



Impacts of the Constructivism Approach on English Learning in Senior Students

AmiriDoomari, Mansooreh

Department of TEFL and English Translation, payam-e Noor University, Qom, Iran
[10.22034/jelt.2023.13980.1051](https://doi.org/10.22034/jelt.2023.13980.1051)

Abstract

According to the importance of cooperative learning based on constructivism in better learning of the material, which has been demonstrated in many types of research, these techniques make students exchange information and opinions, help each other and get help. Cooperative learning and the conduction of constructivism in learning, increase group cohesion and enable students to interact with others and examine learning from all aspects. To conduct this research, 30 senior students with the age range of 16 to 18 and based on the English level proficiency test to ensure the same language level of them, were selected. Then the target students were divided into two experimental and control groups and the pre-test was taken from them. After grouping, English language teaching was done to the students of the experimental group based on constructivism and cooperative learning, and after a certain period (five weeks), a post-test was taken from them, and Stephen's cooperative learning questionnaire (2007) was given to the students, and then the data was collected and analyzed and T-Test, ANOVA, paired sample test were conducted. The most important findings, in the present research in the first stage, were the impact of constructivism and cooperative learning on English learning of the students who were trained and achieved the most effective cooperative learning techniques, and in the second stage recognized that students use the technique of group dynamics and then feedback and doing project work respectively based on Stephen's cooperative learning questionnaire (2007).

Keywords: Constructivism, Cooperative, Learning, Students, Teachers.

Introduction

Constructivism is a new school of thought whose founders are Piaget and Vygotsky. This school of thought is known as a paradigm in language education and has had a great impact on the development of education. Its influence in the field of education has been so great that this school of thought has also been effective in the field of sciences such as mathematics, cognitive science and Vygotsky's social and cultural theory. The existence of this new educational school is known as a new idea in language education.

Constructivism will be able to provide new opportunities to integrate common approaches to language teaching and learning. In recent years, constructivism has been considered a philosophy and a theory of communication and has a major role in mathematics.

This new school has caused changes in education and has directed the path of education from teacher-centered to student-centered and emphasizes cognitive and social processes. At a young age, when language *learning* occurs mostly through creating a suitable learning environment through reading, listening, and experiencing, and three processes of simulation, adaptation, and balance are involved, this type of learning can involve learners and *teachers*. They can also observe and identify the Zone of Proximal Development (ZPD) of *students* and accordingly design and implement effective learning methods that lead to achieving higher levels of understanding of educational content.

One of the most popular concepts of Vygotsky is ZPD (zone of proximal development), it is an important case for teaching and learning of second language and social constructivism because it involves tasks, and the means of tasks in ZPD are complex and hard tasks that the learners can't do them and teacher or adult help to learners.

Constructivism theory is based on observation and scientific study, and it says: People construct, understand, and have knowledge of the world by themselves. Constructivism is the knowledge constructed by learners as attempts to make of their experience and the knowledge must be on experience to understand kind of information (Driscoll, 2000). This theory is one of the learning theories that human, makes knowledge, and the production of the knowledge is continuous, and knowledge is constructed by the learner based on mental activity.

One of the characteristics of constructivism is the integration of linguistic, psychological, and sociological, and it can be used to indicate communication between teacher and students as well as between students. In constructivism, knowledge is constructed and this is recognized as a principle that is shared between teachers and students, and learning thus occurs mostly under the influence of the environment and culture. By using constructivism, teachers and students share their experiences and the teacher's role in this method is a facilitator, in this method, learning is an active process and social activity, and the existence of a stimulus called motivation is the key. It is considered learning and in this method, if students are unmotivated, they are not able to learn.

Constructivism has different branches such as cognitive constructivism, which it has emphasizes the importance of learners, Radical constructivism, which is associated with the study of Ernst von Glasersfeld, Trivial constructivism, which is known as personal constructivism, (in this branch, knowledge constructed by the learners, not from the environment), Cultural constructivism, which is including Custom, religion, biology, tools, and language. Critical constructivism looks at the social and cultural environment and Social constructivism emphasizes the importance of social interaction and *cooperative* learning.

Knowledge is depending on individuals (Solomon, 2008), so, according to the production of knowledge, which is a mental and continuous activity, sometimes there are not enough effective and cooperative methods, and learners don't have any information about cooperative activities and their effects of them. Therefore, the present research evaluates the effective performances of constructivism and cooperative learning and helps students to achieve the best way of learning and improving English learning. So, this study refers to constructivism and cooperative or social constructivism and their functions in English learning.

Literature review

Constructivism is a new way to learn and refers to teaching and learning. Sidney (2015), states that, if, traditional and modern methods are blended, may be beneficial and effective for learners. Constructivism is important learning, which is based on the creation of knowledge by the learner, and learners use their prior knowledge as a foundation for new things.

Constructivism as a new cognitive approach also emerged in China, which has a significant impact on the field of education, and Chinese researchers have also conducted systematic studies about this theory.

Constructivism theory has roots in psychology, philosophy, sociology, and education. The main idea of constructivism is, that, human learning is constructed and learners, construct new knowledge based on the roots of prior learning. Important concepts of constructed knowledge, are: construct new understanding by the learner through what they already know, and learning is active rather than passive.

Constructivism can be traced back to educational psychology in Piaget's research, he focused on how humans make meaning about the interaction between experiences and ideas, Vygotsky states that when a student is in ZPD for a specific task, it provides the appropriate assistance of the ZPD.

Cole (1990) believes that constructivism places the individual growth of the language learner in the center of education and by combining the learning of endogenous factors and internal schema with exogenous factors and social and cultural variables, it causes transformation and helps the learner.

Beatty (2003), Bransford, Brown, & Cocking (2000) Perkins, Schwartz and West (1995) state that the combination of new technologies in educational fields and topics has created progress and effective impact, and the advancement of technology in the age of communication, which has provided suitable opportunities and conditions for learning, challenges language learners and makes their learning in Virtual environments enhance and enhance, and as such, learners pursue topics more deeply.

Kirchner (1992), conducted research and explained that the way a scientific expert, reaches a scientific conclusion, is not the same as classroom training and the formation of teaching and learning processes, so Kirchner, Sweller, and Clark (2006), state that there was insufficient empirical data to support constructivism.

Research questions

1) Are there any differences between students who use cooperative activities in English learning and students who don't use cooperative activities?

2) What cooperative approach, is most used by students in English learning?

Methodology

The current research used an explanatory sequential mixed method, and data were compiled through a pretest, posttest, and Stephen's Cooperative Learning Questionnaire.

Design and Context of the Study

According to the research questions and the title of the research, this study is a pilot study designed based on mixed methods and was conducted in Kerman province.

Participants

The current research was a pilot study and the samples were collected using the non-random convenience sampling method. The participants were collected through an English language mastery test, and 30 female students, were selected among 50 participants in a secondary school in Kerman province, and they were respectively, 7 students in 10 grade, 10 students in 11 grade, and 13 students in 12 grade. The participants had an intermediate level of English, and their mother tongue was Farsi. The participants were 16-18 years old ($M= 17.2$), $SD= (0.62)$. Table 1, shows the demographic and data related to participants.

Table 1.

Demographic Background of the Participants

No. of Students	30
Gender	Female
Native language	Persian
Educational level	10 grade (7) 11 grade (10) 12 grade (13)
Proficiency level	Intermediate (30)

Instruments

Instruments used in the current research were English vision for schools for pretest and posttest in multiple-choice format and Stephen's Cooperative Learning Questionnaire (2007). This questionnaire was designed from 13 items and 3 dimensions with group dynamics, Work on the project, and Feedback, in which 5 items are related to group dynamics, 5 items are related to work on the project and 3 items are related to the feedback. The answer to the questionnaire is based on numbers 1 to 5 and the questionnaire is scored, based on the Likert scale. Its reliability also was calculated using Cronbach's Alpha test and the Alpha of this questionnaire is above 70%.

Material

In this research, English teaching is taught based on the constructivism theory and cooperative learning in the classroom such as group dynamics, Work on the project, and Feedback Stephen (2007).

Procedure

In recent research, first, a proficiency test was conducted and students were selected. Then students were divided into experimental and control groups. Then pretest was taken from students. And for five weeks, 10 sessions, each session 40 minutes, English, taught based on the constructivism theory and cooperative learning. After this certain time, the posttest was taken from the students, and finally, Stephen's questionnaire (2007) was given to the students, and data analysis was done by using SPSS 23.

Results

In this section of the research, in addition to t-tests in experimental and control groups, which is related to the first question of the research, the analysis of effective methods in English cooperative learning and based on Stephen's questionnaire (2007), which is related to the second question of the research, is also examined and reviewed. Regarding, the analysis of the data in the present research, and considering that the samples in this research are <2000, to check the normality of the data, using the Kolmogorov-Smirnov statistic.

According to this test, the p-value in Table 2 is >0.05 , so it can be concluded that it is not statistically significant and the distribution of the data in this research and both experimental and control groups are normal.

Table 2.

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statisti			Statisti		
group		c	Df	Sig.	c	Df	Sig.
Experimental	pretest	.108	20	.200*	.958	20	.502
	posttest	.174	20	.114	.913	20	.074
	control	.154	10	.200*	.956	10	.745

Considering the normality of the data in this research, t-tests can be done for experimental and control groups. Considering that one of the necessary conditions to perform the T-test, in addition to the normality of the data, is the homogeneity of the variances of the two groups, therefore Levene's test was used to check the homogeneity of the variances. This test was performed based on the P-value or significance of two experimental and control groups.

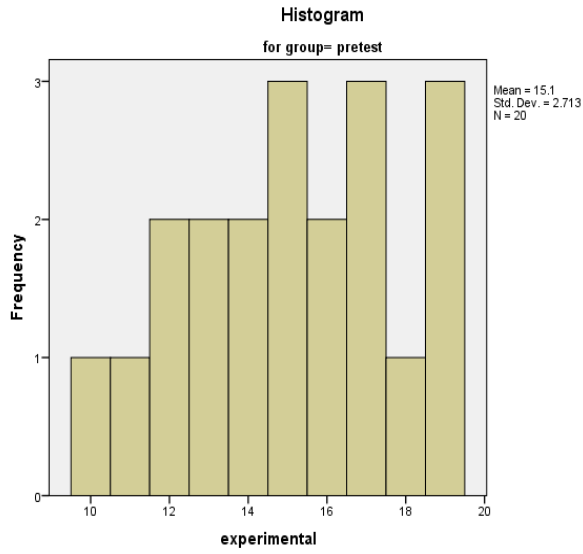


Figure 1.

Pre-test Stem-and-Leaf Plot

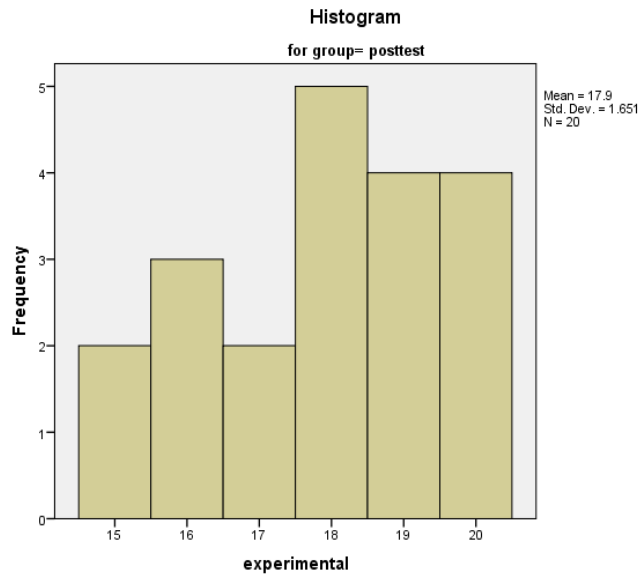


Figure 2.

Post-test Stem-and-Leaf Plot

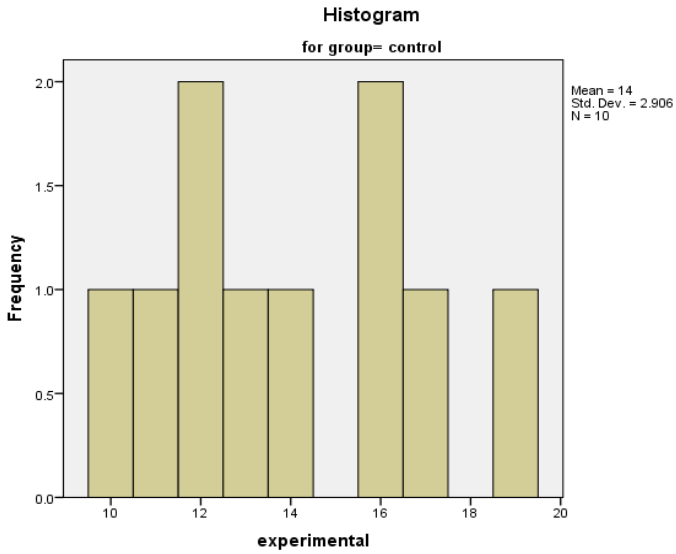


Figure 3.

Control Stem-and-Leaf Plot

Table 3.

Independent sample test

		Levene's Test for Equality of Variances					t-test for Equality of Means		95% Confidence Interval of the Difference	
Experimental	Equal variances assumed	F	Sig.	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
								37	.020	4.713

Equal			1					
varian			1					
ces not	3.9	.	.002	3.900	.990	1.74		6.058
assum	38	9				2		
ed		9						
			2					

Table 3 shows the independent sample test between the experimental and control groups, according to the p-value which is < 0.05. So, there is a meaningful difference between of two groups and the mean in the two groups is not equal and indicates effective constructivism and cooperative learning in students in English learning.

Table 4.

Paired sample test

		Paired Differences							
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	experimental - group	14.200	2.955	.418	13.360	15.040	.797	37	.000

The next test conducted to ensure the effectiveness of cooperative learning was paired sample test. Table 4 shows this test, in this test also according to the p-value which is < 0.05 , it concluded that there is a meaningful difference between the pretest and posttest mean in the experimental group, and it shows, the impact of the method on students' English learning.

Table 5 shows the one-way ANOVA test, and the p-value or Significance in this test shows the effectiveness of constructivism and cooperative learning in the English language. So, according to the first research question and the existence of differences between students who use cooperative learning and students who don't use cooperative learning, it can be concluded that learning English is based on cooperative learning, and constructivist techniques have been effective, and students who used cooperative learning, had a better score than students who didn't use cooperative learning.

Table 5.

One way ANOVA

experimental

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	128.400	2	64.200	11.276	.000
Within Groups	267.600	47	5.694		
Total	396.000	49			

The next section analysis of this research is related to the analysis of Stephen's questionnaire (2007), which contains questions such as group dynamics, working on the project, and feedback. Table 6 shows the descriptive statistics of Stephen's questionnaire (2007). The

number of students who answered this questionnaire was 30. 7, tenth-grade students, 10, eleventh-grade students, and 13, twelfth-grade students, respectively.

Tables 6 and 7 show the statistics and frequency age of students who answered to questionnaire respectively.

Table 6.

Statistics of Age

N	Valid	30
	Missin g	1
Mean		2.20
Median		2.00
Mode		3
Std. Deviation		.805
Variance		.648
Minimum		1
Maximum		3

Table 7.

Frequency of Age

	Frequenc y	Percent	Valid Percent	Cumulative Percent
--	---------------	---------	------------------	-----------------------

Valid	Sixteen	7	22.6	23.3	23.3
	seventeen	10	32.3	33.3	56.7
	eighteen	13	41.9	43.3	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

As mentioned in the previous sections, Stephen's Cooperative Learning Questionnaire (2007) consists of 13 questions in 3 groups: Group dynamics (5 questions), doing project work (5 questions) feedback (3 questions). So tables 8, 9, 10, show, statistics of group dynamics, doing project work, and feedback, respectively.

Table 8.

Statistics of group dynamics

		group dynamics	group dynamics	group dynamics	group dynamics	group dynamics
N	Valid	30	30	30	30	30
	Missing	1	1	1	1	1
Mean		2.93	2.80	2.87	2.70	3.10
Median		3.00	3.00	3.00	2.50	3.00
Mode		2 ^a	2 ^a	2	2	3
Std. Deviation		1.413	1.400	1.196	1.317	1.242

Variance	1.995	1.959	1.430	1.734	1.541
Minimum	1	1	1	1	1
Maximum	5	5	5	5	5

Table 9.

Statistics of project work

		project work	project work	project work	project work	project work
N	Valid	30	30	30	30	30
	Missin g	1	1	1	1	1
Mean		2.73	2.87	2.70	3.17	2.83
Median		3.00	3.00	3.00	3.00	3.00
Mode		2 ^a	3	1 ^a	3	2
Std. Deviation		1.258	1.167	1.317	1.289	1.177
Variance		1.582	1.361	1.734	1.661	1.385
Minimum		1	1	1	1	1
Maximum		5	5	5	5	5

*Table 10.**Statistics of feedback*

		Feedba ck	feedbac k	feedbac k
N	Valid	30	30	30
	Missin g	1	1	1
Mean		2.70	2.63	3.03
Median		2.00	3.00	3.00
Mode		2	3	3
Std. Deviation		1.291	1.299	1.217
Variance		1.666	1.689	1.482
Minimum		1	1	1
Maximum		5	5	5

According to Tables 8, 9, and 10, students selected group dynamics, feedback, and project work, respectively. So, the second research question is related to the most cooperative learning used by students in English learning classrooms, therefore, the most cooperative learning used by the students, was group dynamics.

Discussion

As previously discussed, this study attempted to investigate whether constructivism and collaborative learning have an effect on secondary school students' English language learning, and if this method has been effective in their learning, the students, more than They use the constructivism technique.

The results of this research confirmed that the use of constructivism for learning English by language learners has been effective and students can learn English better by using constructivism techniques. The students learned which components are more important in learning than the others and this research is effective for people who try to find the items needed for a better understanding of the English language by the students.

The results of this research showed that there is a difference between the individual and collaborative assessment of students' English language learning after doing and implementing learning based on constructivism and collaborative learning using group dynamics learning techniques, project work and feedback techniques (Stephen (2007) , there is a significant difference and the students who have learned learning based on constructivism and cooperative learning in a certain period have better grades than the students who have not learned and this applies to the first question of the research as well and after the investigations and implementation the method based on the theory of constructivism and collaborative learning in the classroom, it was found that there is a significant difference between students in the use of constructivism in learning English and students who learned learning based on constructivism and collaborative learning in a certain period, compared to students who have not learned, they have better grades.

Implementation of constructivism and collaborative learning techniques based on a questionnaire (Stephen (2007) showed that students use more group dynamics techniques and then feedback and project work in learning English and this case also applies to the second research question about which technique students use more in cooperative learning of English.

The findings of this research mean that learning English in collaborative groups is better than in individual groups and the findings of this research are in line with the findings of BADA, Steve Olusegun (2015) and Tuncer CAN (2009) who in their research on evaluation Constructivism worked and their data analysis showed that by using the constructivism technique, there are significant differences between the traditional classroom and the constructivist classroom, and the constructivism technique is promising in improving language and communication skills of language learners in different learning environments.

Conclusion

According to the results and score analysis section in SPSS, in this research, it was found that students who use cooperative learning techniques and constructivism in English learning had higher scores than students who don't use these techniques. And also students, tend more to use the cooperative technique of group dynamics in English learning, and the next, feedback and project work techniques.

The present research was limited to one school and senior students, but other research can be conducted between other age groups and more students and more samples and can be evaluated the effect of constructivism and cooperative learning on English learning in a wider dimension.

Finally, the present research can help teachers and students in applying constructivism and cooperative learning techniques, and effective techniques in the classroom, and encourage them about these techniques and help them in better learning. According to the analysis done and the recognition of effective methods in cooperative learning and the effect of constructivism, it is suggested that teachers encourage students to use these techniques for better and more effective learning.

References

- BADA, S. (2015). Constructivism learning theory: A paradigm for teaching and learning. *Journal of Educational and Social Research*, 5(2), 131-138.
- Beatty, K. (2003). *Teaching and researching computer-assisted language learning*. Pearson Education.
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school*. National Academy Press.
- Brown, H. D. (1941). *Principles of language learning and teaching*. Prentice Hall.
- Driscoll, M. (2000). *Psychology of learning for instruction*. Allyn & Bacon.
- George, B., & Michael, K. (2001). The many forms of constructivism. *Journal of Chemical Education*.
- Joans, S. (2008). School science and further of scientific culture, 5(2).
- Kirschner, P. A. (1992). Epistemology, practical work, and academic skills in science education. *Journal of Science Education and Technology*, 1(4), 287-297.
- Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, 41(2), 75-86.
https://doi.org/10.1207/s15326985ep4102_1
- Leela, R., & Marlene, T. (2019). Implementation of the principles of constructivism and connectivism. *International Journal of Contemporary Applied Research*, 10(1), 123-140.
- Merve, K. (2018). A systematic literature review: Constructivism in multidisciplinary learning. *Journal of Educational Research*, 5(2), 90-105.
- Nuket, G., & Cigdem, H. (2015). Constructivism in teaching and learning: Content analysis evaluation. *Social and Behavioral Sciences*, 191, 526-533.
<https://doi.org/10.1016/j.sbspro.2015.04.356>
- Perkins, N., Schwartz, L., & West, M. (1995). *Software goes to school: Teaching for understanding with new technology*. Routledge.

Sidnery, P. (2012). Evaluating a behaviorist and constructivist learning theory for the 21st century learners. Paper presented at the Georgia Education Research Association Conference.

Svein, S. (2010). Constructivism and learning. In *International Encyclopedia of Education* (pp. 485-490). <https://www.researchgate.net/publication/285884326>

Tuncer, C. (2009). Learning and teaching language online: A constructivism approach. *Novitas-ROYAL*, 3(1), 60-74.