

# Effect of Integrating Computer-Assisted Language Learning in the TOEFL Performance of Nursing Students

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**Abstract-** *The study aimed to determine the relationship between the use of a computer-assisted language learning (CALL) software and the TOEFL performance of nursing students. This descriptive study used a pre-test and post-test and a survey questionnaire to gather data. Interviews and observations were also conducted to gain further insights in the use of the software. Results indicate that for the three areas of the TOEFL model practice test, there is a statistically significant increase in the gain scores of the students in the post-test after being exposed to the use of the software for two semesters. They performed well in Sentence Completion and Error Identification, both under Structure and Written Expression. On the other hand, they performed only fairly for Reading Comprehension and Vocabulary. For Structure and Written Expression, the areas of strength included correct choice of main verbs, subject pronouns, and comparative use of adjective while the areas of weaknesses include correlative conjunctions, adverb-related structures, and indefinite subject and verb agreement.*

**Keywords:** *CALL, language laboratory, TOEFL*

## INTRODUCTION

Statistics indicate that the demand for Filipino nurses in developed countries is growing. The World Health Organization (WHO) has cited the Philippines as the largest exporter of nurses to foreign countries. WHO indicates that there are an estimated 786,000 Filipino nurses working outside the Philippines in about 116 countries (WHO, 2006.)

Philippine Overseas Employment Administration (POEA) regional director Delfina Camarillo reported that there is a need of nurses for USA, Canada, Japan, Norway and Austria (Bignotia, 2006). Nurse Immigration USA, a non-government research organization reported that in the United States alone, demand is estimated at 600,000 between now and 2020. The shortage of nurses has led US hospitals to entice nurses from other countries by increasing the signing bonus from \$1,000 to \$7,000. But employers, according to the organization, are requesting for more Filipino nurses (Mercado, 2006). There are advertisements that say “preferably Filipinos”; and in the Middle East, an article indicated that if one wanted a job done, hire a Filipino (Santos, 2004). Tordesillas (2005) affirms that foreign employers like Filipino nurses because of their cheerful dispositions and affinity for hard work. They are also known all over the world “to do their job with a smile, with charm,

with grace, with the real purpose of helping to ease patients’ pain, work without looking at the clock or without minding overtime” (Santos, 2002). The demand for Filipino nurses is expected to increase in the next 10-15 years. Even doctors who wish to work abroad have re-enrolled as nursing students (POEA, 2007).

Abba Philippines for Filipino Nurses (2006) say that part of the reason for the popularity of Filipino nurses is their proficiency in the English language which is today’s lingua franca of hospitals worldwide. The educational system for nurses in the Philippines mandates English as the medium of instruction. Moreover, the training of nurses features apprenticeship, laboratory work, experiments, residency and community-based projects – all lectures and school work being done in English. By the time the Filipino nurse finishes her nursing degree, she would have spent at least 10 years in school, being taught most of her subjects in the English language, instead of the local language. The fluency in English results in adaptability and shorter training period. Overseas employment for a Filipino Registered Nurse is not considered unusual but regarded as an enrichment of a professional experience. However, in June 2005 record of Professional Regulation Commission (PRC), 26,000 graduates of nursing took

the licensure exam but 12,843 or only 50% of them passed (Miras, 2006).

Further, Filipino nurses have to pass through the eye of a needle to be able to prove one's worth and competence. Passing the PRC Board Exam is just the first step towards being a registered nurse. Then, as a general rule, Philippine educated nurses are required to pass an English test then the nursing competency test. Nurses who want to be deployed abroad must undergo rigorous training and are required to pass a number of difficult examinations. In the USA, for a Filipino nurse to be qualified for a US work visa, she should pass the following tests: NCLEX, IELTS or TOEFL (TWE and TSE), and CGFNS ([www.philnurses.com](http://www.philnurses.com), 2007). Argel (2006) also adds that English proficiency, which is a mandatory requirement in Australian skilled migration, is not the same as the pre-nursing registration English proficiency requirement. While a passmark of 5 or 6 in the IELTS general module meets the skilled migration requirement, a higher passmark in the IELTS academic module is required for the latter. For the English test, one must either obtain an overall passmark of 7 in the International English Language Testing System Academic module (IELTS) or Level B pass in the Occupational English Test (OET). And only after passing the English test will one be required to pass a nursing competency test (theoretical and clinical) before getting registered as nurse in Australia.

Though English is the medium of instruction in Philippine schools, Estella (2005) laments the fact that IELTS and TOEFL results show that Filipinos do not meet the standards. The author revealed that Dr. Tamse of the Technical Committee on Nursing Education of CHED noted that the latest Nursing Board Exam of 2005 registered its lowest passing rate ever at 43 percent. Of the about 12,000 students who took the board, only about 5,000 made the grade. Since the tests are all written in English, reading comprehension skills and critical thinking are very important weapons to pass the board examination. The doctor also said that from the thousands of nurses applying for a job abroad, many of them fail because they were not able to meet the English proficiency requirements.

To help address this problem, higher education institutions in the Philippines, whether they are offering allied medicine courses or not, are investing in computer-assisted language learning (CALL) laboratories to enhance language skills, testing skills,

and technology skills of the students. The inclusion of the existence of CALL laboratories has also been a selling point for school brochures and part of their marketing strategies.

In view of this, the researcher, who is an instructor of English in a higher education institution in Laguna, would like to determine whether the integration of a CALL courseware would enhance the English proficiency performance of first year nursing students through a pretest and posttest TOEFL model examination. In addition, the study would also shed light on the perceptions of the students on the use of the software.

### **Background of the Study**

As mentioned previously, IELTS and TOEFL are the required standardized English language tests taken by speakers of other language who are applying to universities or jobs abroad. Registered nurses, in particular, have to pass the TOEFL or the IELTS, depending on the country they are applying in. International English Language Testing System (IELTS) and Test of English as a Foreign Language (TOEFL) cover the English proficiency assessment. For IELTS, the candidate must complete four modules - listening, reading, writing and speaking to obtain an IELTS Test Report Form. It has a total test time of 2 hours 45 minutes ([www.philnurse.com](http://www.philnurse.com), 2007).

Frequently, studies use the Test of English as a Foreign Language (TOEFL) as the primary assessment instrument to determine nonnative users' English language proficiency. The TOEFL, a product of the Educational Testing Service of Princeton, New Jersey, USA, "measures the ability of nonnative speakers of English to use and understand English as it is spoken, written, and heard in college and university settings" (<http://www.ets.org/portal>). Currently, more than 6,000 licensing agencies, colleges and universities use the TOEFL. The TOEFL measures listening comprehension, defined as the ability to understand spoken North American English. In the Structure section of the examination "the ability to recognize language that is appropriate for standard written English" is assessed. The Reading Comprehension section measures the student's ability to understand short university-level texts. The last section, writing, measures students' ability to productively respond to an assigned prompt. TOEFL is a multiple choice test and primarily receptive in nature, as the writing section (productive) is frequently omitted. The heavy use of TOEFL scores to

measure English language proficiency presupposes that it can be associated with language requirements at the university level for which the test is given.

The TOEFL iBT has just been recently introduced wherein applicants use the internet to take the test. Since it is interactive, the test stresses integrated communication skills and communicative competence. The test measures all four language skills, and most importantly, it uses an integrated skills approach in which test takers need to: a) read, listen, and then speak in response to a question; b) listen and then speak in response to a question; and c) read, listen, and then write in response to a question. It is an integration of listening, reading, writing and speaking. For the TOEFL, TWE and TSE, registered nurses must submit a score of 540 on the written TOEFL or 207 on the computer-based TOEFL, 4.0 on the TWE and 50 on the TSE. The Test of Spoken English (TSE) lasts approximately 20 minutes and there are nine questions on the test to which the candidate responds. The Test of Written English (TWE) is also required for everyone taking the paper-based TOEFL test. Test takers are given 30 minutes to write a short essay on an assigned topic. The essay is evaluated on the test taker's ability to support and organize new ideas and to use standard written English. Special knowledge of the topic is not needed to write the essay. TOEFL can be taken via a written test or via computer. In the Philippines, tests are offered at Cebu City International STC in Ateneo Professional Schools, Manila, at the University of the Philippines in Diliman and the International School in Makati ([www.philsnurse.com](http://www.philsnurse.com), 2007).

TOEFL is administered in two ways: computer-based and pencil-based. In this study, since a computer-based version was unavailable, the pencil-based model test was administered to the students.

While TOEFL test is divided into four sections: listening, structure, reading, and writing, the model test administered in this study was delimited only to structure and written expression and reading comprehension and vocabulary. The students were not tested for their listening and writing skills.

Again, this was due to the limited availability and accessibility of the materials and equipment required for the actual TOEFL tests.

The study was also limited only to the first year regular nursing students of the institution to attain a degree of consistency with the respondents' profile. Irregular and second coursers, though first years, were not included in the study. It was also limited only to a

particular higher education institution since requests to conduct such study in other higher education institutions in the district were rejected due to the presumed sensitivity of the results.

To avoid any prejudice or bias on the part of the English instructors handling the different sections of nursing, the test itself and the pretest scores results were not revealed to them to inhibit them from tackling lessons or giving exercises that may directly affect the posttest performance of the students.

Ethical considerations were also thought of in this study. Privacy invasion issues were considered. The names of the students and their scores were kept confidential, as students at this age are sensitive and also, to avoid negative self-esteem effects.

Finally, this study did not aim to predict the TOEFL performance of the nursing students whether it will be passing or failing. As stated in the TOEFL test manual, there is no passing or failing score in the TOEFL test. The TOEFL have also their own way of scaling the scores of test takers thus whatever scores the students achieved in this study has a totally different interpretation or scoring standard in actual TOEFL tests.

### **Integration of the CALL Courseware**

The effective use of CALL in developing or enhancing language proficiency has been cited in the studies of Blake (2000); De Ridder (2000); Dreyer and Nel (2003); Bangs and Cantos (2004); Levy and Hubbard (2005). In addition, Smith (2003) proposed an expanded model for a computer-mediated negotiated interaction in a classroom setting to address issues in language teaching and learning while Almekhlafi (2006) focused on EFL and CALL.

At this study's locale, English language skills for first year students are enhanced by providing lessons, exercises and activities in the following Communications subjects: English A – Fundamentals of English and English 1 – Study and Thinking Skills in English. Further, to align with the institution's vision and mission of producing globally competitive graduates, the institution launched its major projects, Just English Please (JEP) Program and the integration of the Dynamic English courseware (produced by DynEd International, Inc.) with the English subjects. DynEd was introduced "to further improve the English proficiency of students" (LIT brochure, 2007).

Founded in 1987, DynEd an "internationally recognized, award-winning English Language

learning courseware which aims to help English language learners develop the skills they need to succeed in school and career” (www.dyned.com, 2006). Features of this courseware include Placement and Mastery Tests, Speech Recognition, Teacher-Support Materials, and a Records Management System (RMS). The New Dynamic English series has four levels, with two modules each. “In addition to building listening and speaking skills for communication in English, the course provides a strong foundation in grammar and vocabulary (New Dynamic English Study Guide, 2003).

By the institution’s standard and as used in this study, a 75 percent or better enabled to students to move up to the next level.

### **OBJECTIVES OF THE STUDY**

The foremost aim of this study was to determine the effect of integrating a language courseware with English subjects and the TOEFL performance of nursing students. It also aimed to assess the significant difference in the posttest TOEFL gain scores of the students after taking up English A and English 1 and using the digital language laboratory.

### **METHODS**

#### **Research Design**

This study adopted a pre-experimental, one-group pre-test-post-test design. In this design, a control group is not compared with an experimental group (Creswell, 2006). The single group in this study refers to the first year nursing students who were administered a pretest, followed by an intervention (exposure to the use of the DynEd digital laboratory), and a posttest.

#### **Participants**

An initial intact group of 300 regular first year nursing students of an allied medicine school in Laguna, Philippines served as the subjects of the study for the pretest. Irregular and second coursers, though first years, were not included in the study. The researcher had no control over the composition of the classes. Students had been randomly assigned in sections, regardless of age, sex, or college entrance exam result. There were 35 to 40 students per class or section. No control group was formed since both English subjects and use of the DynEd laboratory was an institutional requirement.

For the posttest conducted towards the end of the

second semester of the same academic year, only 202 students out of the 300 pretest subjects were able to participate in the posttest. This was due to dropping out, failing in English A, absences when the posttest was conducted, and transferring to other schools.

### **Instruments**

The instruments that were used to collect data for this study were a TOEFL model test and a validated one-page perception survey questionnaire about the use of the courseware. The TOEFL model test was adopted from an internationally accepted test preparation manual, Barron’s TOEFL (Sharpe, 2005) and validated by language experts.

As previously mentioned, the model test was limited only to a) structure and written expression and b) reading comprehension. There were two parts for Structure and Written Expression. These included Part 1 – Sentence Completion,(15 items) and Part 2 – Error Identification (25 items). There were 40 questions for this area of the test which the students had to answer in 25 minutes. On the other hand, the Reading Comprehension section of the test had 60 questions that had to be answered in 55 minutes. All in all, the test which had 100 items required one hour and 20 minutes to finish, just sufficient for the 1 ½ hour class for the English subject.

### **Data Gathering Procedure**

Part of the institutional requirement was the maximized use of the DynEd laboratory. All first year students who were taking up the subjects, English A (Fundamentals of English) in the first semester and English 1 (Study and Thinking Skills in English) in the second semester, were required to spend an hour each week using the courseware totaling to at least 20 hours per semester.

Prior to the use of DynEd, a pretest was administered to the target participants. Both English subjects were taught for 3 hours per week or one and half hour for two days in a week. An hour per week of the subject was dedicated to the language laboratory exercises.

In between the pretest and posttest, observations on the use of the software was documented and the perception questionnaire which was adapted from the Japan study of Bingham and Larson (2006) on the use of DynEd among Japanese first year students, was administered during the last day of the scheduled DynEd lab class. A posttest was administered towards the end of the second semester.

**RESULTS and DISCUSSION****Pre/Posttest TOEFL Performance**

Table 1 indicates the mean scores of the students, the percentage equivalent, and the performance equivalent of each score in the three areas in the pre-test and posttest.

**Table 1. Pre-test TOEFL performance**

<b>Pretest</b>	<b>Sub Scores</b>	<b>Mean Scores</b>	<b>Percent Equivalent(%)</b>	<b>Performance Equivalent*</b>
Sentence Completion	15	11.46	88	Good
Error Identification	25	13.72	77	Fair
Reading Comprehension and Vocabulary	60	29.46	75	Fair
<b>Total</b>	<b>100</b>	<b>54.46</b>	<b>77 %</b>	<b>Fair</b>
<b>Posttest</b>				
Sentence Completion	15	12.42	91	Very Good
Error Identification	25	15.34	81	Fairly Satisfactory
Reading Comprehension & Vocabulary	60	32.80	77	Fair
<b>Total</b>	<b>100</b>	<b>60.56</b>	<b>80 %</b>	<b>Fair</b>

*\*based on institutional standard*

For the pretest, it can be observed that the participants performed only fairly for all the TOEFL areas, with a 77% grade for the pretest. As for the participants' posttest performance, it can be seen that there is an improvement in the mean scores although the overall performance equivalent is still *Fair*.

**Table 2. Significant Difference between Pretest and Posttest Scores after Taking up English A, English 1 and the use of the DynEd Laboratory**

<b>TOEFL AREAS</b>	<b>Pre-test/ Posttest</b>			<b>Interpretation</b>	<b>Decision</b>
	<b>t-computed</b>	<b>t-tab</b>	<b><math>\alpha</math></b>		
Sentence Completion	9.60	1.645	0.05	Significant	Reject Ho
Error Identification	9.30	1.645	0.05	Significant	Reject Ho
Reading Comprehension and Vocabulary	8.33	1.645	0.05	Significant	Reject Ho

*Decision: Reject Ho if  $t_{computed} > t_{tab=1.645}$*

A t-computed test determined whether there is a statistical difference in the posttest gain scores of the participants after taking up English A and English 1 and the use of the DynEd laboratory. The null hypothesis was: *There is no significant difference in the posttest scores of the students after using the DynEd laboratory.*

Under the area of Sentence Completion, the t-computed was 9.60 for pretest and posttest. This is much greater than the t-tab which is 1.645.

**Table 3. Performance of the Nursing Students in the Pre-test and Posttest assessed as Strong or Weak Based on the Grading System of the Institution**

<b>TOEFL AREAS</b>	<b>Pre-test</b>			<b>Posttest</b>		
	<b>Mean Scores</b>	<b>Percent Equivalent (%)</b>	<b>Implication</b>	<b>Mean Scores</b>	<b>Percent Equivalent (%)</b>	<b>Implication</b>
Sentence Completion	11.46	88	Strong	12.42	91.4	Strong
Error Identification	13.72	77	Strong	15.34	80.68	Strong
Reading Comprehension and Vocabulary	29.46	74.55	Weak	32.80	77.33	Strong
<b>Total</b>	<b>54.46</b>	<b>77 %</b>	<b>Strong</b>	<b>60.56</b>	<b>80.28%</b>	<b>Strong</b>

*\*If percent is less than 75, the implication is that the students are Weak in that area*

To numerically present the strength and weaknesses of the participants in the TOEFL test using the institution's grading system, Table 4 summarizes the mean scores, the corresponding percent for each area of the TOEFL test using the 75% passing rate of the institution, and the implication of the percentages.

It can be observed from the above table that the participants passed both pretest and posttest for *Sentence Completion* and *Error Identification*. In contrast, they barely passed the pretest (74.55%) for *Reading Comprehension and Vocabulary* and just a passing rate for the posttest (77.33%) in the same area. The overall percent of 77% and 80% in pretest and posttest, respectively, indicate a passing mark for the participants. The computed percentages imply the students' strength in the areas of *Sentence Completion and Error Identification* and a weakness in *Reading Comprehension and Vocabulary*. A closer inspection of the answer sheets indicated errors committed under *Structure and Written Expression* are correlative conjunctions like *both* and *and*; adverb-related structures, subject-verb agreement especially in indefinite subject and verb. Under *Reading Comprehension and Vocabulary*, errors were committed with making inferences and restatements where the students were asked to choose from four possible answers the answer closest in meaning to the statement. *Context* in vocabulary were also deemed problem areas of the students. The answer sheets also revealed telltale signs of the students not finishing answering the *Reading Comprehension and Vocabulary* portion in the allotted time. This implies that students also lack skill in skimming and scanning.

As for the students' perception on the use of the software, using an adapted perception questionnaire about the use of Dyned, all of the students agreed that the software helped them to develop their English proficiency and that the software was easy to use. Follow-up interviews revealed the following concerns of the students in the use of the software: some of the modules became quite boring after a time when they had to click the options repeatedly for the correct answers; some of the contents were quite "too foreign" for them to be able to relate to its context; and it was time consuming for both the teachers and students when there were technical problems with the software, the computer, and the headsets.

On the other hand, interviews with the teachers indicated their positive reception towards the use of the software, especially the convenient generation of

scores, but also found the technical problems to be cumbersome during the laboratory sessions.

## CONCLUSIONS

Although the results indicate that there is a significant relationship between the use of the DynEd laboratory and the test results, it cannot be concluded that the use of the DynEd laboratory effected the significant difference in the pre/posttest since the participants were also similarly exposed to language activities and exercises in their English subjects. The statistics do not indicate which of the three components (English A, English 1, and the DynEd lab) effected more the significant increase. The pretest and posttest TOEFL performances of the first year nursing students are indicative of their language proficiency. The first year nursing students have strong points in Sentence Completion, but they have to develop their proficiency skills in Error Identification and Reading Comprehension and Vocabulary.

The study indicates that an enhancement program must be proposed after careful evaluation of the results of the tests. The program must address the needs of the students. After needs assessment, learning activities and materials should be provided to come up with the expected outcomes. A sound enhancement program directed and focused on the needs of the students would definitely improve their TOEFL performance. This could include communicative activities that include the macro skills of listening, speaking, reading and writing aimed towards improved TOEFL performance.

## RECOMMENDATIONS

In light of the above results and conclusions, the following are recommended: Verify again the results of this study by administering a second set of TOEFL practice test so that additional information can be gleaned from the nature of each task so that students can be provided with solution strategies in answering the items. This will facilitate exercises that can be provided to target specific difficulty levels and to create performance summaries that are indicative of students' strengths and weaknesses; Maximize the use of the digital language laboratory by carefully planning the exercises that would go hand in hand with the students' needs; Provide more enriching activities and exercises especially in the areas where students performed only fairly. Although TOEFL scores are not meant to be predictors of academic

success, the question remains as to how much real language learning takes place amid exposure to the finer points of the practice test and strategies for successful test taking. In addition, an experimental study should be done to determine the extent of the effectiveness of using the language laboratory.

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