negotiating their thoughts, which encourages them to be independent, critical and autonomous writers.

Lantolf and Throne (2006) maintained that the SCA functions as a comprehensive framework that is useful for providing qualitative analysis in order to gain insights into how learners interact with others and the world. Such approach affirms that when students produce written materials, they build on their actual socio-cultural knowledge and that their thoughts coincide with their own experiences and interests. Besides, students who share their ideas and practice scaffolding are able to establish ownership of writing and produce accurate rhetorical contexts. This results in enhancing their critical skills and deepening their level of topic familiarity.

The social constructivism perspective views writing as a co-constructed process stressing the larger community of learners who collaboratively engage in knowledge-building; rather than focusing on individually-based instruction. Such perspective is important to gain insights into the various collaborative stages of writing, along with the co-construction of knowledge which occurs through collaborative work (Storch, 2011). Thus, writers act as guides who obtain information and knowledge to help novice readers acquire different ideologies, values and practices that assist them in utilizing and interpreting information appropriately. This requires readers to be critical in order to determine writers' purposes and strategies and consider them when producing or interpreting a text.

To Lee (2017), learners may struggle when being exposed to a target-language context as their cultural identity may be isolated and marginalized due to social distance that may occur between them and the target culture. The SCA can, therefore, be used to enhance students' awareness of constructing their social and cultural identity in their own written texts (i.e., their understanding of the ways of arguing and their perception of themselves).

Within the development of social and cultural identity, EFL writers form their own perspectives in the form of different selves (i.e., autobiographical, authorial and discursal selves). Such selves are constructed and utilized based on the writer's experience, the socio-cultural aspects and the task (Gómez-Estern et al., 2010). The autobiographical self focuses on using the writer's self-experience and initiation towards a given discourse as evidence. The authorial self requires the reader to assert various claims, whether substantiated or personal. Hence, EFL writers are involved in critical thinking processes through forming an authorial position. In discursal self, EFL writers adopt an objective approach in which others' views support claims without relying on personal language. These different forms of selves are revealed in the attempts of EFL writers to persuade readers via various forms of argumentation.

Ideally, the SCA is considered as a valuable source for revealing EFL writers' identity and their critical argument, as it emphasizes how learners construct meanings and reach understandings through social interactions. Writing is not the product of isolated learning; rather interactions occur between texts, writers and readers. Hence, a learning community is constructed in which

learners understand their cultural and social identities. This is fundamental to the understanding of the social constructivism theory, as it stresses the inter-subjective sharing of information that shapes learners' behaviours through establishing their identities as members in an established learning community.

To McKinley (2015, p.16), the sociocultural norms of writing (e.g., interpreting written material to provide evidence for one's own claims, boosting and hedging claims, and addressing opposing claims) contribute to the enhancement of critical thinking processes through integrating both identity construction and critical argument. This helps learners seek alternatives and reasons that allow them to make reasonable decisions, as well as engage in various communicative acts that enable them to construct a sociocultural identity. Figure 1 illustrates the relationships between the different elements involved in the socio-cultural theory.

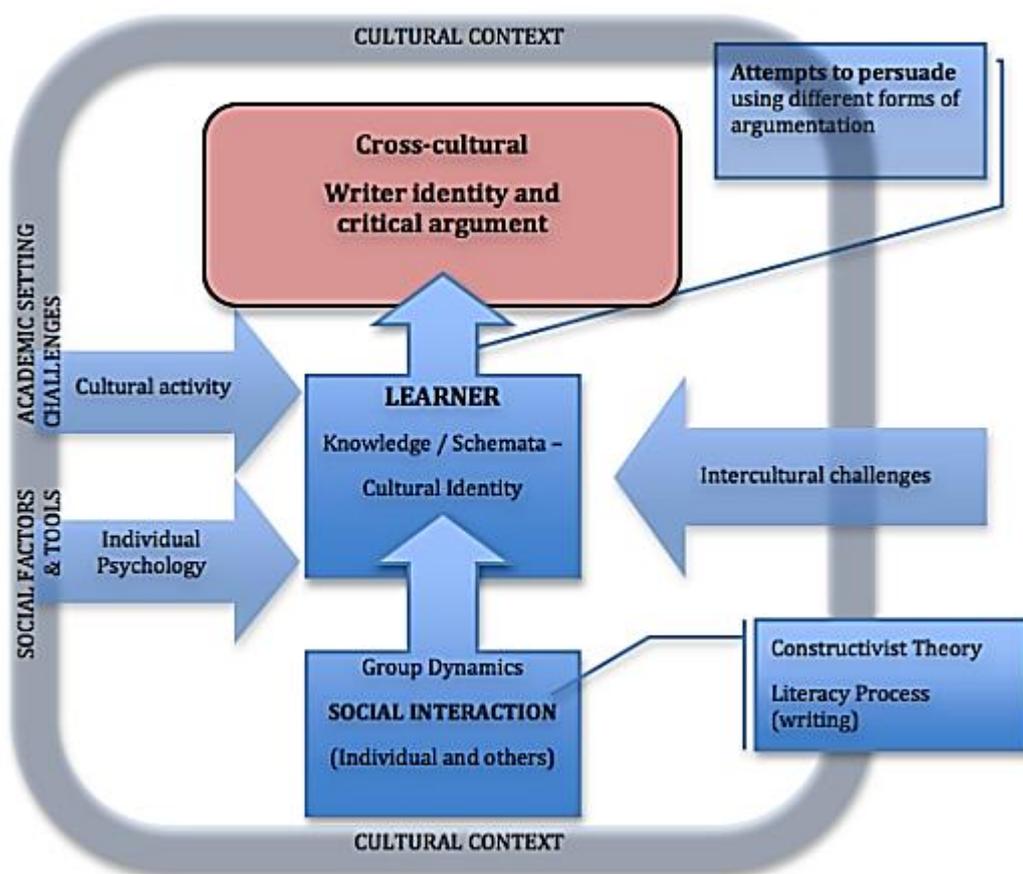


Figure 1: A framework of concepts in socio-cultural theory (McKinley, 2015, p. 22)

The social constructivist view, therefore, considers the notion of writer's identity as the dynamic aggregate of a writer's beliefs that are formed in a social discourse (Gómez-Estern et al., 2010). Students, therefore, can construct their cultural and social identity with respect to various groups they engage with. McKinley (2015, p.9) posited that social constructivism focuses on establishing writers' identities and emphasizing critical thinking abilities through influencing different power structures influencing their lives. It also helps writers understand the pragmatics of English writing, such as understanding various task assignments and structuring well-developed essays.

Recent studies affirmed the need to utilize the SCA in the context of English language learning (e.g., Liu & Lan, 2016; Mohammed & Kinyó, 2022; Safari & Pourhashemi, 2016). Besides, Lötter and Jacobs (2020) stressed the importance to conduct research based on social constructivist theory and recommended that more studies need to be investigated, particularly focusing on students' writing.

Liu and Lan (2016) examined the impact of the SCA in a web-based learning environment on EFL learners' vocabulary knowledge and their perceptions on using Google docs. Two classes were selected and divided into two groups (one group worked individually and the other one worked collaboratively). Instruments involved a vocabulary test and semi-structured interviews. Results showed that students in the collaborative group outperformed those who worked individually in terms of vocabulary knowledge and perceptions towards using Google docs. Using a longitudinal case study, Safari and Pourhashemi (2016) examined the professional development of an EFL student teacher from the perspective of the SCA. Semi-structured interviews, reflective journals and observations were used as instruments to obtain data. During a three-year-time span, the process of professional development was examined and analysed. The participant's behaviours, attitudes and professional knowledge were also observed. It was found that social interaction and collaboration led to enhancing the participant's professional development, as well as reconstructing knowledge, cognition and beliefs to cope with the demands of the educational setting.

With the advent of technology, it has become possible to construct new meanings collaboratively and exchange information in new ways (Lötter & Jacobs, 2020). The process of learning and teaching is no longer restricted to the four walls of classes, and students are no longer bound by space or time. Technology has now become an integral part of higher education and has had an effective impact on English language learning (Teng & Wang, 2021). Such changes have allowed students to learn anytime through collaboration and reflection among peers and teachers and have connected educators, students, resources and learning activities into an interactive and collaborative learning environment. Therefore, this can help students personalize the learning process and promotes student-centered learning.

Using technology, especially web applications, can be utilized to promote students' participation and collaboration. This entails involving students in determining their own learning goals, valuing their prior knowledge and experience, as well as integrating different social applications as interactive tools to stimulate community learning and collaboration (Campión, Nalda & Rivilla, 2012).

Social constructivist learning within a technology-based environment focuses on embedding various real-world problems into teaching and learning situations, which encourages students to work collaboratively within an interactive community. Such problem-based collaborative environment supports learners in the process of knowledge construction. Educators should, therefore, not only support learners to interpret information but also inspire them to evaluate and analyse their thoughts.

Such pedagogical change forms a networked learning community that focuses on instructing students using a) lectures and lessons, b) multimedia technologies, and c) web-based applications. Lectures and lessons are introduced to help students acquire new concepts, extend their knowledge and enhance their skills. Multimedia technologies involve incorporating software design, media elements, and hyperlinks. Web-based applications (such as, portfolio sharing platforms, collaborative presentation tools, blog sites, wiki writing sites, and social networking groups) are utilized to mediate interactive collaboration and social interaction among students (Teng & Wang, 2021, p.4).

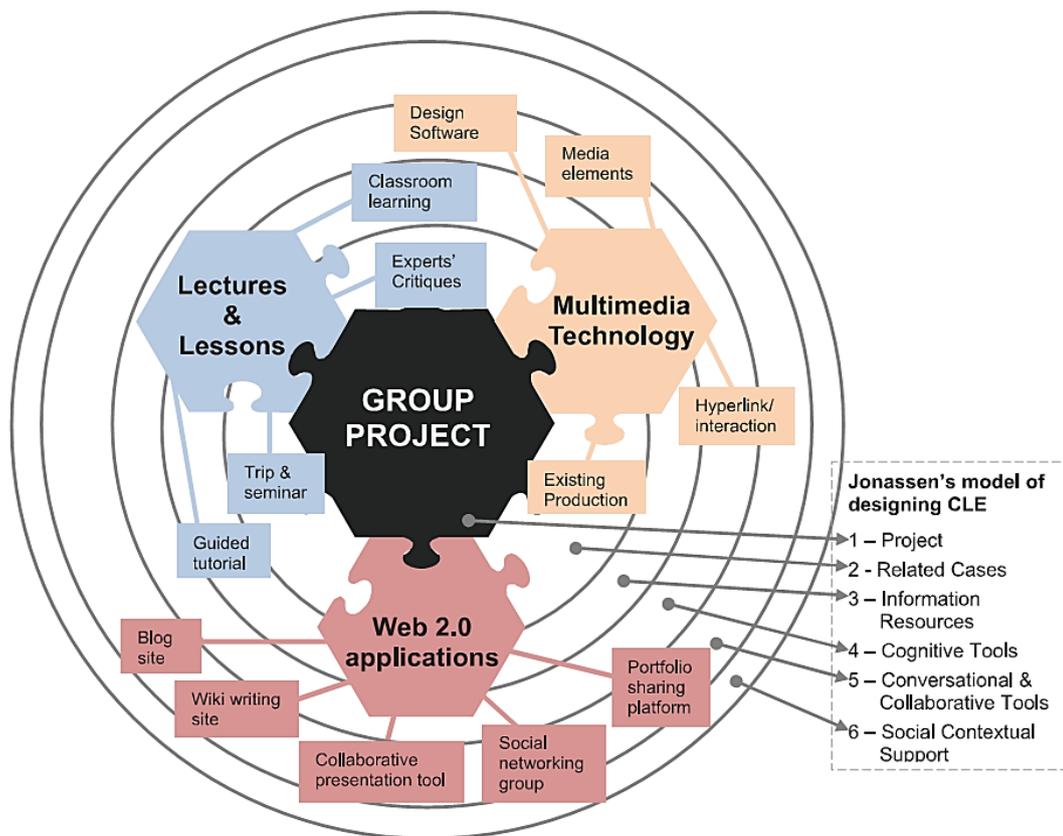


Figure 2: Forming a networked learning community (Teng & Wang, 2021, p.5)

Recently, studies have stressed the importance of using the SCA and technology tools to enhance various English language skills (e.g., Ebadi & Rahimi, 2019; Lötter & Jacobs, 2020; Mohammed & Kinyó, 2022; Olson, Wang, Olson, & Zhang, 2017). Conducting a corpus-based study, Olson et al. (2017) investigated college students' use of web-based applications within a collaborative writing environment. The aim was to examine students' behaviour when writing collaboratively in Google docs. A group of 96 college students were chosen and divided into small collaborative groups (each group had four members). They created their documents and submitted them to a folder that the instructor had access to. The final documents reflecting the students' collaboration and processes were graded and then analysed. Data analysis showed that students accomplished their writing tasks using both synchronous and asynchronous modes, as well as exhibited a wide variety of styles and roles. In addition, the documents that involved balanced participation were judged to be high in quality.

Following a mixed-method approach, Ebadi and Rahimi (2019) investigated the effect of online dynamic assessment (DA) in a social constructivist environment on three EFL college students' writing performance. They also explored the impact of mediations in DA and the students' perceptions towards the online DA. Instruments included: (a) IELTS writing tasks to assess students' writing performance, and (b) semi-structured interviews to investigate their perceptions of online DA. Findings indicated improvement in students' writing performance in all areas of lexicon, coherence and cohesion, grammatical range, and task achievement. Interview data showed that the students had positive perceptions towards the online DA.

In spite of the importance of utilizing modern technology, there is a gap between formal education settings and students' learning mode (Woodhouse & Wood, 2022). In addition, limited work is conducted to utilize the social constructivist pedagogical perspective through online learning tools. The current study, therefore, focuses on using the various interactive features of social applications and discussion dashboards within the social-constructivist view to enhance EFL critical writing skills. Hence, students can manage, reorganize, sort and recreate the content using various web technologies and applications that enable them to proceed based on their interests and personal needs.

Method

Participants

Sixty-four English major senior students at the faculty of Specific Education, Zagazig University were chosen as the study participants. Students at this stage are required to develop higher order level skills and experiment with different types of discourse. Besides, they reported low levels of critical writing compared to their expected level as they are supposed to interpret, analyse and evaluate arguments. The average age of the participants ranged from 20 to 21. They were randomly divided into two groups: an experimental group and a control one. To make sure that both groups were homogenous, the EFL critical writing skills test was pre-tested.

Table 1

Pre-test results of the experimental and the control groups in the critical writing skills test

| Group | No. | Mean | S.D | t-value |
|-------|-----|--------|--------|---------|
| Exp. | 32 | 3.6562 | 1.4725 | -0.0782 |
| Cont. | 32 | 3.6875 | 1.7121 | |

t-value is not significant at (0.01) level

Study design

The current study adopted a mixed-method design in which both quantitative and qualitative data were collected and analyzed. Sixty-four students were randomly selected and assigned into two equal groups: an experimental group (receiving instruction using social constructivism via online learning environments) and the control one (receiving regular instruction). The experiment continued for two months and a half during the second semester of the academic year (2021-2022). Seven participants were selected to take part in the qualitative analysis. After the treatment, the participants' critical writing level was post-tested to find out any statistical differences.

Instruments

In order to collect quantitative data, a pre/post critical writing test was designed (See Appendix B) and submitted to a jury of experts in the field of TEFL to determine the validity. For reliability, the test-retest method was used to determine its internal consistency (0.81). In addition, the test was piloted on a random sample of 40 students to determine its clarity and suitability. The final form of the test consisted of three parts: part one and two required students to read statements or a passage and then write a critical essay following the guidelines given, whereas part three required students to interpret information about world's population and distribution during a period of time and then write a 100 word critical paragraph. A critical writing rubric was designed to assess the students' performance on the test. For qualitative analysis, semi-structured interviews were used to probe into the students' experiences, as well as their thoughts and practices concerning the intervention.

Study material

Based on the different features of the SCA and web technologies, three suggested units were designed to develop English major students' critical

writing skills. The units aimed at enhancing students' EFL critical writing skills in terms of comparing and contrasting writers' views, determining the validity of ideas and evaluating information, interpreting given information, making and justifying the use of claims and evidence, and evaluating the use of claims. They also aimed at fostering collaboration and interaction among students, providing opportunities to engage students in online collaborative work, and strengthening their abilities to utilize online learning tools.

Based on Jonassen's (2003; 2006) model of social constructivism learning using technology, the following procedures were conducted in the implementation of the suggested units.

a. Creating a project

At this stage students were asked to investigate authentic real-world problems. The aim was to engage students with challenging open-ended questions that allow them to apply their skills and background knowledge, as well as adopt their own approaches. Students were asked to form hypothetical questions about imaginary situations through introducing a what-if situation. Being involved in genuinely challenging questions, students had the opportunity to do deep research, reflect on their thoughts and reach a solution. Hence, they were allowed to delve into the content and form real-world applications.

After sharing their answers of hypothetical questions, students were allowed to log into the "Now Novel" outlining dashboard. They were asked to develop their ideas and drafts on narrative topics, using different resources (e.g., videos, dashboard guides, outlines). Students, at this stage, were encouraged to brainstorm their ideas and develop their drafts. Using the dashboard guide, they could explore their interests of the topics provided and choose from a wide variety of topics that they found interesting.

b. Problem representation

Having completed the project stage, students were asked to use the central ideas in the dashboard to outline and represent their ideas of the hypothetical questions. They had the opportunity to brainstorm new ideas that are relevant to the problem and develop their drafts. They were also allowed to investigate related cases of the given problems.

c. Using information resources and cognitive tools

At this stage, students were provided by relevant information to support their ideas, as well as help them understand new relations and inspire different possible solutions. Students utilized web-based resources and cognitive tools (e.g. hypermedia, semantic networking, info-graphics, and other computer-based graphic tools) in order to support their higher thinking skills and their intellectual abilities. Using cognitive tools aimed at scaffolding students' learning through (a) representing concepts in a meaningful way, (b) modeling cognitive strategies and techniques, (c) reducing students' cognitive load so that they can enhance their higher-order cognitive processes, (d) guiding them through different complex tasks, and (e) supporting their self-regulation. In addition, cognitive tools provided students with the necessary feedback in order to scaffold their conceptual change in case they do not understand a task or a topic.

d. Collaboration tools and social support

Students were allowed to engage in various interactive tasks through forming collaborative communities, which helped them negotiate meanings and construct knowledge. They were also engaged in a networked community that helped them organize and share their ideas and their interrelationships. Dynamic interactions and active participation were also encouraged during this stage through providing opportunities to create groups within the online community.

Results

For the current study purpose, quantitative and qualitative data analysis was performed. For quantitative analysis, t-test for paired and independent samples was used to find out whether or not the experimental group students performed better than their control peers. Semi-structured interviews, on the other hand, were used for qualitative analysis. In addition, the results were presented in light of the study hypotheses.

Testing the first hypothesis

The first hypothesis states that" there is a statistically significant difference at (0.01) level between the mean scores of the experimental group students and those of their control peers in the EFL critical writing skills post-

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test results, in favour of the experimental group students". Independent Sample t-test was, therefore, used to reveal any significant differences.

Table 2

Post-test results of the experimental group and the control one in the critical writing skills test

| Sub-skill | Group | N | Mean | S.D | t. Value | DF | Sig. |
|---|-------|----|--------|-------|----------|----|-------|
| Comparing and contrasting the views of authors | Exp. | 32 | 3.6562 | 0.482 | 25.08 | 62 | 0.000 |
| | Cont. | 32 | 0.562 | 0.504 | | | |
| Determining the relevance or validity of information | Exp. | 32 | 3.43 | 0.564 | 19.01 | 62 | 0.000 |
| | Cont. | 32 | 0.68 | 0.592 | | | |
| Evaluating the relative significance of details | Exp. | 32 | 3.56 | 0.504 | 23.98 | 62 | 0.000 |
| | Cont. | 32 | 0.781 | 0.420 | | | |
| Making claims and providing evidence to support them | Exp. | 32 | 3.2812 | 0.522 | 20.93 | 62 | 0.000 |
| | Cont. | 32 | 0.625 | 0.491 | | | |
| Interpreting information to extract relevant evidence | Exp. | 32 | 3.3125 | 0.470 | 17.66 | 62 | 0.000 |
| | Cont. | 32 | 0.75 | 0.672 | | | |
| Evaluating the strengths and weaknesses of claims | Exp. | 32 | 3.218 | 0.608 | 16.062 | 62 | 0.000 |
| | Cont. | 32 | 0.843 | 0.574 | | | |
| Justifying the use of evidence for a particular claim | Exp. | 32 | 3.375 | 0.491 | 18.72 | 62 | 0.000 |
| | Cont. | 32 | 0.75 | 0.622 | | | |
| Overall critical writing skills | Exp. | 32 | 23.843 | 1.779 | 39.635 | 62 | 0.000 |
| | Cont. | 32 | 5.00 | 2.016 | | | |

Table 2 indicates that students of the experimental group outperformed their counterparts in the control one in the overall critical writing and its sub-skills. The experimental group gained higher mean scores in each critical writing skill (ranging from 3.656 to 3.218) and overall critical writing (39.635); whereas the control group had lower means in each critical writing skill (ranging from 0.843 to 0.562) and overall critical writing (5.00). Moreover, the t-value for overall critical writing (39.635) is statistically significant at (0.01) level. Hence, the first hypothesis is verified.

Testing the second hypothesis

The second hypothesis states that "there is a statistically significant difference at (0.01) level between the mean scores of the experimental group students in the pre- and post-results of the EFL critical writing skills test, in favour of the post-results". Paired Sample t-test was, therefore, used to find out any significant differences.

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Table 3

Comparing the pre- and post- results of the experimental group in the critical writing skills test

| Sub-skill | Measurement | N | Mean | S.D | t. Value | DF | Sig. |
|---|-------------|----|--------|--------|----------|----|-------|
| Comparing and contrasting the views of authors | pre | 32 | 0.437 | 0.504 | 29.935 | 31 | 0.000 |
| | post | 32 | 3.656 | 0.482 | | | |
| Determining the relevance or validity of information | pre | 32 | 0.437 | 0.504 | 21.128 | 31 | 0.000 |
| | post | 32 | 3.445 | 0.564 | | | |
| Evaluating the relative significance of details | pre | 32 | 0.437 | 0.504 | 31.933 | 31 | 0.000 |
| | post | 32 | 3.562 | 0.504 | | | |
| Making claims and providing evidence to support them | pre | 32 | 0.5 | 0.508 | 32.053 | 31 | 0.000 |
| | post | 32 | 3.281 | 0.5226 | | | |
| Interpreting information to extract relevant evidence | pre | 32 | 0.625 | 0.491 | 25.667 | 31 | 0.000 |
| | post | 32 | 3.312 | 0.470 | | | |
| Evaluating the strengths and weaknesses of claims | pre | 32 | 0.6562 | 0.601 | 31.138 | 31 | 0.000 |
| | post | 32 | 3.3125 | 0.535 | | | |
| Justifying the use of evidence for a particular claim | pre | 32 | 0.5625 | 0.504 | 24.687 | 31 | 0.000 |
| | post | 32 | 3.375 | 0.4918 | | | |
| Overall critical writing skills | pre | 32 | 3.656 | 1.472 | 64.6 | 31 | 0.000 |
| | post | 32 | 23.843 | 1.779 | | | |

Table 3 indicates that the experimental group students obtained higher means in the post-testing of the overall critical writing and its sub-skills. The t-values of the critical writing post-testing ranged from 32.053 to 21.128. The t-value for the overall critical writing skills (64.6) is statistically significant at (0.01) level. Hence, the second hypothesis is verified.

In order to gain insights into how students benefited from the intervention, qualitative data analysis was conducted. The interviewees stated that their ideas and thoughts were expanded when working on different writing tasks using the online dashboard. One participant stated, "*I knew some of the ideas, but the dashboard increased my knowledge, especially the guides and videos*".

Another participant added, "*It was easy for me to use higher level skills and apply new knowledge to my writings*".

Concerning the online collaborative work, one participant commented, "*I benefited from sharing the ideas among my colleagues. I also found that the writing tasks were useful*".

Another participant added, "*The collaborative work helped me improve my skills to compare and contrast others' views. I also gained experience in evaluating information and providing evidence.*".

As regards using the online tools, one participant commented, "*The online tools that I used in the dashboard assisted me in completing my writing and guided me to avoid any errors*".

Discussion

The current study aimed at investigating the impact of the SCA via online environments on English majors' critical writing skills. Findings indicated that experimental group students taught through the SCA performed better than those taught through regular instruction. The SCA was applied through an array of online learning tools and activities that allowed students to work in a safe environment in which they were able to share information, ask questions and discuss events. This inspired students to think critically and actively construct knowledge through posing various questions and offering suggestions to support their peers.

Through the process of forming hypothetical questions and brainstorming ideas, social constructivist students collaborated in the development of their own solutions, reflected on their contributions, and ultimately presented their ideas to other groups. They were able to demonstrate understanding of claims and evidence in texts, as well as provide comments on the evidence in order to indicate how such evidence strengthens the argument and supports the claim. Hence, the social constructivist instruction promoted students' active processing of knowledge construction that is inseparable from the social context. In addition, students were engaged in practical contextual assignments that maintained connection between knowledge construction and personal experience.

This is supported by the results of studies stressing the social constructivism as a pedagogical approach that fosters English language writing (e.g., Ali, 2021; Charmaz, 2017; Elola & Oskoz, 2011; Shepherd, 2022).

Working collaboratively on the online dashboard, students could brainstorm their ideas, refine their thoughts and develop their drafts, as well as personalize the process of writing. In addition, the dashboard guide allowed

them to practice the writing tasks in small groups and share their knowledge and thoughts. This helped them focus on each other's knowledge and experience, as well as engage in productive discourse that promotes higher level skills. Students also shared information about what would have done in various imaginative situations. This encouraged them to suggest new ideas for solutions and introduce a deep analysis of the topic.

Through incorporating different web-based cognitive tools, students were motivated to learn the content embedded in the dashboard and reduced their cognitive overload, which improved their higher order thinking skills. Such cognitive tools could provide students with the necessary knowledge structures and problem solving strategies to support higher-order cognitive tasks. They could offer adequate level of scaffolding based on students' performance in order to make sure that both novice and expert learners receive the same level of cognitive support. They also allowed students to engage in various authentic tasks that are closely connected to real-world contexts, as well as supported students' cognitive processes when engaging in solving different problems. Hypermedia, for instance, provided students with a rich environment in which they can explore new ideas and details, as well as move easily between different levels of information. This allowed students to find appropriate information and helped them in the process of forming questions and creating hypotheses. In addition, semantic networks allowed students to describe and structure different ideas and their interrelationships in memory. Jonassen (2003; 2006) added that cognitive tools promote learners' active engagement and facilitate concept learning and knowledge construction.

This corresponds with the results of Elola and Oskoz (2011); Mohammed (2020); Nobles and Paganucci (2015); Nykopp, Marttunen and Erkens (2019); and Shepherd (2022) who emphasized the importance of using technology-enriched environment to enhance students' writing, especially their critical writing skills.

Students in the control group, on the other hand, exhibited low levels in all critical writing skills due to regular writing instruction. They were asked to accomplish writing tasks by themselves without collaboration with their peers. They were not allowed to share their ideas, pose questions or inquire about the given topics. Hence, they lacked the ability to communicate their ideas and

seemed to have troubles when expressing their thoughts. Class time was basically dominated by the instructor, and the regular teaching framework involved three stages, i.e. preparation, presentation and production. Points of grammar and writing techniques were presented explicitly without providing meaningful social contexts. The instructor was at the center of teaching and learning, controlling the situation and depending merely on explaining language structures and writing conventions. Students' essays lacked the necessary arguments and evidence to support claims and persuade the reader. Moreover, students were unable to analyse and evaluate ideas, as well as critically compare and contrast different views and perspectives. They just focused on avoiding grammar and spelling mistakes. Moreover, their writings seemed to depend mainly on using exaggerations and clichés.

Recommendations

In light of the current study, writing courses should incorporate enhancing students' critical writing skills, especially their ability to compare and contrast various perspectives, evaluate different claims and details, provide evidence, and make justifications. Both collaborative work and online activities need to be integrated in order to help learners personalize their learning and become active constructors of knowledge. Web-based cognitive tools should be incorporated into teaching the content when working online in order to help students reduce their cognitive load and improve higher order skills. Assessing college students' critical writing skills should be emphasized in order to help them improve their critical reasoning and become independent learners.

Suggestions for further research

Based on the results of the current study, the following suggestions seem worth attempting:

1. Further research is needed to examine the role of social constructivism on students' listening and reading comprehension skills.
2. Investigating the impact of social constructivism, as a theoretical framework, on developing critical thinking skills and establishing writer identity.
3. Investigating the impact of online collaborative applications based on social constructivism on students' communication skills.

4. Investigating the effect of various online cognitive tools on students' vocabulary acquisition and retention.
5. A case study is needed to investigate how learners collaborate and share their ideas in online learning environments using different cognitive tools.
6. A case study is needed to explore students' beliefs about implementing online collaborative applications based on social constructivism.

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