

Use of Computer Aided Instruction in Enhancing English Grammar Performance of College Students

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Abstract— Integrating technology in language teaching has recently earned much popularity due to its tremendous impact on language education. This paper examined the potential of the Computer Aided Instruction in helping Filipino learners of the language to learn English grammar more easily and correctly. Using the pretest-posttest control group experimental research design, it determined the English grammar performance of first year college students of the Don Mariano Marcos Memorial State University- South La Union Campus in English 100 (Basic English) when exposed to counteractive lecture. Specifically, it sought to identify the level of performance of two groups of students in terms of their scores in a teacher-made grammar test, and the significant difference between the achievements of the two groups in the pretest mean scores and posttest mean scores. Thirty students were considered and divided into groups: (1) CG who will be taught with conventional teaching and (2) EG who will undergo counteractive lecture. Incidentally, the equal mean performances of the EG and CGs in the Pretest establish their homogeneity which is poised towards the bottom—showing that the teaching-learning process on this area is wanting of interventions to make learning more stimulating to students. Meanwhile, the evident rise on the performance of the EGs establishes the effectiveness of CAI as supplement to traditional mode of instruction. The significant difference in the performances of the EG and CGs in the Posttest corroborates with all the aforementioned findings to emphasize the effectiveness of CAI as supplement to traditional teaching for the systematic presentation of learning techniques to students.

Index Terms— competency, computer aided instruction, curriculum, English language, grammar, pedagogy, technology

1 INTRODUCTION

LANGUAGE experts from various academic communities across the globe all agree that English is the language of the global community. English is the language of international academic exchange, international politics, international negotiations, and virtually every transaction that requires interaction between people from various corners of the world.

Consequently, governments of countries who aspire to earn a place in the global arena exert considerable efforts and investments to secure that their respective academic systems provide sufficient instruction for students to acquire the optimum competency in the use of English necessary to communicate with the rest of the world.

As Galero-Tejero [1] has pointed out, English has definitely found its place in the lives of people. She opined matter-of-factly that learning English is important in the school setting as students make use of it to “learn how to learn” (p. ix). The use of English has a lot of advantages. Businessmen can close difficult deals and be successful with appropriate language use. Professionals can look more professional if they have good command of English. Literary enthusiasts can be more efficient when they are able to utilize the right euphemism, the proper metaphor.

The principal significance of English as a language to the Filipino student was expressed in the words of Gonzalez-Bueno and Perez [2] when he posited that it is intellectualized languages such as English, German and French which makes the world’s knowledge available and accessible. Consequently, Physics, Chemistry, Astronomy, Biology, Mathematics,

Law, Philosophy, Medicine, and all the higher knowledge of man is available in the intellectualized languages. In the Philippine setup however, a student can still get an education only by knowing how to speak Filipino because, notwithstanding government advocacies for the use of English as a medium of instruction, Filipino still dominates the basic education department. Undeniably, Tagalog or Filipino as a language of expressions of emotions in the domain of the imaginative or creative life of an individual earns its keep. But Filipino is still in the early stages of intellectualization [3]. Hence, if the Philippines is to have a place in global competitions then the teaching of English needs to be reinforced strongly.

The pervasiveness of English, and its having become an important tool for survival in global competitions, has rendered it imperative to learn English as quickly as possible. While other countries are engaged in the process of English empowerment, however, the teaching and the use of English in this country started to deteriorate. The slide has been particularly precipitous in recent years as public schools started running out of qualified teachers and the overall quality of Philippine education went down [4].

Educators and language experts in the Philippines have assailed this deterioration of the language skills of the outputs of Philippine educational system pointing that college graduates nowadays fall behind in their language skills which is believed as their passport to landing good jobs. They fail in oral interviews and written examinations not because they lack knowledge in their respective specializations but because

they are unable to express these content ideas in a clear and understandable language.

Cognizant of this issue in English language pedagogy, the two agencies in the Philippines that are primarily responsible in regulating educational reforms (the Department of Education [DepEd] and the Commission on Higher Education [CHED]) took it upon themselves to oversee and regulate the process upon which English language education is carried out in the entire country through rigorous diagnoses of scenarios existing in the academe to pinpoint the source of the predicament so that an appropriate reinforcement of various academic curricula could be conducted to address the predicament in the source level. However, the applicability of the implemented reinforcements and reforms varies from one area to another. Consequently, results are not indicative of indicative direct definite progress. And classroom teachers are left with the task of augmenting these policies through classroom management strategies and through the use of appropriate instructional materials.

Boado [5], as cited by Jarata [6], said, "The simple truth is that we are entering a strong new world in which rapid change will bring about radical implications for education and learning; hence, we see and observe students who engage in what we call 'self-directed learning and participation.'" Thus, education is influenced now not only by the teachers and academic structure but by the resources, as well.

Along this perspective, the use of technology in language instruction has been among the predominant options for teachers. Integrating technology in teaching has recently earned much popularity since it had been seen to have a tremendous impact on language education. Numerous English as a Foreign Language (EFL) research studies [7], [8], [9], [10], [11], [12]. They opine quite strongly that integration of technology can improve academic performance, enhance motivation, and promote learning. Computer-assisted instruction (CAI) is among the range of strategies being used to improve student achievement in school subjects, including reading and language learning. Programs for CAI have come a very long way since they were first developed over two decades ago. These programs tutor and drill students to diagnose problems, keep records of student progress, and present material in print and other manifestations. It is believed that they reflect what good teachers do in the classroom [13].

Thomas made a study on the nature and impacts of computer-mediated communication on students' learning; and found out that it promotes high levels of cognitive engagement and critical thinking. However, the study also pointed out that virtual learning does not promote the coherent and interactive dialogue necessary for conversational modes of learning; hence, having moderators and facilitators is necessary in this type of learning.

Nagata [14] conducted a number of studies with results indicating computer-based grammar instruction to be more effective than traditional instruction. Nagata claimed that self-study computer-based instruction based on natural language processing technology which provides full-sentence production exercises and detailed grammatical feedback to learners' errors is more effective than the non-CALL work-

book instruction. Nagata further studied the relative effectiveness of computer-assisted comprehension practice and production practice in the acquisition of a second language. The results of the study showed that the output-focused group performed significantly better than the input-focused group for the production of Japanese honorifics and equally well for the comprehension of these structures.

Nutta's [15] study also showed that computer-based students scored significantly higher on open-ended tests covering the structures in question than the teacher-directed students.

The generation of immediate feedback is an important aspect of computer-assisted instruction, since it allows students to evaluate their answers while the questions are fresh in their minds. It helps prevent them from repeating the same mistakes until they get teacher feedback. Computers are always available, while the student is working, to give feedback, while a human teacher has to attend to other students and other tasks and may be tired or distracted (Church, 1986). In the fast-moving 1990s, a variety of new technological tools appeared on the scene. No longer were we swept by a wave of methodology; we were swamped by a tidal wave of computer-assisted technologies. Suddenly the capability of incorporating laserdiscs, hypertext cards, CDs, CD-ROMs and the Internet into our syllabi became a reality. Instructors of foreign languages are now faced with a myriad of new multimedia tools unheard of just a few years ago.

Recently, Torlakovic and Deugo [16] conducted a study that investigated whether or not CALL systems could be used for grammar teaching. The researchers hypothesized that L2 learners will show improvement with positioning adverbs in an English sentence. The experiment lasted over two weeks. Two groups of ESL learners were exposed to six hours of grammar instruction. The treatment group used the computer-based grammar instruction method and the teacher-driven grammar instruction method was used with the control group. Both groups studied the same material in terms of format, content and feedback. To find the effect of the methods of instruction, the groups were given three tests: pre-test, immediate post-test and delayed post-test. The findings of the study revealed that the treatment group outperformed the control group in learning adverbs on the post-tests.

Realizing the potentials of computer technology, educators have become more interested in its use as a tool to augment foreign language teaching. Much of the reviewed literature regarding software tools consisted of (1) a description of one or more pieces of software, (2) a description of how this software was integrated into the learning environment, (3) a description of the effects of the software on students, and (4) possible implications for further study [17], [18], [19], [20], [21], [22]. Evaluative software articles also tended to discuss whether or not software was robust enough for school use.

The pervasiveness of English makes it imperative that methods and strategies be so designed to ensure the effectiveness of instruction and ensure, as well, that students get the best out of the teaching-learning process. If traditional chalk-talk-textbook classrooms are insufficient, then additional modes of instruction delivery such as, but not limited to,

Computer-Assisted Instruction (CAI), Audio-Visual Teaching, Video Lecture, or Multimedia Lecture must be resorted to as a means of substantiating classroom instruction. Although these supplementary instructional strategies or methods are named differently, they share the common feature of using computer technologies to combine the elements of sight and sound in one.

In one of his articles, Jones [23] offers an exhaustive discussion of this multimedia teaching technology in his article on Computer-Assisted Instruction (CAI), also known as Computer-Aided Instruction, opining that it is a diverse and rapidly expanding spectrum of computer technologies that assist the teaching and learning process. Examples of this technology include guided drill and practice exercises, computer visualization of complex objects, and computer-facilitated communication between students and teachers.

Research done on the effects of video lectures shows that video lectures have a positive effect on the motivation and success of students [24]. They indicate that students pay more attention, are more involved, better prepared for exams and get better grades.

Educators nowadays recognize the power of CAI materials in the form of multimedia and video to capture the attention of learners, increase their motivation and enhance their learning experience. When a video/multimedia is used appropriately it can be a powerful teaching medium. In 1996, Sullivan and Pratt used videos to grab students' attention and motivate them to learn. As Sullivan and Pratt [25] puts it, "These videos do not provide content, but they can stimulate the interest that makes the curriculum relevant or "jumpstart" lessons". It provided a summary of current research and educator surveys where educational videos reinforces reading and lecture material, aids in the development of a common base of knowledge among students, enhances student comprehension and discussion, provides greater accommodation of diverse learning styles, increases student motivation and enthusiasm, promotes teacher effectiveness.

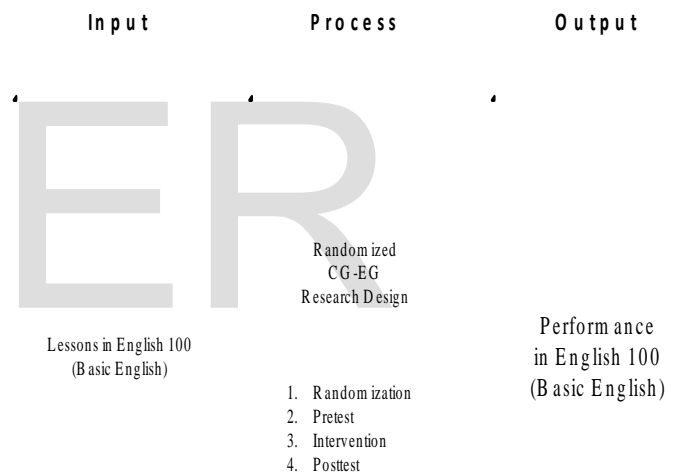
The purpose of this paper was to examine the potential of the CAI in helping Filipino learners of English language to learn English grammar more easily and how to use English correctly. The study is designed to use the computer as a tool to integrate teaching materials through the use of multimedia to motivate students to learn English grammar more effectively.

It focused on the performance of first year college students in English 100 (Basic English) which, in the case of the chosen locale, is the very first English subject that college students who have not incurred satisfactory rating on the English section of the College Admission Test (CAT) has to hurdle. This non-credit course aims to improve the language proficiency of freshmen students by learning the critical grammatical structures necessary for communicative functions such as narrating, describing, giving directions, etc., and to provide them adequate vocabulary needed for academic study. The students are also expected to master the spellings of acquired vocabulary items and words that are often misspelled. The emphasis is on the use of English for communication and learning purposes. In short, this course offers intensive in-

struction in English grammar to help prepare students to tackle higher academic subjects which are delivered in English as the medium of instruction. The subject pays particular respect to grammar and it is for this reason that it was chosen as the concentration of the study – grammar being the very framework upon which English language revolves.

Figure 1.1 illustrates the paradigm of the study. In the study, the input-process-output (IPO) model was used where the lessons in English 100 served as the input variables. The process variables included the randomized control-experimental group research design where a test is administered before and after the intervention is provided to the experimental group. The intervention used in this particular study is teaching using CAI materials. The output is the measured performance of the students. Performance refers to the output of the students based on their scores in the pretest and posttest. The study determined the extent of influence of CAI in the performance of the first year students particularly in the BS Psychology Program of the College of Arts and Sciences in DMMMSU-SLUC, Agoo, La Union.

Fif. 1. Paradigm of the Study



1.1 Statement of the problem

This study determined the performance of First Year students in English 100 (Basic English) when exposed to counteractive lecture.

Specifically, it answered the following questions: (1) Is there a significant difference in the performance of the two groups in the (a) pretest and (b) posttest.

1.2 Hypotheses of the Study

There is a significant difference between the performance in the: (1) pretest mean scores of the control and experimental groups and (2) posttest mean scores of the control and experimental groups.

2 METHODOLOGY

2.1 Research Design

The study used the pretest-posttest control group experimental research design. This design is one of the most commonly used by social science and educational researchers. It involves the administration of a pretest and a posttest to the control and experimental groups. The study utilized teaching using Computer Aided/Assisted Instruction (CAI) in the treatment of experimental group and conventional teaching to the control group.

2.2 Population and Locale of the Study

The study was conducted at Don Mariano Marcos Memorial State University - South La Union Campus (DMMMSU-SLUC) during the second half (after midterms, since DMMMSU only has two major terms per semester - midterms and final terms) of the second semester of SY 2014-2015. A total of 30 first year students served as the population-respondents. The students were grouped into two. Before the grouping, all 30 students were ranked according to their Mid-term Grades. The odd-numbered students were taken as one group and the even-numbered students as the other group (randomization). Tossing of coins was used to determine which among them belong to the control and experimental groups.

The control group was exposed to conventional lecture while the experimental group was taught with the aid of CAI. During the three weeks of administering the study the two groups were handled by the researcher after requests and arrangements with school administrators have been made.

2.3 Population and Locale of the Study

The test instrument (see Appendices) used in this study is a 30-item two-choice test in SVA utilized by Bucang [26] in his study of the grammar proficiency of fourth year high school students.

2.4 Validity Test

The content validity of the test has been established by Bucang employing the aid of four competent English teachers in the subject population as validators, following the recommendation of Fraenkel and Wallen [27], who determined the test validity through the judgment of experts as to adequacy and suitability of the test items. Content validity is a non-statistical type of validity that is usually associated with achievement test. When a test is so constructed that it adequately covers both the content and the objectives of the course or part of the course of learning, it is said to have content validity (Downie and Heath, 1974).

A questionnaire (see Appendices) was used to establish the content validity of the test instruments. The questionnaire is made up of statements pertaining to content validity which were rated in a five point-scale. Following the recommendation of Best and Kahn (2003), the combined rating of the validators must not be lower than 4.5 for the instrument to be deemed valid. A mean of 4.67 was posted, thus exceeding the cutoff scale which was set by the researcher. The following

table presents the credentials of the validators.

TABLE 1. 2
VALIDATORS' PROFILE

Evaluator	Experience	Highest Degree Earned	Specialization
1	17	PhD	English/ Linguistics
2	18	PhD	Language Education
3	14	Master's Degree	Linguistics
4	7	Master's Degree	Language Teaching

Further, the test results were likewise subjected to item analysis to improve the instrument and to determine the validity of the test items. Item analysis (APPENDIX M) was used to determine the discrimination and difficulty indices of the test items. To establish the goodness of a test item two factors were considered, the index of difficulty (*Df*) and the index of discrimination (*Ds*) (Bucang, 2004).

The index of difficulty refers to the percentage of setting correct answers to each item. The smaller the percentage, the more difficult the item is. It was computed using the formula:

$$Df = (Pu + Pl) / n \times 100$$

where:

Df = index of difficulty

Pu = correct responses of the high-scoring group

Pl = correct responses of the low-scoring group

N = total number of students in both group

Discrimination index is the quality of an item which enables that allows one to distinguish between the high-scoring group and the low-scoring group. According to Ebel (1972), an item is held to be valid when it is correctly answered by more students of the high-scoring group than of the low-scoring group. The discrimination index of each item was computed using the formula:

$$Ds = (Pu - Pl) / n$$

where:

Ds = index of discrimination

Pu = correct responses of the high-scoring group (upper 27%)

Pl = correct responses of the low-scoring group (lower 27%)

n = number of students in each group

Items with negative discrimination values were rejected while items with difficulty indices within 0.20 to 0.80 and discrimination indices of 0.30 and above were retained. The computed indices were interpreted using "Ebel's rule of thumb":

Index of Difficulty

81 and above
21 - 80

Very easy
Moderately difficult

20 and below	Very difficult
0.40 and above	Very good item
0.30 - 0.39	Reasonably good item
0.20 - 0.29	Marginal
0.19 and below	Poor

2.5 Reliability

In like manner, the reliability of the said instrument has been established by Bucang through a pilot test that was carried out to non-respondents. The constructed test was tried out to non-respondents – one of the sections of BS Nursing students at DMMMSU-SLUC for reliability testing. The reliability coefficient of correlation was computed using Cronbach’s Alpha computed using the Statistical Package for the Social Sciences (SPSS), and was interpreted in terms of the correlation coefficient following the scale presented by Panopio (2004): 0.00 to ± 0.09 – Very Low/Negligible relationship; ±0.10 to ±0.39 – low correlation or small relationship; ±0.40 to ±0.59 – moderate correlation or substantial relationship; ±0.60 to ±0.89 – high correlation or marked relationship; and ± 0.90 to ±1.00 – very high correlation or very dependable relationship. The computed reliability of the test material is 0.82, which is described as high correlation, thereby warranting the reliability of the test.

2 RESULTS AND DISCUSSION

2.1 Performance of the two groups of respondents in the pretest

Table 2.1a exhibits the performance of the control and experimental groups in the pretest.

TABLE 2.1A
 Performance of the two groups of respondents in the pretest

Performance	Experimental Group	Control Group
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	f	%	f	%
25 – 30 (Excellent)	0	0	0	0
19 – 24 (Highly Satisfactory)	0	0	0	0
13 – 18 (Satisfactory)	6	40	6	40
7 – 12 (Moderately Satisfactory)	9	60	9	60
0 – 6 (Unsatisfactory)	0	0	0	0
Total	15	100	15	100
Mean	11.67		11.67	
SD	2.23		1.95	

In terms of their performance in the pretest, it can be noted that the control and the experimental groups each incurred a Satisfactory rating accounting to 40% of the group while the remaining 60% acquired Moderately Satisfactory performance. In keeping with the thrusts of this research, the almost similar performance of both groups, as represented by the mean, establishes their homogeneity before being subjected to the proposed intervention. But this claim needs to be validated. For which reason, a test of difference using independent samples t-test was used.

Table 2.1b presents these statistics.

TABLE 2.1B
 Difference between the performances of the CG and EG in the pretest

Group	Mean	Difference	df	T-Value	P-Value	Significance
CG	11.67	0.00	28	0.00	0.55	Not Significant
EG	11.67					

In statistical analyses of difference, it is necessary to conduct a test of hypothesis to determine whether or not the difference is significant. For the foregoing the table, the null hypothesis (H₀) is: “There is no significant difference between the performances of the CG and EG in the pretest.”

This H₀ was tested at 0.05 level of significance (95% level of confidence) using Statistical Package for the Social Sciences (SPSS). In tests of hypothesis using SPSS, the rule is to reject the H₀ – and declare the difference to be significant – if and only if the obtained P-Value is equal to or less than the level of significance, which in this case is set at 0.05.

The foregoing table shows that the control and the experimental groups each incurred a mean score of 11.67 resulting to a mean difference of 0.00. Testing the significance of

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this difference yields a T-Value of 0.00 with a corresponding P-Value of 0.55 which does not meet the requirement to reject the H_0 . The H_0 is then upheld to mean that there is no significant difference between the performances of the CG and EG in the pretest. The contention here is that EG and CG performed on the same level in the pretest.

In keeping with the thrusts of this research, this similar Moderately Satisfactory performance of EG and CG establishes their homogeneity before being subjected to the proposed intervention. This is especially important inasmuch as one of the yardsticks in measuring the effectiveness of the proposed intervention is the difference in each of the group's performance in the Pretest and Posttest. In this case, the difference would easily be identified since the Pretest mean scores are the same.

In an instructional perspective, however, this Moderately Satisfactory performance shows the inadequacy of plain classroom instruction. The teacher, under these circumstances was not able to capitalize on the students' level of interest to sustain their attention throughout the lesson thereby putting a barrier to effective transfer of learning. This fact has been established by authors throughout academic history and it would be a futile effort to even try to name them all.

Needless to say, this near-the-bottom performance of the two groups of respondents, calls for the need of pedagogical interventions to devise, implement and evaluate a method of teaching that is interactive and collaborative.

2. 2 Performance of the two groups of respondents in the posttest

The table below exhibits the performance of control and experimental groups in the posttest.

TABLE 2.2A

Performance of the two groups of respondents in the posttest

Performance	Experimental Group	Control Group
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	f	%	f	%
25 - 30 (Excellent)	2	11.11	0	0
19 - 24 (Highly Satisfactory)	5	33.33	1	6.66
13 - 18 (Satisfactory)	8	55.56	7	46.67
7 - 12 (Moderately Satisfactory)	0	0	7	46.67
0 - 6 (Unsatisfactory)	0	0	0	0
Total	15	100	15	100
Mean	19.20		13.13	
SD	3.93		3.93	

As posted in the preceding table, the performance of the EG in the posttest is evidently higher as evidenced by 11.11% posting an "Excellent" mark by successfully pegging scores that fall within 25-30 points. Furthermore, 33.33% obtained a "Highly Satisfactory" performance. The remaining 55.56% posted a "satisfactory" rating and nobody from the EG scored below those levels.

In the case of the CG, 6.66% posted a posttest performance rate as "Highly Satisfactory". A few 46.67% posted a performance described as "Satisfactory" and the same percentage posted a performance of "Moderately Satisfactory". Fortunately, none of the CG respondents posted an "Unsatisfactory" performance. But unfortunately, none of them posted "Excellent" performance either.

The foregoing results yielded mean scores of 19.20 "Highly Satisfactory" for the EG and 13.13 "Satisfactory" for the CG. Clandestine scrutiny would lead to the assumption that the EG performed better than the CG in the posttest. But then again, this claim needs to be validated.

As in the case of the pretest, therefore, another test of difference was conducted. The results are presented in Table 2.2b below.

TABLE 2.2B

Difference between the performances of the CG and EG in the posttest

Group	Mean	Difference	df	T-Value	P-Value	Significance
CG	13.13	6.07	28	4.23	0.00	Not Significant
EG	19.20					

For the foregoing the table, the null hypothesis (H_0) is: "There is no significant difference between the performances of the CG and EG in the posttest." As in the pretest, this H_0 was tested at 0.05 level of significance (95% level of confi-

dence) using SPSS. The same rule which is to reject the H_0 - and declare the difference to be significant - if and only if the obtained P-Value is equal to or less than the level of significance was used.

The table shows that 6.07 difference in the mean scores of the two groups in favor of the experimental group yielded a T-Value of 4.23 with a corresponding P-Value of 0.00 which falls within the area of H_0 rejection. Rejecting the H_0 would necessitate the confirmation of the alternative hypothesis (H_a) which means that there is significant difference in the performance of the EG and the CG in the posttest. And since the difference is in favor of the EG, then the conclusion is that the EG performed significantly better than the CG in the posttest. The implication of this being that, holding all other variables constant, the CAI intervention utilized in the teaching of the EG has significantly increased their performance in English grammar as manifested by their performance in the grammar test.

By far, the results that have been presented established the fact that CAI in English enabled the EG to perform better than the CG in the posttest. As to whether the gain scores of the EG, who were taught using CAI, from the pretest to the posttest is significantly notable or not remains a matter of question. The same is true in the case of the CG. To shed light to this dilemma, it is important to determine whether or not the said gain scores - that is, the difference between the pretest and the posttest scores - of the EG and CG is significant. This type of inquiry is statistically substantiated using the T-Test of paired samples. Table 2.3 below presents the result of this computation.

Table 2.3
 Difference between the two groups of students in the pretest and posttest

Group	Pretest	Posttest	Difference	T-Value	P-Value	Remarks
CG	11.67	13.13	1.46	2.03	0.06	Not significant
EG	11.67	19.20	7.53	8.38	0.00	Significant

The table provides an explicit comparison between the performances of the two groups before and after the EG have been exposed to CAI. Both groups incurred an increase in their performances. For the CG who was not exposed to counteractive lecture, there was a slight increase in their scores from 11.67 in the pretest to 13.13 in the posttest. Scrutinizing this 1.46 points gain in their score resulted to a T-Value of 2.03 and a corresponding P-Value of 0.06. Applying the same rules applied above, we rule that the H_0 "There is no significant gain in the performance of the CG from the pretest to the posttest" is to be upheld by virtue of statistical values which lie beyond the area of H_0 rejection. The contention here was that the performance of the CG even after they have been taught did not significantly increase or improve. The slight difference may be accounted for by the concept of familiarity since the areas they were tested on are the same in the pretest and the posttest, but it does not under any circumstance stand to prove that conventional teaching can significantly improve

performance. The CG's familiarity of the concept enabled them to slightly increase their scores.

On the other hand, the very notable leap from 11.67 in the pretest to 19.20 in the posttest incurred by the EG yielded a gain of 7.53 which by merely looking at the figures would lead one to rule that it was indeed an evident rise. For purposes of statistical accuracy however, same test was conducted that yielded a T-Value of 8.38 with a corresponding P-Value of 0.00 which lie within the area of H_0 rejection. Hence, it is ruled that "There is significant gain in the performance of the EG from the pretest to the posttest."

The forgoing table corroborates previous findings where, notwithstanding the fact that both groups incurred notable augmentation in their performance in the posttest, it is only with the EG where the augmentation is considered significant. At this juncture, it is worth reiterating that this evident rise in the performance of the EG establishes the effectiveness of counteractive lecture as supplement to traditional mode of instruction for the systematic presentation of facts, ideas, skills, and techniques to students.

This strengthens the findings of Diaz (1994) and Novilla (1992) that the use of instructional strategy enhanced the performance of students. The result is also parallel to the findings of Gurley-Dilger (1992) when she reported that students learned better because they saw the interaction between the two sides -- prior and new or constructed knowledge.

This is also similar to the findings of Wu (2003) which compared two grammar instructions, namely traditional output-based and innovative input-based instruction, and concluded that it is time for foreign language learning to become learner-driven and computer-assisted.

The same findings were presented by Chatel (2002) who examined how technology supports teaching and learning by conducting interviews and observations with eight classroom teachers and four English as Second Language (ESL) teachers. The study reported that one of the participants in the interview indicated that it is quite appropriate software and websites, which enabled ESL learners to learn and apply English, thereby corroborating significant findings of Lasagabaster and Sierra (2003) who conducted a similar research examining the attitude of 59 undergraduate students toward Computer-Assisted Language Learning software programs where findings revealed that the students had a positive attitude toward learning language with computers.

3 RESULTS AND DISCUSSION

3. 1 Summary

The study determined the English grammar performance first year college students of Don Mariano Marcos State University - South La Union Campus upon exposure to CAI. Specifically, it sought to identify the level of performance of two groups of students in terms their scores in a teacher-made grammar test, and the significant difference between the achievements of the two groups in the pretest mean scores and posttest mean scores.

The study employed the experimental research design

using CAI. Total enumeration of 30 students was considered. The students were divided into groups. Random sampling was used to determine the CG who will be taught with conventional teaching and the EG who will undergo counteractive lecture.

A thirty-item multiple choice test was constructed by the researcher. The exam was used as a pretest and posttest to determine the performance of the two groups of students. All data and observations in the course of the study were subjected to statistical treatment and were subjected to manipulation using SPSS.

2.2 Salient Findings

1. In terms of their performances in the grammar test, both the EG and CG incurred a mean performance of 11.67 (Moderately Satisfactory) in the Pretest.
2. There is no significant difference in the pretest performance of the EG and CG.
3. The mean performance in the Posttest for the Experimental and CGs are 19.20 (Highly Satisfactory) and 13.13 (Satisfactory), respectively.
4. There is significant difference in the posttest performance of the EG and CG in favor of the EG.
5. The CG did not incur significant gain in their posttest performance.
6. The EG incurred a significant gain in their posttest performance.

3 Conclusions

Incidentally, the equal mean performances of the Experimental and CGs in the Pretest establish their homogeneity. And since the homogeneity is poised towards the bottom, these results readily show that the teaching-learning process on this area is wanting of interventions to make learning more stimulating and encouraging on the part of the students. This is especially important inasmuch as government efforts have been directed to promoting academic curriculum that put the students at the center of the educative process.

The results of the Posttest showing a marked increase in the performances of both groups manifests that both groups were able to perform better the second time they took the test. For the CG who were not exposed to CAI, the increase from Moderately Satisfactory to Satisfactory is, as discussed above, accounted for by the concept of familiarity since the areas they were tested on are the same in the pretest and the posttest. On the other hand, the evident rise on the performance of the EG's establishes the effectiveness of CAI as supplement to traditional mode of instruction for the systematic presentation of facts, ideas, skills, and techniques to students.

The significant difference in the performances of the Experimental and CGs in the Posttest corroborates with all the aforementioned findings to emphasize the effectiveness of CAI as supplement to traditional mode of instruction for the systematic presentation of facts, ideas, skills, and techniques to students.

4 Recommendations

CAIs can dramatically increase a student's interest in the subject matter. The method provides flexibility on the part of the instructor as it enables him to adapt his pace to the abilities and preferences of the individual student and assess (on the spot) the degree to which students were able to internalize the lesson.

Notwithstanding the fact that it is really difficult to assess the effectiveness of any educational system, results of this study show that CAI is successful in raising examination scores, improving student attitudes, and increasing the amount of topics internalized by students in each setting.

Needless to say, the foregoing result may vary depending on other precipitating factors. Still, the possibility of CAIs substantially enhancing the teaching-learning process at all educational levels can never be undermined.

It is for these prevailing reasons that a recommendation is hereby being given by the researcher to integrate CAIs as vital inputs in instructional delivery in DMMMSU particularly where Basic English and grammar is concerned.

The researcher also recommends that similar studies on the effectiveness of CAIs be conducted to determine whether such method would also be helpful in other areas, and, if results prove positive, that a special training on the use of CAI be conducted for the benefit of all teachers and other stakeholders, not the least of whom are the students.

7 END SECTIONS

7.1 Appendices

APPENDIX A

Test Instrument dopted from Bucang (2004)

Name: _____	Code: _____
Directions: Underline the correct word to make the verb agree with the subject.	
1. The scissors I got from the supply drawer (is, are) too dull.	
2. My knee (seem, seems) better than it did yesterday.	
3. Two appetizers or one main course (is, are) all that I can eat.	
4. Shaking the cans (make, makes) them to squirt when they opened.	
5. Our selection of grapes (is, are) second to none.	
6. At the start of the meeting, Mr. Burns, my boss and mentor, always (stand, stands) and (sing, sings) the company song.	
7. Flags honoring Gay Pride Day (was, were) raised over city hall.	
8. Our group's presentation (require, requires) a computer loaded with PowerPoint.	
9. The shirt with the bold horizontal stripes (make, makes) you look heavier.	
10. Our department (doesn't, don't) get any bonus pay when we move.	
11. Neither the manager nor his staff (know, knows) anything about this.	
12. The Simpsons (is, are) the most cynical television show of the last decade.	
13. Peanut butter and simulated bacon (was, were) a failed product that (was, were) briefly marketed during the seventies.	
14. Either the undercooked hamburger or the green apples (is, are) making me sick.	
15. Twenty-five cents a liter (is, are) good price to pay for gasoline.	
16. Television news (is, are) frequently filled with vacuous nonsense.	
17. The Grapes of Wrath (is, are) a story of life in the Great Depression.	
18. There (is, are) no reason for you to be missing so much work.	
19. There (is, are) many people who (has, have) overcome great problems.	
20. It (is, are) the dogs in the neighborhood that (is, are) getting into the garbage.	
21. Economics (seem, seems) almost as fascinating as accounting.	
22. Analyzing sentences for grammatical purposes (is, are) even better than watching paint dry.	
23. Fifteen kilometers (is, are) a nice distance to ski in an afternoon.	
24. A number of people (is, are) sitting on the grass.	
25. Each of the workers (is, are) given new safety equipment.	
26. Neither the students nor the instructor (like, likes) the idea of a three-hour exam.	
27. My partner, in addition to his customers, (like, likes) the way the new law (make, makes) life safer.	

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