

## Enhancing students' literacy skills through the social constructivism-based literacy learning environment model

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### Suggested Citation:

Hilmawan, H., Musthafa, B. & Agustin, M. (2022). Enhancing students' literacy skills through the social constructivism-based literacy learning environment model. *Cypriot Journal of Educational Science*. 17(10), 3614-3624. <https://doi.org/10.18844/cjes.v17i10.7842>

Received from June 20, 2022; revised from August 16, 2022; accepted from October 19, 2022

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### Abstract

The aim of this study was to enhance students' literacy skills through a social constructivism-based literacy learning environment model. The research method used was a quasi-experimental design with a non-equivalent pre-test and post-test control group design. Participants in this study were 74 third-year students of one of the public elementary schools. The instruments were the reading skill test and rubric instruments to assess narrative essay writing skills. Data were analysed through the average score and hypothesis test. The average scores of reading and writing in the experimental class were higher than the control class. Then, there is a significant influence of the social constructivism-based literacy learning environment model and regular learning on students' literacy skills. Moreover, there is a significant difference between the influence of learning in the experimental and control classes. It can be concluded that a social constructivism-based literacy learning environment model can enhance students' literacy skills.

Keywords: Literacy learning environment model; literacy skills; social constructivism

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## 1. Introduction

Literacy has received a lot of attention recently. Literacy is a basic student skill, and delays in correcting these needs can affect a student's overall educational performance. The acquisition of literacy is the first foundation of a student's academic performance and should be nurtured and developed from early childhood, even in early primary school. At this level, teachers can maximise their opportunities to train their students' literacy skills so that later students will acquire 'literacy', deal with the problems of social life to master social skills and acquire skills for the challenge of the 21st century (Aderinoye, 2008).

Literacy is closely related to read-and-write activities (Kalman & Reyes, 2016; Zhang et al., 2010). Learning to read and write is a basic skill, and unfortunately not all children around the world learn it properly (Genlott & Grönlund, 2013). As social changes increase the demand for individual writing language skills, it is important for schools to be able to pass on these skills to all children. The main problems in many countries include too little school education and a shortage of teachers. Nevertheless, even in countries where children have been in school for years and have teachers, there are problems. 'Information society' actually means that information activities are increasing significantly due to activities related to information and communication technology such as the Internet (Yasdin et al., 2021). More and more people around the world need improved literacy skills to find, select, interpret, analyse and generate information (Hanemann, 2015; Lang, 2021).

Literacy skills related to reading play an important role in receiving, classifying and criticising particularly circulating information in life (Dezuanni, 2021). Reading is a necessary skill for a child's success, both at school and in life. Poor reading ability is associated with a variety of social issues, including early dropouts, teenage pregnancy, crime, unemployment and homelessness. Unfortunately, 10%–30% of school-age children have difficulty reading (Kaminski & Good, 1996). The Progress in International Reading Literacy Study (PIRLS) international benchmark on literacy (read) includes four levels: low (locate and retrieve information), intermediate (make straightforward references), high (make inferences and interpretations with text-based support) and advanced (integrate ideas and information across texts to provide reasons and explanations). In the information society, more people are needed to acquire skills at this scale limit. Even the best performing countries are just under 20% in the advanced category and just over 60% in the high category (Cheema, 2015). Therefore, in all countries, improving reading comprehension is important.

It is also important to develop writing skills, as they are part of literacy skills in elementary school (Chohan, 2011). The introduction and practice of writing with engaging activities in elementary school can foster self-confidence and a lifelong love for writing. Writing skills are also important for continuous learning in elementary school in all areas of science, communication and self-expression (Levin & Wagner, 2006). In reality, teachers do first-grade students' writing activities, and students' writing results may not look like complete sentences, although there are still many mistakes in the use of punctuation and spelling. Students' writing efforts are part of the process of learning to read and write. Therefore, McLachlan et al. (2012) found that the development of writing skills was not automatic, requiring clear demonstrations by teachers, and was repeated and had the opportunity for practice and ample experimentation.

Previous research has shown that children who fall behind in literacy development at a young age struggle to keep up with later education as the text becomes longer and more complex (Gan et al., 2021; Novita et al., 2021). Given this situation, we need a better way to improve literacy skills. The problem of literacy is related to the problem of the learning environment (de Greef et al., 2015; Easton, 1989;

Kim et al., 2022). Therefore, efforts are needed to design a learning environment model for literacy in schools that can provide practical support for teachers to develop their students' initial literacy skills.

The literacy learning environment based on social constructionism is closely related to the development of students' literacy abilities. Social constructionism is an epistemology of sociology and communication theory that examines the knowledge and understanding of the world in which individuals develop together (Amineh & Asl, 2015). This theory assumes that understanding, meaning and significance are developed in collaboration with others. The key elements of this theory are (a) the assumption that humans rationalise their experience by creating models and mechanisms of the social world; and (b) language as the primary system for humans to build reality. Vygotsky (1978) stated that cognitive development can occur first at the social level and then within the individual. By understanding others and building knowledge at such a social level, learners can be involved in the situation. Lin and Shi (2014) also stated that the roots of individual knowledge are in the environment and in interaction with other people before their knowledge is internalised.

Barak (2017) found that social constructivist studies of literacy learning focus on the role of teachers, peers and families in providing learning, the dynamics of teaching in the classroom and the organisation of systems in which students learn or fails to learn. In this context, the role of teachers, peers and families as part of the zone of proximal development (ZPD) is 'the difference between the actual developmental level of the student and the achievement level achieved in relation to the adult' (Vygotsky, 1978). In addition, according to Vygotsky (1978), teacher success lies in identifying the ZPD of the student in the classroom and building an experience that contributes to the development of the student's skills. Others build scaffolding with friends who can help students better. Reynolds (2016) stated that this social constructivist approach is also commonly used by teachers as the basis for designing more effective learning environments.

In fact, at the practical level of Indonesian elementary schools, the design format of the literacy environment model is not yet relatively considered optimal to support the development of students' early literacy skills. Suhendi et al. (2021) state that in Indonesian educational practice, the concept of constructivism already exists, but is not optimally implemented. Therefore, in order to improve the early literacy abilities of elementary school students, it is necessary to develop a learning model that teachers can actually use.

The main components of the social constructionism-based literacy learning environment model adopted by the type of scaffolding activity include explaining, modelling, guiding and giving feedback. These components attempt to adapt the scaffolding process proposed by van de Pol et al. (2010), aimed at contingency, decline and delegation of responsibility. The design of this model is intended to support the development of early literacy skills in elementary school students who are focused on reading and writing skills. A description of the component is shown in Figure 1.

### Explaining

- At this stage, teachers explain difficult tasks to students. It is also a form of support that adapts to and depends on the student's understanding.

### Modeling

- At this stage, teachers explain difficult tasks to students. It is also a form of support that adapts to and depends on the student's understanding.

### Guiding

- In guiding , students are guided to complete tasks according to the difficulty level of the task they are completing.

### Feedback

- At this stage, teacher support is less involved and encourages students to reflect on the teacher's questions and evaluate the work done.

Figure 1. Scaffolding component of the social constructionism-based literacy learning environment model

#### 1.1. Aim of the research

Preliminary with the interrogations described, this study systematically tests students' literacy skills, especially early literacy skills, story reading and essay writing, through a social constructivism-based literacy learning environment model. This model of the literacy learning environment is expected to be an alternative teaching method for teachers to improve their early literacy skills in third-grade elementary school students.

#### 2. Research method

The research method used was a quasi-experimental design with a non-equivalent pre-test and post-test control group design, as shown in Figure 2.

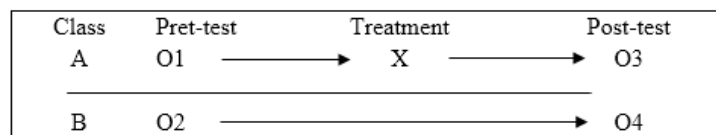


Figure 2. Non-equivalent pre-test and post-test control group design

In this design, experimental (A) and control (B) groups were selected without randomisation. Both pre-test and post-test were performed in both groups. During the implementation phase, learning orientations in the form of pre-tests were administered in experimental and control classes to determine how well students were performing in the reading comprehension and writing essay sections. In addition, the experimental group was given treatment (X) in the form of applying a social constructivism-based literacy learning environment model. In control classes, they were treated to a form of learning, as teachers usually do. Finally, post-tests were conducted in both experimental and control classes. The purpose of the pre-test and post-test was to examine the effectiveness of applying

the social constructivism-based literacy learning environment model to early literacy skills in pre- and post-learning reading comprehension and writing essay.

### 2.1. Participants

Participants in this study were third-year students of one of the public elementary school in Sukabumi Regency, West Java, Indonesia. Participants were separated into classes A and B. Class A comprised 35 students (19 female and 16 male) and class B comprised 39 students (25 female and 14 male). The research location is 90.9 km away from the capital of West Java (Bandung).

### 2.2. Instruments

For the first stage, the instrument for this study was a reading skill test that applied the reading theory proposed by Ruddel (2005). This instrument was used to assess students' reading comprehension by asking questions in the pre-test and post-test in the experimental and control classes. Second, the use of rubric instruments to assess narrative essay writing skills, applying the theory of Combs (1996). The instrument was used in pre-test and post-test in the experimental and control classes to assess students' writing skills through the task of writing simple essays based on the students' interesting experiences in caring for plants and animals. Three experts validated the instruments. The result of which stated that the instruments could be used.

### 2.3. Data analysis

The data obtained from pre-test and post-test would be scored. This score is then analysed through a statistical test in the form of average of the experimental and control classes, and a hypothesis test in the form of paired sample t-test and independent sample t-test if the data are normally distributed and homogeneous.

## 3. Result

From research conducted to enhance student literacy, mainly in relation to reading comprehension and writing essay, through social constructivism-based literacy learning environment model, the average scores are shown in Figure 3.

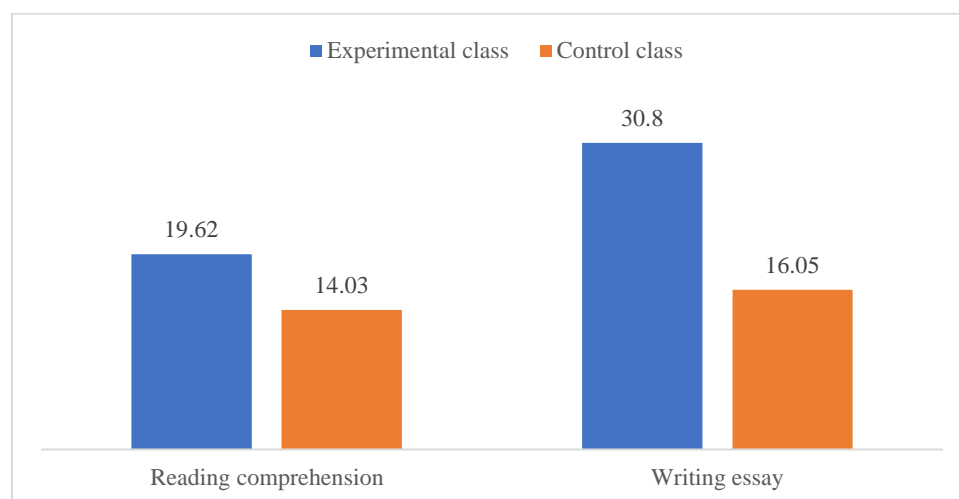


Figure 3. The average scores of students' literacy skills

Figure 3 shows that the average score of reading comprehension of the students in the experimental class was higher than the control class. In addition, the average score of writing the essay of students in the experimental class were higher too. This indicates that the social constructivism-based literacy learning environment model can further enhance students' literacy skills compared to regular or traditional learning.

In addition, to determine the effect of the social constructivism-based literacy learning environment model, we accomplished a hypothesis test using paired sample t-test and independent sample t-test, as the data were normally distributed and homogeneous, as shown in Table 1.

Table 1. Results of the hypothesis test

Class	Paired sample t-test	Independent sample t-test	Paired sample t-test	Independent sample t-test
Experimental class	10.262	0.915	11.240	4.302
Control class	7.252		7.482	

Based on the analysis results of the paired sample t-test, with a value of  $t = 10.262$  for experimental class and  $t = 7.252$  for control class, with a significance =  $0.000 < 0.05$ , it can be stated that there is a significant effect of the social constructivism-based literacy learning environment model and regular learning on early literacy skills in reading story comprehension. After accomplishment of the paired sample t-test on both groups of data, it is known that both in the experimental class and in the control class, the results show that there is a significant effect. Therefore, further analysis was conducted to test the difference in the effect of the experimental class and the control class on early literacy skills' reading story comprehension. Based on the results of the analysis of the independent sample t-test that has been carried out, the value of  $t = 0.915$  and significance =  $0.039 > 0.05$ , it can be stated that there is a significant difference between the influence of the social constructivism-based literacy learning environment model in the experimental class and the usual learning in the control class on early literacy skills reading comprehension stories.

In essay writing, based on the results of the paired sample t-test analysis, the value of  $t = 11.240$  for the experimental class and  $t = 7.482$ , with significance =  $0.000 < 0.05$ , it can be stated that there is a significant influence on the social constructivism-based literacy learning environment model and regular learning on early literacy skills in writing essay. After accomplishment of the paired t-test in both groups of data, it is known that both the experimental class and the control class show that there is a significant effect. Therefore, further analysis was conducted to examine the difference in the effect of the experimental class and the control class on early literacy skills in writing essay. Based on the results of the independent sample t-test analysis that has been carried out, the  $t$  value =  $4.302$  and significance =  $0.000 < 0.05$ , it can be concluded that there is a significant difference between the influence of the social constructivism-based literacy learning environment model in the experimental class and the usual learning in the control class on early literacy skills in writing essay.

#### 4. Discussion

The results show that the implementation of social constructivism-based literacy learning environment model is effective in enhancing students' early literacy skills in the reading story comprehension and writing essay. This can be seen from the fact that the average score in the experimental class is higher than the average score in the control class. Regarding the results of learning to read, this finding is consistent with the study by Jubran (2016), Reynolds and Goodwin (2016) and

Wu et al. (2021) on social constructivism learning and scaffolding to improve students' reading comprehension. Regarding the outcomes of learning to write, this finding is also consistent with the results of previous studies (AL-Ghazo and Al-Zoubi, 2018); Padmadewi and Artini, 2019; Reynolds, 2016), which concluded that learning is based on social constructionism and scaffolding approaches that can help students improve their writing skills.

From the perspective of the process, the emphasis on scaffolding activity and direct social interaction in the application of the literacy learning environment model plays a very important role in enhancing the results of this study. The first scaffolding action performed must provide an explanation. In reading learning, the teacher explains the purpose of reading, how to read the story, the content of the story being read and the part of the story. While learning to write, the teacher explains the purpose of writing an essay, how to write an essay, about the outline of an essay and the guidebook for writing an essay. Prior to that, the teacher sought to correlate the student's initial knowledge and experience with the reading topic that the student would read. In addition, the students are actively interacting while listening to the explanations of the teaching materials from the teacher. This is consistent with the findings of Gulchiroy (2021), where the activity activates students' knowledge before learning begins and helps them become familiar with existing texts. Students feel they have prior information on the topic. Information outside the text is their previous understanding. This result is also consistent with those of Sari and Rozimela (2021) who concluded that providing explanations is one of the scaffolding strategies used by English course teachers.

The second scaffolding activity is an activity that models literacy skills. When learning to read, the teacher gives an example of how to read the story. This includes reading aloud in front of the class, pausing in the middle of the reading to let the students predict what the next story will be, and asking questions about the content of the story. When learning to write, teachers will give examples of how to create titles for essay topics and how to use spelling and punctuation in sentences. In the writing exercise, the teacher gives an example of how to create an essay outline and plot. This is consistent with the research of Al Eissa and Al-Bargi (2017), which means that when a teacher makes an ideal model task, students imitate that task in a more accurate way.

The third scaffolding activity is guiding. This activity is performed when working on individual tasks or collaborative group work. The purpose of this activity is not only to improve literacy skills, but also to enhance student interaction and social experience by completing literacy tasks by identifying the components of the story together. This is in line with the findings of Gulchiroy (2021), who stated that discussion is a way to develop collective knowledge and guide students to work together cognitively in a supportive social environment. These results are also consistent with the findings of Kim et al. (2022), who concluded that implementing a problem-based learning model using scaffolding strategies and a reading guide impacts student activity and learning outcomes. In this study, applying scaffolding strategies in the form of teacher counselling may help students become more independent in solving their own learning problems.

The fourth scaffolding activity is to afford feedback. At this stage, the teacher provides feedback on the performance of all students as they read and answer questions from all story texts and write essay performances. The teacher asks the students about the subject. Teachers also provide feedback on the answers and skills that students have achieved, for example, correct the student's answer and the student's essay. The teacher then repeats the discussion of the material to confirm the material presented. The purpose of this activity is for teachers to take corrective action on literacy so that students can be empowered by their teachers and improve their learning outcomes. This is consistent with Piamsai's (2020) study, which shows that the use of scaffolding has positive effects in terms of

using text models, explicit instruction and feedback when writing in the classroom. This means that students' writing skills have improved significantly. These results also support the findings of Hasan and Rezaul Karim (2019) and conclude that scaffolding motivates students through positive feedback from EFL and others.

Overall, this model helps students read texts and actively interact with other students in the class. Wilson (2007) concluded that a social constructionist approach to learning to read provides teachers with tools and principles that enable students to actively interact with texts and authors. In addition, in the learning development paradigm, the use of teacher roles and genuine assessments in the teaching process impacts improving student learning outcomes (Zakaria et al., 2016).

## 5. Conclusion

The social constructivism-based literacy learning environment model with an emphasis on the role of the main activity of scaffolding, namely explaining, modelling, guiding and providing feedback from the teacher, must be a bridge for students so that they are able to move from the actual ZPD ability level to the expected ability within the optimal ZPD level. Teachers first need to know a student's actual performance level so that they can provide services and assistance to overcome difficulties in learning to read and write. In addition, in the learning environment, emphasise social interaction such as teacher–student, student–student and student–reading texts, and provide opportunities for students to learn together through discussion, making learning more enjoyable, fun and meaningful.

The results of this study conclude that a social constructivism-based literacy learning environment model can enhance students' literacy skills in third grade. Learning in a social constructivism-based literacy learning environment is more effective than what teachers typically do. Learning based on social constructivism and scaffolding can improve students' reading comprehension, for example, creating a series of events, linking cause and effect, predicting results, making decisions and so on. In addition, learning based on social constructivism and scaffolding can improve students' writing skills such as idea generation, organisation and language use. Other researchers can use the social constructivism learning environment model of literacy to improve students' literacy at both other literacy levels and at various school levels.

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