

The praxis of integrated reading and writing instruction on enhancing students' various aspects of critical thinking and composition skills

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Abstract

The purpose of this study was to explore the praxis of integrated reading and writing skills instruction on EFL learners' various forms of critical thinking and composition development at Bahir Dar University. The study used a pretest-posttest/quasi-experimental design, and 96 freshman students (n = 48) as experimental and (n = 48) control groups took part in the study with a random assignment. In this study, the control group was instructed through a skill-separated instructional approach, and the experimental group learned through a newly designed integrated reading and writing instruction for 12 weeks concurrently with three sessions per week, and then, 25 (twenty-five) pre-and post-tests of critical thinking questions were designed to assess students' critical thinking achievement. The Kappa inter-rater and split-half reliability tests were employed to compute the reliability and internal consistency of both tests, respectively. Likewise, a five-paragraph essay was also used to collect data in pre and post-test composition development. Finally, an independent t-test was employed to compute the data, and then the results revealed that both the control and experimental groups were homogeneous regarding their level in the pre-tests of critical thinking and composition skills. However, after the treatment, the results specified that the experimental group outscored the control group significantly on the post-test results. In a nutshell, the study showed the supremacy of integrated reading and writing skills instruction over the conventional approach in enhancing students' critical thinking and composition skills development.

Key words: composition writing; critical thinking; integrated reading and writing; instructional discourse

Introduction

English is often used as a foreign language in Ethiopia. As a result, it is not working as a lingua franca in student's everyday lives outside of the EFL classroom. As a result, there are fewer opportunities to learn and practice English outside of the classroom in the country. For this reason, students practice the language through reading and writing in their academic careers, regardless of their field of study at the university level. In fact, students are expected to be proficient in analytical reading, coherent composing, and critical thinking repertoire, as these skills are thought to be the foundation for any university student's success (Hamad Al-Dosari, 2016). As a result, the instructional methods used by EFL instructors for

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reading and writing skills would be critical in mastering their language and reasoning competence, as these two skills are the major skills in English that must be taught efficiently to enable students to comprehend, analyze, and compose texts critically.

Reading and writing are interdependent and transactive, according to current ideas about their nature (Spack, 1998; Rosenblatt, 2004). Furthermore, according to these experts, meaning is formed by the interaction of the reader, the writer, and the text. As a result, in order to provide students with the necessary skills, university teaching and learning activities, particularly in EFL classes, should focus on enabling students to interact with a text through the integration of reading and writing activities. Furthermore, it is noteworthy that an integrated skill teaching is a natural learning approach for supporting the development of communicative skills in EFL students (Li & Yang, 2014; Pardede, 2017). Therefore, when learners are involved in both analytical reading and writing skills in integrated ways, they also build up their critical thinking ability in their academic career. In like manner, Atkins, Hailom, and Nuru (1996); Cavdar & Doe (2012) also confirm that learning to integrate the skills not only develops students' ability to express themselves, but it also develops students' thinking power; they get mental training. Furthermore, Cobine (1995), Pysarchyk & Yamshynska (2015) claim that reading and writing skills are so closely linked, they mutually reinforce each other and, therefore, promote learning when they are integrated into classroom activities.

Similarly, when students learn reading and writing together, they become better readers, writers, and thinkers (Carson, 1993; Al-Dosari, 2016). Similarly, Fisher (2001) asserts that "students must develop thinking and reasoning skills to reach their fullest potential, and this can be done explicitly and directly in an integrated manner" (p.17). Similarly, Flower (1989) states that reading and writing can be used in ways that surpass the functional and minimal literacy demands and that enable students to develop and use skills for analysis, synthesis, and creative expression. Thus, every classroom activity with the aim of developing students' comprehending, composing, and critical thinking abilities can lead to an environment that enhances these basic skills in students' learning. Subsequently, in light of the above view, integrated reading and writing instruction is where developmental reading and writing are taught in one course within a reduced period of time.

Richards and Rodgers (2001) also suggest that skill training and critical thinking can be achieved simultaneously by integrating reading and writing skills in ESL and EFL classrooms. Similarly, according to Rosenblatt's (1995, 2004) assertion, integrating reading and writing skills in the EFL classroom encourages learners to feel the freedom of creating text and looking at reading and writing as a journey through life. She further points out that these pedagogical positions range from the traditional skill-based, text-driven models to more holistic, process-oriented approaches associated with integrating the language arena. In like manner, Carson and Leki (1997); Hirvela & Du, (2013) state that the integration of reading and

writing instruction helps to demonstrate an understanding of the source text: it is beneficial to produce a thematically coherent text. In similar vein, by immersing learners in reading and writing, which demand the use of two language skills at a time, exposes learners to be motivated to use authentic language and enables them to interact naturally with the target language and develop implicit knowledge as well. Similarly, Langer (1986); Graham & Hebert (2010) suggest that the process of reading and writing integrating activities are the interaction of mind and texts that bring about new interpretations, new ways of considering thoughts, and new learning. Furthermore, in literary contexts, Krashen (1984) ; Mekheimer, (2011) claim that reading builds the knowledge base of written texts that helps learners acquire language constructs like grammatical structures and discourse rules that facilitate language acquisition.

Therefore, researchers and theorists recommend examining assumptions and reviewing educational practices because "current pedagogical thinking seems to be shifting away from the traditional behaviorist model of teaching to constructivist views of learning whereby teaching is seen as transformative" (Richards & Rodgers, 2001, p.197). Similarly, philosophers such as Ferire (1984) and Pardede (2017) have stated that de-contextualized, segregated teaching cannot achieve transformative learning. In their explanations, they strongly assert that transformative and effective literacy learning takes shape when the learners are involved in reading and writing activities and engage with the world in a constant and lifelong reflective process.

All the above implies that when reading and writing are integrated into classroom instruction, it enables students to think about comprehension strategies proficiently and engage in constructing meaning from a given genre. In doing so, a reader tries to use higher cognitive skills to describe, respond, or interpret a reading text, and then a new interpreted text is produced in the process. Under these strategies, learners would be trained to organize their thoughts through writing. Likewise, the integration of reading into writing enables students to develop both critical thinking and critical literacy because it augments their ability to transform information for their own purposes in reading and to synthesize their prior knowledge by constructing another text in writing.

Statement of the Problem

In the context of EFL in Ethiopia, the curriculum and pedagogy of writing and reading courses have traditionally been designed on a separate basis. As a result, more emphasis is given to skill-based language activities. Moreover, tasks have been designed, usually focusing on one specific skill. For instance, in reading instruction, more emphasis was given to answering reading comprehension questions, vocabulary meanings, references, and so on. Indeed, these sorts of activities are important, particularly for language practices, but their contribution to enabling students to go beyond the literal meanings of the text like critical analysis and composing texts would not be developed. As a result, most learners neither

understand the text fully nor give critical explanations of the text. However, during reading and writing integrated instruction, Cavdar and Doe (2012) claim that reading instigates learners to think critically, and puts them in a good position to cultivate their composition abilities in an EFL classroom.

Furthermore, in most writing instruction classrooms, most emphasis is given on writing activities for prescribed topics, and attention is too often paid to modeling correct grammatical and essayist forms instead of creating a conducive environment for students to interact with language actively for authentic communicative purposes. Moreover, after students' writings, EFL instructors' main focus would be on correcting different kinds of writing mechanics like spelling errors, punctuation, wrong use of words, phrases, tenses, and other related problems. Likewise, hand-written texts are evaluated on the accuracy of grammar rather than on content, style, or creative expression of ideas. As a result, students are unable to engage in critical mental exercises through writing because this method of instruction is heavily emphasized in traditional EFL teaching and curriculum provisions (Hao & Sivell, 2002).

Researchers like Taizad and Namaghi (2014) states that although segregated skills teaching may help students develop their knowledge of the language, its impact on enabling learners to use the knowledge in actual communication is not sufficient. Similarly, Squire (1983); Hao & Sivell (2002) claim that failing to practice composing and comprehending, which are fundamentally interconnected-oriented skills, impedes the efforts not only to teach students to read and write but also how to think. Kroll (1993) also claims that "teaching writing without teaching reading is not teaching writing at all" (p.75). In a similar vein, Hao and Sivell (2002) claim that the "division between teaching reading and writing in the EFL classroom, which entails a considerable lack of emphasis on the reading-writing connections, is a major cause of the weakness in the students' writing ability" (p.1). They added that when reading is not integrated into writing instruction, the knowledge and skills students have gained in reading cannot be transferred to writing. As a result, the division may cause EFL students to struggle with both language and rhetoric when beginning a writing assignment. Therefore, all the above research outcomes prove that separating reading and writing skills in EFL classroom instruction has its own detrimental effects on enabling learners to make connections between these skills in critical thinking and text development, which then implicates the necessity of the integrated reading and writing skills instructional approach since the two skills are complementary.

With this in mind, my close observation at the university in Ethiopia has revealed that the quality of reading, writing, and critical thinking skills proficiency is deteriorating from time to time, and university students do not appear to meet the required competence. For instance, students who are taking the courses Basic Writing Skills and Communicative English Skills have shortages in comprehending texts, composing coherent paragraphs, and critical analysis of texts. Moreover, most students also have limitations in terms of (language) grammar problems, diction,

punctuation, etc. As a result, many of the learners have deficiencies in communicating in writing since their composition is scanty and lacks coherence to express meaningful ideas. Furthermore, various past and recent research outcomes have also revealed the decline of these skills. For example, in his doctoral dissertation, Geremew (1999) found that writing in different faculties of Addis Ababa University is weak in treating a given topic both in content and form, and also those students could not identify the relevant information from the irrelevant ones and had a lack of organizing skills for connected discourse in composing. Furthermore, he noted that students had deficiencies like a lack of cohesion and coherence in their writing, problems with tenses, and a shortage of basic vocabulary.

Similarly, Tsegaye (2006) conducted research on the writing problems of preparatory students and found that most grade twelve students are unable to write a single meaningful sentence, let alone large texts like paragraphs or essays. Similarly, Meseret (2012) discovered that focusing writing activities more on the product approach is unlikely to engage students in writing because composing activities without a context are unnatural and provide students with no real sense of understanding other than passing examinations. Zeleke (2017) carried out a study on Ethiopian public university entrants' writing skills in the English language in the case of Hawassa University, and came to the conclusion that students were very poor in discussing relevant content, using accurate grammar, and organizing content in their writing.

In relation to critical thinking, Dawit (2008) claims that even though the Ministry of Education (1994) asserts that active learning methods or student-centered teaching would govern educational practices in schools and universities, the Ethiopian educational system continues to provide students with the traditional model of instruction. Furthermore, he adds that the faulty everyday reasoning and poor argumentation skills used by most students (both orally and in writing) indicate that even a college/university education appears to have a limited effect on graduates' critical thinking abilities, including making reasonable interpretations of texts. Likewise, Adege (2009) conducted research on "Critical Thinking Pedagogy in EFL Classrooms at Jimma University", and came to the finding that the majority of EFL instructors (71%) agreed that critical thinking is an important goal of their instructional objectives and/or practices, but only 2% of the total number of EFL teachers at the university bring explicit modelling of critical thinking into their classroom instruction, and 5% of them bring critical thinking assessment into their assignments and examinations. Therefore, the study shows that critical thinking is given less emphasis, or it is a neglected aspect in EFL classrooms in Ethiopia.

Dessie (2018) also conducted a study to analyze the effect of infusing intellectual standards of critical thinking on students' critical reading performance. In his study, assessing EFL students' attitudes and practices in reading academic texts critically and exploring students' levels of critical reading performance were aimed to

supplement the analysis. In the study, he used a mixed research design to collect and analyze data from 72 English-language undergraduate students through a questionnaire and tests. Finally, it was discovered that most English-language students lacked adequate understanding of critical reading tasks and inquisitive strategies, and critical reading activities were not engaging. Likewise, the students' critical reading performance was found to be unsatisfactory. In sum, all the above research results show that there is a gap in instructional practices that needs to be addressed, particularly in critical thinking and composition achievement.

In fact, there are pieces of research that have been conducted on the effects of integrated reading and writing instruction in enhancing students' composition and critical thinking skills. Hyonsuk Cho and Janina Brutt-Griffler (2015) conducted a study and reported that Korean English language learners' perceived needs concerning their learning of reading and writing and how the integrated reading and writing instruction affects their reading comprehension and summary-writing abilities, and then came to the conclusion that students at intermediate and advanced levels showed significant improvement in their comprehension and summary writing achievements. However, the Korean students' experience, background knowledge, and context differ from the Ethiopian educational settings. Hailah (2020) also conducted a study on the effectiveness of integrating reading and writing pedagogy in an EFL setting and on the teacher's perception, and he came to the conclusion that integrated reading and writing has a significant impact on students' reading abilities and writing proficiency over a short period of time. However, he did not address critical thinking skills, and also the setting of the research was different from the Ethiopian context. Similarly, Al-Dosari (2016) conducted a study on the effects of integrated reading on the quality of writing. The analysis showed statistically significant improvement in writing, but the researcher did not address critical thinking skills. Moreover, the research environment is different from the Ethiopian educational setting.

Desta (2019) investigated the effects of integrated reading-and-writing practice on EFL learners' performance and self-efficacy in reading comprehension and summary writing with grade eight students. The researcher employed tests and interviews to collect the required data. Finally, he came up with the conclusion that integrated reading-and-writing skills instruction has a positive influence on students' reading comprehension, summary writing, and self-efficacy. However, the researcher did not address its effects on students' critical thinking skills achievement. Similarly, Al-Dosari (2016) conducted a study on the effects of integrated reading on the quality of writing. The analysis showed statistically significant improvement in writing, but the researcher did not address critical thinking skills.

Likewise, Alemu (2015) conducted a study on the integration of content-based instructions in teaching English reading skills to grade 11 students. He used an interview, classroom observation, and document analysis to collect the data. Finally, he came to the conclusion that teachers had high theoretical orientations about

integrated instruction, but because of a number of impediments in the environment related to school, integrated content based instruction could not be implemented in language teaching in reading classrooms. However, the researcher's focus was only on assessing the implementation of integrated content-based instruction on teaching reading skills, not on students' critical thinking. Hailah (2020) also conducted a study on the effectiveness of integrating reading and writing pedagogy in an EFL setting and on the teacher's perception, and he came to the conclusion that integrated reading and writing has a significant impact on students' reading abilities and writing proficiency over a short period of time. However, he did not address critical thinking skills. Zhanfang Li, Chunhong Yang (2014) conducted a study on the effects of reading-to-write on critical thinking skills and concluded that practicing reading to write in the classroom helps students to shift from the passive reception of knowledge to an active seeking of knowledge and also to move from the rote learning of the text to the practical use of the knowledge in solving problems.

Hence, as it is clearly discussed in the above pieces of literature, an immense body of them stated the benefits of integrating reading and writing skills in L₂ and EFL classrooms. However, the extent of its effectiveness in composition and critical thinking skills has no clear evidence to claim the strategy's impact in the Ethiopian university contexts. These kinds of doubts would seem to specify the gap in knowledge and conceivable restraints. Therefore, the major concern of this study is to experiment empirically the effectiveness of a balanced integrated reading and writing skills instruction on students' composition and critical thinking skills development. As far as the researcher's knowledge, no research of this sort has been conducted in the context of Ethiopia so far. Therefore, this research would be the first and new in its kind, and it would attempt to add to the knowledge in the field and try to fill the gap in this aspect. Therefore, in this study the following research questions were formulated:

Research Questions

1. Is there a statistically significant difference between the achievement of the experimental and that of the control group in their various aspects of critical thinking achievement as a result of the treatment?
2. Is there a statistically significant difference between the achievement of the experimental and that of the control group in their various aspects of composition skills achievement as a result of the treatment?

The Null Hypotheses

1. H₀: There is no statistical difference between the achievement of the experimental and control groups of students in their various aspects of critical thinking skills achievement as a result of the treatment

2. H_0 : There is no statistical difference between the achievement of the experimental and control groups of students in their various aspects of composition skills achievement as the treatment

Research Design and Methodology

In this study, a quantitative research design was used to collect the required data. Among the quantitative data collection instruments, tests were used in this research. Hence, critical thinking and composition skills' tests were employed in both pretest and posttest preparation. Therefore, a group quasi-experimental pretest/posttest design was used using two intact sections, which were assigned randomly to the control and the experimental groups. In this pretest and posttest experimental design, both tests were prepared to assess the same concepts using different question types, which have equivalent quality and level of difficulty.

Participants

This research was conducted at Bahir Dar University. At the university, there were 110 sections of first-year students. Among these sections, two intact sections were selected as a sample using a lottery method. All of the above students were registered to take various courses, including communicative English skills. Communicative English Skills I is a course that provides a semester-long intensive program at a university that is supposed to provide a conducive environment for students to develop their communicative and reasoning competence. Reading and writing are the parts of the skills that are incorporated into the course material. However, reading and writing tasks were designed in parallel and isolated forms, and the instruction is also undertaken on a separate basis. In relation to this, the researcher had tangible corpus evidence at hand on the existence of the problems in critical thinking achievement that had been collected through assignments and examinations at various times. This was the impetus for selecting this course to investigate to what extent the integrated reading and writing instructional approach has a positive effect on the experimental group of learners in terms of their various critical thinking features in the EFL classroom.

Data Collection Instruments

In order to collect the required data, a test was employed as the main data-collection instrument. The researcher prepared 25 (twenty-five) critical thinking questions in collaboration with curriculum experts at the university. The pretest and posttest of critical thinking questions consist of the following content test items: 6 (inference), 6 (interpretation), 6 (explanations), and 7 (analyses) questions. In this pretest and posttest design, both tests were prepared to assess the same concepts using different question types, which have equivalent quality and level of difficulty. Both of the tests were prepared based on Facione's (1995) critical thinking model. Facione (1995) suggests that "a person engaged in critical thinking uses a core of self-regulated cognitive skills like interpretation, analysis, inference, evaluation, and

explanation to form logical reasoning and judgments" (p.3). With this in mind, the general framework of both tests comprised equivalent elements of questions that would measure students' various aspects of critical thinking skills, such as inference, interpretation, explanation, analysis, and evaluation. All the above assessment models were employed to evaluate critical thinking skills, except "evaluation". The evaluation was not used in this specific study since it was exposed to subjectivity, as it had been proved in the pilot study. Correspondingly, the pre-test of the composition was a narrative, five-paragraph essay, and its' title was prescribed by the instructor; and also, the post-test of the composition was a narrative genre, and its' title was given by the instructor, which is related to the given reading text. Likewise, the Muncle (2013) model is also used to assess students' writing (composition) skills. In the model, students' ability to organize a text, the density of the content, and grammar usage are used as criteria to assess students' composition skills. Therefore, these two assessment models were used in this particular study.

Data Collection Procedures

At the beginning of the course, a pretest of critical thinking and composition skills was given to the two selected groups of students before they were assigned as control and experimental groups. Then, after the pretest, the two EFL sections of learners were randomly assigned as experimental and control groups, and the pretest results were corrected and recorded in the meantime. Subsequently, the trained instructor was assigned to teach Communicative Language Skills I in these two intact sections. In this study, the focus area was reading and writing skills activities, but the other components of language exercises were common for both of the groups. Therefore, in the conventional approach, students often read the reading text and do a set of activities focusing on comprehension activities based on the textbook, excluding writing activities, and the instructor's feedback was focused on correcting students' errors on the given answers. Similarly, writing was taught in isolated ways from reading, and composition activities were done through prescriptive topics, which are outside of the given reading context in an EFL classroom. Here, the role of the instructor was to give feedback on the final product of handwritten texts.

However, the experimental group learned through an integrated reading and writing instructional approach. The underlying assumption of this instructional approach is that reading and writing derive from a single basic proficiency, so taking both skills as a single entity and giving a balanced emphasis on both skills at a time in an EFL classroom would play pivotal roles to maximize students' composition and critical thinking skills at a reduced time. Therefore, the newly designed integrated reading and writing instructional strategy procedure was implemented for the experimental group with the following three steps: First, apart from brainstorming discussions, there was writing before reading activities like predicting texts in the form of paragraphs or writing a short paragraph on different sayings related to the texts

before going through the texts (Write-before-you-read activities). Second, students were supposed to write their responses to the literal and open-ended questions like comparing their predictions, identifying the main ideas of paragraphs, paraphrasing, summarizing, interpreting texts, analyzing activities, explaining, inferring information, and writing the main idea of the text (Read and respond through writing activities). Finally, students were involved in connecting activities like text-to-text, text-to-self, and text-to-world activities (Write-text connecting activities). Indeed, when students failed to do the above cognitive strategies by themselves, the instructor was supposed to guide and teach explicitly and implicitly each selected strategy until students mastered it and worked on it independently, and the instructor's feedback would be given through reflective observation.

The implementation of the instruction for both the control and experimental groups lasted for 12 weeks with 3 periods per week and was held from October 1, 2019–January 2, 2020. Finally, a post-test of composition and critical thinking skills tests was given to the two groups to see if there was a change in students' composition and critical thinking achievement results after the intervention. Eventually, the tests were corrected by two different TEFL instructors to avoid unintended biases in correcting the subjective items. Finally, the two instructors' average scores were taken for analysis, and then they were analyzed and computed through MANOVA and ANOVA to see if a significant difference existed between the groups in combined and separate analysis of the various aspects of critical thinking and composition skills' achievement.

Data Results

The results obtained by analyzing the data gathered through critical thinking tests are presented below, and then, the students' pre-test and post-test critical thinking test results are described, respectively.

Students' Critical Thinking Skills

The first step was to perform the one-way MANOVA to make a quantitative comparison between the control group and the experimental regarding students' critical thinking skills and the four components of this dependent variable: inference, interpretation, explanation, and analysis before the intervention. The main aim of performing the pre-intervention one-way MANOVA test was to make sure that the two randomly selected intact classes were homogeneous without significant multivariate and univariate differences in terms of levels of students' critical thinking skills before they were assigned as experimental and control groups.

Table 1 below presents descriptive statistics (the means and the standard deviations for each group of participants on the four sub-scales of critical thinking skills) and the multivariate analysis of variance (MANOVA) results.

Table 1: *Pre-intervention comparison of the two groups and Multivariate Analysis*

Group		N	M	SD	df	F	Sig.	λ	Partial η^2
Inference	control	48	11.79	1.11	4, 91	.529	.715	.977	.023
	experimental	48	11.75	1.27					
Interpretation	control	48	12.25	1.06					
	experimental	48	12.58	2.14					
Explanation	control	48	12.58	1.48					
	experimental	48	13.13	2.94					
Analysis	control	48	14.79	2.36					
	experimental	48	15.13	2.73					

As shown in Table 1 above is the pre-intervention comparison between the control and the experimental group on the four components of students' critical thinking skills of inference, interpretation, explanation, and analysis skills. The descriptive statistical results indicate that the two sections scored comparable points on inference, with a mean score of 11.79 in control and 11.75 in experiment. The standard deviations were 1.11 and 1.27, respectively. Concerning their interpretation, the control group scored a relatively lower mean ($M = 12.25$; $SD = 1.06$) than that of the experiment ($M = 12.58$, $SD = 2.14$). Similarly, the difference in their scores on explanation was negligibly small (i.e., with a mean score of 12.58 in control and 13.13 in experimental). The standard deviations were 1.48 and 2.94, respectively). The table also reveals that the control group was associated with a numerically lower mean score ($M = 14.79$; $SD = 2.36$) of analysis than the experimental group ($M = 15.13$; $SD = 2.73$). In general, the figures in the table indicate that there were slight statistical differences in the pre-intervention critical thinking skill results between the two groups.

Based on the results of the descriptive statistics, multivariate tests were checked to examine if a statistically significant multivariate difference could occur between the two groups before they were assigned as an experimental and a control group. The results of multivariate tests in the above table revealed a non-significant multivariate difference between the two groups, Wilks' $\lambda = 0.977$, $F(4, 91) = .529$, $p = .721$ multivariate $\eta^2 = .023$. These results indicate that there were no significant differences between the control and the experimental groups in their students' critical thinking skills on a linear combination of inference, interpretation, explanation, and analysis. And also, the effect size, expressed by partial eta squared ($\eta^2 = .023$) signifies that the combined variance between the control and the experimental groups in those components of critical thinking skills accounted for 2.3 per cent, a very marginal difference. As a rule, there is no need to run further tests of univariate analyses of variance (ANOVAs) after the MANOVA result has shown no significant multivariate effect. As a result, we inferred that there was no significant difference between the two groups in their critical thinking skills before the experimental intervention.

Post-intervention multivariate comparisons

Following on the results of the tests of assumptions, the post-intervention critical thinking skill scores of the experimental group and the control group were compared by running a one-way MANOVA. First compared was the multivariate effect of integrated reading-writing instruction on the two groups of students' critical thinking skills (the combined effect) and on the four components of the critical thinking skills: inference, interpretation, explanation, and analysis. This was part of the attempt to answer whether there was any difference between the control and experimental groups of students in their various features of critical thinking skills after the treatment. The results are presented in the following tables:

Table 2: *Post-intervention comparison of the two groups and Multivariate Analysis result*

Group		N	M	SD	df	F	Sig	Λ	Partial η^2
inference	control	48	12.25	3.13	4, 91	12.144	.348	.652	.348
	experimental	48	14.5	2.93					
interpretation	control	48	12.1	4.56					
	experimental	48	16.33	3.39					
explanation	control	48	12.25	4.39					
	experimental	48	17	3.64					
analysis	control	48	14.25	3.49					
	experimental	48	18.33	4.19					

The post-intervention comparison between the experimental group ($N = 48$) and the control group ($N = 48$) in the above table indicates that the former group scored statistically better results than the latter in all of the four components of critical thinking skills: inference, interpretation, explanation, and analysis. According to the results, the post-intervention inference was associated with a mean score of 14.5 ($SD = 2.93$) in the experimental group and 12.25 ($SD = 3.13$) in the control group. In terms of the post-intervention interpretation results, the experimental group ($M = 16.33$, $SD = 3.39$) was again relatively better than the control group ($M = 12.1$, $SD = 4.56$). Furthermore, concerning the post-intervention explanation, the experimental group ($M = 17.0$, $SD = 3.64$) scored a fairly higher result as compared to the mean score of the control group ($M = 12.25$, $SD = 4.39$). Similarly, the experimental group showed a remarkable improvement in analysis ($M = 18.33$, $SD = 4.19$) as compared to the score of the control group ($M = 14.25$, $SD = 3.49$).

Hence, the experimental group of students scored better results than the control groups in all components of the post-test on critical thinking skills as a result of the intervention. The statistical significance of the differences was examined using one-way MANOVA, which includes multivariate and univariate tests, to determine whether these mathematical disparities in scores between the two groups could be inferred to the target population. Table 2 also presents the results of the multivariate test. As can be seen in Table 2 above, the multivariate differences between the experimental and the control group were found to be significant with Wilks' $\lambda = .652$, $F(4, 91) = 12.144$, $p = .000$, and multivariate $\eta^2 = .348$.

These results showed that the independent variable brought about significant multivariate differences between the experimental and control groups on students' inference, interpretation, explanation, and analysis when these four components of the variable are considered collectively. The effect size, expressed by partial eta squared ($\eta^2 = .348$), accounted for 34.8% of the combined variance between the two groups' various components of critical thinking skills.

As it is revealed above, the results of the multivariate analysis of variance (MANOVA) specified the presence of a significant difference between the control and the experimental groups' critical thinking in various aspects when considered jointly. However, in order to see the magnitude of the differences between the two groups in each component of critical thinking, separate ANOVAs were conducted for each dependent variable at an adjusted alpha level of .0125 (based on Bonferroni's suggestion that the regular alpha (.05) be divided by the number of dependent variables).

Table 3: *The Separate Effects of critical thinking components in the posttest*

group		N	M	SD	df	F	Sig.	Partial η^2
inference	control	48	12.25	3.132				
	experimental	48	14.5	2.932	1, 94	13.203	.000	.123
interpretation	control	48	12.1	4.56				
	experimental	48	16.33	3.39	1, 94	26.909	.000	.223
explanation	control	48	12.25	4.39				
	experimental	48	17	3.64	1, 94	33.204	.000	.261
analysis	control	48	14.25	3.49				
	experimental	48	18.33	4.19	1, 94	26.875	.000	.222

The results of tests of between-subjects effects revealed the values of each component of the dependent variable in contributing to the multivariate differences.

As to the univariate tests of students' critical thinking skills, the outputs presented in the table indicate that each component of the dependent variable had a significant contribution to the multivariate difference. With regard to the students' inference sub-skill, the univariate difference between the experimental group ($M = 14.5$; $SD = 2.93$) and the control group ($M = 12.25$; $SD = 3.13$) was found to be significant, $F(1, 94) = 13.203$, $p = .000$, $\eta^2 = .123$. Similarly, in terms of interpretation skills, the analysis of variance (ANOVA) difference between the experimental group ($M = 16.33$; $SD = 3.39$) and the control group ($M = 12.1$; $SD = 4.56$) was found to be significant, $F(1, 94) = 26.909$, $p = .000$, $\eta^2 = .223$. Likewise, the univariate difference between the experimental group ($M = 17$; $SD = 3.64$) and the control group ($M = 12.25$; $SD = 4.39$) in explanation skill was found to be significant, $F(1, 94) = 33.204$, $p = .000$, $\eta^2 = .261$. Concerning analysis skills, the analysis of variance (ANOVA) difference between the experimental group ($M = 18.33$; $SD = 4.19$) and the control group ($M = 14.25$; $SD = 3.49$) was found to be significant, $F(1, 94) = 26.875$, $p = .000$, $\eta^2 = .222$. As far as the effects of integrated reading-writing instruction are concerned, as shown in Table 4, the partial Eta squared coefficient results showed the difference brought to the two groups by students' critical skills components were as follows: inference (12.3%), interpretation (22.3%), explanation (26.1%), and analysis (22.2%). Among these components, the experimental group scored the highest in explanation which was the highest as compared to the other three components: Therefore, the above data confirmed that the students who received integrated reading-writing instruction outperformed those students who were instructed through the conventional approach in the our critical thinking skills. In general, the results of the separate effect ANOVA indicated that there was a significant variance between the experimental and control groups in terms of critical thinking skills achievements after the treatment. As a result, the null hypothesis, which states the absence of a difference between the two groups, is rejected.

Students' Composition Writing Skills

Performing one-way MANOVA was the first step to making a quantitative comparison between the control group and experimental regarding students' composition skills and the three components of this dependent variable: text organization, density of the content, and grammar usage analysis before the intervention. The main objective of carrying out the pre-intervention one-way MANOVA test was to make sure that the two randomly selected intact classes were homogeneous without significant multivariate and univariate differences in terms of levels of students' composition skills before they were assigned as experimental and control groups.

Table 5 below presents descriptive statistics (the means and the standard deviations for each group of participants on the three sub-scales of composition skills) and the multivariate analysis of variance (MANOVA) results.

Is there any significant difference between the two intact groups of students in terms of their various components of compositions skills achievement before the treatment?

Table 4. *Combined effect of composition skills components in the pre-test*

Group		N	M	SD	df	F	Sig	Partial η^2
organization	control	48	15.87	4.99	3, 93	1.146	.335	.964
	Experimental	48	16.75	4.22				
content	control	48	17.88	4.28				
	Experimental	48	17.42	3.64				
grammar	control	48	13.58	3.49				
	Experimental	48	13.88	2.12				

What is shown in Table 4 above is the pre-intervention comparison between the control and the experiment group on the three components of students' composition skills: text organization, the density of contents, and grammar usage skills. The experimental group showed a relatively lower mean than the control group on text organization, with a mean score of 15.87 compared to 16.75 in the experimental group, and also that the standard deviations were 4.99 and 4.22, respectively. In terms of content density, the control group scored comparable points mean ($M = 17.88$; $SD = 4.28$) to the experimental group ($M = 17.42$, $SD = 3.64$). Similarly, the difference in their scores on grammar usage was negligibly small (i.e., with a mean score of 13.58 in the control group and 13.88 in the experimental group). The standard deviations were 3.49 and 2.12, respectively. In brief, the figures in the table indicate that there were slight statistical differences in the pre-intervention composition skill results between the two groups.

Based on the results of the descriptive statistics, multivariate tests were checked to examine if a statistically significant multivariate difference could occur between the two groups before they were assigned as an experimental and a control group. The results of multivariate tests in the above table revealed a non-significant multivariate difference between the two groups, Wilks' $\lambda = .964$, $F(3, 93) = 1.146$, $p = .335$, multivariate $\eta^2 = .036$. These results indicate that there were no significant differences between the control and the experimental groups in the students' composition skills on a linear combination of text organization, content density, and grammar usage. Furthermore, the effect size, expressed as partial eta squared ($\eta^2 = .036$), indicates that the combined variance in those components of composition skills between the control and experimental has a very marginal difference.

As a rule, there is no need to run further tests of univariate analyses of variance (ANOVAs) after the MANOVA result has shown no significant multivariate effect. Therefore, the result of the multivariate combined effect proves that there is no significant discrepancy between the experimental and the controlled groups of

students' text organization, content development, and grammar usage in the pre-test achievement. As a result, we inferred that there was no significant difference between the two groups in their composition skills before the experimental intervention.

3.4. Post-intervention multivariate comparisons

Following the results of the tests of assumptions, the post-intervention composition skill scores of the experimental group and the control group were compared by running One-way MANOVA. First compared was the multivariate effect of integrated reading-writing instruction on the two group students' composition skills (the combined effect) and on the three components of the composition skills: text organization, content density and grammar usage. This was part of the attempt to answer whether there is any difference between the control and experimental group of students in their various features of composition skills after the treatment. The results of this are presented in the following table.

Table 5: Post-intervention comparison of the two groups and Multivariate Analysis result

group		N	M	SD	df	F	Sig.	Λ	Partial η^2
organization	control	48	17.10	4.96	3, 93	9.82	.000	.757	.243
	experimental	48	21.87	4.03					
content	control	48	17.97	4.77					
	experimental	48	21.29	4.96					
grammar	control	48	14.45	5.12					
	experimental	48	19.25	5.74					

The post-intervention comparison between the experimental group ($N = 48$) and the control group ($N = 48$) in the above table indicates that the experimental group scored mathematically better results than the control in all of the three components of composition skills: text organization, content density, and grammar usage. According to the results, the post-intervention text organization was associated with a mean score of 21.87 ($SD = 4.03$) in the experimental group and 17.10 ($SD = 4.96$) in the control group. Here, the experimental group showed a significant improvement. In terms of the post-intervention content density results, the experimental group ($M = 21.29$, $SD = 4.96$) was again relatively better than the control group ($M = 17.97$, $SD = 4.77$). Furthermore, concerning the post-intervention grammar usage, the experimental group ($M = 19.25$, $SD = 5.12$) scored a fairly higher result as compared to the mean score of the control group ($M = 14.45$, $SD = 5.74$). In a nutshell, as the results of the descriptive statistics revealed,

the experimental group showed a remarkable improvement in text organization, content density, and grammar compared to the score of the control group.

Hence, the experimental group of students scored better results than the control groups in all components of the composition skills post-test because of the intervention. The statistical significance of the differences was examined using one-way MANOVA, which includes multivariate and univariate tests, to determine whether these mathematical disparities in scores between the two groups could be inferred to the target population. Table 5 also presents the results of the multivariate test. As can be seen in Table 5 above, the multivariate differences between the experimental and the control group were found to be significant with Wilks' $\lambda = .757$, $F(3, 93) = 9.82$, $p = .000$, and multivariate $\eta^2 = .243$.

These results showed that the independent variable brought about significant multivariate differences between the experimental group and the control group on students' text organization, content density, and grammar when these three components of the variable are considered collectively. The effect size, expressed by partial eta squared ($\eta^2 = .243$), accounted for 24.3% of the combined variance between the two groups' various components of composition skills.

As it is revealed above, the results of the multivariate analysis of variance (MANOVA) specified the presence of a significant difference between the control and the experimental groups' composition skills in various aspects, when considered jointly. However, in order to see the magnitude of the differences between the two groups in each component of composition skills, separate ANOVAs were conducted for each dependent variable at an adjusted alpha level of .0167 (based on Bonferroni's suggestion that the regular alpha (.05) be divided by the number of dependent variables).

Discussion

In this part, brief discussions were held on students' various components of critical thinking skills' achievement results before and after the intervention. Predominantly, students' critical thinking skills development between the two groups was homogeneous before the treatment. However, after the intervention, a deep analysis was made on the experimental group's results to see to what extent and which aspects of the critical thinking skills the experimental group was better than their control group counterparts. Based on this, the experimental group had shown significant betterment in the post-test outcome of various aspects of critical thinking skills for each dependent variable at an adjusted alpha level of .0125 in the areas of inference (12.3%), interpretation (22.3%), explanation (26.1%), and analysis (22.2%) when compared to the students in the control group who were not exposed to any kind of integrated reading-writing activities. Therefore, the obtained results confirm that in 12 weeks of teaching, students of the experimental group improved

their critical thinking components because of the integrated reading-writing skills approach.

The control group, on the other hand, did not show any significant improvement in their inference, interpretation, explanation, and analysis components as a result of being taught reading and writing separately. This implies that isolated reading and writing skills instruction cannot provide students with much critical thinking skill development. Moreover, the experimental group has shown a 35% outcome disparity within the group's pretest and posttest results. This finding is also consistent with Hirvela's (2004) proposition that using both writing and reading skills in harmonious integration in EFL instruction enhances students' understanding, composition skills, and the ability to look at things critically. Therefore, the results clearly indicated that the treatment that had been implemented on the experimental group in the EFL classroom had had a positive effect on students' critical thinking skills. To sum up, all these data would seem reasonable to point to the likelihood that the null hypothesis is rejected.

Correspondingly, in terms of students' composition skills, the experimental group of students has shown a great improvement in terms of text organization (22.2%), content density (10.6%), and grammar usage (16.5). For instance, in terms of organizing the text, the experimental group was better at using proper text structure, good logical flow of ideas using proper transitions within sentences and paragraphs, better word choice to convey ideas smoothly and coherently with limited mistakes, etc. compared to their control counterparts. Similarly, the experimental group has manifested good enhancement in content density, like using various relevant sources to substantiate the content and lead to the direction and weight of the essay, etc. Likewise, in terms of grammar usage, the experimental group was to some extent better than the control group in using proper tenses, punctuation, spelling, contextually varied sentences, etc. This finding is aligned with Richards and Schmidt's (2002) claims that "when integrating reading into writing tasks, writing often reinforces the grammatical structures, word choices, and mechanics." Furthermore, learners also have a chance to be exploratory with the language to go beyond what they have just learned to express and to take risks. " In general, the integrated reading and writing instructional strategy that had been implemented in the EFL classroom had brought a positive impact on experimental students' composition skills' development, specifically in organizing a text, content density, and grammar usage. As a result, all these data would seem to point toward the likelihood that the null hypothesis is rejected.

Conclusions

Taking everything into account, the evidence obtained from this study revealed that learners who were taught in an integrated reading and writing instructional approach achieved higher critical thinking and composition achievement than learners who learned in the conventional method. Therefore, based on this, it is possible to claim

that integrating reading and writing skills instruction is more effective than the separated instructional approach in EFL classrooms in enhancing students' critical and composition skills achievement. Thus, the researcher of this study concluded that integrated reading and writing skills instruction supports students to develop their composition skills achievement and ways of thinking in versatile dimensions. Furthermore, these findings show that integrating the two skills places a greater emphasis on students constructing their own learning than the traditional approach does, and it also encourages students to be self-reliant learners and helps them develop the confidence to take responsibility for their own learning, particularly in the field of foreign language learning. Equally, integrated reading and writing instruction is more helpful for learners as it transforms them from passive to active readers and writers. Besides this, it plays a prominent role in maximizing learners' critical thinking skills in language learning instead of simple memorization of facts and grammar rules.

Correspondingly, EFL instructors should be aware that implementing reading and writing integrated instruction helps learners to be immersed in reading and writing which demand the use of the two language skills at a time, and then it exposes learners to be motivated to use authentic language and enables them to interact naturally with the target language and develop implicit knowledge as well. Moreover, it develops students' learning in all disciplines because it requires students' to become more actively engaged in what they are learning, and with that engagement, greater academic success will come, and that in turn increases students' motivation.

Finally, the researcher of this study recommends that instead of teaching the course reading and writing skills separately at an advanced university level, integrating the two skills would provide more benefit in making connections between reading and writing skills in a reduced amount of time. In the same way, it is found more pertinent to teach reading and writing in an integrated way while teaching communicative language skills in higher institutions to enhance students' critical thinking and composition skills achievement simultaneously in the EFL classroom.

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