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**Rosetta Stone and Language Proficiency of International Secondary School****English Language Learners****Robert A. Griffin****James Martinez****Ellice P. Martin****Abstract**

This study examined the effect of *Rosetta Stone* computer-assisted language learning (CALL) on English proficiency achievement, engagement in the language learning process, and student perceptions of the effectiveness of CALL-based instruction as compared to direct instruction for 36 English Language Learners (ELLs) in a suburban high school in the southeastern United States. Students were randomly divided into control and treatment groups. The control group received language instruction, using direct instruction, while the intervention group supplemented direct language instruction with use of Rosetta Stone. Results were determined, using pre- and post-scores from the WIDA-ACCESS Placement Test (W-APT), mean achievement scores on direct language instruction exercises, an observational engagement checklist, attitudinal surveys, and post-intervention interviews. Language proficiency scores, student engagement, and student attitudes improved significantly. Direct language instruction achievement also increased, but that difference was not statistically significant. Rosetta Stone was found to have a positive impact on English proficiency achievement, student engagement, and student attitudes toward the CALL-based application.

*Keywords:* secondary school, Rosetta Stone, ELLs, CALL instruction, English proficiency

## Introduction

Between 1986 and 1998, the number of students with limited-English proficiency in the United States soared from 1.6 million to 9.9 million (Lindholm-Leary, 2000). Lindholm-Leary has estimated that by 2050 the number of students, who enroll in schools in the United States and speak a language other than English, will increase to 40%. According to a 2008 publication by the National Council of Teachers of English (NCTE), the largest increase of ELLs has been in Grades 7 through 12. The ELLs' population increased nationally by roughly 70% between 1992 and 2002 in the high-school grades.

High school ELLs today may speak minimal English, yet they are still placed in academic classes along with enrollment in English for Speakers of Other Languages (ESOL) classes. Though content teachers may have some skills in working with ELLs, they also must keep up with the content pacing-chart and may find it difficult to provide the individualization needed by the ELLs. ELLs are expected to perform on par academically with their English-proficient peers while simultaneously learning an entirely new language.

No Child Left Behind (NCLB) mandates that ELLs take standardized tests that measure their English Language Proficiency (ELP) and their academic content mastery. Menken (2010) has suggested that education for ELLs may have deteriorated during the NCLB era because of the accountability issue. NCLB pushes for immediate results for ELLs in terms of linguistic and academic achievement, though one study suggested that ELLs take from five to seven years to master academic language (Hakuta, Butler, & Witt, 2000). The most efficient strategies must be found for teaching ELLs English in a timely and efficient manner.

Chapelle (2010) supported studying the effectiveness of second-language acquisition through technology. One CALL program that educational policy makers and ESOL instructors have considered for teaching English-language acquisition is *Rosetta Stone*, an interactive software application that is advertised to help users naturally learn languages in an immersive and personalized environment. Schools in the United States spend approximately \$56 billion on technology each year—about \$400 per student per year (Johnson, 2011). Research was needed to determine whether a portion of this investment could be effectively spent on a specific computer-based language learning program.

Georgia is a member of the World-Class Instructional Design and Assessment (WIDA) Consortium, and all ELLs enrolled in any ESOL academic support-course in Georgia high schools—without exception (Latinos and non-Latinos, males and females, Kindergarteners through 12th graders, ELLs with learning abilities and disabilities)—are required to take the Assessing Comprehension and Communication in English State-to-State for English Language Learners, or ACCESS for ELLs (WIDA, n. d.). The WIDA-ACCESS Placement Test (W-APT) is the screening assessment used in Georgia to determine student eligibility for ESOL services. The W-APT is patterned after the ACCESS for ELLs. ELP scores are part of the high-stake-assessment scores reported for AYP, so it is important to determine if completing *Rosetta Stone*'s computerized, interactive language-study modules can increase ELLs' W-APT scores.

From 1995 to 2006, Georgia ELLs' population soared 252%. For the school year 2010/2011, 67,499 ELLs (4.1% of the total student population) were enrolled in Georgia schools, and failure rates on state tests were much higher than for all students; e.g., only 9% of all high school students failed the English/Language Arts test for graduation, compared to 33% of ELLs. Similar discrepancies existed for other content area tests (Governor's Office of

Student Achievement, 2011). Throughout the nation, ELLs score on average fall 20-50 percentage points below native English speakers on state assessments of core subject areas; therefore, the majority of ELLs consistently do not reach proficient levels of achievement or meet AYP goals (Abedi & Dieta, 2004; Sullivan et al., 2005). The deficiency in Georgia ELLs' progress in meeting AYP goals highlights the importance of determining the most effective means for enhancing ELLs' language proficiencies.

### Review of the Literature

#### Factors Affecting English Language Learners' Success

The challenges ELLs face are momentous. Abedi and Gándara (2006) have observed that ELLs lag behind their English-proficient peers in all content areas because of factors such as, parents' education, poverty, challenges associated with learning a second language, unequal schooling conditions, poor reading skills in native languages, and poor assessment tools. Non-cognitive factors, also, influence ELLs' academic performance. Abedi and Gándara explained that many assessments ask students to solve problems within a framework built around American society and values. Many ELLs lack the cultural background to successfully respond to some assessment items.

Additionally, the academic challenges many ELLs face may lead to a diminished sense of self-efficacy, which could elicit "learned helplessness" (Abedi & Gándara, 2006, p. 42) that may prevent them from even attempting tasks perceived as too difficult. To help mitigate factors that inhibit ELLs' success, Garrett (1991)—in his seminal study on CALL—emphasized designing a welcoming learning environment that fostered as much collaboration as possible in the second language.

## CALL's Evolution and Impact on Language Learning Instruction

The advance of technology has significantly improved the ability to provide quality language learning experiences to learners (Ayres, 2002; Green, 2005; Wang & Heffernan, 2010). Since the 1960s, when computers were first introduced to education, CALL has been studied extensively. CALL is a type of language learning, “in which a learner uses a computer and, as a result, improves his or her language” (Beatty, 2003, p. 7). In the 1970s, CALL programs were relatively basic, consisting primarily of question-and-answer sequences (Jafarian, Soori, & Kafipour, 2012). Internet use in classrooms widened in the 1990s, and CALL has evolved from isolated programs to interconnected, distance-learning applications (Wang & Heffernan, 2010).

As CALL applications developed, the presentation of language instruction advanced. Teaching language, using visually stimulating text, audio, and video features makes multimedia an effective medium for language instruction (Ayres, 2001) and has prompted a marketable business in developing CALL software. Green (2005) indicated that the greater interactivity of technology could make a positive impact on English language skills. Green, additionally, has noted that children who have access to high-quality computers with features like authentic audio, sound effects, text that highlights itself as it is read, and vocabulary instruction score much higher on standardized tests. CALL programs are designed to appeal to visual, auditory, and kinesthetic learners through interactive protocols, thus promoting internalization of the language.

Numerous studies have demonstrated that exposure to CALL applications positively affects all four language skills—speaking, reading, writing, and listening—(Arslan & Sahin-Kizil, 2010; Jafarian et al., 2012; Spender, 2011; Wang, 2011; Yakimchuk, 2010) and

increases students' motivation and attitudes toward language learning (Esit, 2011; Morton & Jack, 2010). While the advantages of CALL have been acknowledged by educators, some still criticize CALL platforms. Pedagogical qualities, software stabilities, technical difficulties, expertise deficiencies, and multimedia overloads are problems that may be encountered (Wang, 2011). Notwithstanding these challenges, CALL still has potential as an effective means of language instruction.

Blake (2009) has noted that English language instruction using CALL applications has evolved considerably from what Garrett (1991) described. New research and theories in second-language acquisition have arisen, and authenticity no longer centers on ensuring that language learners model their pronunciation entirely after native speakers of the target language. Interactivity, now, can involve students producing digital products (e.g., blogs, web sites, PowerPoints, etc.) and having meaningful conversations with native speakers (Blake, 2009).

#### Scarcity of Empirical Research on Rosetta Stone

Limited empirical research exists on the effectiveness of commercially available, stand-alone CALL software. Godwin-Jones (2007) mentioned *Rosetta Stone* in his review of trends in self-directed instruction, observing that Rosetta Stone used a systematic, guided curriculum with audio, graphics, video, and speech recognition software; however, no studies deal specifically with *Rosetta Stone's* impact on high school English Language Learners' ELP scores.

Another reference to *Rosetta Stone* is in Saury's (1998) work on meaningful tools for evaluating CALL software. She has asserted that *Rosetta Stone* is "one of the few software programs designed with an awareness of how multimedia can capitalize on the psychological

processes of language learning” (p. 6). While Saury’s claims were made over a decade ago, her theory is relevant as a springboard for later studies into CALL effectiveness.

A more substantial empirical study, involving *Rosetta Stone* is Nielson’s (2011) investigation into the effect of two CALL software programs—*Rosetta Stone* and Auralog’s TELL ME MORE (ATMM)—on self-motivated, autonomous adult language learners. Nielson had several objectives, including whether self-study with CALL materials was suitable for United States government employees, whether both beginners and others could make gains, and whether *Rosetta Stone* worked equally well with Arabic, Chinese, and Spanish. In terms of software usage, the government employees in Nielson’s study slowly lost interest in the investigation and never started or eventually stopped accessing the online learning sessions and assessments. Nielson supposed that the lack of interest was the result of a variety of technological problems as well as the absence of adequate support for self-directed learning in the workplace. Many participants never initially accessed the software, and very few completed the course. The researcher concluded more supervision and direct support were needed.

Rather than evaluating specific programs, some recent CALL scholarly work (Nowrozi, 2011; Sykes, Oskoz, & Thorne, 2008; Thorne & Payne, 2005) has focused on how learners use technological tools for interaction. Because of the shift in second-language acquisition to a communicative and interactional approach (Gass & Mackey, 2007), researchers have been more concerned with how CALL programs can stimulate communication rather than assessments of software packages.

#### Other Researched CALL Applications

Some studies (e.g., Arslan & Sahin-Kizil, 2010; Morton & Jack, 2010; Yakimchuk, 2010) relate to other CALL protocols and their effectiveness in language acquisition. For

example, Arslan and Sahin-Kizil (2010) found that blogs had a positive impact on language learners' writing performance. Yakimchuk (2010) determined that a text-to-speech CALL software program, PDF Equalizer, improved academic ELLs' performance.

### Summary of Literature

CALL products are sometimes discussed in the second-language acquisition literature; however, there are differing assessments of their success. Although there are many reasons for this lack of research (e.g., much CALL research is focused on interaction or student perceptions of the learning process), the fact that there has been little investigation into whether specific CALL products increase student achievement, particularly for ELLs in high school, helps to identify a gap in research. With corporations such as *Rosetta Stone Ltd.* advertising their products as effective tools for language learning, educational policy makers, school officials, and language teachers must know how well these products work before they invest.

### Purpose of the Study

The purpose of the present study was to examine the relationship between completion of Rosetta Stone CALL-based language learning modules and student achievement in terms of ELP scores. Specifically, student achievement was compared, using *Rosetta Stone* computerized language learning versus direct language instruction completion and demonstration. Students' attitudes, opinions, and preferences regarding delivery methods for English language instruction were also analyzed.

### Research Questions (Hypotheses)

Three research questions were addressed in this study as:

1. Will there be a significant increase in ELP scores for ELLs who use direct instruction combined with *Rosetta Stone* CALL-based instruction compared with ELLs who use direct instruction?
2. What are the personal preferences of ELLs who use *Rosetta Stone* CALL-based instruction as compared to those who use direct instruction regarding English language learning methods of instruction in ESOL courses?
3. Will there be a significant increase in engagement for ELLs who use *Rosetta Stone* CALL-based instruction compared with ELLs who use direct instruction?

### Methodology of the Study

#### Setting and Participants

This study took place at a suburban Title I high school located in Georgia in the metro Atlanta area and serving students in Grades 9-12. The population for the county in which the school was located was estimated at 85,765 in 2011 (U.S. Census Bureau, 2011). The ethnic makeup of the county was 47% African American, 37% Caucasian, 12% Latino, 1% Asian, and 3% multiracial.

There were 1,656 students enrolled at the research site for the 2010/2011 school year. While only 12.3% of the county's population lived below the poverty level, 46% of the students at the research site qualified for free or reduced-price lunches. Gifted students comprised 13% of the student population, while 9% were served by special education, and approximately 2% were classified as ELLs (Governor's Office of Student Achievement, 2011).

The study sample consisted of 36 ELLs enrolled in ESOL academic support classes at the research site. Demographic information about subgroups and their ELP achievement levels

on the ACCESS for ELLs (WIDA, n. d.) are provided in Table 1. Most students in the study were Latino (94%).

Table 1

*Demographic Information for Direct Instruction and Rosetta Stone Groups*

Demographic		Total Sample ( <i>N</i> = 36)	Direct Instruction Group ( <i>n</i> = 18)	Rosetta Stone Group ( <i>n</i> = 18)
Ethnicity	Latino	34 (94%)	16 (89%)	18 (100%)
	Asian	2 (6%)	2 (11%)	0 (0%)
Grade Level	9 <sup>th</sup>	6 (17%)	4 (22%)	2 (11%)
	10 <sup>th</sup>	16 (44%)	7 (39%)	9 (50%)
	11 <sup>th</sup>	4 (11%)	3 (17%)	1 (6%)
	12 <sup>th</sup>	10 (28%)	4 (22%)	6 (33%)
Gender	Male	22 (61%)	14 (78%)	8 (44%)
	Female	14 (39%)	4 (22%)	10 (56%)
English Language Proficiency (ELP) prior to intervention	Level 1 ( <i>Entering</i> )	4 (11%)	3 (17%)	1 (6%)
	Level 2 ( <i>Beginning</i> )	6 (17%)	2 (11%)	4 (22%)
	Level 3 ( <i>Developing</i> )	13 (36%)	6 (33%)	7 (39%)
	Level 4 ( <i>Expanding</i> )	7 (19%)	4 (22%)	3 (17%)
	Level 5 ( <i>Bridging</i> )	6 (17%)	3 (17%)	3 (17%)

The group was divided to create a control group and an intervention group with 18 randomly-selected students in each group. All 18 students (100%) in the intervention group were Latino. The teacher-researcher (seven years of experience) conducted the intervention, and a fellow ESOL teacher assisted with observations and data collection.

#### Intervention

The researcher sought to determine whether supplementing regular instruction with work on *Rosetta Stone* computerized English language learning modules would affect students' ELP scores, engagement during periods of language instruction, and self-efficacy. Direct English language instruction was supplemented with *Rosetta Stone* computerized language modules for the *Rosetta Stone* Group, while the Direct Instruction Group received the direct instruction supplemented with additional direct instruction activities (e.g., completing reading-comprehension exercises, grammar warm-ups, and formative grammar assessments).

All ELLs in the two groups agreed to participate in the experiment, and all ELLs at the research site were assigned to one or more of the principal researcher's ESOL classes. The 36 students were in various classes throughout the day, and students in the Direct Instruction and *Rosetta Stone* Groups were often in the same class period together. Students in both groups received direct English language instruction from the district-chosen ESL course book, *The McGraw-Hill ESL Workbook* (Buscemi, 1997), a level-appropriate grammar workbook geared toward ELLs, and containing numerous grammar exercises, reading selections, and classroom activities.

Researcher-created lesson plans focused on enhancing students' English grammar knowledge. Speaking practice through interactive pair and group work, listening practice through structure-focused listening exercises, vocabulary building-practice through illustrated workbook reading selections and exercises were utilized in daily lessons and activities. Workbook lessons were presented to all students in whole-class direct instruction. After each lesson, students in both sub-groups completed the workbook activities. The researcher and research colleague used a checklist (see Appendix B) of common student behaviors to determine the engagement level of students as they worked. Constant supervision was provided

to ensure that students remained focused and actively engaged in completing the workbook exercises.

Students in the Direct Instruction Group used *The McGraw-Hill ESL Workbook* exclusively as their means of learning English grammar and structure. Students in the *Rosetta Stone* Group went to the ESOL computer lab for the last 20–30 minutes of each class session during the 6-week intervention. They used a log sheet to record minutes spent on *Rosetta Stone* and to help ensure that students were making effective use of their time, using the software. Student participants were required to redo any activity on which they received a score of less than 90%. Students in the Direct Instruction Group remained in the classroom and completed supplementary exercises that accompanied *The McGraw-Hill ESL Workbook* exercises. The students knew each other and were aware that some students were going to the lab for computer work.

*Rosetta Stone* uses interactive speaking activities to help students begin to feel comfortable speaking English. Summative assessments at the end of each unit replicate everyday conversations and assess students' mastery of the language standards addressed in each unit. Interactive grammar and spelling activities serve as formative assessments to support lesson content.

#### Data Collection Techniques

The teacher-researcher used several assessments to determine the effect of *Rosetta Stone* on English language acquisition. The students' ELP scores, scores on workbook exercises, engagement during lessons, and attitudes toward the effectiveness of instructional practice (direct instruction exercises or *Rosetta Stone*) were measured to determine if a significant difference existed between the direct instruction and *Rosetta Stone* treatments.

*The McGraw-Hill ESL Workbook Exercises.* This direct instruction workbook was chosen by the school district and its exercises were developed for ELLs by the McGraw-Hill Company. Before and during the intervention, students in both groups worked through the exercises, which consisted of five questions that assessed mastery of content from previous lessons. A summative exercise was scored every two weeks. Scores were analyzed, using descriptive statistics and paired two-tailed *t*-tests comparing gains from each treatment. Results were interpreted by identifying significant changes in the assessment results.

*WIDA-ACCESS Placement Test (W-APT).* W-APT is an ELP screening assessment that was administered to students in both groups before and after the intervention. WIDA-commissioned language-learning specialists created the W-APT to assess a potential English learner's knowledge of the English language (WIDA, n. d.). Reading, writing, listening, and speaking proficiencies are measured by the W-APT. The speaking section must be administered to each student individually. The teacher-researcher and fellow ESOL teacher administered the W-APT Speaking Test to each student individually in a side room during regularly scheduled class periods. Reliability and validity of the W-APT are recognized on a national level because the W-APT is patterned after the ACCESS for ELLs, a nationwide standardized assessment for ELLs. Using the W-APT Writing Rubric, students received a proficiency-level score for each skill (reading, writing, speaking, and listening). These scores were averaged to determine a composite score, ranging from 1 (*Entering*) to 6 (*Reaching*; see Appendix A). Pre- and post-results were analyzed, using descriptive and inferential statistics.

*Class Engagement Checklist* (see Appendix B). Adult facilitators completed a 13-item checklist of observed student behaviors as they monitored students engaged in direct instruction learning sessions and *Rosetta Stone* learning sessions. The checklist was developed by the researcher

and validated by pilot testing with ten students. Items checked were analyzed by paired two-tailed *t*-tests, comparing differences from each treatment.

*Student Perception Surveys* (see Appendix C). A 20-item questionnaire was administered to students in the Direct Instruction and Rosetta Stone Groups after the intervention. Five questions related to students' cultural and educational backgrounds, five questions addressed student attitudes toward their own ELP, and the remaining ten questions focused on the students' attitudes toward either the effectiveness of *Rosetta Stone* or the direct instruction exercises. Fifteen attitude statements about their own language skills and the usefulness of either *Rosetta Stone* or the direct instruction exercises were listed, and the students chose responses from 1 (*strongly agree*) through 5 (*strongly disagree*). The survey was developed by the researcher and validated by peer review with five teacher-researchers. To assist ELLs with different reading levels to complete the survey, the questionnaire was read aloud. Selected responses on the post-intervention survey were analyzed by comparing students' attitudes toward the effectiveness of their instruction and by exploring respondents' perceptions of their academic aptitudes.

*Interview Protocol* (see Appendix D). A randomly selected, representative sample of ten students in the *Rosetta Stone* Group was interviewed shortly after the intervention for 20–30 minutes. Five open-ended-interview questions were used to triangulate data on students' personal preferences concerning instructional methods and self-perceptions of learning abilities. The interview protocol was developed by the researcher and validated by peer review with five teacher-researchers. Responses were analyzed and interpreted by identifying patterns for sub-groups of students, analyzing emergent themes in the data, and then comparing student interview responses to survey responses.

## Results

### WIDA-ACCESS Placement Test (W-APT)

The nationally recognized ELP screening exam, W-APT, served as a pre-test and post-test. W-APT 1 was given to students in the Direct Instruction and *Rosetta Stone* Groups before the intervention period, and a similar W-APT 2 was administered to both groups at the completion of the 6-week intervention period. While the W-APT measures ELP in the areas of listening, reading, speaking, and writing, only overall composite scores ranging from 1 (*Entering*) to 6 (*Reaching*) were analyzed for the purposes of this study.

Before the intervention, students in the *Rosetta Stone* Group performed marginally better on the pre-test ( $M = 3.66, SD = 1.23$ ) than students in the Direct Instruction Group ( $M = 3.54, SD = 1.33$ ). The mean pre-test score for students that were to supplement their instruction with Rosetta Stone was not significantly different ( $t(34) = -0.26, p = 0.80$ ) from the mean pre-test score for students that would use the workbook exercises exclusively, and the variations in scores in each group as indicated by the standard deviations, were similar. The groups were considered similar enough for comparison in this study.

W-APT 1 results for students in the Direct Instruction and *Rosetta Stone* Groups prior to *Rosetta Stone* CALL-based instruction as compared to W-APT 2 scores for students in both groups following the intervention are shown in Table 2. The mean gain/loss between students' pre-test and post-test scores were analyzed. After the intervention, students in the *Rosetta Stone* Group ( $M = 4.48, SD = 1.29$ ) outscored students in the Direct Instruction Group ( $M = 3.80, SD = 1.15$ ) on the post-test. The change in ELP scores of students that received *Rosetta Stone* CALL-based instruction was statistically significantly higher than the change in scores of students that only received direct language instruction ( $t(32) = -4.33, p = 0.00$ ).

Table 2

*Comparison of Pretest (W-APT 1) and Posttest (W-APT 2) Results*

Group	N	Pretest		Posttest		Gain/Loss		t-value	p
		M	SD	M	SD	M	SD		
Direct Instruction	18	3.54	1.33	3.80	1.15	0.26	0.34	-4.33	.00**
<i>Rosetta Stone</i>	18	3.66	1.23	4.48	1.29	0.83	0.41		

\* $p < .05$ , \*\* $p < .01$

Effect size was computed, using Cohen's  $d$  to determine the practical effect of the intervention. Use of *Rosetta Stone* had, as defined by Cohen, an effect ( $d = 1.56$ ). An average student who used *Rosetta Stone* along with direct instruction exercises would be expected to score higher on a standardized ELP assessment than about 94% of those students who supplemented their language instruction with additional workbook exercises. Using *Rosetta Stone* increased scores by 219%.

#### The McGraw-Hill ESL Workbook Exercises

Students in both groups completed McGraw-Hill workbook exercises throughout the 6-week intervention period. The researcher scored one summative direct instruction exercise every two weeks for a total of three exercises scored per group. The exercises gradually increased in linguistic complexity and difficulty. In comparing the groups' results, students who supplemented their language instruction with *Rosetta Stone* CALL-based instruction scored on average ten points higher ( $M = 79.26$ ,  $SD = 12.29$ ) than students who only used the direct instruction ( $M = 69.63$ ,  $SD = 22.31$ ). While the difference between the two groups' performance on the direct instruction exercises was not statistically significant ( $t(34) = -1.60$ ,  $p$

= 0.12), the intervention did have a medium effect ( $d = 0.55$ ). Using Rosetta Stone increased direct instruction exercise scores by 14%.

#### Class Engagement Checklist

The teacher-researcher and his assistant used an engagement checklist (see Appendix B) to determine the level of student engagement during direct instruction as compared to CALL-based instruction. Off-task behaviors included: being out of one's assigned seat, constantly moving around at one's desk, making inappropriate noises, refusing to complete assignments, talking socially with friends, etc. Twelve observations were conducted over the course of the 6-week intervention period—six observations during direct instructional sessions and six observations during *Rosetta Stone* CALL-based instructional sessions. Observable off-task behaviors were rated on a scale of 1 (*rarely observed*), 2 (*occasionally observed*), and 3 (*frequently observed*). Lower means indicate less frequent off-task behavior. Analysis of student engagement and active participation during the two instructional formats (see Table 3) showed statistically significantly fewer ( $t(10) = 3.31, p = 0.01$ ) off-task behaviors for students engaged in computerized instruction ( $M = 1.44, SD = 0.17$ ) compared to students engaged in direct instruction ( $M = 2.17, SD = 0.51$ ).

Table 3

*Comparison of Student Engagement and Active Participation (N = 6)*

Activity	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i> -value	<i>p</i>
Direct Instruction Participation	6	2.17	0.51	3.31	.01*
<i>Rosetta Stone</i> Participation	6	1.44	0.17		

\* $p < .05$ , \*\* $p < .01$

The intervention had an effect ( $d = 2.31$ ) on increasing student participation and engagement during instructional sessions. Students who were exposed to *Rosetta Stone* CALL-based instruction would be expected to remain more focused and engaged than students using direct instruction. Utilizing *Rosetta Stone* decreased off-task behaviors among ELLs by 36%.

#### Student Perception Surveys

Students in both the control and treatment groups completed post-intervention surveys, which measured students' perceptions of their own learning skills and academic aptitudes. The version of the survey administered to students in both the Direct Instruction and *Rosetta Stone* Groups (see Appendix C) specifically measured students' attitudes toward the effectiveness of the direct instruction approach in helping them learn English. A separate version of the survey (see Appendix C, alternate Section III) was given exclusively to students in the *Rosetta Stone* Group to measure their perceptions of the effectiveness of *Rosetta Stone* in helping them build proficiency in English.

Table 4

#### *Post-Intervention Perceptions of Direct Instruction Exercises for Both Groups (N = 36)*

Survey Statement	<i>Strongly Agree/ Agree</i>	<i>Undecided</i>	<i>Strongly Disagree/ Disagree</i>
The workbook graphics and illustrations helped me stay focused and concentrate better.	56%	14%	31%
I would prefer computer-based instruction to teacher-directed instruction.	78%	3%	19%
I would recommend the workbook exercises to other English Language Learners.	39%	17%	44%
The workbook exercises are a waste of time.	39%	36%	25%

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Overall, the workbook exercises were an excellent tool for learning English.	53%	6%	42%
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Student responses concerning the effectiveness of the McGraw-Hill direct instruction exercises are shown in Table 4, while responses concerning *Rosetta Stone* are shown in Table 5. When comparing student responses, noticeable differences stand out. A large percentage of *Rosetta Stone* students (83%) preferred computer-based instruction to teacher-directed instruction. While only 56% of students believed the direct instruction graphics and illustrations helped them stay focused and concentrate better, a vast majority of respondents in the *Rosetta Stone* Group (94%) agreed or strongly agreed that the *Rosetta Stone* graphics and illustrations helped them stay actively engaged in the learning process. These results corroborate results from the engagement checklist.

Table 5

*Post-Intervention Perceptions Concerning Rosetta Stone for the Rosetta Stone Group (N = 18)*

Survey Statement	<i>Strongly Agree/ Agree</i>	<i>Undecided</i>	<i>Strongly Disagree/ Disagree</i>
The graphics and illustrations helped me stay focused and concentrate better.	94%	0%	6%
I would prefer teacher-directed instruction to computer-based instruction.	22%	11%	67%
I would recommend Rosetta Stone to other English Language Learners.	89%	0%	11%
<i>Rosetta Stone</i> is a waste of time.	6%	0%	94%
Overall, <i>Rosetta Stone</i> is an excellent tool for learning English.	83%	6%	11%

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Only 6% of students in the *Rosetta Stone* Group felt that *Rosetta Stone* was a waste of time, but 39% of students in both groups believed the direct instruction exercises were ineffectual. A large percentage of students in the *Rosetta Stone* Group (89%) agreed that they would recommend *Rosetta Stone* to other ELLs, and a similar percentage (83%) believed that *Rosetta Stone* was an excellent tool for learning English. The data suggest that *Rosetta Stone* was perceived well among students that were exposed to its media-rich and interactive language learning software.

Student perceptions concerning their own academic aptitude and self-confidence are shown in Table 6. Data concerning *Rosetta Stone* students' confidence proved valuable in understanding *Rosetta Stone*'s positive effect on student achievement. Percentages were high (82% on average) for all student confidence statements on the surveys. Fifteen students (83%) perceived that they have the ability to speak, read, write, and understand English as well as native speakers. A large majority (94%) of respondents assumed themselves to be good students, 72% said that they gave their best effort on assignments, and 78% said that they were motivated to succeed. Few students (6% on average) reacted neutrally to any of the student confidence statements on the survey.

Table 6

*Post-Intervention Perceptions of Student Confidence for the Rosetta Stone Group (N = 18)*

Survey Statement	<i>Strongly Agree/ Agree</i>	<i>Undecided</i>	<i>Strongly Disagree/ Disagree</i>
I have the ability to speak, read, write, and understand English as well as a native speaker.	83%	6%	11%
I do my best on the assignments my teachers give me to complete.	72%	11%	17%

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I believe I am a good student.	94%	0%	6%
I am motivated to succeed and do well in school.	78%	5%	17%

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### Student Interviews

To gain better insight into student responses on the survey, the teacher-researcher and his assistant conducted interviews with ten randomly-selected students in the treatment group toward the end of the intervention period. Using five open-ended questions (see Appendix D), the interviewers sought to probe students' thoughts about the effectiveness of *Rosetta Stone* and their own academic aptitudes. Attention was given to capturing authentic student voices with syntax and grammar typical of ELLs. Respondents generally believed they were good students, did their best on assignments, and were motivated to succeed. They stated that they paid attention in class and gave their best effort when completing class assignments. Students' responses included the following:

- “Yes, I get all A’s and B’s ‘cause I listened and do my best.”
- “I am good student because I do my best on my work that my teachers give me. I stay attention in class.”
- “My father and mother have a Ph.D., and they want me follow them.”

The few students that did not believe they were good students indicated that they lacked focus because they did not find school in general interesting or relevant. Responses from students that believed they could be better students included the following:

- “I want to be a good student, but I have hard time in that area right now.”
- “I don’t try as hard I maybe should because I’m not find interested in what we’re learning.”
- “I want to make money for my family, but my parents say school is first.”

The majority of students agreed that learning English is beneficial. Some responses from male students included the following:

- “English helps [me] speak to others.”
- “When you learn to talk English, you do good at school.”
- “I get a good job here when I learn [English].”

Female students stressed similar reasons why learning English is important to them. Responses from selected female students included the following:

- “I need [to] speak English correct if I want a job and money for my family.”
- “I can translate the English to my family and other peoples.”

The qualitative data collected from the interviews suggested that after the intervention, student confidence levels may have risen because of their success using *Rosetta Stone*.

Given *Rosetta Stone*'s high popularity among students, qualitative data collected during the interviews helped the researcher determine exactly what aspects of *Rosetta Stone* students found most valuable. Students identified a number of significant components of *Rosetta Stone* that they found useful. The following positive program characteristics were identified:

- involves all senses through engaging and interactive learning;
- allows for constant review;
- provides individualized and personal instruction;
- pushes learners to develop more naturalized American accents; and
- promotes thought in English by circumventing translation from native language to English.

Qualitative data—gathered from interviews coupled with quantitative data gathered from the perception surveys—demonstrate that students participated in *Rosetta Stone* CALL-

based instruction found this instructional protocol helpful in increasing their English proficiency because of its strong interactive features.

## Discussion

### Conclusions

For the 36 ELLs in this study, *Rosetta Stone* proved more effective in improving language proficiency scores and student engagement during language learning than the direct instruction. Student attitudes toward CALL-based applications were positive. Language proficiency scores of all students in the treatment group increased significantly. Participation in *Rosetta Stone* helped students remain engaged and focused on language learning and significantly reduced off-task behaviors among students in the treatment group. Moreover, students' exposure to *Rosetta Stone's* CALL-based interactive software over the 6-week intervention period aided in developing positive attitudes toward CALL software applications. The qualitative and quantitative data collected over the course of this study indicate that when combined with direct instruction and direct exercises, *Rosetta Stone* is a highly effective instructional resource for improving English Language Proficiency. The confidence students gain from using *Rosetta Stone* improves their academic success in general, including achievement on direct language exercises.

There was a significant increase in ELP scores for ELLs that used Direct instruction supplemented with *Rosetta Stone* CALL-based instruction compared with ELLs that used direct instruction. Results from both versions of the WIDA-ACCESS Placement Test (W-APT 1 and W-APT 2) revealed that students that participated in *Rosetta Stone* showed a gain of 0.82 points (approximately a 14-point gain on a 100-point scale), which was a significant increase between the pre-test ( $M = 3.66$ ) and the post-test ( $M = 4.48$ ). In contrast to Nielson's (2011) findings

that language gains for beginners were minimal even when they completed the entire CALL course of study, the results of this study were consistent with numerous other studies that have demonstrated that exposure to CALL applications affects gains in the four language skills (Arslan & Sahin-Kizil, 2010; Jafarian et al., 2012; Spenader, 2011; Wang, 2011; Yakimchuk, 2010).

Data collected from the student perception surveys and post-intervention interviews revealed that ELLs that were exposed to *Rosetta Stone* held a more positive attitude toward *Rosetta Stone*'s effectiveness than students that participated in direct instruction held toward the direct instruction's effectiveness. In rating the two treatments as excellent tools for learning English, significantly 30% more student participants favored *Rosetta Stone* over direct instruction learning, and 33% more students believed the direct instruction exercises were a waste of time compared to those that believed the same about *Rosetta Stone*.

Qualitative data gathered during the post-intervention interviews provided support for data from the perception surveys. Both sources provided evidence that students believed *Rosetta Stone* was effective because of its strong interactive features: it involved all senses through engaging and interactive learning, allowed for constant review, provided individualized instruction, pushed learners to develop a more naturalized American accent, and promoted thought in English by circumventing translation from native language to English.

These findings agree with Ayres (2002), who also found that visually appealing multimedia applications positively impact student attitudes toward learning. Paralleling the studies of Morton and Jack (2010) and Esit (2011), this study found that ELLs' attitudes became more positive as they progressed through multimedia-rich CALL applications. This

study supports the findings of Wang (2011), who concluded that CALL-based instruction could inspire ELLs to work harder to become proficient English speakers and readers.

*Rosetta Stone* was found to decrease off-task behaviors among ELLs by 36% compared to direct instruction. During direct instruction, students were more measurably off task than during CALL-based instruction. In consonance with Green's (2005) research, the findings of this study support the conclusion that CALL technologies could make a positive impact on English language skills because they allow for a substantial amount of interactivity within the context of the classroom. *Rosetta Stone* is a valuable means of increasing student engagement and participation in the language learning process.

#### Significance/Impact on Student Learning

With the population of ELLs in public schools increasing every year (Anderson & Dufford-Melendez, 2011), effective strategies for teaching the English language are necessary. Findings from this research study support the proposition that when combined with direct mainstream instruction *Rosetta Stone* is an effective resource that may significantly impact English language proficiency, student engagement, and student attitudes toward language learning for ELLs.

#### Factors Influencing Implementation

Several factors may have affected the accuracy of this study's findings. Inadequate implementation of daily computer time for students to complete activities, using *Rosetta Stone* may prevent gains inaccurate measurement of language proficiency. Six weeks may not be a sufficient period of time to observe positive gains in language proficiency achievement. Furthermore, some students have learning disabilities unrelated to their language acquisition

skills (e.g., poor computer/software skills, dyslexia, ADHD, etc.) that may prevent them from fully benefiting from the time they spend on *Rosetta Stone*.

#### Implications and Limitations

The findings of this research suggest that *Rosetta Stone* is an effective method of English language instruction. It is important to note that *Rosetta Stone* is not meant to replace direct language instruction; its purpose is to serve as an effective supplement to good language instruction. This study, also, has implications beyond the students researched. This study did not address how *Rosetta Stone* may impact the achievement of younger ELLs. Most available research deals with CALL applications as an intervention with high school, college, and adult learners (Arslan & Sahin-Kizil, 2010; Morton & Jack, 2010; Nielson, 2011; Spenader, 2011; Wang, 2011; Wang & Heffernan, 2010; Yakimchuk, 2010).

Although this study did reveal a significant positive impact on the performance of students participated in the study, this action research has limitations related to financial issues. *Rosetta Stone* is considered to be an expensive intervention that some school districts may be unable to fit into their budgets.

It is recommended that this study be replicated with a larger experimental group of ELLs. Research using a longitudinal approach and multiple groups with larger numbers of students across grade levels and school districts from state to state would yield the most reliable results. Further research using a number of teachers to implement the intervention could reduce possible bias in data collection for the engagement checklist and interviews.

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## Appendix A

## Description of English Language Proficiency Levels

<b>Proficiency Level</b>	<b>Description of Proficiency Levels</b> <b>Note:</b> <i>Social language</i> is used to communicate for everyday purposes, whereas <i>academic language</i> is used to communicate the content of language arts, mathematics, science and social studies.
1 – <i>Entering</i>	Knows and uses minimal social language and minimal academic language <u>with visual support</u>
2 – <i>Beginning</i>	Knows and uses some social English and general academic language <u>with visual support</u>
3 – <i>Developing</i>	Knows and uses social English and some specific academic language <u>with visual support</u>
4 – <i>Expanding</i>	Knows and uses social English and some technical academic language
5 – <i>Bridging*</i>	Knows and uses social and academic language working with grade level material
6 – <i>Reaching*</i>	Knows and uses social and academic language at the highest level measured by this test
*When a student reaches an overall language proficiency score of 5.0 or higher, s/he is eligible to be considered for exit from ESOL direct services. Once a student exits the program, s/he is monitored for two consecutive years.	

Appendix B

Class Engagement Checklist

<b>Observer:</b> _____	Almost Never	Occasionally	Frequently
<b>Date:</b> _____			
<i>Rosetta Stone</i>   Workbook ( <i>circle one</i> )			
<b>Activity:</b> Direct Instruction exercises   Rosetta Stone modules ( <i>circle one</i> )			

Behaviors			
Out of seat.....			
Constant movement in desk.....			
Constant verbal noises.....			
Listless, tired.....			
Stares blankly into space.....			
Rarely asks for assistance even when work is too difficult.....			
Does not attempt work.....			
Repeatedly raises hand to ask for assistance.....			
Confused expression on face.....			
Talks to peers socially ( <i>not</i> about content).....			
Talks to peers about content.....			
Requires constant redirection.....			
Gets up to sharpen pencil more than once.....			

Additional Comments



**II. STUDENT CONFIDENCE**

Use the following 1 – 5 scale for items 6 through 20. Please indicate (by circling the most correct response) the degree to which you agree with the statements listed below:

1	2	3	4	5
<i>strongly disagree</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly agree</i>

- 1 2 3 4 5 6. I can now speak, read, write, and understand English as well as a native speaker.
- 1 2 3 4 5 7. I have the ability to speak, read, write, and understand English as well as a native speaker.
- 1 2 3 4 5 8. I do my best on the assignments my teachers give me to complete.
- 1 2 3 4 5 9. I believe I am a good student.
- 1 2 3 4 5 10. I am motivated to succeed and do well in school.

**III. EFFECTIVENESS OF DIRECT INSTRUCTION EXERCISES (all students)**

Use the following 1 – 5 scale for items 6 through 20. Please indicate (by circling the most correct response) the degree to which you agree with the statements listed below:

1	2	3	4	5
<i>strongly disagree</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly agree</i>

- 1 2 3 4 5 11. The workbook exercises helped me to understand English better.
- 1 2 3 4 5 12. The workbook exercises helped me to speak English better.
- 1 2 3 4 5 13. The workbook exercises helped me to write English better.
- 1 2 3 4 5 14. The workbook exercises helped me to read English better.
- 1 2 3 4 5 15. The workbook graphics and illustrations helped me stay focused and concentrate better.
- 1 2 3 4 5 16. I would prefer computer-based instruction to teacher-directed instruction.
- 1 2 3 4 5 17. I would recommend the workbook exercises to other English Language Learners.
- 1 2 3 4 5 18. The workbook exercises are a waste of time.
- 1 2 3 4 5 19. The workbook chapter reviews helped me remember what I learned previously.
- 1 2 3 4 5 20. Overall, the workbook exercises were an excellent tool for learning English.

**III. EFFECTIVENESS OF ROSETTA STONE** (alternate form for Rosetta Stone Group only)  
 Use the following 1 – 5 scale for items 6 through 20. Please indicate (by circling the most correct response) the degree to which you agree with the statements listed below:

	1	2	3	4	5
	<i>strongly disagree</i>	<i>disagree</i>	<i>neutral</i>	<i>agree</i>	<i>strongly agree</i>
1 2 3 4 5	11.	The listening exercises helped me to understand English better.			
1 2 3 4 5	12.	The speaking exercises helped me to speak English better.			
1 2 3 4 5	13.	The writing exercises helped me to write English better.			
1 2 3 4 5	14.	The reading exercises helped me to read English better.			
1 2 3 4 5	15.	The graphics and illustrations helped me stay focused and concentrate better.			
1 2 3 4 5	16.	I would prefer teacher-directed instruction to computer-based instruction.			
1 2 3 4 5	17.	I would recommend <i>Rosetta Stone</i> to other English Language Learners.			
1 2 3 4 5	18.	<i>Rosetta Stone</i> is a waste of time.			
1 2 3 4 5	19.	The review sessions helped me remember what I learned previously.			
1 2 3 4 5	20.	Overall, <i>Rosetta Stone</i> is an excellent tool for learning English.			

## Appendix D

## Interview Protocol

**Interviewee:** \_\_\_\_\_ **Age:** \_\_\_\_ **Grade:** \_\_\_\_

**Interviewer:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Time of interview:** \_\_\_\_\_

**Place:** \_\_\_\_\_

**Open-ended Interview Questions:**

1. Do you believe it is important to learn English? Why or why not?

*Response Notes* (making sure to capture the student's voice):

2. What parts of *Rosetta Stone* (e.g., the reading, writing, listening, speaking, review sessions) did you find most beneficial? Why were these components of the program helpful?

*Response Notes* (making sure to capture student's voice):

3. What parts of *Rosetta Stone* (e.g., the reading, writing, listening, speaking, review sessions) did you find least beneficial? Why were these components of the program unhelpful?

*Response Notes* (making sure to capture student's voice):

4. Do you believe learning English with Rosetta Stone is better than learning English in a classroom setting using workbook exercises? Why or why not?

**Response Notes** (making sure to capture student's voice):

5. Has *Rosetta Stone* helped you become a better English speaker, writer, and reader? Why or why not?

**Response Notes** (making sure to capture student's voice):

## About the Author



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