

Effects of problem-based English writing instruction on students' critical thinking dispositions and argumentative writing skills

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Abstract

Some studies attempted to investigate the effects of problem-based learning on critical thinking dispositions and writing skills in different contexts. However, studies that focus on problem-based learning seem hardly available in Ethiopian context. In doing so, this study was conducted to examine the effects of problem-based English writing instruction on students' critical thinking dispositions (CTDs) and argumentative writing skills among first year Law students in the University of Gondar, Ethiopia. To this effect, mixed method was employed. Since the study was quasi-experimental design, 60 students were participated as control and experimental groups. An independent sample t-test was employed to examine whether there was a significant difference between the control and the experimental groups before and after the instruction. The findings of this study showed that there were significant difference between the two group in critical thinking dispositions and argumentative writing skills favoring the experimental group. Furthermore, the post-intervention mean score indicated that students' CTDs and argumentative writing significantly increased after the treatment. The findings also revealed that students had better understanding on CTDs and argumentative writing skills after the instruction. Therefore, it is suggested that problem-based English writing instruction should be taken into account by material designer, instructors and learners.

Keywords: *Problem-based learning, critical thinking dispositions and argumentative writing skills*

Background

In Ethiopia, English language has long been used as medium of instruction in higher institutions. In this context, EFL writing skill has been given more attention across all disciplines in general and language learning in particular. In this regard, Mesfin (2013, p.1) states that "writing is one of the important language skills which have multidimensional advantages in different aspects of human life." This indicates that writing skill plays a significant role in helping learners' achieve their academic goals throughout their learning. This is because studying writing strategies can help learners recognize and produce various kinds of writing that are valued in different disciplinary areas (Coffin et al, 2003). To this end, employing appropriate writing instruction promotes learners critical thinking ability which is essential in higher education. It also enables learners to have active roles and interactions in the writing process. For this, Problem-Based Learning (PBL) plays a pivotal role in building learners' critical thinking and their writing achievement.

Problem-based learning was first implemented in the Medical School Program at McMaster University, Canada in the late 1970s (Aliffatul, 2014; Dastgeer & Afzal, 2015). EL-Shaer and Gaber (2014) also state that the main purpose of implementing this approach is to engage learners in active learning. It is believed that as learners are given different problems in their learning, they are able to think critically to solve problems. In light of this, Du et al. (2013) maintain that problem-based learning has been an effective and efficient strategy to give confidence for learners to improve their analytical and problem-solving skills. In the same way, "PBL is challenging, and enjoyable learning approach that has resulted from the process of working towards understanding or resolving a problem" (EL-Shaer & Gaber, 2014,

p.75). That is, researches done by Sojisirikul (2009), Yibo (2012) and Temel (2014) reveal that problem-based learning helped learners develop their critical thinking dispositions and writing skills.

In the context of Ethiopia, PBL has been mainly used in university levels, mainly in Law school. This is because Law students are supposed to solve different kinds of problems. Additionally, EL-Shaer and Gaber (2014, p.75) stress that “the students become an independent learner and critical thinker when they analyze, evaluate and synthesis information from a variety of sources and present their own justified interpretation.” To this effect, Law students in university level are expected to develop their writing skills to express their critical, argumentative and reasoning skills. Once learners develop their writing skills, they are believed to write a well-developed argumentation and persuasion writing. However, it is argued that Law students in the University of Gondar have faced problems in learning writing skills. One of the problems is believed to be the teaching approach in which the courses are offered. This is because writing by its nature is the most difficult skill to master it due to its nature and different factors attributed to it. To fill this gap, PBL as an active teaching approach can widen learners’ critical thinking ability and develop their writing skills (Dastgeer & Afzal, 2015). To this end, investigating the effects of problems-based English writing instruction on students’ critical thinking dispositions and argumentative writing skills among Law students in the University of Gondar was believed to bring a new insight in the teaching of writing skills.

Statement of the problem

Writing skill plays an important role in higher education. In line with this assertion, Coffin, et al (2003, p.3) assert that “student academic writing continues to be at the centre of teaching and learning in higher education.” Despite the fact that writing has such importance, great emphasis should be given as to how writing skill is offered to students in different contexts, particularly in university. This is because university education is believed to be the fundamental education to direct learners’ future (Karagöl & Bekmezci, 2015). To this effect, the approach to the teaching of writing skill which enables learners to build their critical thinking skills has to be used in higher institution. To achieve this, appropriate and effective approach like problem-based learning to increase learners’ writing skill and their critical thinking has to be employed. In connection with this, Malmir and Shoorcheh (2012) emphasize that learning should promote critical thinking and academic writing among learners to make them successful in their academic and real life situations.

Since problem-based learning has such importance, research on the effects of problem-based learning on critical thinking dispositions and writing skill is crucial. Some studies tried to investigate this issue in different contexts. Temel (2014), for instance, attempted to compare the effects of problem-based learning and traditional teaching methods on critical thinking dispositions and perceptions of problem-solving ability of pre-service teachers’ in Turkey. The findings show that PBL and traditional methods did not have different effects on critical thinking dispositions of the pre-service teachers’, while they had distinct effects on perceptions of problem-solving ability in the target group. Yibo (2012) also studied the effects of problem-based English writing instruction (PBEWI) on critical thinking abilities and argumentative writing skills of Thai secondary school students. The finding of this study indicates that (PBEWI) significantly improved students’ critical thinking abilities and writing skills.

In Ethiopia context, however, learners’ writing skills are found to be low due to different reasons (Meseret, 2012). In this regard, Manchón (2009, p.23) points out that “the writing of EFL students is affected not only by their first language (L1), but also by the educational context where they learn to write.” Byrne (1988), on his part, identified the overall writing problems as psychological, linguistic and cognitive which impinge on students’ writing performance. The other problem that affects learners writing skills and their critical thing dispositions are believed to be the learning approach in which writing skill is taught. That is, materials do not encourage learners to be engaged in critical thinking and persuasions. What is more, Mesfin (2013) found some basic factors that are attributed to the decline of students’ writing skills in university level, such as giving less attention to the implementation of appropriate teaching theories. Due to these reasons, learners cannot improve their critical thinking dispositions and their writing skills. Accordingly, the materials and the teaching approaches should be designed in such a way that they boost students’ critical thinking dispositions and argumentative writing skills. Once the materials and the teaching approaches (PBL) are well-organized, students could solve problems through writing. Nevertheless, the effectiveness of PBL instruction on students’ critical thinking dispositions and argumentative writing skills has not been investigated in Ethiopian context, particularly among Law students. Therefore, this study attempted to examine the effects of

problem-based English writing instruction on students' critical thinking dispositions and argumentative writing skills among first year Law students in the University of Gondar.

Research questions

The study attempted to answer the following general question:

- What were the effects of problem-based English writing instruction on first year students' critical thinking dispositions and argumentative writing skills at the Department of Law in the University of Gondar?

Specifically, the research answered the following questions:

- What was the effect of problem-based English writing instruction on first year students' critical thinking dispositions at the Department of Law in the University of Gondar?
- What was the effect of problem-based English writing instruction on first year students' argumentative writing skills in the Department?
- What were the students' self-reported beliefs regarding the effects of problem-based English writing instruction on critical thinking dispositions and argumentative writing skills?

Review of related literature

In this part, three basic points are reviewed related to the research questions. Firstly, problem-based learning and writing is discussed. Secondly, the nature of writing is presented in detail. Finally, problem-based learning and critical thinking dispositions is treated thoroughly.

Problem-based learning and writing

As mentioned in the introduction sections, problem-based learning is an effective and successful approach in English language contexts (Dastgeer & Afzal, 2015). In doing so, writing skill which requires more practice on the part of the learners should be supported by appropriate teaching approaches. Despite the fact that writing skill is one of the most difficult skills, properly using PBL in language classroom can boost learners critical thinking to solve problems through writing. To this end, problem-based learning should be used in English language classrooms when there are different writing skills are taught. Specifically, in teaching argumentative writing skills, learners are expected to substantiate their views with facts and evidences to refute their opponents' views. For this, problems should be given to them to think critically and write well-organized argumentative paragraphs and/or essays by providing solution to the problem. The following section deals with the nature of writing skills.

The nature of writing

Writing is one of the language skills which we want to master and help learners to master it. However, writing by its nature is the most difficult skill to master it due to its nature and different factors attributed to it. The task of writing goes beyond the production of language symbols which should be arranged in such a way that it could give meaning to the readers (Byrne, 1988). Strengthening this idea, Hedge (2005, p.7) points out that "writing requires a number of things: a high degree of organization in the development of information, ideas or arguments, a high degree of accuracy, complex grammar..." What is more, writing is a solitary activity involving physical and mental activities. These and other things make writing more difficult for writer, and it might affect learners in different ways due its nature. In line with this, (Byrne, 1988) pinpointed writing problems that affect learners to develop their writing skills. These are dealt with as follows:

Psychological Problem

Psychological problem is one of the writing problems. According to Byrne (1988), the psychological factor is concerned with the production of writing alone. In speaking, the speaker is exposed to verbal communication directly. However, writing is a solitary activity where writer is expected to produce meaningful texts without direct interaction with the reader. Likewise, there is no immediate feedback in the case of writing. These make writing difficult activity.

Linguistic Problem

The other writing problem that affects learners' writing is linguistic problem. The linguistic factor is related to the need to consider the accuracy of the linguistic elements in the writing activity. According to Manchón (2009), linguistic and textual knowledge affect learners' in the process and produce writing. Due to this, writing requires word choice, grammar, coherence, etc to make the composition meaningful.

Cognitive Problem

Cognitive problem is also taken as one of the writing problem among learners. Pertaining to the cognitive aspect, writers are expected to think and process what they want to put down on paper because writing requires much more care than speaking. This is because speaking by its nature precedes writing in language acquisition and can be learned informally. Unlike speaking, writing needs formal instruction and intensive practice compared to other skills.

Problem-based learning and critical thinking dispositions

As explained in the introduction section, problem-based learning is an essential approach in helping and developing learners' critical thinking. According to Tung and Chang (2009), as a component of critical thinking skills, critical thinking dispositions are essential in increasing learners' learning abilities. This is because learners are able to scale up their problem-solving skills to solve problems. Critical thinking dispositions could also enable learners to improve internal motivations (Facione, 2000).

Basically, there are seven constructs of critical thinking dispositions which are measured by Critical Thinking Dispositions Inventory (CTDI) (Facione, Facione & Giancarlo, 2000). These are: I) Truth-seeking is a courageous desire for seeking knowledge at best. II) Open-mindedness means the tolerance of divergent views, self-monitoring for possible bias on the part of the learners. III) Analyticity means a category of dispositions refers to the need of the application of reason and evidence towards something. IV) Systematicity involves the value given to organization, focus and diligence to deal with problems of all levels of complexity by considering different approaches. V) Critical Thinking Self-confidence refers to the trust of one's own reasoning skills and seeing oneself as a good thinker. VI) Inquisitiveness is the curiosity and eagerness to acquire knowledge and learn explanations as the applications of the knowledge are not immediately apparent; and VII) Cognitive Maturity needs careful in making, suspending, or revising judgment and awareness that multiple solutions can be acceptable. In other words, it makes people do things in careful manner as they make decisions. Therefore, the seven components of critical thinking dispositions can be achieved through the implementation of problem-based learning.

Methods

In this study, mixed method was used. In this respect, experimental design was preferred for this study to determine whether an activity or material (an intervention) resulted in differences in results of participants. Specifically, quasi-experimental design was employed because it is common in education setting and has its own advantages (Creswell, 2012).

Population and Sampling

The study was conducted in the University of Gondar at the Department of Law first year students who took English for Lawyers I & II courses during the first semester of 2016/17 academic year. A total of 60 students were chosen to take part in the study from the two sections. Before the placement of the students, pre-intervention questionnaire (i.e. critical thinking dispositions) was given to these students. Upon the completion of the questionnaire, argumentative writing pre-test was administered to the students. Since the pre-intervention results of the study showed no differences, the two sections were taken as a control group and experimental group. Based on this, the experimental group received the treatment (problem-based English writing instruction), while the control group did not get the treatment.

Data Collection Instruments

In this study, three data collection instruments, i.e. questionnaire, writing tests and interview were used. The following sections discuss these instruments.

Critical Thinking Dispositions Inventory (CTDI)

Originally, Facione and Facione developed CTDI in 1992. This inventory consisted of seven categories/constructs: open-mindedness, truth-seeking, analyticity, systematicity, critical thinking self-confidence, inquisitiveness and cognitive maturity. Thus, the adapted questionnaire contained 75 items, and it measured learners' "willing" dimension in the expression "willing and able" to think critically in this study (McCormick, 2014). This questionnaire which was used in this study has a 6-point Likert scale ranging from (1=Strongly disagree, 2=Disagree, 3=Slightly disagree, 4=Slightly agree, 5=Agree and 6=Strongly agree). To this end, the CTDI and its subscale scores were leveled as follows: strong positive inclination (>50), positive (40-50), ambivalent (30-39) and negative (<30) for each disposition. As to the total CTDI, mean score above 280 was considered as positive inclination toward critical thinking dispositions. In contrast, score below 280 was considered as negative inclination toward critical thinking dispositions (Tiwari, et al, 2006).

Argumentative Writing Test

In order to measure students' argumentative writing skills, argumentative writing topic sentence and topic were given to students to write argumentative paragraph and essay. The tests were administered twice as a pre-test and post-test. In the pre-test, students were first given an argumentative writing topic sentence on "affirmative action should (not) be practiced in our country". Then, argumentative writing essay topic "abortion should (not) be legalized" was given to them to write at different times. In the post-test, on the other hand, different topic sentence "cost sharing should (not) be mandatory for students" was given to them to write argumentative paragraph. Likewise, an argumentative writing essay topic on "prostitution should (not) be allowed" was given to them.

Interview

The other data gathering technique was semi-structured interview. The main purpose of using the semi-structured interview in this study was to get deeper information from the target students about their self-reported beliefs on the implementation of problem-based English writing instruction on critical thinking dispositions and argumentative writing skills. The interview was employed from the selected first year students in the Department of Law. To do this, the students were chosen based on their post-intervention results as higher achiever (1 student), average achiever (1 student) and low achiever (1 student). Then, the interview was carried out with these students. Then, the interview was conducted with each interviewee individually, and the interactions were audio-recorded. Therefore, the interview items were designed in such a way that they could generate responses that addressed the issues raised in the students' questionnaires (i.e., CTDI and argumentative writing skills).

Data analysis

In this study, both quantitative and qualitative techniques of data analysis were used. Accordingly, the quantitative data were analyzed using the Statistical Package for the Social Science (SPSS) version 20 to compute mean scores of students' critical thinking dispositions and argumentative writing skills. Furthermore, independent sample t-test was employed to compare if there was a significant difference between the control and experimental groups in critical thinking dispositions and argumentative writing skills in the Department. On the other hand, the qualitative data that focused on students' self-reported beliefs regarding the effects of critical thinking dispositions and argumentative writing skills were analyzed using the methods of description, narration and interpretation.

Results

Quantitative findings

As stated in the previous section, in order to measure students' critical thinking dispositions, a 6 point Likert scale questionnaire was administered before and after the experiment. Therefore, the results and interpretations of the pre- and post-interventions are presented in the following subsections.

Table 1: *Pre-intervention mean scores of the control and experimental groups on CTDs total and subscales questionnaire*

CTDI Subscales	Groups	N	Mean	STD	STD Error Mean
Truth-seeking	Control	30	38.73	6.82	1.24
	Experimental	30	38.33	7.23	1.32
Open-mindedness	Control	30	38.50	7.66	1.39
	Experimental	30	38.93	7.60	1.38
Analyticity	Control	30	35.50	7.18	1.31
	Experimental	30	35.20	6.55	1.19
Systematicity	Control	30	32.50	6.92	1.26
	Experimental	30	32.66	6.02	1.09
Critical Thinking Self-confidence	Control	30	27.36	6.56	1.19
	Experimental	30	27.03	6.23	1.38
Inquisitiveness	Control	30	33.50	6.75	1.23
	Experimental	30	33.20	6.90	1.25
Cognitive Maturity	Control	30	34.03	6.70	1.22
	Experimental	30	33.66	6.78	1.23
Total CTDI	Control	30	240.12	48.59	8.84
	Experimental	30	239.01	47.31	8.84

The scores in Table 1 above show comparison of the mean scores between the control and experimental groups in the pre-intervention of the critical thinking dispositions questionnaire. In the pre-intervention, the result indicates that there was no mean difference between the control and experimental groups. The control and experimental groups means and standard deviations of the seven constructs are shown respectively as follows: truth-seeking [38.73(6.82) and 38.33(7.23)]; open-mindedness [38.50(7.66) and 38.93(7.60)]; analyticity [35.50(7.18) and 35.20(6.55)]; systematicity [32.50(6.92) and 32.66(6.02)]; CT self-confidence [27.36(6.56) and 27.03(6.23)]; inquisitiveness [33.50(6.75) and 33.20(6.90)], and cognitive maturity [34.03(6.70) and 33.66(6.78)]. This shows that both the control and the experimental groups were found ambivalent towards critical thinking except critical thinking self-confidence. This is because the seven critical thinking dispositions subscale mean scores were labeled as strong disposition >50, positive inclination 40–50, ambivalent 30–39, strong opposition <30. Regarding the total CTDI, mean scores above 280 imply a positive disposition toward critical thinking.

From the above seven subscale mean scores, six show that students were ambivalent towards critical thinking. These subscales (truth-seeking, open-mindedness, analyticity, systematicity, inquisitiveness and cognitive maturity) were found in the middle range scores between 31 and 39. On the other hand, only one subscale means score (critical thinking self-confidence) indicates that students had strong opposition toward critical thinking self-confidence since the results indicated below 30. The mean score of the total CTDI of the above table shows that the experimental group (239.01) which was almost similar with the control group (240.12). Thus, the mean score of the total CTDI of the control and experimental groups were below 280 and suggested that the respondents from the two groups had an overall ambivalence disposition towards critical thinking.

Table 2: Independent sample test: T-test for equality of means

CTDI Subscales	Group	N	t	df	Sig (p-value)	Mean Difference
Truth-seeking	Control	30	.220	58	.826	.40000
	Experimental	30				
Open-mindedness	Control	30	-.220	58	.827	-.43333
	Experimental	30				
Analyticity	Control	30	.169	58	.866	.30000
	Experimental	30				
Systematicity	Control	30	-.099	58	.921	-.16667
	Experimental	30				
Critical Thinking Self-confidence	Control	30	.202	58	.841	.33333
	Experimental	30				
	Control	30				

Inquisitiveness	Experimental	30	.170	58	.865	.30000
	Control	30				
Cognitive Maturity	Experimental	30	.211	58	.834	.36667

p<0.05

As can be seen from Table 2, an independent t-test was computed to compare the mean scores between the control group and experimental group on critical thinking dispositions. The t-test for equality of means shows that the comparison of the means of the control group and experimental group was not found similar between the two groups. That is, Table 2 depicts that the pre- intervention values of the seven subscales of the critical thinking dispositions were found above the standard level (0.05). This is because the significance values were as follows: truth-seeking .826, open-mindedness .827, analyticity .866, systematicity .921, critical thinking self-confidence .841, inquisitiveness .865 and cognitive maturity .834.

Table 3: Post-intervention mean scores of the control and experimental groups on critical thinking dispositions total and subscales questionnaire

CTDI Subscales	Groups	N	Mean	STD	STD Error Mean
Truth-seeking	Control	30	41.03	7.35	1.34
	Experimental	30	45.36	8.33	1.52
Open-mindedness	Control	30	41.00	8.20	1.49
	Experimental	30	50.06	8.44	1.54
Analyticity	Control	30	39.63	6.96	1.27
	Experimental	30	43.56	7.06	1.29
Systematicity	Control	30	36.03	8.01	1.46
	Experimental	30	40.30	8.04	1.46
Critical Thinking Self-confidence	Control	30	32.96	7.37	1.34
	Experimental	30	35.03	7.44	1.35
Inquisitiveness	Control	30	36.46	6.56	1.19
	Experimental	30	40.20	6.84	1.24
Cognitive Maturity	Control	30	35.50	8.13	1.48
	Experimental	30	38.43	7.30	1.33
Total CTDI	Control	30	262.61	52.58	9.57
	Experimental	30	292.94	53.45	9.73

Table 3 above shows that a comparison of the mean scores between the control and experimental groups of the critical thinking dispositions questionnaire in the post-intervention. It is shown that five out of seven subscales indicated significant mean difference between the control and experimental groups in the post-intervention. This is because the control and experimental groups means and standard deviations of the seven constructs are listed respectively as follows: truth-seeking 41.03(7.35) and 45.36 (8.33); open-mindedness 41.00 (8.20) and 50.06(8.44); analyticity 39.63(6.96) and 43.56 (7.06); systematicity 36.03(8.01) and 40.30(8.04); Critical thinking self-confidence 32.96(7.37) and 35.03(7.44); inquisitiveness 36.46(6.56) and 40.20(6.84), and cognitive maturity 35.50(8.13) and 38.43(7.30). This shows that the experimental group showed positive and strong inclination towards critical thinking except CT self-confidence and cognitive maturity. This is because the seven critical thinking dispositions subscale mean scores were labeled as strong disposition >50, positive inclination 40–50, ambivalent 30–39, strong opposition <30. Regarding the total mean value of the CTDI, scores above 280 imply a positive disposition toward critical thinking.

In sum, the total mean value of the CTDI of the experimental group mean (292.94) was found greater than that of the control group (262.61). Accordingly, the experimental group showed positive disposition toward critical thinking after the experiment was conducted. Although the control group students showed mean difference in the post-intervention, they did not show positive disposition toward critical thinking since the total mean value of the CTDI was found below 280.

Table 4: Independent sample test: T-test for equality of means

CTDI Subscales	Group	N	t	df	Sig (p-value)	Mean Difference
	Control	30				

Truth-seeking	Experimental	30	-2.136	58	.037	-4.33333
	Control	30				
Open-mindedness	Experimental	30	-4.126	58	.000	-9.06667
	Control	30				
Analyticity	Experimental	30	-2.172	58	.034	-3.93333
	Control	30				
Systematicity	Experimental	30	-2.057	58	.044	-4.26667
	Control	30				
Critical Thinking Self-confidence	Experimental	30	-1.080	58	.258	-2.06667
	Control	30				
Inquisitiveness	Experimental	30	-2.155	58	.035	-3.73333
	Control	30				
Cognitive maturity	Experimental	30	-1.469	58	.147	-2.93333

p<0.05

As indicated in the above Table 4, an independent t-test was used to compare the means scores between the control group and experimental group on critical thinking dispositions. The t-test for equality of means reveals that the comparison of the means of the control group and experimental group showed significant difference between the two groups favoring the experimental group. Specifically, the result depicts that the CTDI post-intervention values of the five subscales were found below the significant value 0.05, while two of them were above the significant value. The p-values of these subscales of CTDI were truth-seeking .037, open-mindedness .000, analyticity .034, systematicity .044, critical thinking self-confidence .258, inquisitiveness .035 and cognitive maturity .147.

From the above findings, it could be understood that the significance (2 tailed) values of the critical thinking dispositions subscales were the following: truth-seeking, open-mindedness, analyticity, systematicity and inquisitiveness were below at 0.05 level. This clearly indicates that there was a significant difference between the control and experimental groups on critical thinking dispositions supporting the experimental group. However, the two subscales: critical thinking self-confidence and cognitive maturity significance (2 tailed) values were found above 0.05 level indicating that there were no significant difference between the control and experimental groups in these two constructs/subscales.

Argumentative writing test

In order to measure students' argumentative writing skills, argumentative writing topic sentence and topic were given to students to write argumentative paragraph and essay. The tests were administered twice as a pre-test and post-test. The results and interpretations of these pre- and post-tests are presented as follows.

Table 5: Significance of difference between mean scores of the control group and experimental group on argumentative writing skills pre-test

Groups	N	Mean	STD	STD Error Mean
Control	30	50.66	9.01468	1.64585
Experimental	30	50.33	9.81671	1.79228

Table 5 illustrates the comparison of the mean scores between the control and experimental groups in the pre-testing of argumentative paragraph and essay writing. It is shown that the means and standard deviations of the control group 50.66(9.01) and experimental group 50.33(9.81) were found in the pre-test. This indicates that there was no mean difference between the two groups.

Table 6: Independent sample test: T-test for equality of means

T-Test for Equality of Means						
t	df	Sig. (2- tailed)	Mean Differenc e	Std. Error Difference	95% confidence interval	
					Lower	Upper

Pre-test equal variances assumed	.137	58	.892	.33333	2.43333	-4.53750	5.20416
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p<0.05

In Table 6, an independent t-test was used to compare the means scores between the control group and experimental group argumentative writing paragraph and essay. The t-test means reveal that the comparison of the means of the control group and experimental group did not show significant statistical difference between the two groups. This clearly implies that there was no significant difference between the two groups on argumentative writing tests since the significance 2-tailed value .892 was above the standard level 0.05.

Table 7: *Significance of difference between mean scores of the control group and experimental group on argumentative writing skills post-test*

Group	N	Mean	STD Deviation	STD Error Mean
Control group	30	53.83	9.70987	1.77277
Experimental group	30	60.00	11.50112	2.09981

Table 7 illustrates the comparison of the means scores between the control and experimental groups in the post-testing of argumentative writing paragraph and essay. It explains the means and standard deviations of the control group 53.83 (9.70) and experimental group 60.00 (11.50). This shows that the mean of the experimental group was greater than that of the control group. Thus, the difference has been brought due to the treatment the experimental group received.

Table 8: *Independent sample test: t-test for equality of means*

T-Test for Equality of Means							
						95% confidence interval of the difference	
	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Post-test equal variances assumed	-2.244	58	.029	-6.16667	2.74807	-11.66754	-.66580

p<0.05

In Table 8, an independent t-test was applied to compare the means scores between the control group and experimental group on argumentative writing. It indicates that the comparison of the means of the control group and experimental group showed significant difference between the two groups. That is, Table 8 presents that the argumentative writing paragraph and essay post-test results brought a significant difference since the significance 2-tailed value .029 was below the standard level 0.05. This implies that the experimental group had better than that of the control group in argumentative writing.

Qualitative findings

Interview with the students

Qualitative data were also gathered using semi-structured interview. The findings of the interview questions are summarized in the following paragraphs. The results of the interview reveal that problem-based English writing instruction helped students improve their critical thinking dispositions and argumentative writing skills. In response to a related question of how PBL can improve their truth-seeking, open-mindedness, analyticity, systematicity, critical thinking self-confidence, inquisitiveness and maturity of judgment, the results of the interview indicate that PBL helped students achieve the aforementioned constructs of critical thinking dispositions. This is because the main goals of PBL are to help improve all those things as they lay the foundations for everything else. Accordingly, students could know when and how they can make use of different critical thinking dispositions.

The results obtained from the interview questions also show that students had confidence to improve their argumentative writing skills and write a well-organized argumentative paragraph/essay. The other results gained from the interview questions reveal that students had good involvement in argumentation. In this regard, the data show that students had beliefs in which they were willing to consider divergent views during the argument. They were also curious and eager to learn new things. Similarly, the three interviewees clearly asserted that they did consider the outcome of the situation and try to approach problems in a disciplined, orderly and systematic ways. What is more, students believed they had the trust in their own reasoning skills and they saw themselves as a good thinker. In response, all the interviewees stated that they felt reasonable and rational skills. This is because they enabled them to be careful in making, suspending, or revising judgments.

The results of the qualitative data also indicate that there were factors related to problem-based English writing instruction which helped in the development of students' critical thinking dispositions. The interviewees asserted that English class was one factor that paved the way for students to develop their critical thinking dispositions. Likewise, the finding of the students' response reveals that they benefited a lot from the argumentative case videos they watched during the writing sessions.

Discussions

Concerning the first research question, "What was the effect of problem-based English writing instruction on first year students' critical thinking dispositions?", the results reveal that there were no mean differences between the control and experimental groups pre-intervention in the seven critical thinking dispositions subscales. Nevertheless, there were mean differences between the control group and experimental group in the post-intervention in the seven critical thinking dispositions. More specifically, the experimental group showed significant differences in the five critical thinking dispositions subscales: truth-seeking (.037), open-mindedness (.000), analyticity (.034), systematicity (.044), and inquisitiveness (.035) were below at 0.05 level. On the other hand, the experimental group did not show significant difference in the two subscales: critical thinking self-confidence (.258), and cognitive maturity (.147). However, they indicated greater mean values than the control group. Similar with this finding, the findings of the study done by Du, et al (2013) indicate that problem-based learning group was able to score positive (above 40) on all the seven subscales of CTDI that of the control group. In a study, Temel (2014) also found that critical thinking dispositions of the pre-service teachers in the experimental group showed at high level that the control group because of the implementation of problem-based learning.

In line with the above, the results of the mean value of the total CTDI score of the experimental group was 292.94 indicating that students had positive inclination towards critical thinking dispositions. Conversely, the mean value of the total CTDI score of the control group was 262.61 indicating that students had still no positive inclination toward critical thinking dispositions. This is because the total response was below 280 which is the recommended cut off the scale.

Similarly, the interview result confirms that the experimental group of students improved their critical thinking dispositions through problem-based English writing instruction. In this regard, the findings of the research done by EL-Shaer and Gaber (2014) found that problem-based learning helped students participate actively to improve their critical thinking dispositions through problem-based English writing instruction.

In relation to the second research question: "What was the effect of problem-based English writing instruction on first year students' argumentative writing skills?", the mean scores and standard deviations for the students in both the experimental group and control group were calculated. The results showed that there were mean difference between the experimental group (Mean: 60.00); (Std: 11.5) and the control group (Mean: 53.83); (Std: 9.7) in the post-test. This happened due to the treatment (problem-based English writing instruction) the experimental group received. In the same way, the finding of the study done by Yibo (2012) revealed that students' argumentative writing skills were significantly improved through problem-based English writing instruction.

Regarding the third research question, "What were the students' self-reported beliefs regarding the effects of problem-based English writing instruction on critical thinking dispositions and argumentative writing skills?", the finding shows that students had better understanding on critical thinking dispositions and argumentative writing skills after the treatment. This is because they were able to know when and how they could apply the seven critical thinking dispositions components (open-

mindedness, truth-seeking, analyticity, systematicity, critical thinking self-confidence, inquisitiveness and cognitive maturity).

Conclusions and recommendations

In respect to whether there was a significant difference between the control and experimental groups on critical thinking dispositions, the research findings indicate that the implementation of problem-based English writing instruction brought significant change on the experimental group towards critical thinking dispositions. Pertaining to the students' argumentative writing skills, the finding reveal that problem-based English writing instruction showed significant change on the experimental group towards argumentative writing skills. With regard to students' self-reported beliefs towards critical thinking dispositions and argumentative writing skills, the findings show that the implementation of problem-based English writing instruction helped students improve their critical thinking dispositions. Furthermore, the finding reveals that students could write well-organized argumentative writing paragraphs and essays because of problem-based English instruction. For this, the treatment had its own positive effects on students writing skills.

Based on the findings and conclusions of the study, the following recommendations were given. Firstly, it is imperative that instructors at the Department of Law in the University of Gondar should apply problem-based English instruction in order to improve students' critical thinking dispositions when they teach English for Lawyers course. Secondly, it is advisable that instructors at the Department of Law in the University of Gondar should apply problem-based English instruction in order to improve students' argumentative writing skills when they teach English for Lawyers course. Thirdly, it is clear that first year Law students who took the course English for Lawyers in the Department in focus should understand the importance of problem-based English instruction in developing their critical thinking dispositions and argumentative writing skills.

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