Using reflective journal writing to develop undergraduates' metacognitive awareness and writing performance

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Article Info

Abstract

Many undergraduates face various challenges in ESL writing, especially academic writing. Most of the students lack the basic knowledge and skills required to accomplish their writing tasks. This is known as metacognition. Therefore, this study employed a reflective journal writing strategy to develop undergraduates' metacognitive awareness and writing performance. The study adopted a pre-and-post quasi-experimental research design with an intact class of (87) third-year undergraduates in a creative writing class. The study employed two instruments for the data collection: a writing task and a metacognitive questionnaire. Both instruments were used before and after the reflective journaling for 12 weeks. The pre-and post-test mean scores of the two instruments were compared using a paired-sample t-test. The results of the study show a significant improvement in the participants' metacognitive awareness level and writing skills after writing the reflective journals. The study makes some recommendations for further studies and practices.

INTRODUCTION
Academic writing has been a difficult and daunting task for many undergraduates, especially English as a Second Language (ESL) students (Dobakhti, 2011; Kanoksilapatham, 2003). In Nigeria, for instance, English is used as a second language and a medium of instruction in all three levels of education, namely, the primary, the secondary, and the tertiary (Omotoyinbo, & Olaniyi, 2019; Omowumi, 2019; Tom-Lawyer et al., 2021). However, researchers and lecturers in tertiary institutions have been complaining about the poor quality of undergraduates' academic writing. Studies have revealed various problems in the students' writing and suggested various solutions (see Boscolo et al., 2007; Pineteh, 2014; Al-Khairy, 2013; Bian, & Wang, 2016). Nevertheless, the problems persist due to numerous factors. One such factor is the students' lack of metacognitive awareness in writing.

Metacognitive awareness according to Wenden (1998), is the understanding that learners have of themselves, the learning task, and the learning process. She categorized metacognitive awareness into three categories: person knowledge, task knowledge, and strategy knowledge. Person knowledge refers to the learners' general knowledge of themselves as learners, including things like age, linguistic ability, and motivation, which may help or impede their learning. Task knowledge is the understanding of the task's purpose by the learners. It also comprises information about the requirements of a task, such as the knowledge and skills required to do it, as well as knowledge about the nature of the activity in question. The last component of strategy knowledge is the learners' understanding of the methods that should be applied to manage, direct, and regulate learning. Thus, in writing, metacognitive awareness refers to students' understanding of their writing abilities, the writing assignment, and the writing process (Kim, 2013). She also divides metacognitive knowledge into six categories: metacognitive task knowledge, personal learning process information, strategy knowledge, text and accuracy knowledge, problem-solving knowledge, and discourse features knowledge. The understanding of numerous variables pertinent to a writing assignment, such as the task's goal and the traits of the writing genre, is known as metacognitive knowledge of the task. The understanding of numerous aspects of learning to write in English, such as unique approaches to enhance L2 writing skills by oneself or through teaching, is what she refers to as metacognitive knowledge of the personal learning process. She defines metacognitive knowledge of strategy as the general understanding of successful writing tactics in L2. A plan to make up for a lack of language knowledge, for instance. The use of discourse markers and accurate textual elements in writing is part of metacognitive knowledge of text and accuracy. The understanding of methods for problem-solving when faced with writing challenges, such as sentence construction and time management, is known as metacognitive knowledge of problem-solving. The awareness of the features of conversation in English and L1 in writing and speaking pertains to the final subcomponent, metacognitive knowledge of discourse features. This necessitates the need to come up with alternative strategies such as reflective journal writing that would help to develop the student's metacognitive awareness and eventually writing skills.

Reflective journal writing has been an effective strategy for developing students' writing skills (Cisero, 2006; Lindroth, 2015). It is a kind of writing that allows students to think, explore, and give their opinions concerning their learning experiences, events, or new information (Farrah, 2012). It encourages students to develop their critical thinking skills and intellectual abilities. Reflective journal writing, also known as journal keeping, which provides students with a valuable opportunity for extensive reading practices, as stated by Peñaflorida (2002). Many students find it enjoyable since it allows them the freedom to write about a topic of their choice at their convenience. Moreover, engaging in reflective journal writing offers students privacy, freedom, and a safe space to experiment with and develop their ideas as writers. Purposeful reflection is found to minimize irrational decision-making and allow someone to make decisions by carefully reviewing data obtained from diverse experiences, leading to purposeful thinking (Lindroth, 2015). Engaging in communication of their ideas and messages through reflective journal writing enables students to foster self-reflection and make both macro- and micro-linguistic improvements, as emphasized by Sudirman et al. (2021).

Theoretically, reflective writing is established on Dewey's idea of reflection. According to him, reflection involves pupils associating material with in-depth experiences and connecting it to other concepts (Rodgers, 2002). In contrast, Grimmett and Erickson (1988) define reflection as a mental state that allows an individual to contemplate past behaviors or experiences, with the aim of avoiding failure in the future. This concept addresses the paradoxical statement that "one cannot

know without acting, yet one cannot act without knowing." Building on Dewey's definition, Rodgers (2002) proposes a classification of reflection that comprises four stages: presence in the experience, learning to see, description of the experience, learning to describe and differentiate, analysis, learning to think critically and develop theory, and experimentation, learning to act wisely. It is common for most people to perceive reflection as a process connected to their experiences.

Several research works have looked into reflective journal writing and discovered that it helps students to improve their writing skills. For instance, reflective journal writing among students is a predictor of academic achievement by Tsingos-Lucas et al. (2017). Moreover, Amirkhanova et al. (2016) found that writing reflective journals while studying English as a foreign language in Russia has a significant positive effect on students' motivation and self-confidence. Students can pose questions and provide their solutions in journals because they are open-ended (Lindroth, 2015). In the classroom, journals can be utilised as a tool for self-evaluation to evaluate the educational strategy and philosophical foundations (Lee, 2008). In Lee's (2008) work, four distinct categories of journals were identified. Dialogue journals involved interactions between the teacher and student, where both parties responded to each other's entries. In Response journals, students used these journals to share their personal responses and reflections on their educational activities and experiences. Teaching journals documented students' thoughts and reactions while they were being taught by their teachers. Interactive journals recorded the interactions and exchanges between groups of students, fostering collaborative learning experiences.

Numerous studies have highlighted the positive influence of reflective journal writing on students' writing skills. Knapp (2012) utilized reflective journal writing to gain insights into her students' educational experiences, and she found that it helped them reflect on their "apprenticeships of experience" while providing teachers with valuable resources for facilitating student teaching experiences. Ni'ma et al. (2020) conducted research that revealed reflective journal writing to be more effective than traditional writing methods in enhancing students' motivation and promoting their writing skills. This finding was further supported by Jannah et al. (2020), who observed a significant positive impact of reflective journal writing on the writing performance of Indonesian high school students. Similarly, Sudirman et al. (2021) discovered that reflective journal writing improved students' ability to effectively communicate ideas through writing. By keeping a reflective journal, students were able to engage in critical reflections and self-discoveries in their writing, allowing them to focus on aspects such as order, unity, coherence, cohesiveness, content, and organization of ideas. In Mexico, May-Melendez et al. (2019) conducted research that revealed students' positive perceptions of reflective journal writing in their learning process, further highlighting its benefits in educational settings.

From the existing literature on reflective journaling, previous studies have primarily concentrated on investigating the effectiveness of reflective journal writing in fostering students' curiosity, creativity, and critical thinking, as well as exploring teachers' perceptions (e.g., Towndrow et al., 2008; Hume, 2009; Farrah, 2012; Abednia et al., 2013). Some studies have also explored its impact on course performance (e.g., Farrah, 2012). However, a noticeable gap in the research is the limited attention given to assessing the effectiveness of reflective journal writing in enhancing undergraduates' metacognitive awareness. Understanding how reflective journaling influences metacognition in this context is an area that warrants further investigation and exploration in the field of education and learning. Therefore, this study aims to examine the effectiveness of reflective journal writing on students' writing skills and metacognitive awareness. To guide the study, the following research questions have been formulated: (1) What is the effect of reflective journal writing on undergraduates writing performanca?; and (2) what is the effect of reflective journal writing on undergraduates' metacognitive awareness?

METHODS
A pre-and-post-quasi experimental research design was adopted in the study to examine the effectiveness of reflective journal writing to develop undergraduates' metacognitive awareness in ESL writing and writing performance. Specifically, a time series design was adopted where participants were given an essay writing task, a metacognitive questionnaire (pre-test) for one week, treatment (reflective journaling) for 12 weeks, and a post-test for one week to see the effect of manipulating the independent variable (reflective journaling) on the dependent variable (metacognitive awareness and writing performance). The mean scores of the two instruments were compared using a paired-sample t-test.

Respondents

A complete class of eighty-seven (87) third-year undergraduates in Nigeria was selected for the study. All the participants were taking English majors and were enrolled in a creative writing course for 14 weeks.

Instruments

The study employed two instruments for the data collection: a writing task and a questionnaire. Both instruments were used before and after the reflective journal writing. In the writing task, the participants were asked to write a descriptive essay of 350 to 500 words on any of the following topics: My Home Town, My best Food, My Life, My best Friend. These topics are selected because they are closely related to the participants' real-life.

The questionnaire used in the study was adapted from Kim (2013) and focused on measuring participants' metacognitive awareness. It consisted of 29 closed-ended items presented on a 5-point Likert scale. The questionnaire aimed to collect data related to the participants' metacognitive awareness in writing in various areas, including task requirements, personal learning process, strategy utilization, text and accuracy, problem-solving, and discourse features. By employing this questionnaire, the researchers sought to gain valuable insights into the participants' metacognitive awareness in these specific domains. Specifically, the metacognitive questionnaire items numbered 1, 2, 7, 8, 10, 11, 13, 14, and 24 were designed to gather information about the participants' metacognition regarding task requirements. These items aimed to assess the participants' awareness of various aspects relevant to a writing task, including the purpose of the task and the characteristics of the writing genre. On the other hand, items 4, 6, 12, 17, and 20 were focused on gathering information about the participants' metacognition of their personal learning process. These items aimed to explore various aspects of learning to write in English, such as individual variations in improving L2 writing proficiency, either through instruction or self-directed efforts.

Additionally, information on the participants' awareness of writing strategies was elicited through items 3, 15, and 28. These items aimed to assess the participants' awareness of effective strategies used to achieve their writing objectives. It also included the strategies participants employed to compensate for a lack of vocabulary knowledge and the approaches they used when faced with difficulties in their writing.

The questionnaire also assessed the participants' metacognitive knowledge of text and accuracy through items 5, 9, 19, and 23. These items aimed to gather information about the participants' awareness of using discourse markers and maintaining accurate textual features in their writing. Regarding metacognitive knowledge of problem-solving, items 16, 25, 27, and 29 were included in the questionnaire. These items sought to elicit information about the participants' awareness of effective problem-solving strategies when faced with difficulties in writing, such as handling sentence formation challenges or managing time constraints. Lastly, items 18, 21, 22, and 26 were designed to gather information about the participants' metacognitive knowledge of discourse features. This included their awareness of the distinct characteristics of English and their native language (L1) discourse in both writing and speaking contexts.

Reflective journal writing

The concept of reflective journaling was explained to the participants so they would know exactly what it comprises. Students received instruction on how to keep a reflective journal as well as information on its benefits and main uses. After that, they were given precise instructions on how to keep a reflective notebook. The instructions detail the format to use, the vocabulary to use, examples, and the structure of a reflective journal. Finally, the participants were required to keep a weekly reflective notebook for 10 weeks straight on any subject connected to their experiences in the class and at school in general.

Data collection procedures

During Week 1 of the data collection, the participants were required to complete two tasks. First, they were asked to write an essay on a given topic. Second, they were asked to fill out the metacognitive awareness questionnaire to assess their initial metacognitive awareness levels.

Throughout the treatment period, which spanned 10 consecutive weeks, the participants were instructed to maintain a weekly reflective journal. In these journals, they could write about any topic

related to their experiences in the class and the school in general. The purpose of the reflective journal was to encourage them to reflect on their learning experiences and develop their metacognitive skills.

After the 10-week treatment period, the participants were again asked to complete two tasks. They were required to write another essay, similar to the one they wrote in week 1, and also fill out the metacognitive awareness questionnaire once more. This allowed the researchers to assess any potential changes or improvements in the participants' writing and metacognitive awareness after engaging in the reflective journaling process.

Data analysis

To address Research Question 1, which is on the effectiveness of reflective journaling on undergraduates writing performance, the pre-and-post-treatment essays written by the participants were graded and the mean scores were compared using a paired-sample t-test. Jacobs et al.'s (1981) scale. was used to score the writing scripts. The scale has five components: content, organization, language use, vocabulary, and mechanics. The components are described on a scale of 0-100. Each component of the scale comprises the following four categories: excellent to very good, good to average, fair to poor, and very poor. The following is the description of the components.

- Content: knowledge of the topic, viability and development of a thesis relevant to the topic
- Organisation: fluency of expression, organisation, logical sequencing, and cohesive topic
- Vocabulary: the range of vocabulary, word choice, forms and usage, registers related to topic
- Language Use: sentence structures; errors of agreement, tense, number, word order, articles, pronouns, and prepositions
- Mechanics: spelling, punctuation, capitalisation, paragraphing, etc.

To answer Research Question 2 on the effectiveness of reflective journal writing on the respondents' awareness of metacognition in writing, a paired-sample t-test was conducted to compare the mean scores of the questionnaire for the pre-and post-treatment. Before conducting the analysis, reliability and normality test were run to ensure that the assumptions of the a paired-sample t-test are fulfilled.

The findings from the reliability test of the metacognitive questionnaire demonstrate a high level of consistency among the items. The overall Cronbach's Alpha for the six questionnaire components was calculated to be 0.95, indicating a strong internal consistency. Moreover, each individual component also displayed Cronbach's Alpha values ranging from 0.80 to 0.94, which are considered to indicate very good internal consistency (George & Mallery, 2003).

Table 1: Reliability of the Metacognitive Questionnaire

Components	Cronbach's Alpha
Task Requirements	0.92
Personal Learning Process	0.86
Strategy Use	0.93
Text and Accuracy	0.80
Problem Solving	0.92
Discourse Features	0.87
Overall	0.95

The outcomes of the normality test indicate that the data exhibited a normal distribution. The Skewness values ranged from -.108 to -.902, while the Kurtosis values ranged from -.011 to -1.049. These results were considered acceptable according to George and Mallery (2003), signifying that the data was normally distributed and suitable for parametric analysis, to compare the pre- and post-treatment scores on the questionnaires, a paired-sample t-test was utilized.

Table 2: Skewness and Kurtosis for the Metacognitive Questionnaire

Components	Skewness	Kurtosis

Task Requirements	-.902	.608
Personal Learning Process	-.288	-.421
Strategy Use	.720	-.526
Text and Accuracy	.108	-.844
Problem Solving	-.856	-.011
Discourse Features	-.393	-1.049

FINDINGS AND DISCUSSION
Effectiveness of reflective writing journal on undergraduates' writing performance
Table 3 displays a comparison of pre- and post-writing scores based on a scale comprising five (5) components as described above. The aim is to investigate the effectiveness of reflective writing journals on undergraduates' writing performance, as addressed in research question 1. The results of the paired-sample t-test, which compares the pre- and post-mean scores of the writing task, indicate a significant difference in the overall mean scores of the participants' writing (t = 9.09, p = .000). This suggests that reflective journal writing had a positive effect on the participants' writing performance. Moreover, significant improvements were observed in all components of the participants' writing after the treatment: content (t = 13.78, p = .000), organization (t = 8.93, p = .000), vocabulary (t = 3.31, p = .004), language use (t = 3.38, p = .004), and mechanics (t = 6.01, p = .000). This indicates that reflective journal writing positively influenced each aspect of the participants' writing. A summary of the results of the paired-sample t-test is provided in Table 3. The findings support the effectiveness of reflective journal writing in enhancing undergraduates' writing performance across various components.

Table 3: Comparison of pre-and post-writing scores (n= 87)

Components	Mean	SD	Std. Er Mean	95% Confidence Interval of the Difference		t-value	df	Sig. (2-tailed)
				Lower	Upper			
Content	3.000	0.92	0.217	2.540	3.459	13.78	17	.000
Organisation	2.083	0.98	0.233	1.591	2.575	8.93	17	.000
Vocabulary	1.305	1.67	0.394	0.473	2.137	3.31	17	.004
Language Use	1.527	1.91	0.450	0.576	2.479	3.38	17	.004
Mechanics	0.777	0.54	0.129	0.505	1.050	6.01	17	.000
Overall	8.694	4.05	0.955	6.677	10.711	9.09	17	.000

Effectiveness of reflective writing journal on undergraduates' metacognitive awareness
To address research question 2 of the study, which focuses on the effect of reflective journal writing on undergraduates' metacognitive awareness, a paired-sample t-test was also conducted. This test aimed to compare the mean scores of the metacognitive questionnaires before and after the reflective journal writing intervention. The results of the paired-sample t-test indicate that there are significant differences in the overall mean scores of the metacognitive questionnaire before and after the reflective journal writing (t = -3.725, p = .000). This suggests that engaging in reflective journal writing had a positive impact on the participants' metacognitive awareness. Furthermore, the results reveal significant differences in all components of metacognition for pre- and post-treatment reflective journal writing. These components include personal knowledge (t = -3.531, p = .000), task knowledge (t = -3.334, p = .001), strategy knowledge (t = -3.524, p = .000), planning (t = -3.727, p = .000), monitoring (t = -2.740, p = .006), and evaluation (t = -3.746, p = .000). This indicates that the reflective journal writing intervention positively influenced various aspects of the participants' metacognitive awareness. The detailed results of the statistical analysis are presented in Table 4, providing a comprehensive overview of the positive effects of reflective journal writing on undergraduates' metacognitive awareness.

Table 4: paired-sample t-test for pre-and post-treatment metacognitive scores (n=87)

Components	Pre Mean	Post. Mean	Mean Diff.	t value	Sig.(2 tailed)
Personal knowledge	36.15	43.72	-7.76	-3.53	.000
Task knowledge	14.33	16.15	-1.72	-3.33	.001
Strategy knowledge	28.26	34.37	-6.11	-3.52	.000
Planning	23.98	36.26	-12.37	-3.72	.000
Monitoring	14.37	15.50	-1.22	-2.74	.006
Evaluation	15.98	21.98	-6.00	-3.75	.000
Overall score	132.61	167.61	-35.00	-3.73	.000

p value = .05

Interestingly, both the participants' writing performance and metacognitive awareness levels increased beyond expectations, as shown by Tables 1 and 2 above. Based on these findings, it can be concluded that reflective journaling has positive effects on Nigerian undergraduates' metacognitive awareness which eventually improve their writing performance. Students are encouraged to critically reflect on their writing processes and pinpoint opportunities for development by using reflective journals. In addition, metacognitive awareness supports students' increased self-awareness of their learning and thought processes, enabling them to plan, monitor, and evaluate their writing more effectively.

Discussion

The present study focused on examining the effectiveness of reflective journal writing in improving undergraduates' metacognitive awareness in English as a Second Language (ESL) writing. The findings demonstrated a significant positive impact of reflective journal writing on the students' metacognitive awareness in ESL writing. These results are consistent with previous research, such as the studies conducted by Klassen & Willoughby (2003) and Tsai (2009), which have also suggested that reflective writing can be a beneficial tool for enhancing students' metacognitive skills. The present study's findings align with those of various other research works, including Tsingos-Lucas, Bosnic-Anticevich, Schneider, and Smith (2017), who observed that reflective journal writing and metacognitive awareness play a crucial role in improving students' writing abilities. Similarly, research conducted by Ni'ma, Sumardi, and Tarjana (2020) supported the notion that reflective journal writing is more effective than traditional writing methods in enhancing students' writing skills. Additionally, May-Melendez, Balderas-Garza, Alcocer-Vazquez, and Quijano-Zavala (2019) found that students in Mexico had a positive perception of using reflective journals as part of their educational process. Overall, the findings of the present study contribute to the growing body of evidence highlighting the benefits of reflective journal writing for enhancing students' metacognitive awareness and writing skills in ESL contexts.

Several explanations can be offered to explain the positive impact of reflective journal writing on students' metacognitive awareness in ESL writing. Firstly, the process of reflection can encourage Nigerian undergraduates to monitor and evaluate their learning strategies and identify areas for improvement. This is because most of the methods adopted by Nigerian teachers do not engage the students in reflective writing. By reflecting on their writing processes and experiences, students can gain insights into their strengths and weaknesses, and develop strategies to enhance their writing skills (Ward & Lee, 2003; Yancey, 1998). Secondly, most Nigerian undergraduates do not keep records of their learning experiences for improvement because the traditional teacher-centered approach adopted in most schools does not encourage that. Also, many students are after the certificate, thus, their focus is just "read to pass". Thus, reflective journal writing can provide students with a safe space to express their thoughts and feelings about their writing experiences. This is particularly relevant for ESL students who may feel anxious or self-conscious about their writing abilities. Through reflective writing, students can explore their feelings and attitudes towards writing, and develop a more positive and confident mindset towards the writing process (Nakamaru, 2014; Tsui, 1996). Finally, reflective journal writing can help to bridge the gap between students' current and desired levels of proficiency in ESL writing. By engaging in a process of self-reflection, students can identify their strengths and weaknesses, and develop strategies to bridge the gap between their current and desired levels of proficiency (Bray & Tang, 2009; Flower & Hayes, 1981).

CONCLUSION

This study examines the impact of reflective journal writing strategy to develop undergraduates' awareness of metacognition and writing performance. The results show a significant improvement in the participants' post-treatment writing and metacognitive awareness level. This suggests the positive effect of reflective journal writing on writing performance and metacognitive awareness level. Although the present study suggests that reflective journal writing can be a valuable tool for enhancing undergraduates' metacognitive awareness in ESL writing, the study has some limitations. Firstly, the sample size is relatively small, which limits the generalizability of the findings. Also, there is a lack of control and experimental groups. The study was also conducted for only one semester and the participants were not interviewed to get their experiences and perceptions regarding reflective journal writing. Future studies should address the limitations of the study by using a larger sample size, both control and experimental groups. Further studies should also investigate the participants' experiences and perceptions of reflective journal writing. Despite the limitations, the study is useful as it provides insight to researchers, teachers and policymakers on how to design and implement curricula on writing to include reflective writing journals based on students' educational level, interests and field of study. Overall, the study suggests that reflective journaling can be an effective tool for promoting metacognitive awareness in writing among Nigerian undergraduates. Through reflective journaling, students can develop a deeper understanding of their writing processes and strategies to monitor and regulate their writing. This, in turn, can help them to become more effective writers.

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