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Effect of Cooperative Learning Approach on Classroom Environmental Perception in Public Co-educational County Secondary Schools, Nakuru County, Kenya.

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Abstract— Cooperative Learning Approach (CLA) has been widely recognized for enhancing students' academic achievement. This study examined its effect on students' perception of their classroom environment and the moderating role of gender. Guided by motivational and cooperative learning theories, the study used a quasi-experimental Solomon Four-Group, Non-equivalent Control Group Design. The target population comprised 766 Form Three students and teachers from four public co-educational secondary schools in Nakuru County, with a sample of 242 students and four English teachers. Two experimental groups (E1, E2) were taught using CLA, while two control groups (C1, C2) used conventional methods. Data were collected through Student Perception Guide (SPG), Teachers Perception Guide (TPG), and Student Interview Guide (SIG). Reliability testing yielded a Cronbach's alpha of 0.801 for SPG. Data analysis involved descriptive and inferential statistics (t-test, ANOVA, ANCOVA) at $\alpha=0.05$. Results showed a significant effect of CLA on students' classroom perception ($F(1,126)=2020.828$, $p<0.05$) and a significant moderating effect of gender. The findings recommend integrating CLA in teacher training and encouraging English teachers to adopt it in line with the Competency-Based Curriculum (CBC).

Key Words— Cooperative Learning Approach, Perception, Achievement.

1. INTRODUCTION

Teaching has for many years been always linked with conventional teaching styles, where teachers become the fountains of knowledge and learners who are taught are required to comprehend and give feedback of the same content during evaluation time. Several studies such as Sharan (2018), Pandya (2017) and Saltymakov and Frantcuzskaia (2015) noted that this put widespread bottlenecks in all academic schools of learning, notwithstanding level of grade, and less concern given to the studying itself. To the contrary, a lot of research studies had it that true comprehension was an issue of the students active restructuring. Restructuring occurred through students learning to ask questions and looking for solutions through research, finding out and relating of concepts. All these processes were mandated to far more constructive students and other types of teaching approaches than the

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ones presently advocated by most teachers in secondary schools especially the (conventional teaching approaches) (Altun, 2015).

Rather than learners being hopeless and teacher reliant, students should be allowed to reason, study on their own and hence studying be understood to be student centered and not what is done to the student by someone else (Gokhale, 2015). This statement underscored the interest and motivation which informed the need, its importance and relevance for conducting this research study on active or spirited learning approach .One such method of active learning was Cooperative Learning Approach, (CLA) which is student centered, and uses team members or group work to improve on student academic achievement and is linked with better performance, motivation and interdependence skills (Melnichuk & Osipova, 2017).

A study carried out by Olsen (2018) on elementary students found that cooperative learning approach was an organized and structured way of using groups, to increase learner's knowledge and linkage. In the study, learners were issued with practice exercises, which they did in groups so that they would in return be able to achieve team goals. Every member was held responsible to the allocated duties in as far as aiding and contributing towards the finishing and accomplishing of the task; and therefore, achievement depended on every member's contribution to the team. In addition to that, studying and learning amongst themselves made them to actively participate as a group and rely on others in solving of problems.

In the United States of America, Salimah (2017) investigated students' perception of group investigation and averred that high performing learners had significant better and positive perception of their classroom environment and subject, hence leading to higher academic performance. Moreover, the study not only found that the perception of teachers on cooperative learning approach was highly positive, but also established consensus that the cooperative learning approach improved and turned on an attractive classroom learning environment for the learners and teachers. This was not the case for the control groups that used conventional learning approaches. The author established that, the lecture method used on conventional learning approach was unattractive to the learners and produced lower outcomes in academic assignments among the students. In Australia, Vladimir and Salinas (2016) revealed that teachers' perceived cooperative learning and its classroom environment as beneficial in improving students critical thinking and as well developing their social skills..

Comparing the learning environment provided by cooperative learning approach and the conventional methods of learning, Çolak (2015) noted that using cooperative learning teaching approaches or team aided learning, students actively participated together, and engaged in teams in order to aid one another in studying. Learners were put in collaborative or group teams of 4 to 5 members, and they did hold on together as a team for three weeks and above. The learners were strictly instructed on how to hang together and actively engage as a team through active deliberations, healthy discussions that were devoid of criticism of group members.

Sharan (2018) carried out a research, through the use of cooperative learning approach, and the study found out that students from different cultures were not viewed as a problem or risk but as a source of learning. Through the use of CLA students were able to harness cultural differences in the pursuit of learning goals in an environment that showed respect for all contributions from different learners. In Russia, a study by Saltymakov and Frantcuzskaia (2015) established that there were several benefits achieved through the use of cooperative learning approach. One of the benefits that the study highlighted was that students from different backgrounds and abilities were able to gain status and acceptance among their peers.

Adams (2015) in United States of America established that the use of cooperative learning approach was associated with a number of advantages in the classroom learning as compared to conventional methods. Some of the key advantages of CLA include, its ability to support constructive interactions that enable learners to recognize individual duty and responsibility. CLA also enable students to work together in small groups while offering opportunities for learners to nurture teamwork spirit, engagements, linkages and collaborations with others; an opportunity that is missing through the lecture method in conventional learning approach.

Moreover a study by Oludipe and Awokoy (2015) in Nigeria established that there were significant differences in the level of academic achievement between the students taught using the conventional methods of teaching and those using the cooperative learning approach. Obinna-Akakuru et al., (2015) established that through the use of cooperative learning approach, different worlds of different people met and obtained information on ethnic background and history of communities. In a study by Asuai, Azukaego and Toochi (2014) on the effect of cooperative learning on English language achievement among high school learners in Delta State Nigeria and Implications for counseling, the findings put forward that cooperative learning expanded learners' English language reading skills. Haliru (2015) conducted an inquiry into the impact of Cooperative Learning Strategy (CLS) on geography learner's educational achievement in high schools in Sokoto State, Nigeria and established that the learners who were in the experimental group (CLS) performed significantly better than their counterparts in the control group (lecture method).

English as a service channel for teaching in Kenyan schools, as a matter of fact, is an indispensable discipline both in our educational programmes and as a utility subject (Barasa, & Mutitu, 2013). The functions of English are varied, among them being; fulfilling educational, developmental, social, aesthetical aspects and cognitive development. In Kenya, elements of grammar and literature are integrated and taught as one subject namely, English. The components of the integrated English include; grammar items, comprehension passages, cloze test, poetry and poem appreciation, oral literature genres, and literature set books. There is poor language prowess of English by secondary school learners in the last three decades. These challenges impact on the instruction and study of English in Kenya and have become a worrying issue to the Government, not only because English is a medium used for communication in the school educational programmes but also holds a distinctive and noteworthy position in the country.

A study by Chebii, Wachanga, and Anditi (2018) summarized the benefits of CLA in classroom practice. Firstly, that co-operative learning as an instructional approach promotes student centered learning, increases students' motivation and supports collaboration. Secondly, that learners and teachers' roles and duties change tremendously from being dependent and passive to learner centered and active participants in the learning process, and on the contrary teachers take the role of guiding instead of being transmitters' of knowledge. Lastly, CLA largely emphasizes on students of mixed abilities helping each other to study in small groups, which improves student's motivation and their academic achievement. Unlike cooperative learning approach, conventional learning approaches do not incorporate student interactions and this leads to less motivation of students and hence low academic achievement among the students.

Jepkoskey (2018) revealed that cooperative learning had more added advantages than other conventional instructional approaches as far as improving learners' communication, social interaction, cognitive and motivation skills were concerned. The study revealed that cooperative learning approach improved the social interaction of students as well as their motivation towards learning more than conventional teaching methods. In respect to this, the researcher revealed that that there were significant differences in the academic achievement of students taught using the two methods.

Njenga (2018) revealed that cooperative learning approach through use of small groups encouraged learners to work together and accomplish shared goals and subsequently maximized theirs and others' potential. Nyabiosi, Wachanga, and Buliba (2017) who undertook a study in secondary schools of Kisii County, revealed that the use of cooperative learning approach was a significant predictor of academic achievement of students in Kiswahili Language Comprehension. Kamau (2015) reviewed the impact of cooperative learning approach on educational attainment of high school learners in mathematics in, Murang' a County. The study recommended that the learners exposed to cooperative learning approach performed well unlike those exposed to the conventional instructional approaches, and that their feelings towards teamwork while learning mathematics together in small groups improved drastically.

In addition to that, Muraya and Kimamo (2017) established that there were significant differences in the mean scores of the students in Biology tests between the students taught using cooperative learning approach and those taught using regular methods of teaching. Whereas the above studies

looked at the effect of CLA in Kiswahili and Biology it was of interest for this study to establish CLA's effect in English subject. Muraya and Kimamo (2017) revealed that cooperative learning classroom provided an eye-opening move from the conventional classroom instructional approach where teachers' talk dominated, to a student – centered learning environment and that the influence of CLA on the mean scores of high school learners in poetry, narratives and biology showed that it had a significant higher mean score in comparison to that of the conventional learning approaches. The findings further posited that CLA had no significant influence on student's gender and that of their performance in the subjects. An inference was therefore drawn that, CLA was an effective instructing approach which teachers should use in class.

According to Keter (2018), the use of cooperative teaching in chemistry learning contributed to an enjoyable instructional environment as compared to extra-curricular activities. It was therefore to the interest of this study to establish the effect of CLA on secondary schools students' perception of their classroom environment towards learning English subject in Nakuru County.

The role of English language in Kenya's education system is crucial and central in shaping students' careers and facilitating their economic, political and social interactions in the society. However, its importance is overshadowed by student's low achievement in English annually in national examinations as is evidenced by the KNEC (2019) reporting an overall national mean ranging between 34.03% and 41.00% over the years 2014 – 2019. Regionally, Nakuru County reported an average mean of 3.10 out of a possible 12 points which translated to 25.83% between 2015 and 2018 and was still lower than the overall national mean score of 37.64% which was notably a worrying negative drop of 11.43%. This implies that Nakuru County performed poorly in English Subject compared to the national performance in the subject. This is a worrying trend that does not augur well with the Kenyan Government and other Education stakeholders. This English Language Analysis report made manifest that the overall performance fell short of the ideal national mean of 50% (mean score of 6.0) hence calling for innovation and creativity in teaching and preparing candidates for Examinations.

Past studies have attempted to explain this trend of low achievement. However it's notable that they have largely focused on output factors such as inadequate syllabus coverage and lack of content mastery, with no scrutiny of input and process factors such as perception of the classroom environment. This observation underscores the necessity and importance of this study because student's low achievement especially in secondary schools in Nakuru County makes them not realize their career goals and aspirations.

The low achievement of English Nationally and in Nakuru County doesn't portend well, for it limits the learners from realizing their full potentials, and the Kenyan Nation from achieving its development agenda as envisaged in vision 2030. It's on this premise of persistently low achievement of English yearly that this study sought to fill the gap and examine the effect of cooperative and conventional learning approaches on environmental perception in Public Co-Educational County Secondary schools, Nakuru County, Kenya.

The objective of this study was to examine the effect of cooperative learning approach on classroom environmental perception in Public Co-Educational County Secondary schools, Nakuru County, Kenya.

In order to achieve the study objective, a null hypothesis was formulated as follows, "H01: There is no statistically significant effect of cooperative learning approach on classroom environmental perception in Public Co-Educational County Secondary schools, Nakuru County, Kenya".

2. METHODOLOGY

The study adopted quasi experimental design, based on Solomon Four- group, Non-equivalent Control Group Design. The study involved two Experimental groups, E1 and E2 which were taught through CLA method and two Control groups, C1 and C2 which were taught through the conventional methods.

The target populations were students and teachers from the four co-educational public secondary schools of Nakuru County. Since the study used Solomon Four Non-equivalent control Group Design, four co-educational public secondary schools were randomly selected from the five co-educational public secondary schools in Nakuru

County. Two schools were randomly selected to be experimental groups while the other two as control groups and one for piloting.

The accessible population was 766 form three students in the four schools. From each of the school, the researcher then selected the class with the highest number of learners to participate in the study using purposive sampling. In addition to that, from each of the selected co-educational school, the study selected one senior teacher of English with the most experience in teaching using purposive sampling. The four teachers of English were the key informants of the study. The study sample size was 242 Form three students from the four co-educational public secondary schools in Nakuru County. The study used English Achievement Test (EAT) to collect quantitative data.

Data was analyzed using both descriptive and inferential statistics using the Statistical Package for Social Sciences (SPSS version 24). The hypotheses were tested using the following statistical tests for significance, t- test, ANOVA, ANCOVA. ANOVA and t- test were used to determine if there was any statistically significant effect on students' academic achievement in English between experimental and control groups. ANCOVA was used for statistical adjustment to enhance control if variation was evident in the experimental and control groups at the time of pre- testing. Qualitative data was coded into themes, interpreted and organized and a computer assisted qualitative data analysis (CAQDAS) package was used. The level of significance was computed at 5% significant level in order to guide in the rejection or acceptance of the null hypothesis.

3. RESULTS AND DISCUSSION

The second objective of the study sought to examine the effect of cooperative learning and conventional learning approaches on classroom environmental perception in county co-educational secondary schools, Nakuru County, Kenya. Data on students' perceptions of classroom environment was gathered by use of Student Perception Guide (SPG) on classroom environment. The SPG contained 47 Likert type scale items on General perception of CLA classroom environment, Academic outcomes, Social outcomes, Perceptions regarding teachers implementation of CLA, Students behavior in group work and Students challenges and difficulties when using CLA. This instrument was first used to establish the initial perceptions of the students before treatment was administered to the experimental groups. The pre-test was administered to Group E1 and C1. The results for the pre-test are shown in Table 1.

Table 1: Comparison of Pre-test Means of Groups on Students' Perception of Classroom Environment

Test	Group	N	Mean	SD
Perception of Classroom Environment	E1	71	2.3042	0.26909
	C1	58	2.3397	0.30142

Table 1 indicates that the mean score for the students' Perception of Classroom Environment for the E1 was 2.3042 while that of the C1 was 2.3397. This implied that the C1 group had a more favourable perception of classroom environment than the E1 group. It was further established that there was a high consensus in rating the various metrics of student perception of the new classroom environment. The study further sought to establish whether the identified differences in the mean scores for the pre-test were statistically significant using a t-test. The results for the t-test are as shown in Table 2.

Table 2: Independent Samples t-test of the Pre-test Scores on Students' Perception of Classroom Environment

Test	Group	N	Mean	SD	t-value	DF	P-value
Perception of Classroom Environment	E1	71	2.3042	0.26909	-0.705	127	0.482
	C1	58	2.3397	0.30142			

The result in Table 2 indicates that there were no statistically significant differences in the two pre-test scores for the E1 and C1 groups. This is because of $t(127)=-0.705$, $p>0.05$. This therefore implied that

the differences observed were just by chance and hence an indication that the groups used in this study exhibited homogeneous characteristics and therefore fit for inclusion in the study. The experimental groups, E1 and E2 were taught using cooperative learning approach for a period of four weeks and then a similar instrument of Student Perception Guide (SPG) on class environment was administered to all groups at the end of the four weeks. The Post-test Mean scores of Groups on Students' Perception of Classroom Environment are shown in Table 3.

Table 3: Comparison of Post-test Means of Groups on Students' Perception of Classroom Environment

Test	Group	N	Mean	SD
Perceptions of classroom environment	E1	71	3.7423	0.29163
	C1	58	2.7397	0.30142
	E2	37	3.6351	0.32250
	C2	44	2.6455	0.32382

The study revealed that E1 had a favourable post-test perception of the classroom environment at 3.7423, followed by E2 with a classroom environment perception level of 3.6351, then C1 with perception of classroom environment at 2.7397 and lastly C2 with a classroom environment perception rated at 2.6455. The achieved standard deviations were below 1.0, therefore implying that there was a high consensus among the respondents in rating the statements in the SPG with regard to classroom environment. The comparison of post-test means on Perception of Classroom Environment was further presented in a line graph to depict the differences between the four groups in a clearer manner. The line graph shows the differences of classroom environment perceptions as shown in Figure 1.

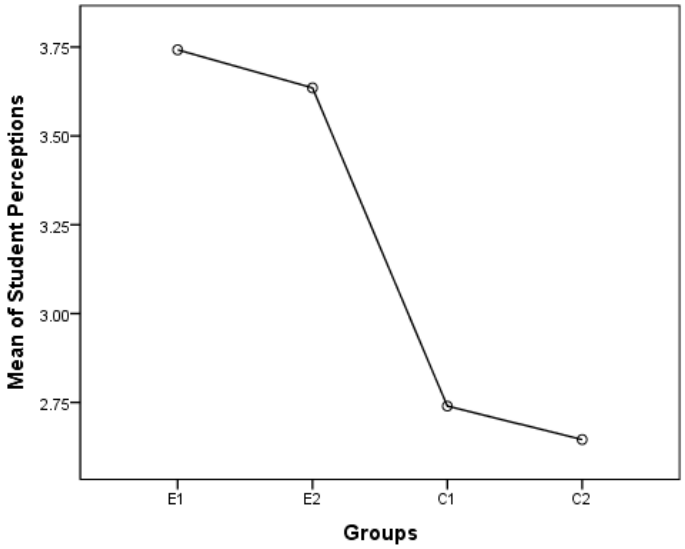

Figure 1: Students Perceptions of Classroom environment Post-test Mean Scores obtained by the Students in the Four Groups.

From the graphical representation, it was revealed that the mean of student perceptions of classroom environment was high for the experimental groups as compared to the control groups. This may imply that the cooperative approach of learning had an effect on the perceptions of students' classroom environment in the sampled schools of this study. The observed differences in the students' perceptions of the classroom environment post-test mean scores between the experimental group 1 and experimental group 2 as well as the differences in the post-test scores between control group 1 and control group 2 may be the effect of prior exposure to the same guide on student perception of the classroom environment towards learning. To establish whether the observed differences were statistically significant or were just by chance, the study carried out Analysis of Variance (ANOVA). The ANOVA results are as shown in Table 4.

Table 4: ANOVA of the Post-test Score on the Students' Perceptions of Classroom environment

	Sum of Squares	DF	Mean Square	F	Sig.
Between Groups	53.646	3	17.882	190.024	0.000
Within Groups	19.385	206	0.094		
Total	**73.032**	**209**			

The obtained results are that F(3,206)=190.024, P<0.05. These results implied that there were statistically significant differences in students' perceptions of Classroom environment post-test mean scores between the four groups. This implied that the differences observed were not just by chance and therefore, rejecting the null hypothesis of F-Test that states that there are no significant differences between the measured groups in a test. Analogously, the second hypothesis of the study stated that there is no statistically significant effect of cooperative learning approach on public co-education secondary schools students' Perception of Classroom Environment in Nakuru, County Kenya was rejected. This led to the conclusion that cooperative learning approach improved the students' Perception of Classroom Environment of learning in public co-education secondary schools in Nakuru, County Kenya.

The ANOVA test is done to show which among the four groups were different and to what extent the differences are. In order to establish the groups that had differences and the significance of the differences, the study used pair wise comparisons of the groups by applying Least Significant Difference (LSD) Post Hoc Comparisons of Students' Perceptions of the Classroom environment Post-test Means for Four Groups. This was done in order to easily explain interpretations on the differences observed. The results are as depicted in Table 5.

Table 5: Least Significant Difference (LSD) Post Hoc Comparisons of Students' Perceptions of Classroom environment Post-test Means for Four Groups

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.
	C1	1.00260*	0.05429	0.000
E1	E2	0.10712	0.06220	0.087(NS)
	C2	1.09680*	0.05886	0.000
	E1	-1.00260*	0.05429	0.000
C1	E2	-0.89548*	0.06454	0.000
	C2	0.09420	0.06133	0.126(NS)
	E1	-0.10712	0.06220	0.087(NS)
E2	C1	0.89548*	0.06454	0.000
	C2	0.98968*	0.06843	0.000
	E1	-1.09680*	0.05886	0.000
C2	C1	-0.09420	0.06133	0.126(NS)
	E2	-0.98968*	0.06843	0.000

*The mean difference is significant at the 0.05 level.
(NS) –Not Significant

According to Table 5, Least Significant Difference (LSD) Post Hoc shows the differences in any two groups. The results revealed that there were significant differences between groups E1 and C1, E1 and C2, C1 and E1, C1 and E2, E2 and C1, E2 and C2, C2 and E1, and between groups C2 and E2 in respect to students' Perception of Classroom Environment. This is because of the p-values being less than 0.05, which was the chosen significance level for the study. However, there were no significant differences between groups E1 and E2, C1 and C2, E2 and E1, and between groups C2 and C1. This was due to the p values being greater than 0.05. This therefore implied that the prior exposure to the instrument Student Perception Guide (SPG) Classroom environment had no significant effect on their perceptions of Classroom environment.

In general, the results indicated that experimental groups outperformed the control groups in Classroom environmental perceptions towards learning of English. This implied that the use of cooperative learning approach in teaching of English improved the students' perceptions of the classroom environment towards learning of the subject. Since there were no significant differences in the post-test scores of students' Classroom environmental perceptions towards learning between groups E1 and E2, C1 and C2, E2 and E1, and between groups C2 and C1, the study combined the E1 and E2 as an experimental group and C1 and C2 as the control group. Table 6 shows the comparison of the students' perceptions of Classroom environment post-test mean scores and between the experimental and control groups combined.

Table 6: Comparison of the Students' Perceptions of the Classroom environment Post-test Mean Scores between the Experimental and Control Groups

Test	Group	N	Mean	SD	Std. Error Mean
Perceptions of Classroom environment	Experiment (E_1,E_2)	108	3.7056	0.30535	0.02938
	Control (C_1,C_2)	102	2.6990	0.31324	0.03102

Table 6 shows that the experiment groups had a favorable Perception of Classroom Environment as compared to the control groups. This is because of the mean score of 3.7056 for the post-test results of the experimental groups and a mean score of 2.6990 post-test results for the controls groups. An Independent Samples t-test of Students' Perceptions of the Classroom environment Post-test Mean Scores between the Experimental and Control Groups was performed to establish whether the differences were statistically significant. Table 7 displays the achieved results of the t-test.

Table 7: Independent Samples t-test of Students' Perceptions of the Classroom environment Post-test Mean Scores between the Experimental and Control Groups

Test	Group	N	Mean	SD	t-value	DF	P-value
Perceptions of Classroom environment	Experiment	108	3.7056	0.30535	23.577	208	0.000
	Control	102	2.6990	0.31324			

The study revealed that there were significant differences in the mean scores of the two groups under investigations. This is due to t-test results showing that $t(208)=23.577$, $P<0.05$. From this results, the study carried out a gain analysis whose purpose was to examine the effect of cooperative learning approach on the students' Classroom environmental perceptions towards learning between the control group 1 (C1) and experimental group 1 (E1). The results are as shown in Table 8.

Table 8: Gain analysis on Students' Perceptions of Classroom environment Post-test Mean Scores for E_1 and C_1 Groups

Stage	Scale	E1	C1
Pre-Test	N	71	58
	Mean	2.3042	2.3397
Post-Test	N	71	58
	Mean	3.7423	2.7397
Mean Gain		**1.4381**	**0.4000**

The pre-test result for Students' Perceptions of Classroom environment for E1 was 2.3042 and its post-test result after exposure to cooperative learning approach was 3.7423. This presented a gain of 1.4381 in the students' perception of Classroom environment which was measured in a Five Point Likert Scale. This gain is equivalent to 35.95% increase in the students, perceptions of the classroom environment. On the other hand, the gain analysis on the control groups shows a gain of 0.4

which is equivalent to 10% increase in the students' perception of Classroom environment. The control group was subjected to conventional approach of teaching and therefore this accounted for 10% of favourable perception towards increase. When comparing the two groups, it then implies therefore that cooperative approach of teaching was more effective in improving the learners Perception of Classroom Environment as compared to the conventional approach of teaching English.

However, since the pre-test results for the E1 and C1 were not the same, the initial differences could have resulted in the differences observed at the post-test results. In respect to this, the pre-test result for the control group was 2.3397 while that of the experimental group was 2.3042. This therefore necessitated for the standardization of the results for the post-test mean scores using pre-test results as covariates. The aim of standardization of the results was to remove any biasness in the examination of the results leading to wrong inferences due to the pre-existing differences in the groups under investigation. This was done using ANCOVA and the results are shown in Table 10.

Table 9: Adjusted Students' Perceptions of Classroom environment Post-test Mean Scores for E_1 and C_1 with Pre-test scores as Covariates

Test	Group	N	Observed Mean	Adjusted Mean
Perceptions of Classroom	E1	71	3.7423	3.757
environment	C1	58	2.7397	2.721

Table 9 shows that the observed Students' Perceptions of Classroom environment Post-test Mean Scores for E1 was adjusted from 3.7423 to 3.757 while those of the C1 were adjusted from 2.7397 to 2.721. The adjusted Students' Perceptions of Classroom environment Post-test Mean Scores for E1 and C1 with Pre-test scores as Covariates were different. To examine whether the difference was statistically significant, the study used ANCOVA as shown in Table 10.

Table 10: ANCOVA Test Results Comparing Students' Perceptions of Class environment Post-test Mean Scores

	Sum of Squares	DF	Mean Square	F	Sig.
Pre-Test Scores	9.005	1	9.005	533.388	0.000
Perceptions of Classroom environment	34.116	1	34.116	2020.828	0.000
Error	2.127	126	0.017		
Total	**1440.780**	**129**			

The ANCOVA Test results comparing students' perceptions of Classroom environment Post-test Mean Scores indicated that there were significant differences in the adjusted scores of student's perception of the Classroom environment between E1 and C1. This is due to $F(1,126)=2020.828$, $p<0.05$. It is on the bases of these findings that the study confirms the rejection of the second study hypothesis that there is no statistically significant effect of cooperative learning approach on public co-educational secondary schools students' Perception of Classroom Environment in Nakuru, County Kenya. The study therefore concluded that there is statistically significant effect of cooperative learning approach on public co-educational secondary schools students' Perception of Classroom Environment in Nakuru, County Kenya. The extent of the effect is as shown in the gain analysis in Table 11.

Table 11: Gain analysis on Adjusted Students' Perceptions of Classroom environment Post-test Mean Scores for E_1 and C_1 Groups

Stage	Scale	E1	C1
Pre-Test	N	71	58
	Mean	2.3042	2.3397
Post-Test	N	71	58
	Mean	3.757	2.721
Mean Gain		**1.4528**	**0.3813**

The initial Students' Perceptions of the classroom environment Post-test Mean Scores for E_1 was 2.3042 and after the use of cooperative learning approach, their perception towards learning improved from 2.3397 to 3.757. This is a gain of 1.4528 in a five point Likert scale coded as; strongly Agree=5, Agree=4, Not Sure=3, Disagree =2 and Strongly Disagree=1. This represents a gain of 36.32% in students' perception of classroom environment in using cooperative learning approach. On the other hand, the initial Students' Perceptions of classroom environment Post-test Mean Scores for C1 was 2.3397 and after continuing to use the conventional teaching approach, their perceptions towards learning improved with a minimal margin of 0.3813 to 2.72. In respect to the used Likert scale, this represents a gain of 9.53% in students' perceptions towards learning. Comparing the two margins of gain between the groups (36.32% for E1 and 9.53% for C1), the study concludes that cooperative learning approach is more effective in improving students' classroom environment perceptions towards learning in public co-education secondary schools in Nakuru, County Kenya than conventional methods of teaching the subject. This further implies that the students' classroom environment perceptions towards learning is about 25% more favourable for those students' taught using cooperative learning approach as compared to those taught using conventional teaching methods. As established in the conducted interviews, students and teachers were in agreement that cooperative learning created positive classroom environment view towards the English content taught in class.

Student Excerpt 2:
"Cooperative learning approach has immensely changed my classroom environment view towards learning. I now like the classroom environment where learning takes place so much as opposed to how I liked it when our teachers were not placing us in small groups to discuss various concepts. In fact, English is now my best subject".

Teacher's Excerpt 2:
"Personally, I like using the cooperative approach in teaching English. Since I started using this approach like a one month ago, students have started liking the subject and you can even find them discussing English content at their own free time. It has completely changed the students' perceptions of the subject to the positive and I am happy with that". Our roles have changed, learning is student centered and students are active as opposed to being passive as was the case earlier, and mine is to guide the process.

These findings are in line with those by Wekesa (2015) who noted that cooperative learning approach resulted to positive attitudes towards learning and less disruptive behaviours in the Biology classroom. The author also averred that cooperative learning yielded positive and supportive relationships with peers as well as more positive attitudes toward subject areas, and higher self-esteem among the learners. On the same context, Molla and Muche (2018) noted that students enjoyed cooperative learning in the class as opposed to conventional teaching approaches. In respect to this, the Molla and Muche (2018) noted that students developed positive attitudes towards the subjects taught using cooperative learning approach.
The current study concurred with studies by Wangila (2015) and Sharan (2018) since the two studies established that there were significant differences in the student perceptions of classroom environment towards learning different subjects like Biology and Chemistry that were taught using different teaching approaches. The authors noted that the subjects that were taught using cooperative learning approach were highly liked by students as compared to those that were taught using conventional approaches. In line to this assertion, Wambugu, Changeiywo, and Ndiritu (2014) who noted that the use of the cooperative learning approach changed the classroom environmental perceptions of the students from negative

perceptions to positive perceptions and therefore determining their choice of subjects for KCSE registration.

The current findings further concur with those by Kinya (2018) who noted that the use of computer aided instruction just like the cooperative learning approach was a significant predictor of student perceptions towards the subject. Kinya (2018) noted that both methods of learning were instrumental in shaping the perceptions of the students towards learning a given subject. It was established that cooperative learning encouraged students to contribute to learning in terms of generation of ideas, asking questions and also improving their communication skills through their interactions in small groups. This was found to have created favourable perceptions in the subject taught using cooperative learning. Similarly, a study by Tanui (2014) concurs with the current findings, by establishing that cooperative learning approach resulted to positive interdependence and hence improving the classroom environment perceptions of students towards the subject of study.

In agreement to the current study findings, Vladimir and Salinas, (2016) revealed that majority of the teachers felt that cooperative learning approach reduced the workload of teachers. Similarly, Williams (2018) established that students liked cooperative learning approach for it developed their social skills and inter-personal communication skills during the debates and small group discussions in the class. The study also revealed that the students had positive perceptions towards learning the subjects that were taught using cooperative learning approach.

The findings of the current study also agreed with those by Keter, Wachanga, and Anditi (2017) who established that learning using cooperative learning approach in class was enjoyable to teachers. Keter (2018) also established that through the use of cooperative learning, teachers found out that learning activities were enjoyable compared to extra-curricular activities. Similar to the current study findings, Jepkosgey (2018) indicated that students enjoyed learning when they were let to discuss in small groups as opposed to lecture-based teaching.

However, some studies showed disagreement to the current study findings. A study by Gillies (2016) in Australia established that there were negative attitudes in the use of the approach due to the small class sizes for the implementation of cooperative learning approach. Others indicated that the use of cooperative learning approach resulted to a noisy classroom. Other negative experience in the use of the CLA as indicated by the teachers was too much preparation time for a class in the event of use of cooperative learning approach. Similarly, a study by Altun (2015), found out that teachers had negative attitudes towards the use of cooperative learning. It was further revealed that teachers found it hard to evaluate students through the use of CLA and that teachers were unable to recommend on the performance of students in the small groups. The study by Altun (2015) focused on teachers perceptions while the current study focused on student perception and therefore it differed with the current study. Sharan (2018) also noted that cooperative learning approach placed too much emphasis on developing students' social skills and was appropriate only for the bright students and therefore unhelpful to weak students. The study by Sharan (2018) however relied on feedback collected from teachers and therefore differs with the current study that collected data from both the teachers and students.

4. CONCLUSIONS AND RECOMMENDATIONS

With respect to the effect of cooperative learning approach on public co-educational secondary schools students' Perception of Classroom Environment, the study concluded that there was statistically significant effect of cooperative learning approach on public co-education secondary schools students' Perception of Classroom Environment in Nakuru, County Kenya. Subsequently, the study concludes that cooperative learning approach is more effective in improving students' classroom environmental perceptions towards English in public co-educational secondary schools in Nakuru as compared to those exposed to conventional methods of teaching the subject. The study further concludes that the students' perception of classroom environment towards English is more favourable for those students' taught using cooperative learning approach as compared to those taught using conventional methods.

The study has demonstrated that enhanced student positive perception of classroom environment can be achieved by way of reconfiguring the teaching and learning approach from conventional teacher-centered to leaner-centered approaches, rather than the popular opinion which tends to predicate improvement of classroom environment to infrastructural upgrade only. Accordingly, teachers are encouraged to adopt modern constructivism approaches to teaching students especially Cooperative learning approach that is student centered. This will enhance be an important step towards enhanced student achievement in English in the context of scarcity of infrastructural resources.

5. REFERENCES

Adams, A. R. (2015). Cooperative Study Teams in Classrooms. *International Journal of Education in Science and Technology*, *35*(5), 669–679.

Altun, S. (2015). The Effect of Cooperative Learning on Students' Achievement and Views on the Science and Technology Course. *International Electronic Journal of Elementary Education*, *7*(3), 451–468.

Chebii, R., Wachanga, S. W., & Anditi, Z. O. (2018). Effects of Cooperative E-Learning Approach on Students' Chemistry Achievement in Koibatek Sub-County, Kenya. *Creative Education*, *09*(12), 1872–1880. https://doi.org/10.4236/ce.2018.912137

Çolak, E. (2015). The Effect of Cooperative Learning on the Learning Approaches of Students with Different Learning Styles. *Egitim Arastirmalari - Eurasian Journal of Educational Research*, (59), 17–34. https://doi.org/10.14689/ejer.2015.59.2

Gillies, R. M. (2016). Cooperative Learning: Review of Research and Practice. *Australian Journal of Teacher Education*, *41*(3), 39–54. https://doi.org/10.14221/ajte.2016v41n3.3

Gokhale, A. A. (2015). Collaborative Learning Enhances Critical Thinking. *Journal of Technology Education*, *7*(1), 22–30. https://doi.org/10.21061/jte.v7i1.a.2

Hall, G. (2015). *Research Methods for Literature in Language Education*. Georgia: Taylor & Francis.

Jepkosgey, E. (2018). Effects of Cooperative Learning on English Languagespeaking Skills among Mixed Public Secondary School Learners in Nandi Central Sub-County, Kenya. *Internation Journal of Education and Social Science*, *4*(1), 11–22.

Keter, J. K. (2018). Effects of Computer Based Cooperative Mastery Learning On Secondary School Students' Skills Acquisition, Motivation and Achievement in Chemistry Practicals in Bomet County, Kenya. *Indonesian Journal of English Language Teaching*, *2*(1), 23–31.

Keter, J. K., Wachanga, P. S. W., & Anditi, Z. O. (2017). Using Computer Based Cooperative Mastery Learning to Enhance Students' Achievement in Secondary School Chemistry in Bomet County, Kenya. *International Journal of Humanities, Social Sciences and Education*, *4*(2), 8–18. https://doi.org/10.20431/2349-0381.0402002

Melnichuk, M. V., & Osipova, V. M. (2017). Cooperative Learning as a Valuable Approach to Teaching Translation. *XLinguae Journal*, *10*(1), 25–33. https://doi.org/10.18355/XL.2017.10.01.03

Molla, E., & Muche, M. (2018). Impact of Cooperative Learning Approaches on Students' Academic Achievement and Laboratory Proficiency in Biology Subject in Selected Rural Schools, Ethiopia. *Education Research International*, *12*(1), 1–9. https://doi.org/10.1155/2018/6202484

Muraya, D. N. ., & Kimamo, G. . (2017). Effects of Cooperative Learning Approach on Biology Mean Achievement Scores of Secondary School Students' in Machakos District, Kenya. *Educational Research and Reviews*, *6*(12), 726–745.

Nawaz, Q., Hussain, L., Abbas, A., & Javed, M. (2014). Effect of Cooperative Learning on the Academic Achievement and Self Concept of the Students at Elementary School Level. *Gomal University Journal of Research*, *30*(2), 128–135.

Ngendahayo, E., & Askell-williams, H. (2016). *Publishing Higher Degree Research*. Research Gate. New York: Rotterdam: Sense Publishers. https://doi.org/10.1007/978-94-6300-672-9

Njenga, J. (2018). Evaluation of The Effectiveness of Cooperative Learning Structures in Improving Students' Performance. *Journal of Engineering Education*, *1*(1), 12–24.

Nyabiosi, H., Wachanga, S. W., & Buliba, A. (2017). Relative Effects of Cooperative Learning Approach on Secondary School Students' Attitudes in Kiswahili Language Comprehension in Kisii Central Sub-County, Kenya. *International Journal of Humanities, Social Sciences and Education*, *4*(3). https://doi.org/10.20431/2349-0381.0403010

Obinna-Akakuru, Onah, T. A., & Opara, D. C. (2015). Cooperative Learning and Student's Academic Achievement in English Language in Imo State, Nigeria. *IOSR Journal of Research & Method in Education Ver*, *5*(3), 2320–7388. https://doi.org/10.9790/7388-05342629

Oludipe, D., & Awokoy, J. O. (2015). Effect of Cooperative Learning Teaching Strategy on the Reduction of Students' Anxiety for Learning Chemistry. *Journal of Turkish Science Education*, *7*(1), 30–36.

Pandya, S. (2017). Interaction Effect of Co-Operative Learning Model and Students' Implicit Theory of Intelligence on Student Engagement in Mathematics. *Asia Pacific Journal of Contemporary Education and Communication Technology (APJCECT)*, *3*(1), 96–107.

Saltymakov, M. S., & Frantcuzskaia, E. O. (2015). Cooperative Learning Approach to Delivering Professional Modules to Bachelor and Master Students: TPU Experience. *Procedia - Social and Behavioral Sciences*, *215*(2015), 90–97.

Sharan, Y. (2018). Cooperative Learning for Academic and Social Gains: Valued Pedagogy, Problematic Practice. *European Journal of Education*, *45*(2), 300–313. https://doi.org/10.1111/j.1465-3435.2010.01430.x

Tran, V. D. (2014). The Effects of Cooperative Learning on the Academic Achievement and Knowledge Retention. *International Journal of Higher Education, 3*(2), 131–140.

Vladimir, J., & Salinas, G. (2016). Pre-service Teachers' Perceptions of Cooperative Learning in a Face-to-Face and 3D Virtual Environment: An Exploratory Study. *Journal of Education and Training Studies*, *9*(2), 54–61.

Wambugu, P., Changeiywo, J., & Ndiritu, F. (2014). Effects of Experiential Cooperative Concept Mapping Instructional Approach on Secondary School Students ' Motivation in Physics in Nyeri County , Kenya. *Journal of Education and Practice, 5*(15), 74–84.

Williams, A. E. (2018). Cooperative Learning in the Undergraduate Classroom: A Case Study. SCHOLE: *A Journal of Leisure Studies and Recreation Education, 10*(1), 79–87. https://doi.org/10.1080/1937156x.1995.11949378