

# Self-Efficacy and Performance in English Language Learners

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## Abstract

In this study, the relationship between self-efficacy and the performance of English Language Learners (ELL) in Math and Reading was examined. Pre- and post exams were taken by students in the subjects of math and reading to determine their level and to measure their progress throughout the La Esuelita summer course. The La Esuelita Community Technology Initiative is designed to prepare Latino youth in passing the Minnesota Basic Standards test by implementing technology and additional support. In addition, pre- and post surveys were also distributed to establish the self-efficacy level in each student and to determine if there would be a difference of scores. These scores were analyzed to determine whether or not self-efficacy has a significant impact on ELL student's performance.

Results show that completion of the program increased participants perceived self-efficacy in reading and math. In addition, self-efficacy in reading and learning vocabulary was found to be a significant predictor of growth in reading and vocabulary. However, math self-efficacy was not a significant predictor in the increase of math scores.

## Literature Review

### English Language Learners and Performances

The number of English Language Learners in the United States is rapidly increasing. In 2000-2001, there were roughly 4.6 million ELL students in the public school system (pre-K through 12th grade). This number is approximately 5.6% of the total student school enrollment and an increase of 32.1% over the 1997-98 school ELL enrollment. (Office of English Language Acquisition (OELA). This number is growing increasingly faster than the total K-12 enrollment. Specifically in MN, there is approximately 48,880 ELL students enrolled in 2001-02, which is an increase of 2.1% from the 1999-2000 school year of 45,090 enrolled students. (OELA) Spanish speakers comprised the majority (79.0%) followed by Vietnamese (2.0%), Cantonese (1.3%), and Korean (1.0%). (Abadi, Hofstetter, Lord, 2004, p.4) Many of these students come from countries that are in great social upheaval and have been refugees with very little to no education. (Freeman, Freeman, Mercuri, 2002 p.1e) These students primarily reside in the inner city and amidst poverty.

There are also many different language levels of ELL. It has been theorized that not all ELL students have the same level of language skills and the difference in these groups require different teaching techniques. For example, a student who has less than a year of English exposure has different psychological needs than a student who has two to three years of English exposure. The disaggregation of ELL students into groups based on level of language exposure and/or ability has been proposed. (Moore, Sajundish, 2003) In their study, Moore and Sajundish distinguish these levels by the number of years that the student has been exposed to academic English. For the exposed group, they also determined the average length of exposure and found that over time, ELL students could catch up in academics to their counterparts with a varied number of years. Students, depending on their grade level when first exposed to English, may need a different amount of time to catch up to their peers. This study demonstrates that there are in fact different levels of ELL students and it is important to distinguish among the different levels when working with these students.

### Self-Efficacy

Self-efficacy, one of the main components of Albert Bandura's Social Learning Theory, helps researchers understand why some students fail while others succeed even when ability is equal. Self-efficacy is our expectation of whether or not we will succeed at a given task. (Woolfolk, 1996, p.392) Bandura theorized that self-efficacy affects task selection, the level of effort and persistence, and the level of performance. (Goetz, Alexander, Ash, 1992, p.244) People generally only attempt tasks that they believe they will succeed at. It has also been argued that self-efficacy determines how much effort is put into a task and how long that effort will last. (Woolfolk, 1996, p.393) When faced with a challenging task, someone with low self-efficacy will put forth little effort and will stop short at the task because they do not believe that they will achieve and feel that trying will not get them there. On the contrary, someone with high self-efficacy will put in a large amount of effort and will keep trying until they succeed because they are confident that they will be able to do it. The consequences of low self-efficacy are a downward spiral of low academic success and constant cycles of failure which in turn lowers their self-efficacy even more. (Goetz, Alexander, Ash, 1992, p.244)

Low self-efficacy is one of the dominating factors in low performance of students. Students who have failed at academics several times develop low self-efficacy for academics. (Margolis, McCabe)

### Self-Efficacy and ELL

It has been theorized that one of the reasons for the low performance of scores on standardized tests for ELL students is the lack of self-efficacy. Self-efficacy affects many ELL students in their education and may not see the needs and there are several types of learners. These students range from those who have just recently arrived into the United States to those who are long term English learners and have been in the United States for more than seven years. (Freeman, Freeman, Mercuri, 2002, p.4) Some of these students may even struggle with academics in their native language. This creates an even greater challenge to learn English and adapt to the American culture. In addition, the students may not be able to perform well on the exams, which lead to not feeling able to perform well at all. This leads to a spiraling effect of constant failure. This phenomenon may cause students to give up and consequently become resistant to learning. In addition, many ELL students also lack confidence. They do not believe that they are capable of achieving in their education and may not see the benefits to education. (Freeman, Freeman, Mercuri, 2002, p.17) In order to feel successful, all students need to experience success. By not succeeding, ELL students lack at school as a place of failure and feel worthless. Self-efficacy is one key to success for students and learning. (Lunnenbrink, Pintirich, 2003) If effort is put into increasing the level of self-efficacy, students will be more successful.

## Statement of Purpose

Given that the level of ELL and self-efficacy are both important predictors of academic outcomes, it becomes important to understand the relationship they have with each other. The completion of this study will better describe the relationship that each predictor (ELL level and self-efficacy) has with the outcome. In addition, this study proposes to demonstrate the multicative interaction of the two predictors using the general linear model to test for their combined effect. As a matter of course, the effect of ELL level on student outcomes which depends on self-efficacy will be tested.

## Research Question

Several research questions will be tested in this current study. They are as follows:

1. Will the La Esuelita technology initiative program be effective in increasing students self-efficacy and academic ability in math and reading?
2. What is the proportion of variance in growth scores that is attributable to self-efficacy?
3. Is the interaction of self-efficacy and ELL level a significant predictor of growth in reading and math scores?

## Participants

### 1. Grade Level:

In this data set, there are a total of 51 students. There are a total of 30 students in ninth grade, 21 male students and 9 female students. In tenth grade, there are 15 total students, 9 male students and 6 female students. In eleventh grade, out of the 3 students, there is 1 male student and 2 female students.

Grade	Male	Female	Total
9	21	11	32
10	10	6	16
11	1	2	3

### 2. Average Lexile:

Of the 51 students in this data set, the average Lexile score is 361.10 (346.16). The scores range from 0, meaning the student has no English proficiency, to 1312 which demonstrates high English proficiency.

	Grade 9	Grade 10	Grade 11
Male	244.29 (266.729)	341.70 (272.428)	324.00 (89.895)
Female	527.18 (447.735)	469.17 (405.661)	324.00 (89.895)
Total	341.53 (374.130)	389.50 (321.631)	418.33 (175.115)

### 3. Average Math Total:

Of the 51 students in the data set, the average math score is 30.1765 (10.15225) out of a total possible score of 100. The scores range from 11.20 to 50.20 with the maximum total score of 100. There are no significant differences in math scores between gender or among grade levels.

	Grade 9	Grade 10	Grade 11
Male	28.8571 (11.2822)	29.8000 (10.41367)	34.0000
Female	30.6364 (8.53549)	36.3333 (9.37372)	27.0000 (11.3317)
Total	29.4688 (10.34559)	31.7500 (10.38208)	29.3333 (8.96289)

### 5. Average efficacy scores:

The average efficacy score for the 51 students is 129.9216 (44.05081) with a minimum score of 48.00 and a maximum score of 213.00. There are no significant differences in efficacy scores between gender or among grade levels.

	Grade 9	Grade 10	Grade 11
Male	118.0000	138.8000	93.0000
Female	146.0588	132.2864	145.5000
Total	134.0000	141.8333	145.5000
Female	48.50979	53.85320	124.7474
Total	123.5000	139.9375	128.0000 (35.0000)
	44.75448	39.83373	

## Design and Overview

Participants for the current study were students who have been recruited to participate in a supplemental training program. Students have all previously failed the Minnesota Basic Standards Test (BST) and will be given training in reading and math in a state-of-the-art technology center that utilizes computer-based instruction. In addition, students will receive coaching and practice BST tasks. All of the students in the program are Latino students and the majority are native Spanish speakers. Many are children of Mexican immigrants and/or other recent arrivals to the United States and the Midwest. The sample of students is representative of the population of urban, impoverished Mexican immigrant population of the Twin Cities area.

## Materials

### Reading

The Scholastic Reading Inventory (SRI) was administered to all participants to measure and assess growth in reading, language, and comprehension.

\* The SRI generates a wealth of criterion and norm-referenced data for every student including a percentile rank, stanine, normal curve equivalent (NCE), grade level standard, performance standard, and a native Lexile measure.

\* The average Lexile score for participants is 361.10. The scores range from 0, meaning the student has no English proficiency, to 1312 which shows high English proficiency. The Lexile scores are broken down by grade and gender on Table 2.

### Math

\* Math proficiency was measured through the Steck-Laughlin Math Screening and Placement Test.

\* This test was administered prior to and following the program. This test assesses students' ability in the following areas: whole numbers, addition, subtraction, multiplication, division, decimal concepts, decimal addition, decimal subtraction, decimal multiplication, decimal division, percent concepts, using percent, fraction concepts, addition, subtraction, multiplication, division, measurement concepts, using measurements, geometry, algebra concepts and equations.

\* The average math score for these participants was 30.1765 out of a total possible score of 100. The math scores are separated by grade and gender in Table 3.

### Self-Efficacy

\* Self-efficacy of the participants was measured by a survey specifically made to measure self-efficacy in reading, writing, speaking, vocabulary and math.

\* There were a total of 20 questions, four questions for each category and all of the questions were made available in both English and in Spanish, therefore eliminating error due to English deficiency. Self-efficacy was determined on a 5-point, 1 indicating strongly disagree to 5 which indicates strongly agree.

## Results

### 1. How much growth was made in reading (SRI Lexile points)?

	Pre-test	Post-test	D-value	Significance
Lexile	335.80 (349.05)	363.73 (320.97)	1.95	.068
Math	30.79 (10.18)	41.80 (12.13)	7.94	.000
Reading Efficacy	26.07 (10.66)	31.93 (17.11)	2.36	.023
Listening Efficacy	27.66 (12.83)	30.71 (10.46)	3.62	.001
Vocabulary Efficacy	27.93 (12.68)	31.76 (18.49)	2.87	.007
Speaking Efficacy	25.07 (12.42)	29.61 (11.33)	4.10	.000
Math Efficacy	18.24 (2.30)	16.42 (2.38)	2.68	.011

Reading: Students scored on average 33.80 on the pre-test and 36.73 on the post-test. The difference in scores was 32.07 to 36.73, p = .068. Although scores decreased, the scores were not significantly different. The margin of measurement error. The scores were not significantly different in score is that students remained at the same level when they started the program. (See table 5)

Math: Students scored on average 30.79 on the pre-test and 41.80 on the post-test. The difference in scores was 11.00 to 41.80, p = .000. These data show that significant growth was made upon completion of the program. (See table 5)

Self-efficacy: Students made a significant increase (2.68 growth points) on their perceived level of self-efficacy in reading. Similar gains were made on individual perceived self-efficacy for listening (3.62), speaking (4.10), and vocabulary (3.81). Math scores decreased slightly (1.62).

### Table 6: Regression Analysis

Item	t	Significance
Intercept	.704	.486
Reading Efficacy	-.632	<.006
Listening Efficacy	-.065	.172
Speaking Efficacy	-.382	.542
Vocabulary Efficacy	.855	2.448

Using regression analysis, the predictive relationship between self-efficacy and growth in reading was tested. Significant, the level of self-efficacy was a significant predictor of growth. Overall, the model explained approximately 20% of the variance in growth scores. However, only self-efficacy in reading and vocabulary was a significant predictor of growth.

### Table 7: Regression Analysis of Math Scores

Item	t	Significance
Intercept	.455	.629
Math Efficacy	.085	.269

Using regression analysis, the predictive relationship between self-efficacy and growth in math was tested. Significant, the level of self-efficacy was a significant predictor of growth. Overall, the model explained approximately 20% of the variance in growth scores. However, only self-efficacy in reading and vocabulary was a significant predictor of growth.

### Table 4: Regression Analysis of Growth Scores and Four Independent Variables

	Beta	t	Significance
ELL reading level	-.101	-1.494	.145
ELL oral level	.959	1.312	.199
Reading self-efficacy	-.672	-2.305	.018
Vocabulary self-efficacy	.626	2.166	.027

Model F(3,108) = 24.2, p < .001

## Discussion

In this study, several research questions were proposed in regards to self-efficacy. The first question asked if the program would be effective in increasing students self-efficacy and academic ability in math and reading. In this study, the relationship between the growth in Lexile score and four different independent predictors, ELL reading level, ELL oral level, reading self-efficacy, and vocabulary self-efficacy was tested. Results showed that the ELL level did not have a significant effect on the growth in student's Lexile score. On the contrary, student's reading and vocabulary had a significant impact on growth. These results showed the difference in ELL level does not effect how a student performs academically in this particular program. A student who has just started learning English can perform at the same level as a student who has a few years of English learning. The differences in score were not attributable to ELL level but are attributable to a student's self-efficacy. If a student has high self-efficacy, they are able to perform well.

The second question asked what the proportion of variance in growth scores was attributable to self-efficacy. The research tested for the predictive relationship between self-efficacy (reading, listening, speaking, and vocabulary) and growth in reading and found that self-efficacy in reading and vocabulary was a significant predictor of growth. However, there was no significant relationship found between self-efficacy and the growth in math scores.

The third question asked if the interaction of self-efficacy and ELL levels was a significant predictor of growth in reading and math scores. In this study, the relationship between the growth in Lexile score and four different independent predictors, ELL reading level, ELL oral level, reading self-efficacy, and vocabulary self-efficacy was tested. Results showed that the ELL level did not have a significant effect on the growth in student's Lexile score. On the contrary, student's reading and vocabulary had a significant impact on growth. These results showed the difference in ELL level does not effect how a student performs academically in this particular program. A student who has just started learning English can perform at the same level as a student who has a few years of English learning. The differences in score were not attributable to ELL level but are attributable to a student's self-efficacy. If a student has high self-efficacy, they are able to perform well.

## Implications

According to previous research findings as well as the results gathered in this study, self-efficacy can be used as a significant factor in the achievement of students, particularly ELL students. Having high self-efficacy can lead to students feeling confident in themselves and will keep them from giving up on the task at hand, even when a language barrier exists. Given this fact, schools and teachers need to be aware of the role that self-efficacy plays and implement techniques that will raise self-efficacy in students. Margolis and McCabe (2003) discuss and offer several principles and recommendations.

**1. Frequently task students' work to recent successes**  
Margolis and McCabe (2003) believe that teachers should frequently link the current work to recent successes by the student. Students must first have many past successes to fall back on. Success should be possible and attainable. If students see that the new work that they are given is similar to those that they have already achieved, they will be more inclined and motivated to attempt at the new work even if it is harder.

**2. Teach Needed Learning Strategies**  
Students need to be taught learning strategies such as sequencing, modeling, explicit step-by-step directions, feedback, correction, and practice, students have the necessary skills to obtain success. In addition, students need to feel more confident because they know that they can achieve because not only do they have knowledge of the subject matter but they also know how to learn. This is important because knowing learning strategies can be transferred and used in any subject of their education and life.

**3. Reinforce Effort and Persistence**  
According to Bandura, many students with low self-efficacy will be less likely to pursue tasks they feel are difficult and they will spend less effort and time with the task because they feel that regardless of the effort implemented, the task will not be achieved. Due to this, it is important for teachers to reinforce the effort and persistence that is being displayed by struggling ELL students. Once these students see that success is indeed possible, they will put forth more effort and persistence.

**4. Stress Peer Modeling**  
Use students to teach other students who may be falling behind. Peer modeling is found to be effective because struggling learners can see that others just like them are able to learn which reinforces the idea that they too can be successful.

In addition to these techniques, the results of this study show other necessary implications for teachers. It is suggested that materials given to students should be at each student's level or at their appropriate ELL level. It is important to keep in mind that each student's academic level is different and varied. Although students may be all categorized similarly as ELL students, their exposure to academic and English may be vastly different. Different levels of ELL students need different learning strategies. Another suggestion to teachers is that ELL students need to feel capable of what they are doing and feel that what they are learning is relevant in their everyday lives. If a student feels like what they are learning will not help them in their everyday lives, they may feel that school is irrelevant for them. Teachers and administrators should help show relevance to everyday situations such as using money to calculate money.