THE EFFECTIVENESS OF CONTEXTUAL TEACHING AND LEARNING IN IMPROVING STUDENTS’ READING SKILL IN PROCEDURAL TEXT
(A Quasi-Experimental Study of the Second Grade Students at One Vocational School in Bandung)

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Abstract: This study aimed to investigate the effectiveness of Contextual Teaching and Learning (CTL) approach in improving students’ reading skill in procedural text and to find out the students’ responses toward the use of CTL in learning process. The quasi experimental design was employed in this study involving two classes which were assigned as experimental and control groups. The data were collected through pretest, posttest, and interview. The data from pretest and posttest were analyzed by using SPSS to examine the effectiveness of CTL approach in improving students’ reading skill in procedural text, while the interview data were analyzed to find out the students’ responses toward the use of CTL in learning process. The findings obtained from statistical computation showed that CTL approach could improve students’ reading skill in procedural texts. In addition, the interview data showed that the use of CTL motivated students to learn and helped the students to understand the materials. Based on these findings, it is recommended that CTL approach is implemented in teaching reading procedural text.

Keywords: contextual teaching and learning, reading, procedural text

Introduction
Indonesian students’ reading ability is still far from satisfactory. Media Indonesia (as cited in Sukyadi and Hasanah, n.d) reported that sixty nine percent (69%) of 15-year-old Indonesian students have internationally worst reading performance. Another discussion in Kompas daily newspaper (as cited in Sukyadi and Hasanah, n.d) found that around 37.6% of 15-year-old students can only read the texts without understanding the meaning carried by the text. Only 24.8% out of them are able to relate the texts with their prior knowledge. This reflects that many students in Indonesia still have inadequate ability to comprehend the texts. Besides, in one vocational school, it was found that many students had difficulties in reading. They could not understand the passage and
answered the questions given, since they had lack of vocabularies. The students’ failure in reading achievement also occurred as a result of not putting the reading materials and vocabularies in a context when they were used in teaching and learning process. Thus, the students were not able to get clear idea of the overall meaning of the text and they seemed to forget what they have learned.

Beare (2014) states that giving contextual clues is important to help students understand unfamiliar words that they find in the text, thus the context clues can help students to increase their existing vocabulary knowledge. In order to provide context clues in teaching and learning process, Contextual Teaching and Learning (henceforth CTL) approach is applied. In relation to the School Based Curriculum (KTSP) of Vocational School released by National Education Ministry year 2006, the basic competence number 2.6, “Understanding simple Instructions”, demands students to develop their reading skill to comprehend the instructions or procedures. Thus, the implementation of CTL is crucial as one of the choices to help students understand the instructions and recognize the vocabulary used in the text.

The contextual approach is a learning philosophy that emphasizes students’ interests and experiences (Satriani, Emilia, & Gunawan, 2012). A study of the Office of Vocational and Adult Education (2001) explains contextual learning occurs when teachers relate subject matter content to real world situations. Therefore, the students are motivated to make connections between knowledge and its applications to their lives as family members, citizens, and workers and engage in the hard work that learning requires. The Contextual Teaching and Learning (CTL) procedures according to Crawford (2001) consist of Relating, experiencing, applying, cooperating, and transferring (REACT). These procedures enable students to relate their preexisting knowledge with the new concept, construct new knowledge by experiencing it in the classroom, implement the concept in problem solving activities, work cooperatively in group or pair work activities, and use the knowledge they get in a new context.

Since this study was conducted in Vocational School, the application of English for Specific Purposes (ESP) became crucial. As described by Hutchinson and Waters (1986, p. 17),
English for Vocational Purposes (EVP) is a branch of English for Specific Purposes (ESP). Therefore, ESP materials should be used in teaching reading to Vocational School students. It is supported by the content standard released by National Education Ministry number 22 in 2006 related to the purpose of English subject in Vocational School, “Understanding the knowledge and basic skill of English to support the achievement of major’s competence”. Besides, in relation to the approaches of CTL proposed by Berns and Erickson (2001), Work-based learning is applied to integrate the materials with the workplace situation.

**Literature Review**

- **Reading Comprehension**

  Johnson (1983, pp.17) states that “Reading comprehension is a complex behavior which involves conscious and unconscious use of various strategies, including problem-solving strategies, to build a model of the meaning which the writer is assumed to have intended”. Regarding the process of reading comprehension, Pardo (2004) suggests four elements of reading comprehension: reader, text, context, transaction. The readers’ background knowledge can ease them to construe the writer’s message and comprehend the text, the clear text structure helps readers to interact with the text, context provides clues which can be used to infer the meaning of an unknown vocabulary within the text, and transaction occurs after the readers build mental images.

- **Procedural Text**

  Procedural text is one of the types of text which gives instruction in how to do something through a sequence of the steps (Emilia, 2011, p. 28). According to Gatzke (2003), procedural text can be a text which instructs both how to do particular activity (recipe, science experiments, road safety rules) and how to operate an appliance, machine, computer, or other tools. This type of text is usually found in science experiments and in instructional manuals such as gardening, cookbooks and technical instruction sheets (Emilia, 2011).

  Emilia (2011, p. 98) explains the generic structure of procedural text, including: (1) **aim**, which presents the purpose and predict the conclusion might happen; (2) **materials and tools**, that explain materials and apparatus needed in completing the procedure, or the object will be examined (3) **steps**, which describe sequence of actions in the right order to
accomplish the experiment or procedure. Every step is described in separated lines and written by using imperative sentence or command.

Emilia (2011, pp. 99) also explains specific linguistic features of Procedural text, such as: use action verbs and command; use time signals to put the steps in order; sometimes use word, phrase, or clause which indicates when the action is done and it is put at the beginning of the sentence; sometimes use adverb of manner or word, phrase, or clause which shows how something is done; use technical vocabularies depending on the topic of the text; describe specifically the utensils used, including shape, color, size, and the quantity.

- **Contextual Teaching and Learning in Teaching Reading**

In applying contextual teaching and learning in teaching reading, there are continuous shifts from top-down to bottom-up processing. It can be seen from the strategy of CTL which is begun with the relating stage. In this stage, the students are asked to relate their prior knowledge or experience with the topic discussed. Here, the top-down approach is useful to predict probable meaning. In the next stage, the students are challenged to experience, apply, and transfer the new knowledge. In these stages, bottom-up approach is important to check whether the reader’s understanding is really what the text informs. It is in line with Clarke and Silberstein (1977, pp. 136-137) who suggest that reading skills rely on the efficient interaction between linguistic knowledge and knowledge of the world. Therefore, in comprehending the text, the students should activate their prior knowledge related to the topic to make prediction about the content of the text or vocabularies found in the text, and use their linguistic knowledge to check the prediction they have made before.

- **Definition of CTL**

Satriani, et al (2012) define contextual teaching and learning as “a learning philosophy that emphasizes students’ interests and experiences”. The definition of CTL emerged from a study conducted by the Office of Vocational and Adult Education as cited in Berns and Erickson (2001) is as follows.

Contextual teaching and learning is a conception of teaching and learning that helps teachers relate subject matter content to real world situations; and motivates students to make connections
between knowledge and its applications to their lives as family members, citizens, and workers and engage in the hard work that learning requires.

Therefore, it can be inferred that CTL is an approach which relates materials to the students’ experience, interest, and its application in their real world outside classroom. By applying CTL, the students can see the relevance of the materials they learned in classroom with its application in their daily lives.

- **Principles of CTL**

  There are seven principles should be developed by teacher in applying CTL (Ruhimat, et al, 2012): (1) **constructivism**, (2) **inquiry**, (3) **questioning**, (4) **learning community**, (5) **modeling**, (6) **reflection**, (7) **authentic assessment**.

  **Constructivism** promotes meaningful learning which can help students put the material they have learned in long-term memory. As Brown (2001, pp. 56) states that, “Meaningful learning subsumes new information into existing structures and memory system, and the resulting association links create stronger retention.”  

  **Inquiry** encourages students to develop the knowledge based on their own experience. Inquiry can help students to develop their creativity and critical thinking. The students make an observation, propose some questions, make prediction, collect and calculate the data, and make conclusion from what they have learned. **Questioning** gives benefits in teaching and learning process, such as: (1) students can obtain much information; (2) teacher can examine students’ understanding; (3) it develops students’ response; (4) it finds out students’ curiosity; (5) it observes students’ prior knowledge; (6) it helps teacher get students’ attention; (7) it invites more various questions from students; (8) it reviews the students’ preceding knowledge. **Learning community** accustoms students to work cooperatively with others and share their knowledge. In learning community, students can learn how to work in team and how to interact with others. Therefore, students can get information from the community inside and outside class, such as family or society. **Modeling** gives students the model or the example, which is important to help students acquire the knowledge being learned. **Reflection** can guide students apply their knowledge, attitude, and skill in their real life. **Authentic assessment** is conducted during and at the end of the learning process. It shows the teacher how
much academic material the students know and what the students are able to do.

- **Approaches of CTL**

According to Berns & Erickson (2001), a variety of teaching approaches may be used in implementing CTL. These approaches have emerged and included context as a critical component. They engage students in an active learning process. However, for the purpose of this study, there are only two out of five approaches of CTL (problem based learning, cooperative learning, service learning, work based learning, and project based learning) which are going to be elaborated in this section. They are as the followings.

1. Cooperative Learning

   Cooperative learning strategy organizes instruction using small learning groups in which students work together to achieve learning goals (Holubec, 2001). By working in group, students can cooperate and interact with each other. Thus, they can learn better since they can share their understanding and ideas with other members of the group.

2. Work-based learning

   This is a strategy in which workplace, or workplace-like, activities are integrated with classroom content for benefit of students and often business (Smith, 2001). In work-based learning, the materials and activities are modified and associated to the workplace. Thus, the existence of ESP is needed to meet the students’ needs.

3. Strategies in CTL

   In addition to the principles and approaches, the implementation of CTL in classroom includes REACT strategies. According to Crawford (2001), REACT strategies in CTL approach can help students improve their learning. These strategies include relating, experiencing, applying, cooperating, and transferring. The REACT strategies are elaborated as follows.

   (1) **Relating** can help students to create their own knowledge by relating the topic discussed with their experience; (2) **experiencing** is useful for the students to lean the new concept; (3) **applying** motivates students to use the concept in solving the problems (4) **cooperating** encourages students to develop their cooperative and communication skills and build their self-confidence; (4) **transferring** helps students to use the knowledge in a new context in their life.
4. English for Specific Purposes in Teaching Reading by Using Contextual Teaching and Learning

English for Specific Purposes (ESP) is defined as an approach to language teaching which aims to meet the needs of particular learners (Hutchinson and Waters, 1986, p. 21). In ESP, any teaching activity whether it aims to teach language or skills, is presented in context (Hutchinson and Waters, 1986, p. 11). The existence of context promotes contextual teaching and learning approach to be applied. Contextual learning occurs when teachers relate subject matter to real world situations. Therefore, the students are motivated to make connections between knowledge and its applications to their workplace. In teaching reading procedural text by using CTL, ESP is included specifically in the teaching materials in accordance with the students’ major. Since the students may find many kinds of instructions or procedures in their future work, the materials should be designed specifically for the students in certain major. Therefore, the learning process can improve students’ skills in reading the instructions and give the new information related to their major’s subject.

Methodology

This research used a quasi-experimental design, which included experimental and control groups. Hatch & Farhady (1982, p. 24) states that quasi-experimental designs are practical compromises between true experimentation and the nature of human language behavior which we wish to investigate. It creates treatment conditions by manipulating an independent variable, and then giving test to the participants to obtain a set of scores within each condition (Gravetter and Forzano, 2012). A quasi-experimental design involves selecting groups which are tested without any random sampling. Therefore, it can reduce time and resources needed for experimentation (Shuttleworth, 2008).

This study was conducted in one of public vocational schools in Bandung. From the nine existing classes, only two classes were chosen as the sample of this study, XI TKJ 1 and XI TKJ 2. XI TKJ 1 was chosen as the experimental group and XI TKJ 2 was chosen as the control group. Each group consisted of 30 students, thus the total numbers of the sample of this study were 60 students.

The data were collected through pretest, posttest, and interview.
Beforehand, the pilot test was conducted to examine the validity of instrument and then revise it into the correct one (Creswell, 1994). Then, the pretest was given to both control and experimental groups before the students received treatments to determine the students’ knowledge level of the course content. After the treatments were completed, the post-test was conducted to see whether the treatments given were successful in increasing students’ knowledge of the training content (I-Tech Technical Implementation Guide, 2010). Therefore, it can be determined if there is significant difference between the control and experimental groups after receiving treatments.

After the treatments were completed, the interview was carried out to the students in the experimental group. The respondents were selected based on the principle of voluntary and fairness (Herdiansyah, 2013, p. 49). The interview aims to obtain more information about students’ responses toward the use of CTL approach. The interview was conducted individually in the form of open ended questions. Open ended questions allow interviewees to express what they think in their own words (McLeod, 2014) and elicit deeper information about the topic discussed (Sugiyono, 2010). The interview was conducted by using Bahasa Indonesia to allow students to express themselves clearly (Asri, 2013). It is in line with Andreenkova (2012) who states that the interview should be conducted by using the language which is used most or the language preferred or feel more comfortable to use during interview. The coverage of interview included students’ opinion about reading, students’ opinion about the importance of reading, difficulties that the students found in reading, the students’ opinion toward the use of CTL in reading procedural text, advantages and disadvantages they got after learning procedural text by using CTL.

Data Presentation and Discussion

- The Effectiveness of Using CTL

This present study found that the control and experimental groups experienced improvement the treatments were given. It can be seen from the dependent t-test calculation which showed the significant value of 0.000 for the experimental group, and 0.005 for the control group. The values of both groups
were below the level of significance 0.05 (EG = 0.000 < 0.05, CG = 0.005 < 0.05). It indicated that the treatments using CTL and GTM could improve the students’ ability in reading. However, the calculation of independent t-test showed that that the means of experimental group was significantly different from the means of control group with significant the value 0.018, which was lower than 0.05 (0.018 < 0.05). Besides, $t_{obt} = 2.424$ was higher than $t_{crit} = 2.002$, $\alpha = 0.05$, $df = 58$, two tailed. It indicated that the null hypothesis was rejected. In other words, the treatments by using CTL given to the experimental group resulted in better improvement than the treatments by using GTM applied in the control group. Besides, the CTL approach worked well enough in improving students’ reading skill. It can be seen from the effect size which showed the value 0.303. Based on the effect size criteria, the $r$ value represented a medium effect size.

The elements of reading comprehension (Pardo, 2004) in this study involved (1) the readers which are familiar with the information or experience related to the topic of the texts given in classroom, have good motivation in reading, and have awareness of the importance of reading; (2) the texts which used appropriate genre of procedural text, vocabularies used in computer and networking, content of the text that is relevant for students in computer and networking department, technical vocabularies in computer and networking included in the texts, such as browser, windows, folder, files, web, tab, emoticon, download, upload, etc., difficulty level of the text used, and even the proper font type and font size can ease reader to interact with the text; (3) the context which can be seen from the topic of the text which was related to computer, pictures of computer, laptop, Facebook homepage, and videos about resetting printer, sending email, and inserting videos in power point presentation (PPT). It is in line with Reardon (2011) who states that context clues can be words, pictures, graphs, tables, and side notes, which might be included in the text and can be used to help deduce the meaning of an unknown vocabulary word within the text; (4) the
transaction happened when the students found a gist of the text message. These elements could help students get better understanding in reading procedural texts.

The application of principles of CTL (Ruhimat, et al, 2012) applied in this study included (1) constructivism, in which the students learn the instructions by doing it through real practice (learning by doing). For example on the fourth meeting, the students were instructed to send an email through yahoo emailing site after they have finished reading the text. Therefore, the students were engaged in hands-on activities; (2) inquiry, which was applied in word search activity and matching the words with the clues. Thus, the meaning of the technical terms in the instruction were not directly given to the students. It could evoke students’ inquiry to solve the problem, since the students were encouraged to develop the knowledge based on their own experience; (3) questioning, in which students were asked about how to do the instructions before the text was given, or whether they were familiar with the pictures or videos showed; (4) learning community, which can be seen from the group work in almost all activities during treatment; (5) modeling, which was applied through pictures or videos about how to do the instruction related to computer and networking given to the students as examples of how to do the instructions; (6) reflection, in which the students were asked about what they have learned at the end of each learning process. Thus they were checked whether or not they remember what they have learned in every meeting; (7) authentic assessment, which was not only conducted through giving a test or exercises, but also through demonstrating the procedure into practice and doing group work.

The approaches of CTL (Berns & Erickson, 2001) which were applied in this study included (1) cooperative learning strategy, which was applied in small group activities to complete the exercises, play games, find the words based on the clues, and apply the instruction into practice; and (2) work-based learning, in which the topics of the texts were associated specifically to computer and networking technology. It can be seen from the topics of the texts given in the treatments including ‘How to Change the Language on Your Computer’, ‘Uploading a New Photo to a Timeline on a Computer’, ‘How
to Reset T13 Epson Printer’, ‘How to Send an Email from Yahoo! Emailing Site’, and ‘How to Add Video to Your PowerPoint 2007 Slides’. By learning the texts related to the computer and networking technology, not only can the students learn the language, but also enrich their knowledge related to computer and networking for their future work.

The strategies of CTL (Crawford, 2001) in this study involved (1) relating, in which the students were encouraged to activate their prior knowledge through pictures, videos showed, and questions from teacher, and relate it to the new materials; (2) experiencing, in which the students worked in group to complete the instructions with the appropriate words, and were challenged to find the appropriate words based on the clues given; (3) applying, in which the students were asked to arrange the jumbled pictures based on the given instructions and practice the procedures they have learned; (4) cooperating, which was applied by working in small groups to complete the tasks given; (5) transferring, in which the students were given new texts but still with the same topic. The students worked with their friends to complete the exercises given. Through this activity the students were expected to use what they have learned in new situation.

- The Students’ Responses toward the Use of CTL in the Learning Process

This present study found that most of the respondents like reading English text, with the percentage 78%. Therefore, it can be concluded that the students’ interest in reading could increase their motivation in reading and resulted in good score in reading text. Besides, their awareness of the importance of reading could also increase their motivation in reading. The interview data showed that although 2 of 9 students dislike reading English texts, all of them were aware that reading is important to enrich their knowledge, to answer the questions, and to improve their ability in English. Thus, it was obvious that students’ interest in reading and their awareness of the importance of reading gave positive effect on the students’ score.

Although the students have high motivation in reading, the students still found difficulties when they read English text. The interview data showed that 6 of 9 students (67%) had difficulties in reading, in which all of them had problem with their lack of vocabulary knowledge. On the other hand, 3 of 9 students (33%) had no difficulties in reading text since they had
enough vocabulary knowledge to understand the text.

Since CTL provided context in learning process, the students could use this context as clues in predicting unknown vocabularies, thus they could understand the content of the text without knowing the exact meaning of each word in the text. Although the teacher did not tell the meaning of the words directly, the students could guess the meaning of the words and understand the instructions they read. It was supported by the interview data which indicated that the students had some positive opinion toward the implementation of the CTL in this study. The respondents perceived that CTL could help them understand the materials and created enjoyable learning situation. However, the negative response also sated by 1 of 9 student (11%) who perceived that this method gave less chance for dialogue practice. Therefore, it can be concluded that CTL approach which provides context clues could help students understand the materials and create more enjoyable learning situation, but it did not provide the chance for students for practicing the dialogue.

Regarding the advantages of CTL, there were two points highlighted; (1) helping students in getting better understanding; and (2) motivating students to learn. Related to the first point, helping students in getting better understanding, the result of interview showed that 5 of 9 students (56%) perceived that CTL could help them understand the materials. It is due to the various media used in learning process and the teacher’s help in completing the task. Pedagogy in Action the SERC portal for educators (2012) suggests that using media engages students, aids students’ retention of knowledge, motivates interest in the subject matter, and illustrates the relevance of many concepts. In this study, the pictures, videos, and games were provided as the media of teaching. It has been proven that the use of those media could help students in understanding the materials they learned in classroom.

The result of interview on the second point, motivating students to learn, showed that 4 of 9 students (44%) perceived CTL approach could motivate them to learn, since CTL approach can create more enjoyable learning situation through group work and other activities. Referring to group work activity, Crawford (2001) states that when the students succeed in achieving the goals through group work, each students
of the group will gain higher self-confidence and motivation rather than when they work alone. Brown (2002, p. 178) also stated that affective benefit of small group work is an increase in student motivation. It has been explained before that CTL includes learning community principle, cooperative learning approach, and cooperating strategy. Most of activities conducted in the treatments involved students to work in group in completing the task, playing games, and applying the instruction. Thus, it was obvious that through group work activities students could learn in more enjoyable situation, get self-confidence, and increase their motivation in learning.

As an opposed to the advantages of CTL approach, the disadvantages found by students when CTL approach was applied. The disadvantages were related to the text used and the learning process. The interview data showed that 2 of 9 respondents (22%) stated that the long text creates boredom in reading. Unconducive learning was also perceived by 4 of 9 students (45%). It was caused by the noise occurred in the classroom when the lesson took place. Since the learning activity was mostly conducted in group, the noise was often occurred, especially when the students were given quiz or games. However, 3 of 9 (33%) students perceived that CTL approach did not give any disadvantages. They stated that it is good to apply CTL in learning process.

**Conclusions**

The result of this present study showed that the use of CTL improved students’ reading skill. It can be seen from the calculation of t-test in SPSS 17.0 for windows which showed that the experimental group’s post-test score significantly improved than the score of control group. The experimental group’s mean score was 86.53, while control group’s mean score was 82.40. Besides, significant value from the computation of independent t-test was sig. (2 tailed) = 0.018 which is lower than 0.05 (0.018 < 0.05), and the $t_{obt}$ was higher than $t_{crit}$ (2.424 > 2.002). It was indicated that the null hypothesis was rejected and there was significant difference between students who learned procedural text by using CTL and those who learned it by using GTM. In conclusion, the use of CTL improved the students’ reading skill in procedural text.

The elements of reading comprehension and the application of the principles, approaches, and strategies of
CTL could activate students’ prior knowledge and experience related to the topic of the texts given, encourage students to build the knowledge, engage students in group work to solve the problems they found during the learning process, make reflection of what they have learned, promote learning in context based on their major (computer and networking technology) which can be useful for the their future work, encourage students to apply the instructions they have learned in real practice, and encourage students to learn in novel situation. Through these aspects students were able to understand what they have read and learned from the text, and improve their reading skill, particularly in procedural text.

Furthermore, this present study also found that the students have some positive responses toward the application of CTL in reading procedural text. The result of the interview showed that the students got many advantages through the use of CTL in classroom activity, include; (1) helping students in getting better understanding about materials through the various media used in learning process which helped them understand about materials being learned; (2) motivating students to learn, since they could share their knowledge and work together in completing the task.

Although the current study revealed some positive findings for the development of teaching reading in Indonesia, there is also a weakness that should be looked at the future study. The main problem was students found that the use of CTL did not give them many chances for dialogue practice.

Regarding the data obtained through statistical computation and interview, it is obvious that contextual teaching and learning is useful to help students to get better understanding, especially in reading procedural text. By applying CTL approach, teacher can relate the materials with the real world situation outside classroom, and motivate students to link the knowledge they learn to its application in their lives.

For the teachers who would like to apply this approach in classroom, they need to prepare and plan the lesson well since it can determine the success of the teaching and learning process, provide various kinds of media and choose the material which relates to the students’ needs and interest to increase students’ motivation, and give instructions clearly to
the students. In addition, for the researchers who are interested in the similar study can involve students from different level (junior high school and elementary level) or students of vocational school but from different majors.

References


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