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Effects of Vocabulary Games on Students' Vocabulary Learning in Ethiopian Primary Schools: A Pilot Study Report

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Abstract
Studies conducted in Ethiopian EFL classrooms found that students' vocabulary learning has been problem-bound and wide spreading over time. While various methods of teaching vocabulary have been in place to curb this problem the use of vocabulary games seems to be overlooked for many years. This paper encapsulates the report of a pilot study conducted to appraise the viability of the main investigation into the Effects of Vocabulary Games on Students' Vocabulary Learning Motivation, Achievement, and Peer-interaction in Ethiopian Primary Schools. The specific purposes of this pilot study were threefold: to examine the validity and reliability of data collection instruments, to evaluate the designated games against a set of criteria, and to test the operation and potential flaws of data collection equipment. Pertinent to these specific objectives, it was possible to learn that some alterations are required in organizing data collection instruments, providing instructions to students during game play, and utilizing materials for data gathering. Also, it was tentatively concluded that vocabulary games can enhance students' vocabulary learning motivation as well as achievement.

***Keywords*:** Vocabulary games, motivation, achievement, peer-interaction

Background of the study

The realm of vocabulary teaching and learning has been vastly probed and reanimated over the past years, and its reputation is being more widely realized in the field of English Language Teaching (ELT). Many scholars (Alemi, 2010; Chomsky, 1995, 2000; Fotovatina & Namjoo, 2013; Harmer, 1991; Huyen & Nga, 2003; Schmitt, 2010) discussed that vocabulary takes primacy in that it regulates the academic success of English language learners. Indeed, both mother tongue and second language competencies of a learner highly depend on manipulating the word-sphere of a language. As for Alderson (2005) and Schmitt (2010), a learner's vocabulary size is an indispensable part of mastering a second language. The fact that vocabulary knowledge intensely associates with the basic language skills expedites learners' language performance by staging the platform for them to designate that they can bear their own stake in a series of communication.

The communicative and task-oriented essence of effective vocabulary learning is vitalized in two of the language teaching approaches that are highly pronounced today: Communicative Language Teaching (CLT) and Task-based Language Teaching (TBLT). In the eyes of these two approaches, vocabulary learning is exalted because meaning is principally overemphasized as a creator of effective communication conveyed through task-embedded practices (Nunan, 2004; Richards, 2006). The approaches consider tasks as sublimely prerogative facilitators of students' learning of required language skills (Larsen-Freeman, 2000). Through these tasks which encapsulate games, role play and other problem-solving activities, learners can create an atmosphere of real-life situations, use the language for communicative purposes, form social interaction using the target language, and untangle their problems through communication (Gray & Klapper, 2009; Hossen, 2008; Richards, 2006).

As much as CLT and TBLT provide emphases, games are a crucial element of students' vocabulary learning. They can be understood as a tool or an activity setting up clearly defined goals to create a situ-

ation governed by rules (Aldabbus, 2008; Hornby, 1995; Rixon, Flavell & Vincent, 1991). Language games that facilitate the learning of vocabulary are termed to be vocabulary games which include pictures, gestures, drawings on the board as well as analytical definitions (Nation, 1990; 2000). Vocabulary games bring real world context into the classroom, and enhance students' use of words in a flexible, communicative way. These games give EFL learners a practical instant need to utilize words for communicative purposes and encourage them to sustain their interest and work by removing affective filters from their mind which is not usually possible in a typical vocabulary lesson (Aslanabadi & Rasouli, 2013; Hansen, 1994; Huyen & Nga, 2003; Sorayaie, 2012; Yolageldili & Arikan, 2011).

Problem statement

Communicative Language Teaching specialists claim that students' learning motivation (Doughty & Long, 2003; Gardner, 1985; Gardner & McIntyre, 1993), achievement (Doughty & Long, 2003; Horwitz & Young, 1991) and peer-interaction (Chomsky, 1995; Doughty & Long, 2003; Li, 2000 in Ellis, 2003; Richards & Rodgers, 1986) are essential in determining students' improved language learning. Also, researchers vastly examined topics related to effects of using games on students' vocabulary learning, particularly motivation, achievement, and peer-interaction, which are deemed interconnected, with emphases on various dimensions (Chou, 2014; Dalton, 2005; Aldabbus, 2008; Aslanabadi & Rasouli, 2013; Yolageldili & Arikan, 2011; Yu, 2005). These researchers reiterate the growing impact of games on supporting students' vocabulary learning.

In Ethiopia, English as a foreign language begins, in government primary schools, at grade one dominated by word translation, repetition and memorization of the English alphabet (Daniel, 2010). In Ethiopian classrooms, vocabulary lessons are granted to have a pivotal place in catering adequate tool of communication for learners by augmenting communicative competencies and overall academic performances. However, research findings revealed that students' problem-bound vocabulary knowledge with its domino effect on their use of the target language for communication in real-life situations has been wide spreading over time (Anto, Coenders, & Voogt, 2012; Berhanu, 2010; Lakachew, 2003). One reason for this could be that students' learning of vocabulary is overlooked during their lower grades.

There are scant local studies conducted by combining the various aspects of the variables considered in this study: language games, vocabulary learning motivation, achievement, and peer-interaction. To mention the locally available works in the area, Zewdu (1992) investigated the use of language games to ease learners' vocabulary learning with a focus on tenth grade students. In the meantime, Ogbay (1989) conducted an experimental study on the use of language teaching games and activities in Ethiopian government primary schools with a focus on developing communicative abilities in speaking skills of grade 5 students. These researchers found that games brought about improved vocabulary learning and communicative speaking abilities. Although these scholars went farther to recommend that games and activities should be integrated into the teaching syllabus, the number of games included in students' textbooks and their classroom use have been found limited (Boersma & Manendante, 2016). This is to mean that language games are given less attention to support learning, let alone to be used as a standout approach.

While this issue is being addressed in a broader investigation this pilot study was conducted between October and November 2016 to appraise the viability of the main study, *the Effects of Vocabulary Games on Students' Vocabulary Learning Motivation, Achievement, and Peer-interaction in Ethiopian Primary Schools.* Concomitantly, three specific purposes were addressed: (a) checking the validity and reliability of data collection instruments i.e. tests and questionnaires in terms of time, item value, clarity of instruction, appropriateness of question types, and language complexity, (b) evaluating the designated games against a set of criteria which comprises of suitability for vocabulary teaching in the target grade level, time, class size and classroom organization, mixed-level enclosure, requisite materials such as pictures and dice, preparation, and possible alternatives, and (c) testing the operation and potential flaws of data collection equipment like video camera and voice recorder. All these three purposes deemed to upgrade the quality of the work, the pilot study helped to deliberate some relevant revisions and alterations.

Methods

Setting of the pilot study

This pilot study was conducted in a primary school found in Bahir Dar City, Ethiopia. The school was chosen by convenience sampling technique. Convenience sampling was used because it primarily relies on easily accessible resources (Berg, 2001) as was the case with this Primary School. Since the target grade level for the main study was sixth, the pilot study too considered classes of the same grade level. There were four sections of Grade six in the school taught by a teacher. Of these sections, two intact classes were randomly selected using a lottery method drawn together with the school teacher. The total number of students in the two sections was comparable i.e. 49 in 6C (23 girls) and 50 in 6D (24 girls). Similar to the culture in most other Ethiopian primary schools, a session lasts for forty minutes whereas English is the only subject given in six sessions over the five class days of the week, meaning Monday through to Friday.

Data collection procedures of the pilot study

First in the data collection process was getting engaged with the subject teacher via the authorization of the school principal who had orally received the consent of participants' parents and caregivers by explaining the objectives of the study. At this stage, the researcher explained the purpose of the study to the subject teacher, learned where the teacher was, and framed the data collection period together. Before taking on the two sections as a subject teacher, the researcher spent three days of four class sessions as an observer in each section. In the observation, the focus was, among other things, on the teacher's major instructional procedures, students' grouping and classroom behavior, student-teacher interaction, the teacher's time allocation for tasks, and classroom participation and turn taking.

In the researcher's first independent contact with students, the pre-intervention test was given. In the next day, the questionnaire was administered for both classes. During the administration of both the test and the questionnaire, brief elaborations about instructions were made in Amharic, students' native language, and the participants were encouraged to ask for clarification if they needed. Also, this procedure was similarly followed in collecting post-intervention data. Pertinent to the results found from the pre-test, the two intact classes were assigned randomly; section C were taught vocabulary via the conventional classroom procedures, and section D via game-embedded lessons. Since one of the aims of this study was to investigate students' classroom peer-interaction in vocabulary learning sessions, the observation was piloted in tandem with the intervention.

Instruments used in the pilot study

Pre-intervention

Before the commencement of the experimentation, data were collected through two instruments: vocabulary pre-test and pre-intervention questionnaire.

Vocabulary pre-test

With the main objective of inspecting homogeneity of study participants who belonged to two different sections, a vocabulary achievement pre-test was given to 30 randomly selected students from each section. This was also used to check whether assigning the intact classes into control and experimental groups would implicate no prior differences. Based on this, the pre-test was prepared by the researcher and commented by two supervisors and the subject teacher. The test consisted of 20 items under four sections (*True or False*, *Matching*, *Anagrams*, and *Multiple Choice*), each section having five items of equal value, i.e. one. Content wise, the test contained vocabulary items about jobs, situations/conditions, and objects taken from students' previous vocabulary lessons, and half-an-hour was allotted to complete it. Then, students' test sheets were collected and marked by the researcher based on which the two sections were randomly assigned for the treatment comparison as control (section C) and experimental (section D) groups. The preparation of both the pre-test and the post-test considered the test formulation schemes of Cambridge Young Learners English Tests (CYLET) similar to the work of Chou (2014).

Pre-intervention questionnaire

The pre-intervention questionnaire was administered for the same 30 students who had taken the pre-test. Both the pre-intervention and post-intervention questionnaires used in this study were designed consulting the works of Chou (2014), Gardner (1985) and Schmidt, Boraie, and Kassabgy (1996) on vocabulary learning motivation, and Aldabbus (2008) on peer-interaction. Prepared in Amharic and an hour given for students to complete it, the questionnaire consisted a total of 36 items under two parts: *Vocabulary Learning Motivation* (24 items), and *Peer-interaction* (12 items) in a Likert-type scale. The scales ranged from 5 to 1 (5 = Strongly Agree; 4 = Agree; 3 = Undecided; 2 = Disagree; 1 = Strongly Disagree).

Observation

Unlike the other data collection instruments, the observation was conducted while the treatment was underway. Since this was carried out after the division of the two sections into experimental and control groups, four game-embedded vocabulary lessons of the former group and four conventional classes of the later were video recorded by two cameras with the participants' permission. Each observation lasted for about 30 to 35 minutes. The recording was aimed to observe the classroom activities repeatedly as needed and scrutinize against eight identified areas (*space*, *actors*, *activities*, *objects*, *acts*, *time*, *goals*, and *feelings*) as noted by Chou (2014).

Post-intervention

Similar to the case in the pre-intervention, two instruments: vocabulary post-test and post-intervention questionnaire were used during the post-intervention piloting.

Vocabulary post-test

The post-test was administered to all the 30 students in each group who had taken the pre-test to see if there were any differences between the experimental and the control group students' vocabulary learning achievement. Both groups took the test, which was organized in a similar vein as the pre-test, in the same day. The test consisted of 20 questions in four parts to be completed in 30 minutes, and was valued out of 20. But in contrast to the pre-test, the questions in the post-test were elicited from the treatment particularly focused on *clothes and shoes, jewelry, accessories, places and geography*.

Post-intervention questionnaire

As far as designing is concerned, both the pre-intervention and post-intervention questionnaires were prepared comparably. They were similar in terms of language, time given for completion, and organization, i.e. Likert-type scale. The post-intervention questionnaire was administered to students in both groups. The instrument included a total of 30 items grouped under two themes: *Vocabulary Learning Motivation* (18 items), and *Peer-interaction* (12 items). The purpose of the questionnaire was to investigate the possible differences in students' vocabulary learning motivation, and peer-interaction before and after learning the skill with and without games.

The intervention

The pilot intervention was conducted over nearly three weeks period between October and November 2017. During the intervention, distinctive lesson plans were prepared for the control and experimental groups by the researcher together with the subject teacher. The lessons were drawn from the vocabulary practice parts of students' English textbook. Students in the control group were taught through the conventional vocabulary teaching method consulting Grade sox English Students' Textbook and Teacher's Guide. On the other hand, students in the experimental group were taught about those parts of the vocabulary lesson through games. As such, vocabulary practice lessons found in students' English textbook: *Cloths and Shoes* and *Places and Geography* were considered.

The regular lesson

Found on students' textbook, the vocabulary lessons considered in this study are presented to be taught purportedly through activities. The activities about *Cloths and Shoes* are four that require students to choose suitable adjectives from a given list for the clothes shown in pictures, complete sentences using given words and phrases, match phrases with given pictures of cloths, and use adjectives to complete phrases meaningfully. Similarly, the activities on *Places and Geography* ask students to work with a

partner and find the correct words to complete sentences, to complete sentences using given words, and to form groups of three and talk about the weather conditions of their areas.

The game-embedded vocabulary lessons

All the four games intended to be used in the main study were piloted. The first two games, *At the Market* and *Outburst* were used in teaching the vocabulary of *Cloths and Shoes* whereas the last two, *Chain Game* and *Memory Game,* were used for teaching the vocabulary of *Places and Geography.* The assignment of the games to the lessons was made based on the appropriateness and suitability of the games for five criteria: time, materials required, organization, preparation, and procedures.

The game *At the Market* was adapted from the original game *At the Zoo* (Copland, Garton & Davis, 2012). It took 15 to 20 minutes to play involving mixed levels and large classes. The game required pictures of clothes and shoes and dice. It was played by putting pictures of clothes and shoes from the market on the board numbered 1 to 6. Then students took turns to throw a dice. The number thrown corresponded to a cloth or a pair of shoes on the board, and students had to make a sentence about it. The teacher wrote students' sentences on the blackboard. Once sentences were made about all the words, the key vocabulary were erased to create a gap fill. The second game, *Outburst*, which too allowed both large classes and mixed levels, needed 20 to 30 minutes to play. Materials required for the game were pieces of paper and clock. In the game, students formed groups of five and were given a piece of paper in each group. Then, given brief explanations about three categories of vocabulary of clothes and shoes: *cloths and shoes*, *jewelry*, and *accessories*, they guessed the words that were on the teacher's list by jotting them down on their piece of paper. This game was both cooperative and competitive. Students had to work together to get most of the words on the teacher's list right. Finally, the group which found many words from the teacher's list was declared to win the competition.

Chain Game which is played using flashcards covered 20 to 30 minutes. It was suitable for large classes, mixed levels, and cooperative work. Students were introduced about a list of vocabulary of *Places and Geography*. Then the cards were fixed on the board, and the students were introduced with the sentence '*My father visited several places'.* Using the sentence, the students in groups of five made sentences referring to the word on the flashcard. Finally, all the flashcards were taken off the board and students had to speak out as many sentences as they could. Vocabulary of *Places and Geography* were also taught via *Memory Game*. This game needed only 15 minutes having a room for large classes, mixed levels, cooperation and competition. In the game, sets of cards with words and pictures were needed, and students had to find picture-word combinations. Before the game began, first the picture cards and then the word cards were shown to students and they repeated them all together with me. Then the class was divided into groups of five and sets of cards were given to each group. One student in each group shuffled the cards and laid them face down on the desk. The students took it in turns to turn over two cards to try and find a picture-word pair. Students proceeded until they made mistakes in matching the pairs, and the one with most correct matches at the end was declared winner.

Findings

As noted above, in order to examine the effects of vocabulary games on students' vocabulary learning achievement, motivation, and peer-interaction two tests and two questionnaires measuring vocabulary learning motivation and peer-interaction were administered. These were given as a pre-test and as a post-test. While the pre-tests were intended to check the homogeneity of the two randomly selected groups, the post-tests were used to investigate if a statistically significant difference could occur between the groups' learning achievement, motivation, and peer-interaction only because of the change in mode of teaching from the conventional approach to the game-embedded one.

The data collected through the aforementioned instruments were analyzed using an independent samples *t*-test and a one-way MANOVA (Multivariate Analysis of Variance). Since this study involves an independent variable, vocabulary games, and three dependent variables: vocabulary learning motivation, achievement, and peer-interaction, one-way MANOVA entails reliable and valid results. This statistical package was used to compare the experimental and control groups in terms of mean scores, standard deviation, margins of improvement, and significant differences before and after the intervention i.e. game-embedded vocabulary lesson.

Pre-test results: Effects of vocabulary games on students' vocabulary learning achievement, motivation, and peer-interaction

Table 1: *Pre-test group statistics*

	Pre-test	N	Mean	Std. Deviation
Achievement Pre-test Score	Section C	30	9.27	2.067
	Section D	30	9.10	1.900
Motivation Pre-test Score	Section C	30	79.8667	10.32818
	Section D	30	81.8667	10.07124
Peer-interaction Pre-test Score	Section C	30	42.4667	8.79551
	Section D	30	40.8667	9.71928

The table above shows the pre-test data comparison between the two considered sections on students' vocabulary learning achievement, motivation, and peer-interaction. The results of the test indicate that the two sections registered similar vocabulary learning achievement scores with a mean score of 9.27 in Section C and 9.10 in Section D. The standard deviations are 2.067 and 1.900 respectively. Similarly, regarding students' vocabulary learning motivation, the mean score of Section D (*M*=81.86; *SD*=10.07) was found to be mathematically bigger than that of Section C (*M*=79.86; *SD*=10.32). This shows a slight difference in students' vocabulary learning motivation.

The above table also shows that Section C (*N*=30) was associated with peer-interaction *M*=42.46 (*SD*=8.79). By comparison, Section D (*N*=30) was associated with a numerically smaller peer-interaction score *M*=40.86 (*SD*=9.71). In relation to the results shown in the above table, an independent samples t-test was performed to check the homogeneity of the two randomly selected groups and investigate if a statistically significant difference could occur between the groups. This is shown in the table below.

Table 2: *Pre-test: significance of groups' mean scores difference*

		t test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Achievement Pre-test Score	Equal variances assumed	.325	58	.746	.167	.513	-.859	1.193
Motivation Pre-test Score	Equal variances assumed	-.759	58	.451	-2.00	2.63376	-7.27	3.27
Peer-interaction Pre-Test	Equal variances assumed	.669	58	.506	1.600	2.393	-3.191	6.391

The output of an independent samples t-test report in table 2 confirms the comparison in vocabulary learning achievement, motivation, and peer-interaction between Section C and Section D students. In terms of achievement, there was no significant difference in the scores for Section C (M=9.27, SD=2.067) and Section D (M=9.10, SD=1.900); t (58) = 0.325, p = 0.746. On the other hand, although the group statistics shown in Table 1 indicated a slightest difference between the groups' mean scores, the discrepancy is found to be statistically not significant in that t (58) = -0.759, p = 0.451. Likewise, as far as peer-interaction is concerned, the table indicates a statistically not significant difference between the two sections, t (58) = 0.669, p = 0.506 meaning that the two sections are homogeneous in terms of peer-interaction measure. This can be further illustrated through a one-way MANOVA test as is presented in the following tables.

Table 3a: *Pre-test one-way MANOVA test results*

Effect		Value	F	Hypothesis df	Error df	Sig.	Noncent. Parameter	Observed Power[c]
Sections	Pillai's Trace	.016	.297[b]	3.000	56.000	.827	.891	.104
	Wilks' Lambda	.984	.297[b]	3.000	56.000	.827	.891	.104
	Hotelling's Trace	.016	.297[b]	3.000	56.000	.827	.891	.104
	Roy's Largest Root	.016	.297[b]	3.000	56.000	.827	.891	.104

a. Design: Sections
b. Exact statistic
c. Computed using alpha = .05

Table 3b: *Tests of between-subjects effects*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Noncent. Parameter	Observed Power[d]
Sections	Achievement Pre-test	.417	1	.417	.106	.746	.106	.062
	Motivation Pre-test	60.000	1	60.000	.577	.451	.577	.116
	Peer-interaction Pre-test	25.350	1	25.350	.295	.589	.295	.083

a. R Squared = .002 (Adjusted R Squared = -.015)
b. R Squared = .010 (Adjusted R Squared = -.007)
c. R Squared = .005 (Adjusted R Squared = -.012)
d. Computed using alpha = .05

As can be seen in the tables above, a one-way MANOVA revealed a not significant multivariate main effect for students' regular vocabulary classes, Wilks' λ = .984, *F* (3, 56.000) = 0.29, p=.017. Power to detect the effect was .104. Thus, the hypothesis that the two sections are homogeneous in terms of vocabulary learning achievement, motivation, and peer-interaction was accepted. These results suggest that the two sections are comparable in their level of vocabulary learning achievement implying that they could be randomly assigned into control and experimental groups.

Post-test results: Effects of vocabulary games on students' vocabulary learning achievement, motivation, and peer-interaction

Table 4*: Post-test group statistics*

	Pre-test	N	Mean	Std. Deviation
Achievement Post-test Score	Section C	30	9.13	2.193
	Section D	30	11.17	2.214
Motivation Post-test Score	Section C	30	62.10	9.841
	Section D	30	69.33	7.439
Peer-interaction Post-test Score	Section C	30	42.7667	7.57802
	Section D	30	44.6000	7.33250

Depicted in the above table are the post-test results of students' vocabulary learning achievement, motivation, and peer-interaction in the control and experimental groups. The table shows that the mean score for vocabulary learning achievement of the control group is 9.13 (*SD*=2.193) and of the experimental

group is 11.17 (*SD*=2.214). Likewise, the table indicates that the mean score of students' vocabulary learning motivation in the control group is 62.10 (*SD*=9.841) whereas the mean score of the experimental group is 69.33 (*SD*=7.439). Moreover, regarding students' peer-interaction, the mean score of the experimental group (*M* = 44.60; *SD* = 7.33) yet again is bigger than that of the control group (M = 42.76; *SD* = 7.57). These results imply that there exists a mathematical difference between the control and the experimental groups. Assuming that the difference in the scores might occur due to the game-embedded vocabulary lessons given for the experimental group, a MANOVA test was conducted to detect any statistically significant variance as is presented in the tables below.

Table 5a*: Post-test one-way MANOVA test*

Effect		Value	F	Hypothesis df	Error df	Sig.	Noncent. Parameter	Observed Power[c]
Games	Pillai's Trace	.302	8.080[b]	3.000	56.000	.000	24.241	.987
	Wilks' Lambda	.698	8.080[b]	3.000	56.000	.000	24.241	.987
	Hotelling's Trace	.433	8.080[b]	3.000	56.000	.000	24.241	.987
	Roy's Largest Root	.433	8.080[b]	3.000	56.000	.000	24.241	.987

a. Design: Intercept + Groups
b. Exact statistic
c. Computed using alpha = .05

Table 5b: *Tests of between-subjects effects*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Noncent. Parameter	Observed Power[d]
Games	Achievement Post-test	62.017	1	62.017	12.772	.001	12.772	.940
	Motivation Post-test	784.817	1	784.817	10.314	.002	10.314	.885
	Peer-interaction Post-test	50.417	1	50.417	.907	.345	.907	.155

a. R Squared = .180 (Adjusted R Squared = .166)
b. R Squared = .151 (Adjusted R Squared = .136)
c. R Squared = .015 (Adjusted R Squared = -.002)
d. Computed using alpha = .05

The above one-way MANOVA revealed a significant multivariate main effect of vocabulary games, Wilks' λ = .698, *F* (3, 56.000) = 8.08, *p* <. 017 (i.e. 0.05/3). Power to detect the effect was .987. Given the significance of the overall test, the univariate main effects were examined. Significant univariate main effects for game-embedded vocabulary lessons were obtained for percentage of students' vocabulary learning achievement, *F* (3, 56) = 12.772, *p* <.001, power = .940; and students' vocabulary learning motivation, *F* (3, 56) =10.314, *p* <.002, power = .885.

Validity and reliability of data gathering instruments

Even though all the data gathering instruments used in this study were either adapted from the previous works of scholars or tailored based on findings in the literature, it was deemed essential to test their validity and reliability prior to employing them in the main study.

Vocabulary tests

The two tests (pre-intervention vocabulary test and post-intervention vocabulary test) used in this study were structurally adapted from Chou (2014) based on the test formulation schemes of CYLET. Each test contained 20 items under four directions. In dealing with the face validity and content validity of the tests, constructive comments were received from the researcher's supervisors and the school teacher who, before the tests were administered, assessed, and checked five aspects of the tests: time allotted to

complete the test, item value, clarity of instructions, appropriateness of question types, and language complexity.

Motivation and peer-interaction questionnaires

Students' vocabulary learning motivation and peer-interaction were measured using questionnaires both of which were administered before and after the intervention. The validity of the questionnaires was ensured through the careful evaluation of the researcher's supervisors and a psychology teacher working at Jigjiga University. Based on the comments received, corrections and modifications were made. The pre-test and post-test motivation questionnaires initially consisted of 32 and 24 items respectively. But after repetitive evaluations they were reduced to 24 and 18 respectively. In contrast, the originally formulated pre-test and post-test questionnaires of 12 items each were used with no numeric reduction but only little modifications on the sentences.

Afterwards, the questionnaires, depending on their intended objectives, were administered to 60 students in two groups and a reliability check was made and is presented in the following tables.

Table 6: *Pre-test instruments reliability check*

	Case Processing Summary				Reliability Statistics		
			N	%	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Motivation Questionnaire	Cases	Valid	60	100.0	.686	.632	24
		Excluded[a]	0	.0			
		Total	60	100.0			
	Case Processing Summary				Reliability Statistics		
			N	%	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Peer-interaction Questionnaire	Cases	Valid	60	100.0	.846	.862	12
		Excluded[a]	0	.0			
		Total	60	100.0			

a. Listwise deletion based on all variables in the procedure.

Table 7: *Post-test instruments reliability check*

	Case Processing Summary				Reliability Statistics		
			N	%	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Motivation Questionnaire	Cases	Valid	60	100.0	.750	.757	18
		Excluded[a]	0	.0			
		Total	60	100.0			
	Case Processing Summary				Reliability Statistics		
			N	%	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Peer-interaction Questionnaire	Cases	Valid	60	100.0	.726	.728	12
		Excluded[a]	0	.0			
		Total	60	100.0			

a. Listwise deletion based on all variables in the procedure.

As the tables above indicate, the two pre-test questionnaires were moderately reliable with a Cronbach alpha value of .686 for the motivation questionnaire and .846 for the peer-interaction questionnaire. Comparatively, the Cronbach alpha value of the post-test motivation questionnaire was .750 and that of the post-test peer-interaction questionnaire was .726. While the first value is close to .70 which is considered as a hypothetical cut-off point the other values show greater reliability (DeVellis, 2012). In other words, the alpha values indicate that the items form a scale that has sensible internal consistency.

Lessons obtained from the pilot study

Pertinent to its intended objectives, the pilot study provided some relevant insights with their implications to the main study. Regarding the validity and reliability of data collection instruments, some modifications were made in which eight and six items on the pre-test and post-test achievement questionnaires respectively were reduced based on the comments gained from research supervisors and a psychology teacher. Also, the instructions of the tests as well as the complexity level of the Amharic language used in the questionnaires were revised. Other than these, all the instruments were found to be appropriate in terms of time given for students to complete a task, test values, and appropriateness of question types. The other most important lesson gained from the pilot study is about the games used to teach vocabulary. Clarifying the instructions to the students in English was found to be difficult which forced unintended code-switching. The students asked repeatedly for clarifications on how the games were played. Thus, in the main study, much simplicity is required. Nonetheless, the fact that the games are adapted with their many characteristics helped in many ways. All the games were found to be suitable for the target grade level and for teaching vocabulary, and appropriate in terms of time, class size and classroom organization, mixed-level enclosure, and preparation.

As far as such data collection equipment as video camera and voice recorder are concerned, recognizable flaws were not detected except that in classrooms where the cameras cannot be placed properly situations would go unrecorded. It is also noteworthy that spending the first three days of the experimentation as an observer in the regular classrooms helps to obtain an understanding about the method of teaching practiced by the regular class teacher. Although it is hardly possible to assert that observations within such a short period of time could enable to gain the full picture of the teacher's approaches, it acquaints with the fundamentals of teaching in that grade level and reduces students' strangeness. Finally, this pilot study found out that some of the items on the questionnaires were not easy to be rated in a Likert-type scale whereas there was much noise in the game classroom which should be thought over.

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