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Social Constructivism-Based Reading Comprehension Teaching Design at Politeknik Negeri Sriwijaya

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Abstract

This study aimed at investigating students' reading comprehension achievement, vocabulary mastery, and social values among the third semester students at Computer Engineering, English, and Business Administration department of Politeknik Negeri Sriwijaya Indonesia. In this research, the writers used Research & Development (R & D) methodology. The purposive sampling included 3 high classes and 3 low classes consisting of 148 students. To collect the data, tests of reading comprehension and vocabulary were given and then statistically calculated with the paired-sample t-tests. Shapiro-Wilk test was used to the normality of data distribution. The findings indicated that the students in the high and low classes could significantly improve their reading comprehension achievement and vocabulary mastery. The students have also shown very positive moral values towards their friends such cooperative, respectful, responsible, and helpful and report that it has made their reading process more tangible and interesting. These results verify the efficacy of the social constructivism-based reading comprehension teaching design and the researchers recommends its application in Politeknik Negeri Sriwijaya.

Keywords: Reading comprehension achievement, vocabulary mastery, social Constructivism

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Introduction

In general, the goal of education is to improve the literacy skills of any individual, for example, reading. Literacy development is a beneficial activity involving students in ways of making, interpreting, and communicating ideas or meaning with written language. It means that literacy is the way to understand other skills. Students must be taught to be aware of their own literacy skills reading, writing, speaking through different kinds of reading materials.

One of the literacy skills that must be developed is reading. Reading is the basic skill for any students to understand in the process of learning. Having low comprehension in reading will influence students' active thinking and participation in the classroom (White & Coleman, 2000; Souvignier & Mokhlesgerami, 2006). To make students active in thinking and participative during the teaching and learning process, any English lecturer must be able to create and use an effective reading comprehension teaching design.

Literacy development in Indonesia especially for reading is really needed in all levels of education. The students are going to find a job, work, and attend many kinds of seminars (Alwasilah, 2012; Suleimani & Nahizadah, 2012). In short, to be able to compete in the globalization era and succeed in any aspects of professions and lives, students must be knowledgeable. To be a knowledgeable one, someone must read a lot because of the fact that all up-to-date information of science is in the form of the written text.

Based on the average scores of TOEIC from 2014 to 2017 at Politeknik Negeri Sriwijaya, it was found that students' scores of TOEIC were still low. The average score of Listening part was around 135-200 and of Reading comprehension was around 125-175 (English Department Polsri, 2017). The low scores in reading comprehension part of TOEIC could be an indication that there was a problem in the teaching and learning process of reading comprehension course at Politeknik Negeri Sriwijaya. To overcome such a problem, there had to be an effort to fix the teaching and learning process of reading comprehension course in the classroom. The solution, based on the writers' point of view, was by creating a reading comprehension design that could improve students' reading comprehension achievement.

The observations conducted by the writers started from February to April in 2017 revealed that many English lecturers in teaching the reading-comprehension course still employ a teacher-centered method covering activities of making list of difficult words, translating their meanings into L1 (First Language), asking students to read loudly and/or silently, and having students answer the questions related to the text. However, this kind of method caused negative effects on the teaching and learning process and affected students' reading skill. Only some students, categorized "knowledgeable", dominated the classroom. Other students kept silent, did not participate and made a noise. In the classroom, there was a partition between students who were knowledgeable on English course and students who were less-knowledgeable on English course. When the English lecturers asked them to work in a group, the knowledgeable students did not want to select less-knowledgeable students to join their group. They just selected students whose competencies were like theirs. They welcame less-knowledgeable students to be a member of their group after the English lecturers had insisted on them. It surely made the learning atmosphere in the classroom less-encouraging.

The writers believe that to overcome the above problems is by creating a reading comprehension teaching design of social constructivism that is able to improve students' reading comprehension achievement, accommodate all students at any reading level of English, and grow social values to eliminate a friction among them. The reading comprehension teaching design itself must place an English lecturer as an academic leader and facilitator of students.

Social constructivism has important implications for teaching. The constructivist teachers have the role of guides for the students and provide their students with opportunities to test the adequacy of their current understandings. According to Gagnon and Colley (2001), a constructivist approach is oriented on construction of knowledge putting students in practical situations under the guidance and tutelage of teachers. It seems to be based on the belief that learners construct their own knowledge through interaction, and the assumption that knowledge is physically constructed by learners who are involved actively in learning process appears to be substantiating it. While Lord, Magill, & King (2005) and Amineh and Asl (2015) propose that knowledge in the constructivist approach, is constructed in social environments, where the interaction is considered to be a fundamental factor for effective teaching learning process. Under such circumstances the role of a teacher cannot be neglected rather it becomes more significant in terms of coaching students to selecting appropriate activities for learning (Lord et al., 2005; Amineh and Asl, 2015).

Students are active stake holders in the process of knowledge construction and its dissemination. Students participate in teaching learning process and assume responsibility of their learning by giving it their own meaning in their respective contexts. Hence, constructivism offers students opportunities of cooperative and collaborative learning (Lowenthal and Muth, 2008; Santrock, 2010; Singh and Rajput, 2013). In conclusion, the constructivism emphasizes, the student as being the active learner, playing a central role in mediating and controlling learning and maintains that students create or construct their own new understanding, or knowledge through the interaction of previous experiences, ideas, believes, events, etc, and activities with which they come in contact.

Themes in constructivist work include active engagement in processes of meaning-making, text comprehension as a window on these processes and the varied nature of knowledge, especially knowledge developed as a consequence of membership in a given social group. According to Au (2005), social constructivism includes the idea that there is no objective basis for knowledge claims, because knowledge is always a human construction. Au (2005), Mogashoa (2014), and Amineh and Asl (2015) state that the process of knowledge construction is by the social group and the inter-subjectivity established through the interaction of the group. It is in line with what Duffy (2006) explained that students generate knowledge and meaning from an interaction between their experiences and their ideas (p.16). To conclude, social constructivist research on literacy learning focuses on the role of teachers, and peers members in mediating learning on the dynamics of classroom instruction.

According to Pratton and Hales (1986), and Von Glaserfeld (2005), the students spent more time in doing activities that required thinking, responding and verifying their knowledge. Therefore, active participation of students (social constructivism) was affirmed to be an efficient instructional approach for creating & sustaining motivation and passion for knowledge

construction. The same idea is also stated by Mvududu and Thiel-Burgess (2012) that social constructivism is widely touted as an approach to probe for students' level of understanding and to show that that understanding can increase and change to higher level of thinking. Based on the above ideas, the writers come to a conclusion that in the view of constructivism, the students select information, construct hypotheses, and make decisions, with the aim of integrating new experiences into their existing knowledge and experience.

The root of social constructivism-based reading comprehension teaching design derives from the reciprocal teaching reading strategy. Social constructivism, as a foundation for the use of reciprocal teaching, emphasizes the social genesis of knowledge; that is, "every function in the [student's] cultural development appears twice: first, on the social level, and later, on the individual level" (Vygotsky, 1978, p.57). This social genesis of knowledge construction is comprised of three primary assumptions: (a) knowledge and meaning are active creations of socialization; (b) knowledge and meaning are social creations and as such reflect social negotiation and consensus; and (c) knowledge and meaning are constructed for the purposes of social adaptation, discourse, and goal achievement (Gergen, 1999; Prawat & Floden, 1994).

Social constructivists believe that the process of sharing individual perspectives-called *reciprocal teaching* (Leeds-Hurwitz, 2009) -results in learners constructing understanding together and this construction, according to Woolfolk (2010) in Amineh and Asl (2015), cannot be possible alone within individuals. On the other hand, Kalpana (2014) says that the social contexts of learning and knowledge are mutually built and constructed. By interacting with others, students get the opportunity to share their views and thus generate a shared understanding related to the concept (p.30). Reciprocal teaching has also been recognized for building learner capacity in the key competencies: thinking; using language, symbols and text; managing self; relating to others, and participating and contributing (Alton-Lee et al., 2012). Within learning communities students not only develop comprehension skills but also learn structures for thinking and how to interact meaningfully with other learners to build collective understanding. Reciprocal teaching is also readily incorporated in most learning areas of the curriculum (Alton-Lee et al., 2012; Arbor, 2013; Rosenshine & Meister, 1994). In short, through collaborative dialogue, a shared text and a group exploration of principles, ideas and themes, the reciprocal teaching groups develop to be a learning community.

In 2010, a middle school teacher in Queensland decided to expand the stages of Reciprocal Teaching to better guide her students. By adding orientating, connecting, and giving feedback to the original four stages of Reciprocal Teaching, her students were able to have deeper, higher-level discussions over what they were reading. The result was a higher level of reading comprehension, which is needed for upper grade level students (Meyer, 2010; Hughes, 2011).

In the attempts to improve students' reading comprehension achievement, vocabulary mastery, and to enhance social values among students, the writers have designed the social constructivism-based reading comprehension teaching design. The social constructivism-based reading comprehension teaching design itself is the results of development of a reading strategy - "reciprocal teaching" combined with social constructivist approach in which a social interaction takes place in real life situations.

Literature review

Reading comprehension

Reading in a foreign language is a complicated process involving both lower-level and higher-level processing skills with the interaction of first and second language. In order to help learners improve their reading comprehension achievement, numerous researches have been conducted to identify reading comprehension problems with the purpose of developing comprehension strategies that can be used by readers. Al Odwan (2012) and Huang (2012) say that the requirements of reading comprehension increase as students reach higher grades when they are expected to comprehend more complex materials that are often concrete to requiring well developed reasoning skills as well as an ability to apply proper background knowledge in a range of contexts. Unfortunately, conventional and text-centered classrooms do not provide instruction in the skills and strategies necessary for students to learn how to comprehend text (Huang, 2012). Considering how important reading is for students in daily teaching and learning process, Sung, Chang, & Huang, (2008) and Tuan (2010) mention that the teacher needs to consider the best strategy for teaching reading in order to enhance students' comprehension. Strategy-based instruction has been regarded as an effective approach to enhance reading comprehension.

Reading is a complex cognitive activity that is crucial for adequate functioning and for obtaining information in current society and requires an integration of memory and meaning construction. The main goal for reading is "comprehension", and everything else is a means to this end (Goldenberg, 2011; Loew, 1984). Comprehension is the ability to go beyond the words, understand the ideas in a text and the relationships that exist between those ideas (McNamara, 2007). Traditional views of reading assumed readers, as passive recipients of text information, possessing a large number of sub-skills which were automatically used to comprehend all kinds of texts. It was assumed that reading comprehension occurred automatically (Dole, 2000; Dole et al., 1991).

Cognitive views of reading comprehension indicate that reading is an interactive and comprehension is a constructive process and that skilled readers are differentiated from weak readers by their flexible use of a set of strategies to make sense of the text and to monitor and regulate their reading processes. According to Baker & Brown (1984), Dole et al., (1991), and Van Keer (2004), providing students with explicit instruction in comprehension strategies can be an effective way to help them overcome difficulties in understanding texts. In addition, Graham & Bellert (2004) in RAND (2012), and Johnson-Glenberg (2005) mention that reading strategies do not build reading skill, but rather are a bag of tricks that can indirectly improve comprehension. These tricks are easy to learn and require little practice, but students must be able to decode fluently before these strategies can be effective.

According to Rahmani and Sadeghi (2011), Behjat, Bagheri& Yamini (2012), and Ahmadi and Pourhossein (2012), reading comprehension is defined to get the correct message from a text/written language. Reading comprehension is an interactive mental process between a reader's linguistic knowledge, knowledge of the world, and knowledge about a given topic. Reading comprehension as an interactive process, in which readers interact with the text as their prior

experience is activated. Moreover, readers construct meaning from the text by relying on prior experience to parallel, contrast or affirm what the author suggested in the text.

During the last century, to comprehend lessons usually consisted of students answering teachers' questions, writing responses to questions on their own, or both. The whole group version of this practice also often included "Round-robin reading"; teachers asked individual students to read a portion of the text (and sometimes following a set order). But now, according to Ahmadi & Pourhossein (2012) and Rahmani & Sadeghi (2011), the associated practice of "round robin" reading had also been questioned and eliminated by many educators.

Different models of reading comprehension

Reading is a cognitive process that consists of a reader, a text, and the interaction between the reader and the text. According to Babashamsi (2013), and Fatemi et al. (2014), there are three models of reading process: the bottom-up model, the top-down model, and the interactive model.

Bottom-up model

The bottom-up model begins with decoding the smallest linguistic units, especially phonemes, graphemes, and words, and ultimately constructs meaning from the smallest to the largest units. While doing this, the readers apply their background knowledge to the information they find in the texts. This bottom-up method is also called data-driven and text-based reading (Carrell, 1989). This reading model focuses on the smaller units of a text such as its letters, words, phrases and sentences. Then, a syntactic and semantic processing occurs during which reading reaches the final meaning.

The readers will only be successful in reading if they accurately decode the linguistic units and recognize the relationship between words. According to Ahmadi & Pourhossein (2012), and Hughes (2011), in the reading process, the readers' understanding is the result of their own constructions rather than; the result of the transmission of graphic symbols to their understanding. Hence, without their background knowledge, they cannot comprehend the texts.

Top-down model

Top down model focuses on linguistic guesswork rather than graphic textual information. The readers do not need to read every word of a text. Readers might start predicting from the title of the reading text. According to Ahmadi & Pourhossein (2012), and Nuttall (1996), while reading the message, comprehension begins with higher levels of processing (making hypotheses), and proceeds to the use of the lower levels. Top-down and bottom-up are both strategies of information processing and knowledge ordering; used in a variety of fields including software, humanistic and scientific theories, and management and organization. In practice, they can be seen as a style of thinking and teaching.

A top-down approach is also known as the stepwise design or deductive reasoning, and in many cases it is used as a synonym to analyze or decompose the breaking down of a system to gain insight into its compositional sub-systems. In a top-down approach an overview of the system is formulated, specifying but not detailing any first-level subsystems. Each subsystem is then refined, until the entire specification is reduced to base elements (Babashamsi, 2013). A top-down

model is often specified with the assistance of "black boxes"; these make it easier to manipulate. However, black boxes may fail to elucidate elementary mechanisms or be detailed enough to realistically validate the model. In short, a top-down approach starts with the big picture and then breaks down from there into smaller segments (Ahmadi & Pourhossein, 2012; Nuttall, 1996).

Interactive model

Stanovich (1980) in Hughes (2011), and Bentahar (2012) argued that the interactive model is a process based on information from several sources such as orthographic, lexical, syntactic, semantic knowledge, and schemata. While reading, decoding processes can support one another in a compensatory way. If, when reading word by word, readers with good bottom-up skills do not comprehend the texts, they need to use their prior knowledge (schemata) to assist them. Alternatively, according to Stanovich (1980), Santrock (2010), and Fatemi et al. (2014), readers who rely on the top-down model use textual clues and guess wildly at the meaning, but they need to compensate for deficits such as weaknesses in word recognition and lack of effective bottom-up processing.

Nuttal (1996) argued that efficient and effective reading requires both top-down and bottom-up decoding. L2 readers, for example, may use top-down reading to compensate for deficiencies in bottom-up reading. To comprehend the meaning, readers use their schemata to compensate for the lack of bottom-up knowledge. Therefore, the interactive model is a process that is based on information from several sources.

These three models of the reading process help explain how readers construct meaning and how they compensate for their comprehension deficits. Successful readers usually alter their model based on the need of a particular text and situation. The interactive model, which is the combination of the bottom-up and top-down processes, leads to the most efficient processing of texts. Knowing that the interactive model can help readers in achieving successful reading, teachers should find reading instructions based on this model to promote readers' abilities.

` Principal theoretical perspectives

Cognition and metacognition

Research focuses variously on the development of basic cognitive processes for handling information (e.g. memory; phonological processing), the 'metacognitive' executive awareness and control of thinking and learning (e.g. 'thinking skills', learning strategies and 'learning how to learn'), and sometimes on the inter-relationship of these aspects of cognition (e.g. the links between word reading and reading comprehension). There is some acknowledgement that cognition is 'situated' meaning that children's attainment is affected by the familiarity, level of abstraction and the perceived purpose of investigation and problem solving (e.g. Gersten *et al*., 2001).

Social constructivist teaching

Much research, according to Amineh and Asl (2015), is conducted with a social constructivist perspective related to learning, viewing children as active and curious learners who are motivated to join other people to solve problems, develop knowledge and contribute to the development of the learning community to which they belong. Watson (2001) asserts that learners benefit from

the thoughtful attention and support of other people who provide expert knowledge and guidance which is gradually internalized to allow self-regulation ('scaffolding' and guided participation). According to Shunk (2000) in Amineh and Asl (2015), social constructivist teaching approaches emphasize reciprocal teaching, peer collaboration, cognitive apprenticeships, problem-based instruction, web quests, anchored instruction, and other methods that involve learning with others. Instructional models based on the social constructivist perspective highlight the need for collaboration among learners and with practitioners in the society. Rosenshine and Meister (1994) cited that some social constructivist approaches explicitly share some of the teaching responsibilities to pupils via a process of modeling and guided practice (e.g. reciprocal teaching for developing reading comprehension in children at all levels of reading development.

Generic metacognitive approaches

The teaching of transferable thinking and learning skills is commonly emphasized in professional guidance (Tilstone *et al*., 2000). Effective teaching strategies may include the use of 'procedural facilitators' like planning sheets, writing frames, story mapping and teacher modeling of cognitive strategies, although for quality and independence in learning, it is crucial to extend these technical aids with elaborated 'higher order' questioning and dialogue between teachers and pupils (Gersten et al., 2001).

Teacher's role

Constructivist teachers encourage and accept student independence and schema. They use raw data and primary sources, along with manipulative, interactive and physical materials. When framing an assignment, constructivist teachers use cognitive terminology, such as classification, analyses, prediction, and creation. Constructivist teachers allow students' responses to drive lessons, instructional strategies, and alter content. "For conceptual learning occur, first, learners must play an active role in selecting and defining the activities; second, there must be suitable teacher support as learners build concepts, values, schemata, and problem-solving abilities (Fosnot, 1996, p.92). To make easy real learning, teachers need to organize their classroom and their curriculum so that students can collaborate, interact, and raise questions of both classmates and the teacher. Children's questions are important to help teachers understand developmental progression of children and how they understand literacy tasks.

Student's role

The constructivist model views learners as vital in the process of learning language. Learners are active in seeking and constructing meaning and in seeking communication with others. Children learning language produce hypotheses and test them with the speaker in the environments. They try to combine sounds and words in different situations. Constructivists believe that this problem-solving behavior is very important in learning language. They also believe that the errors in children's speech reflect new knowledge about language rules. They also recognize the importance of social interactions in the development of language. Many constructivist researchers believe that infants control much of their interaction with adults in their environments by smiling, making sounds, and repeating adult sounds to continue the interactions (Brewer, 2001; Ensar, 2014).

Education programs based on constructivism

The goal of any constructivist program is to stimulate children in all areas of development. Physical development, social and emotional development, and cognitive development are all important. Language development and an emphasis on the process of learning are also important. Brewer (2001) explained that socio moral atmosphere includes a child's relationship with his/her teacher, other children, and the rules. This social moral atmosphere should grow among students. Constructivism stands in contrast to the more deeply rooted ways of teaching that have long typified American classrooms. Traditionally, learning has been thought to be a mimetic activity, a process that involves students repeating, or miming. Constructivist teaching practices, on the other hand, help learners internalize, reshape, or transform the new information. Transformation occurs through the creation of new understandings that result from the emergence of new cognitive structures. The constructivists based on the assumption that children mentally construct knowledge through reflection on their experiences. A child is an active architect of learning. This view of children's development constructs with the behaviorist view of a child as a passive receptor of knowledge, which is acquired through imitation and practice and is internalized through the processes of reward and punishment (Roopnarie & Johnson, 2000).

In the constructivist classrooms, a teacher needs to consider the necessity of moral aspects of schooling and described the teacher-child relationship. DeVries and Zan (1995) argued that the constructivist teachers respect children by upholding children's rights to their feelings, ideas and opinions. These teachers use their authority selectively and refrain from using power unnecessarily. In this way, they give children an opportunity to develop personalities characterized by self-confidence, respect for self and others, and active, inquiring, creative minds.

Despite their general similarities, the goals of different constructivist programs can vary. There are some programs based on Piaget's theory. In George Forman's program, the goals are to help children develop cognitively through activities selected specifically to help them with the ideas of correspondence, transformations, functional relations, and changing perspectives. The high/scope program, developed by David Weikart, is known for emphasizing careful and systematic observations of children and for organizing the curriculum around key experiences. Key experiences have been identified in the categories of social and emotional development, movement and physical development, and cognitive development. The other example was the Bank Street Program that is based on the work of Lucy Sprague Mitchell, who had been a student of the most famous educator John Dewey. Mitchell began a school for young children in which play would be taken seriously, in which children could play and researchers could study them doing so in a naturalistic setting. The following principles are the framework of these programs: development involves changes in the way a person organizes experience and copes with the world; individuals are never at a fixed point on a straight line of development; and the child's sense of self is built up from his/her experiences with other people and with objects.

Reggio Emilia schools of northern Italy have been influenced on the early childhood educators. These community preschools are based on the following principles: all children construct their own learning and are capable of learning; the community is an important force in the school, providing both financial support and involvement with programs and children; collaboration, sharing, and personal relationships are valued; the environment—the third teacher

is important in motivating interest and encouraging creativity; teachers consider themselves as learners and work with other teachers and parents (Roopnarine & Johnson, 2000; Brewer, 2001).

Constructivist programs stress the importance of environment that encourages children to make choices and involve their play with peers. Learning centers with materials for art, block play, writing and drawing, dramatic play, and exploration with raw materials, such as dirt, sand, and water, are available for children to select both individual and group projects (Roopnarine & Johnson, 2000).

In the constructivist model, group games are a central feature of the curriculum. Curricula are planned and learning experiences are selected to follow children's interests or expose them to new areas according to their interests (Nawaz, 2012). Many activities and experiences are selected to help children think about solutions to social as well as cognitive problems. Literacy is taught in the context of children's other activities, as they extend their language to reading and writing. Constructivist assumes that literacy skills are best learned within a context in which they can be applied.

Wellhousen and Kieff (2001) emphasized on block play. They explained that block play provides a basic foundation for promoting language and literacy learning. To build an oral language development, they clarified three specific ways; children playing together with blocks need to communicate with one another and sometimes with an adult; children expand their vocabulary during block play; and dramatizing provides opportunities for using rich language.

Constructivist approach is based on Piaget's theory. This constructivist orientation considers the development of social skills, personality, and self-esteem as critical to children's active involvement with their environments (Kamii & DeVries, 1980). The approach encourages cooperative activities for the purpose of respecting the feelings and rights of others and coordinating different points of view.

This study attempts to fill the gap and find whether the social constructivism-based reading comprehension teaching design could improve high and low students' reading comprehension achievement, vocabulary mastery, and enhance social values. To fulfill the purpose of this study, the following research questions are addressed:

i. Is there any statistically significant difference in reading comprehension scores of high and low classes who are exposed to the social constructivism-based reading comprehension teaching design?
ii. Is there any statistically significant difference in vocabulary scores of high and low classes who are exposed to the social constructivism-based reading comprehension teaching design?
iii. What are the social values that enhance the students of high and low classes after being exposed to the social constructivism-based reading comprehension teaching design?

Methodology

Research design

The methodology used in the research is Research & Development (R&D), as outlined by Borg and Gall (2003, p.775) consists of 10 stages: (1) research and information collecting, (2) planning, (3) develop preliminary form of product, (4) preliminary field testing, (5) main product revision, (6) main field testing, (7) operational product revision, (8) operational field testing, (9) final product revision, and (10) dissemination and implementation. Gall, Gall & Borg (2007) claim that to investigate new products, the Research and Development method is necessary to use. No other area of research in education is now as productive and intellectually stimulating as that related to Research and Development method. This method is a design-based research to develop new programs and materials to improve education.

This research only followed the first six steps of Borg and Gall (1983) in consideration of time effectiveness and cost. The educational product of Researchand Development is called the social constructivism-based reading comprehension teaching design.

Participants

There were six classes comprising 148 students of three study programs; Computer Engineering, English, and Business Administration, at Politeknik Negeri Sriwijaya in the academics year 2016 - 2017. They were all on the third semester students distributed into two categories; high classes and low classes which were based on their previous class average scores of reading comprehension and vocabulary tests. All classes were taught with social constructivism-based reading comprehension teaching design. This study was administered for 10 sessions. Every session took three hours in one week.

Table 1. Participants

Number	Study Programs	High Class	Low Class
1	Computer Engineering	Class A (24 students)	Class B (25 students)
2	English	Class A (23 students)	Class B (25 students)
3	Business Administration	Class A (25 students)	Class B (26 students)

Instrumentation

To achieve the aims of the study, the researcher used achievement (pre-post) tests of comprehension and vocabulary comprising forty items for each test. Tests of reading comprehension and vocabulary were in the form of multiple choices consisting of 40 items of reading comprehension test, and 40 items of vocabulary test. Before piloting the tests, the writers distributed the test items to 9 respondets. They were 4 English lecturers from Politeknik Akamigas, 2 English lecturers from Politeknik Sekayu, and 3 English lecturers from Universitas Negeri Sriwijaya. They were asked to judge the appropriateness and difficulty of test items. Before applying the paired-samples t test, the writers had to analyze the normality of distribution of data with Shapiro-Wilk test. If the distribution of data is normal, then the writers used paired-samples t test to know whether there is a significant differences before and after the treatment (pre-test and post-test).

To know the growth of social values among students, a classroom-based evaluation referring to individual and group works was used.

Table 2. *Classroom-based Evaluation Checklist for Individual*

Observant :
Observant Number :
Place of Observation :
Time of Observation :
Observer :
Topic of Observation : Student's activities in learning process in the classroom.

NUMBER	THE OBSERVED ASPECTS	RESULT OF OBSERVATION
1	Attention	
2	Question	
3	Argumentation	
4	Descipline	

Table 3. *Classroom-based Evaluation Checklist for Group*

Type of Activity : Group Discussion
Place of Observation :
Time of Observation :
Observer :

NUMBER	THE ASSESSED ASPECTS	PARTICIPANTS			
		Roy	Sams	Sasha	Tom
1	Arguing				
2	Questioning				
3	Answering				
4	Appreciating				
5	……				

Source: Sanjaya, Wina, (2010). Kurikulum dan pembelajaran: Teori dan praktik pengembangan kurikulum tingkat satuan pendidikan (KTSP). Pranata Media Group: Bandung (p.359).

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Table 4. Lesson Plan for Social Constructivist-based Reading Comprehension Teaching Design

Step	Activities by Lecturer	Activities by Students	Media and Teaching Aid	Characters
(1)	**(2)**	**(3)**	**(4)**	**(5)**
Beginning **5 min**	•communicate what students are going to learn for today •communicate why the topic is important to learn •communicate how communicate how the learning process is happening •communicate how the learning process is happening •communicate the expectation towards the learning objectives •motivate students	•listen •pay attention •question	•syllabus •course agreement •reading text	•careful •cooperative •responsible •critical •communicative •respectful
Middle -The heart of the lesson- **135 min**	•introduce the new learning material •demonstrate and illustrate the steps in the reciprocal teaching •place students in a heterogeneous group of 4-5 students (depend on the number of students in the class) •have students play their roles in their group as a predictor, clarifier, questioner, and	•listen and pay attention •question, •play a role as predictor, questioner, summarizer and clarifier in a group •cooperate in a team •present the group's work and propose a question(s)		

	summarizer (next meeting they change their roles in their group) •make sure all students capable of applying RT strategy well •make sure all activities reflect the learning objectives •have the groups present their team work •distribute formative test	to other groups (if any) •criticize other groups' work
End **10 min**	•summarize the teaching and learning material for the day •communicate the students achievement for the day •communicate the reading material for next meeting	•have the groups hand their groups work out •have the students hand their formative test out •summarize the lesson

Source: Ardiansyah (2017)

Results

In table 4, it is known that *P-values (Sig.)* of reading comprehension tests and vocabulary tests of high classes and low classes for normality test **Shapiro-Wilk** are bigger than $\alpha = 0.05$. It means that the data of reading comprehension tests and vocabulary tests from high and low classes are normally distributed.

Table 5. Summary of Normality Test in the High and Low Classes

Study Program	Category	Shapiro-Wilk		
		Test	df	Sig.
Computer Engineering	High	Reading Comprehension	24	.396
			24	.742
		Vocabulary	24	.113

			24	.505
		Reading Comprehension	23	.193
	Low		23	.388
		Vocabulary	23	.185
			23	.325
		Reading Comprehension	25	.187
	High		25	.285
		Vocabulary	25	.185
English Department			25	.249
		Reading Comprehension	25	.134
	Low		25	.222
		Vocabulary	25	.140
			25	.259
		Reading Comprehension	25	.180
	High		25	.226
		Vocabulary	25	.174
Business Administration Department			25	.215
		Reading Comprehension	26	.104
	Low		26	.240
		Vocabulary	26	.179
			26	.354

Because the distribution of data is normal, one of the parametric statistics, t-test, can be used to know whether two sets of data are significantly different from each other. The t-test is generally applied to normal distribution.

The pretests and posttests of reading comprehension and vocabulary were given to the students in the high and low classes. Pretests were given before the treatment and the posttests

were given after the treatment. Both high and low classes were treated with the social constructivism-based reading comprehension teaching design.

Based on the table 6, all classes either high or low classes could significantly improve their reading comprehension achievement and vocabulary mastery. It means that the social constructivism-based reading comprehension teaching design could be applied at any level of reading proficiency. The highest achievement of reading comprehension was obtained by computer engineering study program of high class with mean score 2.08333. The highest vocabulary achievement was obtained by English study program of high class with mean score 1.95652.

Table 6. Reading Comprehension and Vocabulary Test of High and Low Class

High Class							
		Pre-test	Post-test	Mean	Std. Deviation	Sig. (2-tailed)	t
Computer Engineering	Reading Comprehension	5.5313	7.6146	-2.08333	.55003	.000	-18.556
	Vocabulary	6.6563	8.1771	-1.52083	.98333	.000	-7.577
English Department	Reading Comprehension	5.8804	7.8478	-1.96739	.70833	.000	-13.320
	Vocabulary	5.8913	7.8478	-1.95652	.70972	.000	-13.221
Business Administration	Reading Comprehension	5.8400	7.6300	-1.79000	.58488	.000	-15.302
	Vocabulary	6.0100	7.7900	-1.78000	.73001	.000	-12.192
Low Class							

Computer Engineering	Reading Comprehension	5.2000	6.8600	-1.66000	.75993	.000	-10.922
	Vocabulary	5.4400	6.8100	-1.37000	.58238	.000	-11.762
English Department	Reading Comprehension	5.3300	6.7900	-1.46000	.64015	.000	-11.404
	Vocabulary	5.6300	6.9200	-1.29000	.75925	.000	-8.495
Business Administration	Reading Comprehension	5.5962	7.0288	-1.43269	.66542	.000	-10.978
	Vocabulary	5.7981	6.7885	-.99038	.61433	.000	-8.220

Table 6 also informed that social constructivism-based reading comprehension teaching design could be applied either to good readers or poor readers.

The implication of the finding of the present research toward the teaching of reading comprehension is that the steps in the social constructivism-based reading comprehension teaching design, such as predicting, questioning, clarifying, and summarizing, are worth applying even for students of English as a foreign language with any level of proficiency to improve reading comprehension achievement, vocabulary mastery and to grow social values.

Conclusions

The results show that students' reading comprehension achievement, and vocabulary mastery in the high and low classes are significantly improved. The nurturant effects of the social constructivism-based reading comprehension teaching design are the growth of social values among students. The results are in line with Wilson and Lianrui (2007, p.5) who say "…the social constructivist approach to reading offers tools and principles for EFL teachers which can help them to improve their reading comprehension, draw their students into energetic participation in text events, entering into active dialogue with texts (and their authors), not as outsiders, but as active participants." Thus, teachers of English should be encouraged to apply the social constructivism-based reading comprehension teaching design in their classes of reading comprehension. Grabe (2009) suggests that reading teachers should incorporate strategy instruction as a part of everyday reading instruction and work toward the automatization of strategy use for fluent reading.

Some limitations need to be considered when interpreting the findings of this study. First, this study included only the Indonesian EFL students at Politeknik Negeri Sriwijaya Palembang. A more comprehensive study including other nationalities and/or learners will enhance our understanding of the effects of top-down/bottom-up processing and cognitive styles on reading comprehension reflected into the social constructivism-based reading comprehension teaching design. Secondly, to increase the external validity of the study findings, replication is needed in different settings with diverse populations.

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