Practicing Contextual Teaching and Learning Approach to Enhance Students' Higher Order Thinking Skill on Writing Ability

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ABSTRACT

Contextual Teaching and Learning (CTL), a learning approach which connects learning materials with real life applications within the context of students' lives, encourages students to find the meaning of what they have learned on their own and the lecturer only act as a guide or facilitator, so the students are motivated to think critically. This study aims to describe the implementation of CTL approach to enhance students' higher order thinking skill (HOTS) in writing ability of STKIP PGRI Sidoarjo, which has been found in preliminary observations to be lacking in this aspect. This quantitative research uses a quasi-experimental design through a pretest-posttest pattern. The research sample was 22 students of 2021 A class (Experimental Class) and 23 students of 2021 B class (Control Class). The data were collected through observation, test, and questionnaires. The higher order thinking skill includes: understanding problems (24,20%), making assumptions (28,17%), explaining in depth (25,13%), solving problems (23,25 %), and making conclusions (20,63%). From the table of t-test results, the results (α) = 0.004. It can be stated that (α) < 0.05, so it can be concluded that there is a significant difference in the students' higher order thinking skill in writing ability by using contextual teaching and learning approach. The findings revealed that the contextual teaching and learning approach was successful to enhance students' higher order thinking skill in writing ability. Moreover, it is recommended that CTL and higher order thinking skill have significant influence toward writing ability.

1. Introduction

The technological advances require the students to have communication skills and critical thinking skills. In the area of education, it can be started by creating a learning process to train communication and thinking skills. By understanding the 21st century skills, it can determine the success of students in the future. Through mastery of language, the students will be able to communicate their competence both oral and written (Arizena & Sari, 2021). Critical thinking means that students can respond critically to science while actively using it for specific purposes. When digital technology has disrupted various areas of life, the ability to think critically elevated its position as a primary and highly sought ability. The presence of the concept of Higher Order Thinking Skills (HOTS) in learning activities refers to the significance of critical thinking skills.

Associated with 21st century skills, writing skills are important, because writing are related to the critical thinking. Writing is the embodiment of higher-order thinking activities (Firdausah & Sari, 2020). These thinking activities include in-depth, thorough, and critical thinking activities. It is starting from conceptualizing, pouring, and producing something. Writing skills play an important role in education

because it will make easier to enjoy the relationships, deepen responsiveness, thinking critically, solve problems at hand, organizes the sequence of experiences, and helps in explaining thoughts. Writing ability is a language skill that is not acquired naturally like speaking ability. Rather, writing requires learning strategy. In addition, from the perspective of functional systemic linguistics, writing is also strongly influenced by social context (Islamiyah & Sari, 2021).

Writing is an important language skill, especially for Indonesian students. The students in Indonesian higher education have the obligation to write essays, papers, and scientific writing. Moreover, some of ELT students in Indonesia still have difficulties in writing well. This issue is caused by the lack of students' knowledge regarding of the schematic structure and language features. The same problem even occurs to the students of the English Education study program at STKIP PGRI Sidoarjo. Another factor regarding to the low writing skills was conveyed by Sari (2019) such as (a) the low role in fostering students' writing skills; (b) the lack of providing appropriate writing strategies; (c) the use of an inappropriate writing approach; (d) learning to write that still uses patterns, thinking, writing, and control. Specifically for language literacy, according to

the Program for International Students Assessment (PISA) that in 2012 Indonesian students' reading literacy achievement was ranked 64th out of 65 countries.

Based on the observation made in the writing class of STKIP PGRI Sidoarjo, the students' abilities in writing were varied. But in general there are some things that should be noted. First, some of the students still showed difficulties in making sentence structures in English. Besides the students still made errors in grammar, word choice, and spelling. Second, some students still showed difficulties to developing ideas in a paragraph form, especially in the body paragraph. Third, the students showed difficulties in understanding the explanation of grammar and sentence structure on editing activities. Based on the mapping of the problems found, it is deemed necessary to try out a learning approach that can create a creative, innovative, effective, and fun learning on writing material. A good learning process is learning that is able to increase the students' creative and critical thinking skills (Sari & Prasetyo, 2021). So that the students can think creatively and the students must be directly involved in the learning process.

Starting from the existing problems, it is necessary to practice the learning approach in teaching writing skills, namely Contextual Teaching and Learning (CTL) approach with the following reasons: 1) the learning process emphasizes the students to find material, 2) the learning process encourages the students to find the relationship between the material being studied and the real-life situations, 3) the learning process encourages the students to be able to understand the material and apply it in real life, 4) the learning process can also be interesting for the students.

Based on the background of the study above, the researchers took this research to investigate the implementation of contextual teaching and learning approach to enhance students' higher order thinking skills of writing ability.

2. Literature Review

2.1 Writing Ability

As one of the productive skills, writing skills are seen as complex skills to understand. The students should be mastered writing skill as one of the language skill. This is due to the many aspects that need to be considered in writing. According to Golpour (2014) writing skills are a transformation of one's thinking in the form of language. Therefore, the students not only need physical creativity, but also need critical and systematical thinking activity before putting it into writing. In relation to the teaching, writing is not about giving assignments to the students of producing an essay consisting of several paragraphs. Teaching writing needs to begin with a briefing in the form of students' understanding that writing is an effort to develop the ideas gradually. These stages include of compiling sentences, compiling paragraphs, and composing discourse. So the

essence of teaching writing is to help the students to understand how to express ideas in writing, to encourage the students how to express themselves freely in writing, and to teach the students how to use appropriate and harmonious forms in written expression.

Writing is an essential process that uses symbols to record, communicate, and accommodate aspirations to be conveyed to the others. Writing can also be defined as an activity of delivering messages using written language as a tool or medium. Thus, it can be said that writing is an indirect communication in the form of transferring thoughts by utilizing language structure, graphology, and vocabulary using symbols so that it can be read as what the symbols represent. Writing is a system of recording language by putting signs on a surface so that it can be seen. Writing also has meaning of expressing information, ideas, opinions, or thoughts, and feelings in writing (Bakeer, 2018).

Based on the opinion of Motallebzadeh et al (2018), the stages of English writing include the following five stages: drafting, structuring, reviewing, focusing, generating ideas, and evaluation.
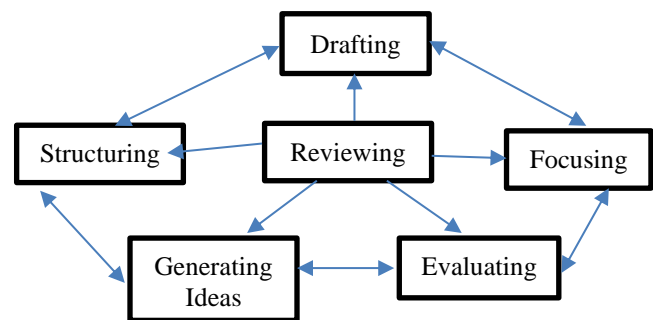
Figure 1. English Writing Procedure

The procedure for writing English in the picture above explains that the students discuss with related lecturers in making written drafts. Before the students decide on the draft of the writing, the lecturer provides explanations and directions on what kind of ideas which they will come up with. Then the students adjust the structure and grammar of an idea that they will write. After that, the lecturer gives a review regarding of the ideas that will be written both in terms of writing in English and focusing in accordance with the results to be achieved. One of the important elements in writing essays in English is the use of vocabulary, grammar, spelling, and punctuation. In this case, its use is regulated according to the grammatical rules. One of the things that affect the use of language in writing an essay is the behavior, thoughts of the author, and the picture from the reader's point of view.

The use of language in writing essays is divided into five categories or basic characteristics. For example, the sentence of the written must be clear or not have the potential which cause double meaning, be brief, and avoid irrelevant forms

of repetition, in addition be wise to be polite or showing the writer's good faith and respect. Furthermore, the sentence of writing must be correct, namely by describing facts using proper grammar, spelling, punctuation, and formatting. In addition, the sentences are also chosen carefully to build the reader's view with good and clean media.

2.2 Higher Order Thinking Skill

Currently the world has entered the 21st century and the industrial revolution 4.0, where science and technology continues to develop an effect on changes to take place without stopping in all fields. Because humans are required to be able to adapt through changes in mental attitudes, knowledge, and skills. Humans are required to be always continue in learning in order to develop their potential knowledge so that they can ready to compete their welfare. One way to prepare is educating the nation's next generation who are intelligent, critical, creative and provide positive reforms.

Higher Order Thinking Skill (HOTS) is an implementation of quality education because the learning and assessment is based on high-level thinking skills and its indispensable in the current era of the industrial revolution 4.0. The students' thinking skills are grouped into two categories, namely (1) low-level thinking skill (LOTS) which consists of knowledge (C1), understanding (C2), application (C3); and (2) higher order thinking skill (HOTS) consists of analysis (C4), evaluation (C5), and creation (C6). One form of evaluation that allows students to improve HOTS is performance in writing skills. In addition, the students' higher order thinking skills can be measured properly, the evaluation performance is closely related to the Bloomian HOTS aspect, namely at levels C4, C5, and C6.

Bloom's Taxonomy is designed with six elements to promote higher order thinking skills. The six levels are: knowledge, understanding, application, analysis, synthesis, and evaluation. After that there was a revision or change to Bloom's Taxonomy which became: remember, understand, apply, analyze, revise, and create (Ballakrishnan & Mohamad, 2020). Lower order thinking skills involve memorizing, while higher order thinking requires understanding and applying knowledge.
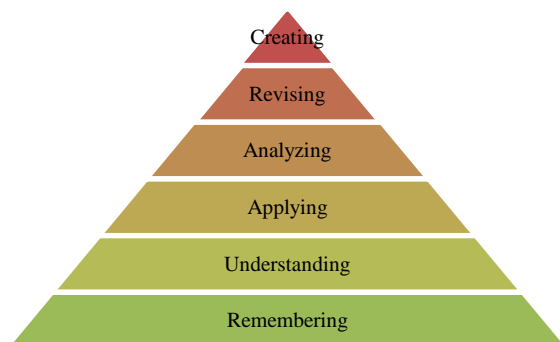
Figure 2. Levels of HOTS

The study of HOTS has been widely studied in various fields of study such as humanities, science, and business. HOTS is often discussed in the relation of critical thinking, academic achievement and development, graduate attributes, ICT in education, and how demographics and other factors might influence HOTS and the types of learning strategies used to improve it among students (Kaur & Hani, 2019). One of the contributing factors is the fact that much ultimately related in motivating students to think critically and develop cognitive skills to be more creative and analytical. Another contributing factor is the challenge of incorporating HOTS into the students' teaching and learning process.

2.3 Contextual Teaching and Learning

Contextual teaching and learning is a teaching and learning approach that encourages the students to connect their knowledge and its application in their real life. It aims to help the students to have dynamic knowledge. CTL was formulated as a teaching and learning approach related to the experiences and interests of the students (Nawas, 2018). There are seven components of contextual teaching and learning approach, namely: modeling, questioning, inquiry, constructivism, learning community, reflection, and authentic assessment. Thus, the learning outcomes are expected to be more meaningful for the students. The learning process takes place naturally in the form of students' activities in working and experiencing. Contextual teaching and learning is a system that stimulates the brain to compose patterns that embody meaning (Lotulung, Ibrahim, & Tumurang, 2018).

Meanwhile, contextual teaching and learning is teaching and learning approach that enables a learning process in which the students use their understanding and academic abilities in various contexts to solve simulative or real problems, either individual or together. Contextual teaching and learning prioritizes experience and knowledge, student-centered, high-level thinking, active students, fun learning, creative, critical, problem solving, exciting, not boring (joyfull and quantum learning), and using a variety of learning resources (Rafsanjani, Fitrayati, Andriansyah, Ghofur, & Prakoso, 2021).

The characteristics of contextual teaching and learning are as follows:

1. Making connection: the students can organize themselves actively in developing their interests individually.
2. Doing significant work: the students make connections between knowledge and experience.
3. Self-regulated learning: the students carry out the significant activities.
4. Collaborating: the students work effectively in groups and understand how to communicate with each other.
5. Thinking critically: the students can analyze, synthesize, solve problems, make decisions, and use logic evidence.

6. Nurturing individuality: the students can knowing, paying attention, giving high expectations, motivating, and strengthening themselves.
7. Achieving high standards: the students identify the goals and motivate to achieve them.
8. Using authentic assessment: the students use academic knowledge in real-life contexts for a meaningful purpose.

3. Method

This study uses a quantitative approach. Quantitative research is emphasizes objective phenomena which is studied quantitatively (Cresswell, 2012). It means that this study was conducted using numbers, statistical processes, structure, and controlled experiments. The research design is a quasi-experimental design through a pretest-posttest pattern, as follows.

Table 1. Research Design

Class	Pretest	Treatment	Posttest
Experiment	Y1	X	Y2
Control	Y1	-	Y2

The research sample was the students of writing class, they were 22 students of 2021 A class as experimental class and 23 students of 2021 B class as control class.

The data was collected through observation, questionnaire, and test. Before the instrument was being used, it was tested for validity and reliability. The observation sheet is used to collect the data about students' activities related to writing ability. The questionnaire was distributed to the students with the aim of knowing the interests and responses of students in learning English. 10 questions is scored on five categories of a Likert scale namely SA (Strongly Agree), A (Agree), N (Neutral), D (Disagree), and SD (Strongly Disagree). In addition, the distribution of questionnaire was also given to determine the assessment and impression of students on the readiness and the way of the lecturer delivered the learning materials. The written test was used to measure the students' abilities. The student's writing is assessed based on aspects of writing assessment that have been prepared at the planning stage.

On the other hand, to obtain quantitative data, the technique used is the implementation of pretest and posttest in each group. The results of the pretest are used as authentic data related to the students' initial skills in writing. Pretest was given to determine the initial ability of students in the group in writing. After conducting the pretest, the assessment was carried out on student's writing, then the researcher gave action in the form of learning activities that were integrated with the CTL approach.

4. Results

4.1 The Implementation of CTL Approach in Writing Ability

In the experimental class, the learning is carried out to the characteristics of CTL, including: (1) emphasizes the problem solving; (2) attempts to occur in multiple contexts; (3) helps the students to monitor their learning; (4) leads to the various contexts of students' life; (5) encourages the students to learn from each other (cooperative learning); and (6) applies the authentic assessment. The implementation of CTL in experimental class are as follows:
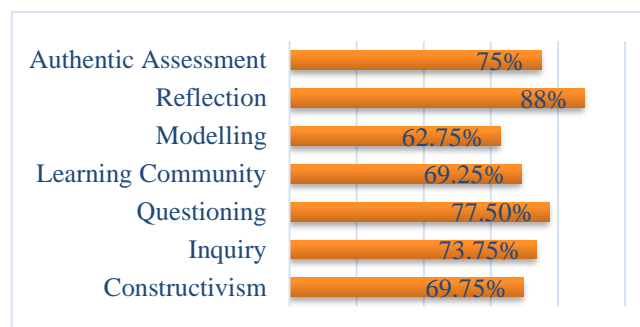
Chart 1. The Implementation of CTL

The first indicator namely constructivism which is a phylosophical foundation of contextual approach with the understanding of students based on previously knowledge. The ability of students to construct their own knowledge with contextual approach, includes: students' knowledge and skills. They are obtained from the process of self-discovery (the students pay close attention to the writing material). The students' knowledge and skills are obtained in a writing skills and students' activities to determine the interesting themes. It has been implemented 69.25% of average score.

The second indicator was inquiry which aims to increase the discovery process of students' skills. The ability of students to find knowledge on their own with a contextual approach is carried out in the steps: finding and collecting observational data, submitting opinions about writing materials. The learning activities are centered on students and assigning the assignments to write individually. The students solve some problems to explore information, stimulate to think, evaluate the learning process, clarify the ideas, and confirm what students know. It has been implemented 73.75% of average value.

The third indicator namely questioning which aims to encourage, guide, and develop students' understanding. The positive aspects of asking questions that occured are the students dare to express opinions about the material provided, enthusiastic in answering the questions, and solve the problems. It has been carried out 77.5% of average score.

The fourth indicator was learning community which has indicators of learning outcomes sourced from two-ways communication of group learning and other sources. Learning activities are characterized by activities such as: (a) the students are actively involved in learning together, sharing information and experiences, responding to each other, and communicating with each other to express their opinions; (b) heterogeneous group division has a positive influence, especially sharing knowledge among students; and (c) the students discuss the material provided, such as finding interesting themes, making observations, and compiling writing. It has been implemented 69.25% of average value.

On the fifth indicator of modelling which directs to focus attention, focus with keywords and understand an example of a problem. The realization of this activity is in the form of things such as: (a) modeling is done by the students who have language skills, (b) the students present the results of discussions in front of the class, (c) the students are active, enjoy, and enthusiastic in obtaining the data through observation activities, (d) other students imitate friends or groups who make in-depth observations, (e) the lecture gives examples of writing, and (f) the students imitate the steps in writing. It has been implemented 62.75% of average value.

The sixth indicator namely reflection which aims to remembering what has been learnt and evaluating the students' direct questions. Reflecting on learning activities is done by responding the events, activities, or knowledge received, it is an important part of contextual learning. The aspects of reflecting on the material in learning are the students respond to the learning material which is related to the students' experiences, the students are able to reflect and respond to ongoing learning and at the end of learning; and some reflections come from students. It has been implemented 88% of average value.

The seventh indicator was authentic assessment which aims to assess the affective and psychomotor during the learning process. Learning assessment is not only focused on assessment in the form of tests, but real assessment is also carried out during the learning process. The aspects of this assessment include: the students are able to answer the questions, the students are active in the learning process, and the students are able to evaluate their friends' writing. It has been implemented 75% of average value. From the seven indicators above, it can be seen that contextual teaching and learning approach has been well implemented.

To determine the improvement of students' writing skills is given the test with criteria as follows:

Table 2. Criteria for writing ability

|	Content
30-27	Excellent to very good: respond to the task correctly; correct discussion; relevant and precise information; very strong and supportive interpretation
26-22	Good to average: able to respond to the tasks; able to discuss; the information is generally relevant and appropriate; the interpretation is generally supports
21-17	Fair to poor: less able to respond to the tasks; the discussion is acceptable but sometimes inconsistent; the information is sometimes irrelevant/inaccurate; the interpretation is sometimes inconsistent with facts
16-13	Very poor: unable to respond to the assignments; the discussion is incomplete and inconsistent; the information is often irrelevant/inaccurate
	Organisation
20-18	Excellent to very good: good and clear technical form of communication
17-14	Good to average: communication technical form of arrangement in relationship
13-10	Fair to poor: communication does not follow a clear order
9-7	Very poor: cannot be communicated in a technical form
	Vocabulary
20-18	Excellent to very good: choosing the right words, choosing the right idioms
17-14	Good to Average: choice of words and idioms has meaning but there is a less clear placement
13-10	Fair to poor: limited vocabulary, idioms, and patterns
9-7	Very poor: very limited choice of vocabulary, idioms, and patterns
	Language Use
25-22	Excellent to very good: The language used is in accordance with the form of the text given and the context of the communication
21-18	Good to average: Generally the language used is in accordance with the form of the text given and the context of the communication
17-11	Fair to poor: The language used does not match the form of the text given and the context of the communication
10-5	Very poor: The language used is very bad
	Mechanics
5	Excellent to very good: Form, spelling, word choice, punctuation, use of capital letters, and neatness are very consistent with the rules of the text
4	Good to average: Form, spelling, word choice, appropriateness, punctuation, capitalization, and neatness are generally comply with the text's rules
3	Fair to poor: Form, spelling, word choice, appropriateness, punctuation, capitalization, and neatness are generally do not comply with the text's rules
2	Very poor: Form, spelling, word choice, appropriateness, punctuation, capitalization, and neatness do not comply with text rules
	Total Score $\dfrac{C+O+V+L+M}{5}$

In the pre-test and post-test both in experimental class and control class, the students were asked to write based on their experiences and their knowledges. In the pretest, the students of experimental class did not know the systematics of writing. After being given the CTL approach in

experimental class, the writing test results have increased. It shows an increase in students' understanding of the writing material. The results of the pretest and posttest data acquisition in the experimental class and control class can be seen in the following chart.
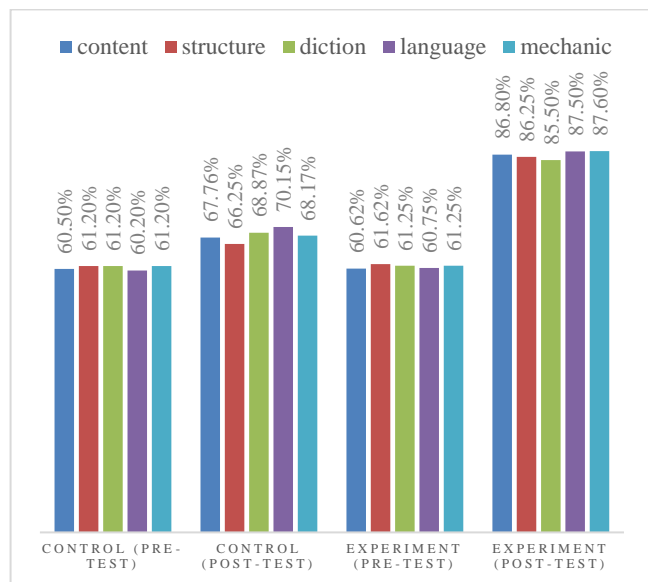
Chart 2. The Comparison of Pretest and Posttest in Control Class and Experimental Class

Based on **Chart 2** above, the students at the time of pretest were still having problems. After being given the CTL treatment in the experimental class, the results of the posttest was increased. Then in control class, both pretest and posttest results did not increase significantly.

Then the observations include of: obedience to planning, class management, and courage in carrying out activities, paying attention, active, critical thinking skills, self-confidence, and collaboration between friends. This indicator of assessment is structured to obtain data on the extent to which learning is going well and conducive. The results of observations obtained as follows.
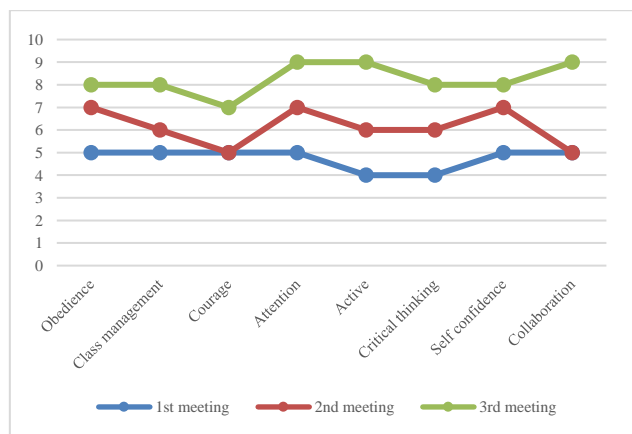

Chart 3. The Observation on Learning Activities

In addition to the students' activities, it also illustrates how the students respond in learning the CTL approach. The questionnaire was administered to collect information about the students' interests of taught using CTL. The questionnare were consisting of ten statements which revealing the use of CTL and the students' perception of using CTL. The researchers provided a close-ended questionnaire with five categories listed on it, namely SA (Strongly Agree), A (Agree), N (Neutral), D (Disagree), and SD (Strongly Disagree). The following figure describes the questionnaire results.
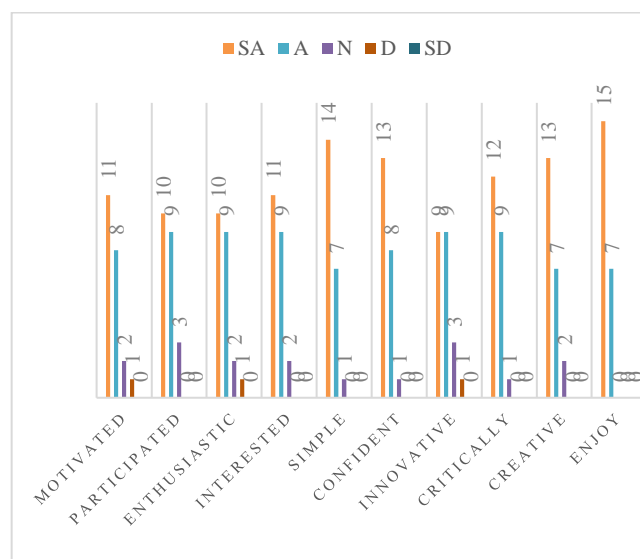
Chart 4. Student Responses of CTL Approach

Based on the data above, most of the students agreed (mean = 86%) that contextual teaching and learning approach aid in learning writing. Moreover, 13% of total score was categorized as neutral while only 1% disagreed. It can be seen that the majority of the students gave positive responses which were agree and strongly agree. It can be concluded that students agreed to felt delighted learning writing using contextual teaching and learning approach. The positive attitude of students towards learning is very influential on learning outcomes (Sari , 2022). Contextual Teaching and Learning (CTL) approach has made a good contribution, especially in terms of students' motivation and interest in learning to write and students' writing knowledge. Motivation and interest is one of the psychological factors that greatly affect in learning achievement.
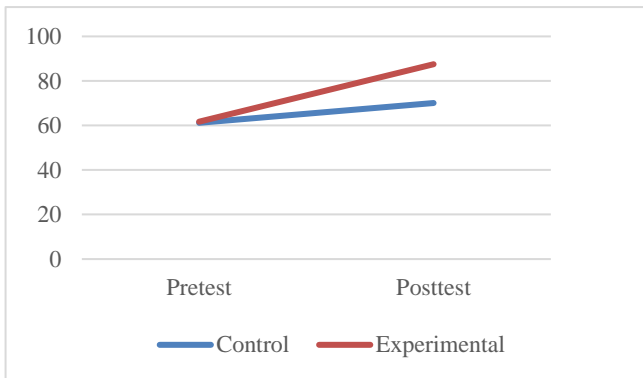
Chart 5. The Differences in Experimental Class and Control Class

The results of the above data show that the average value in the experimental class is different from the control class. Thus, it can be concluded that the use of CTL approach in a class has advantages compared to classes without CTL approach. In the table of experimental class values, it can be calculated that the percentage of class learning completeness is 91.6%, it clearly shows that the experimental class has completed learning because it has exceeded the minimum mastery learning requirements in class, which is 70%. From the results of this test, it can be seen the amount of mastery and initial knowledge of learning material that will be conveyed, so the lecturer can harmonize the knowledge that is mastered by the students at this time with the material that must be given later. From the pre-test value, the control class has an average class value of 61.2, while the experimental class has an average class value of 61.7.

However, a significant difference is reflected in the results after treatment. On a value scale (0-100), the average value of the control class after treatment is 70.08, while the average value for the experimental class is 87.5. Thus, it can be concluded that the experimental class using CTL approach obtained better higher order thinking skill than the students who studied without using CTL approach. The students can relate the knowledge taught with its application in everyday life (Nawas, 2018). This learning approach provides enthusiasm and encouragement for students to find out something new in learning that occurs and its associated with existing conditions.

Based on the data from the pretest and posttest results; observation; and questionnaires, then the results were processed statistically. The hypothesis test showed that the mean of pretest and posttest of experimental class and control class were different. It means that the final ability of experimental class is better than control class. To find out whether it is significant or not, a test is carried out at the next stage, namely inferential statistical analysis, with prerequisite tests, namely homogeneity and normality tests.

Homogeneity test was conducted to determine whether the data was homogeneous or not. The data used for this test is post test value data. The following table is homogeneity test of variance obtained from the analysis using SPSS v.18.

Table 3. Homogeneity Test of Variances

	Based On	Levene Statistic	df1	df2	Sig.
CTL	Mean	,505	1	71	,481
	Median	,403	1	71	,526
	Median and with adjusted df	,403	1	67,9	,526
	Trimmed mean	,504	1	71	,481

The calculation of homogeneity test using SPSS software with the Levene Statistic test, where the way to interpret this test is to compare the significance value with a 95% confidence level, which means that the error rate (α) of this test is only 0.05. If the Levene statistic is $> \alpha$, it can be said that the data variation is homogeneous. Thus it can be concluded that the entire value base of Sig. Levene Statistics $> \alpha$, then the research data that the researcher uses is homogeneous. Thus the data analysis can be continued to the data normality test stage.

The normality test is carried out to determine whether the data taken is normal or not, so that it can determine the next stage of testing using parametric statistical tests or non-parametric statistics. The following table shows the results of the normality test using SPSS v.18 based on the Kolmogrov Smirnov test.

Table 4. Normality Test

	Kolmogrov-Smirnov		
	Statistic	df	Sig.
Experimental	.144	37	.063
Control	.127	37	.160

The calculation of this normality test using SPSS software, which is based on the Kolmogrov test, where the way to interpret this test is to compare the significance value with a 95% confidence level, which means the error level (α) of this test is only 0.05. If the value of Kolmogrov Smirnov $> \alpha$, then the sample comes from a population that is normally distributed. From the table above, the results of the normality test are obtained which yield a significance value of the Kolmogrov Smirnov test = 0.063 for the experimental class and 0.160 for the control class. Thus the value of Sig. Kolmogrov Smirnov test > 0.05, it means that the sample taken comes from a population that is normally distributed. Based on the normality test, it can be concluded that further analysis can be carried out using parametric statistics, namely using the t-test.

Hypothesis testing was conducted to see the differences in the use of contextual teaching and learning approach. Because the previous statistical assumptions were met, then the hypothesis testing was carried out using the t-test. The following are the results of the t-test analysis using SPSS v.18.

Table 5. Independent Sample Test

		t-test of Equality of Means		
		Sig. (2-tailed)	Mean Dif.	Std. Error Dif.
CTL	Eq. var. assumed	.004	3.33333	1.44193
	Eq. var. not assumed	.004	3.33333	1.44193

Based on the table above, the two tailed significance value is 0.04. Based on the t-test, if the two-tailed significance value in the different test with SPSS is smaller than the error level (α) = 0.05, then the data variance is different. Therefore Ho is rejected and Ha is accepted. From the table of t-test above, the results (α) = 0.004. Thus it can be stated that (α) < 0.05, thus it can be concluded that Ho is rejected and Ha is accepted, it means that the hypothesis is received, there is a difference between higher order thinking skill on writing ability of the experimental class which uses CTL and the control class which does not use CTL.

After carrying out the various tests above, the researchers also uses a simple regression analysis test to predict the effect of the independent variable on the dependent variable. Here are the results of a simple regression test of one independent variable and one dependent variable using SPSS based on the coefficients table.

Table 6. Coefficients

Model		Unstd. Coef.		Std. Coef.		
		B	Std. Err.	Beta	t	Sig.
1	(Con)	85.963	2.270		37.608	.000
	CTL	-3.333	1.433	-.332	-3.071	.003

Based on simple regression analysis using SPSS v.18, the coefficients result in the significant column is 0.03. means sig. < 0.05. Thus, it can be concluded significantly that the students' ability in writing with the CTL approach is better than without using the CTL approach.

4.2 CTL Approach in Writing Ability on Students' Higher Order Thinking Skill (HOTS)

The students completed the scale and reported the scores on writing. After gathering the score, the data were analyzed. The internal consistency of the whole test was examined with the reliability as 0,85.
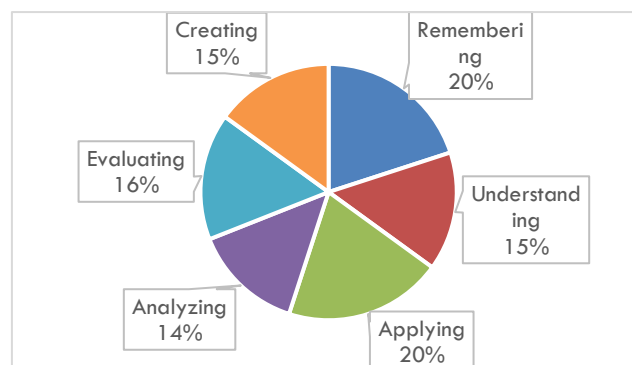
Chart 5. Students' scale on higher order thinking skill

As indicated in **Chart 5**, all variables significantly predict students' higher order thinking skills, they are: critical thinking (20%), communication (15%), collaboration (20%), creativity (14%), literacy (16%), and problem solving (15%). Higher order thinking skill includes the ability of ask pointed questions and solve problems, reason effectively, reflect critically on decisions, and analyze or evaluate alternative points of view (Ballakrishnan & Mohamad, 2020)

The students' higher order thinking skill indicators include of understanding the problem, making assumptions, explaining in depth, solving problems, and drawing conclusions. Furthermore, based on the research finding, it is proven that the CTL approach in writing can increase the students' high order thinking skills. It can be seen in the comparison of pretest and posttest values of high order thinking skills as follows.

Table 7. Comparison of the pretest and posttest

	A1	A2	A3	A4	A5
Pretest	9,10%	9,35%	8,93%	9,12%	8,91%
Posttest	24,20%	28,17%	25,13%	23,25%	20,63%

Based on **Table 7** above, there is an improve in students' higher order thinking skills, as follows: A1: understanding the problem (24,20%), A2: making assumptions (28,17%), A3: explaining in depth (25,13%), A4: solving the problems (23,25%), and A5: drawing conclusions (20,63%). It means that the CTL approach can improve students' writing performance and higher order thinking skills. Statistically, there is a positive relationship between increasing writing ability and students' higher order thinking skills.

5. Discussion

This study aims to determine whether there are differences in students' higher order thinking skill on writing ability between classes that use Contextual Teaching and Learning (CTL) and classes that do not use CTL approach. This study shows that overall, the students' higher order

thinking skill in writing abilitty with CTL are better than those in non CTL. But, particularly, the students with high order thinking skill succeed to improve their writing ability in conteaxtual teaching and learning approach. Moreover, the differences obtained from the results of data collection before and after learning are described above. From the results of the analysis before and after learning above, it can be identified that the use of contextual teaching and learning approach has a greater difference in value than the use of conventional learning approach.

Findings showed the students' writing ability are not only affected by contextual teaching and learning approach, but it also supported by the students' higher order thinking skill. From the research data obtained, the students are indeed more enthusiastic about participating in learning activities using CTL approach, because CTL approach makes the students curious about the learning function that is being carried out with its functional if applied in society (Lotulung, Ibrahim, & Tumurang, 2018). Contextual teaching and learning is suitable learning approach for students (Budiman, Samani, Rusijono, Setyawan, & Nurdyansyah, 2020), but CTL can also improve the competence and knowledge of lecturer (Dewi & Primayana, 2019).

Contextual teaching and learning approach are good to apply for learning strategies (Dude, 2020). Learning approach using CTL have improved mastery of the student concept in classroom (Hyun, 2020). The basic principle of CTL is to develop the competence of students (Indrayadi, 2020). CTL can also optimize the students' critical thinking ability (Mahmud, 2021). The students can easily understand the context of learning with each motivation and ability (Merawan, 2021). The advantage of CTL is the students can explore the environment and experience to strengthen their knowledge (Suadiyatno, 2020).

The students are more enthusiastic in the learning process during the implementation of CTL. The students are more motivated of working together in a team work. The above results strengthen the research of Rikardus, et al (2021) which expresses that the CTL approach can encourage the students' mastery in making connections between experiences and knowledge. The students also look active and motivated to solve the problems and experience, it increased the students' mastery of concepts during their learning in the CTL class (Syukri, 2021).

In this study, the CTL approach is related to students' higher order thinking skills. Critical thinking is an active reflective thinking. A simple way to generate critical thinking in learning activities can be through encouraging students (to present evidence and reasons in drawing conclusions) and asking critical questions. Higher order thinking skill must be continuously implied and explored continuously (Ghaemi & Boroushaki, 2022`). The students are more capable in remembering, understanding, applying, analysing, evaluating, and creating. Contextual teaching and

learning approach promoted the students' critical thinking ability (Al-Mekhlafi, 2018).

In experimental class, the students have opportunity to conduct discussions in contextual teaching and learning approach, and the students can interact with each other to share the information and work together with teamwork. Thus, the students' will be more in-depth understanding because the students become more skilled at giving explanation. This matter can be seen from the process of discussion that occurs in students taught by using contextual teaching and learning process. It is in line with Sari's statement (2022) which states that when students are able to define the problem, determine what they know, determine what is not yet known, and decide what they need to know about learning taking place, as well as exchange ideas with his colleagues then indirectly students' critical thinking processes are trained. Moreover, the students in experimental class be actively provide questions and explanations to others.

The use of CTL in experimental class can also provide a new learning atmosphere for the students. It giving rise to more motivation for students in learning, which in turn can increase mastery of the material (Hasani, 2016). When viewed from the learning outcomes that have been analyzed with the various tests above, it can be concluded that learning with the CTL approach has proven to have a role in applying the principles of thorough learning and individual learning according to the demands of the curriculum.

The increase of students' higher order thinking skills of writing ability that is taught using contextual teaching and learning approach is because of the process on discussion and inquiry. On learning contextually, it involve the students in various activities that helps them to hook up academic lessons with the context of life (Haerazi, Prayati, & Vikasari, 2019). The students find meaning on develop projects or finding problems, seeking information or engaging conclusion, actively compiling and investigating, then making decisions and linking academic content to internal context in life situations. Contextual teaching and learning approach will help to build the students' critical thinking and construct the problem-solving skills as well as social skills (Mursyid, 2019).

The steps of contextual teaching and learning approach also plays an active role in build students' higher order thinking skills, because these steps lead the students to be more able to present and apply knowledge on the material discussed. The seven steps of contextual teaching and learning approach give the opportunity to the students to investigate further about the concept or material discussed, and also discussed it with group of friends. With the process of CTL, the students are indirectly trained to thinking critically to find and select information relevant to the subject matter which is being studied (Rafsanjani, Fitrayati, Andriansyah, Ghofur, & Prakoso, 2021).

6. Conclusion

From the analysis of research finding, it can be concluded that contextual teaching and learning process is able to improve the students' higher order thinking skills in writing ability. Contextual teaching and learning approach has seven steps, these are constructivism, inquiry, questioning, learning community, modelling, reflection, and authentic assessment. The research findings show that contextual teaching and learning approach is useful to enhance the students' higher order thinking skills in writing ability.

The implementation of CTL has contributed with the following indicators. First, there is a positive attitude of students towards learning in the classroom. Second, CTL invites the students to enjoy in understanding learning materials. Third, the students' responses to the writing activities were very good, especially when they asked to make observations, compose a writing outline, and develop a writing outline into several paragraphs. Fourth, the students' impressions of learning, such as increase knowledge and improve writing skills. Therefore, it is suggested to the lecturer to keep going to apply contextual teaching and learning approach, because this learning approach can minimize the students' learning problem. The role of CTL can also provides the students to train their metacognitive awareness, thus it is suggested to the further researcher to explore more deeply about contextual teaching and learning approach.

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