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The Educational Outcomes of U.S. High School English-Learner Students with Limited or Interrupted Formal Education

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Abstract

This paper reports the findings of a study that used school system data and student surveys to examine risk and resilience in the educational outcomes of English learner (EL) students with limited or interrupted formal education (SLIFE) in U.S. high schools. The outcomes included scores on standardized tests of academic achievement and gains in English proficiency over a year. Indicators of limited or interrupted formal education included gaps in grade-relative schooling, low first-language literacy, and low English proficiency on arrival. It found that SLIFE were common among the high school ELs and also that SLIFE were at higher risk of academic failure, but were surprisingly resilient to challenges and fared well if provided with enough support to learn the English they needed for English-only schooling.

Introduction

Currently, in the United States, 4.5% (3,700,000) of all high school students are English learners (EL) (National Center for Education Statistics, 2010). According to various estimates, between 14% and 20% of those ELs are students with limited or interrupted formal education (DeCapua, Smathers, & Tang, 2007; Fleischman & Hopstock, 1993; Ruiz-de-Valasco & Fix, 2000; Walsh, 1999). U.S. researchers have begun referring to this type of student by the acronym SLIFE (DeCapua & Marshall, 2010). Students in U.S. high schools are expected to range in age from 14 to 18, but all people are legally entitled to a free high school education until their 22nd birthday, regardless of their ability. For this reason, many immigrants who come to the United States attend high school, even if they are over 18. This includes labor migrants, refugees, and other immigrants. Thus, these students, who may be older and may lack education and literacy in their first language, are faced with the challenge of earning high school diplomas in a learning environment created for well-schooled and literate native-speaking adolescents. They must overcome the disadvantages they arrive with if they wish to meet state graduation standards before they become 22 years old and are forced to leave the school. For example, in the state of Maryland, where this study took place, all students were required to earn passing scores on a rigorous set of English-only, state-mandated tests of academic achievement in order to graduate (Maryland State Department of Education, 2013). Can SLIFE become proficient in academic English and meet state graduation standards in the short time they are allowed to attend high school?

This article describes findings from a recently completed study that tried to understand educational resilience in SLIFE, in the hope that it may inform policies and practices to serve these students better. It examines the prevalence of SLIFE and SLIFE indicators among a sample of ELs in U.S. high schools and how the SLIFE indicators affected educational outcomes, namely English language acquisition and academic achievement measured by standardized tests. More importantly, it identifies variables related to educational resilience for the SLIFE in the study.

Literature Review

Presently, there is a lack of research on SLIFE (DeCapua et al., 2007), but publicly released data show that SLIFE generally perform very poorly on standardized tests of academic achievement (Office of English Language Learners, New York City Department of Education, 2009). Researchers agree, however, that SLIFE can sometimes show great educational resilience in overcoming their challenges in U.S. schools (Bartlett, 2007; Bigelow, 2007; Short, Boyson, & Coltrane, 2003; Tellez & Walker de Felix, 1993; Walsh, 1999). This perception is based on case studies, however. Until now, there has never been a quantitative study to understand why some SLIFE manage to succeed in school when others fail.

This study builds on previous research on educational resilience in at-risk students. Educational resilience is defined by educational psychologists in reference to educational risk factors (Perez, Espinoza, Ramos, Coronado, & Cortes, 2009; Gordon Rouse, 2001; Gordon Rouse & Cashin, 2000; Alva & Padilla, 1995; Wang & Gordon, 1994). Educational risk factors are factors that normally predict lower educational outcomes. Educational resilience is present when a student's educational outcomes are better than one might expect, considering that student's risk factors. For SLIFE, the risk factors that normally predict lower educational outcomes are limited English proficiency, gaps in their schooling relative to their grade, and low first-language (L1) literacy. In current educational research, resilience is not considered to be a character trait but a process (Gordon Rouse, 2001; Gordon Rouse & Cashin, 2000). In the educational resilience process, a student becomes resilient through experiences and influences in his or her environment that lead to success. Success reinforces the student's goals and beliefs, leading to new experiences and influences in the process. Researchers refer to goals, beliefs, experiences, and influences that foster resilience as "protective" factors. Protective factors in education resilience can include school or out-of-school supports, such as academic or other interventions. Goals, beliefs, experiences, and influences that disable resilience are referred to as "risk" factors. Educational risk factors can include discouraging or distracting influences or experiences in or out of school, such as perceived prejudice in teachers, peers, or society at large.

My study attempts to explain the resilience process for SLIFE in U.S. high schools by identifying the protective and risk factors that influence these students' outcomes. Although such factors are reported in literature on SLIFE (Siu, 1996; DeCapua et al., 2007; Advocates for Children of New York, 2010; Freeman, Freeman, & Mercuri, 2002), their impacts have never been verified by quantitative research. This study intends to examine the effect of each of these factors empirically through regression analysis with quantitative data. Like with other resilience studies of at-risk students, the findings can be used to inform interventions.

Methods

This was a quantitative study that combined existing data from the school system with student survey data in order to understand the variability in students' educational outcomes. Because the students were ELs, the student surveys were often translated into the students' first languages. Because of low education and literacy issues, surveys were written in simple language and read aloud. As needed, bilingual assistants helped administer the surveys. SPSS software was used to conduct bivariate and multivariate analyses on the whole sample of ELs and a subsample of SLIFE.

Participants and Setting

This study took place in a suburban/semi-urban school district on the east coast of the United States, between Baltimore, Maryland, and Washington, DC. The school district is known for high-quality schools in which students from diverse ethnic and socio-economic backgrounds are generally well integrated. This is important to mention because ELs in the United States often attend under-resourced and segregated schools in which they are less likely to be given the support they need to succeed (Gandara, Rumberger, Maxwell-Jolly, & Callahan, 2003). The ELs in this study were generally supported by well-developed English for Speakers of Other Languages (ESOL) programs as well as other supports, such as bilingual family liaisons. Thus, this study shows what support ELs could have but might not have in many parts of the United States.

The students in this study were classified as ELs on the basis of English proficiency tests that were given to them when they first arrived in the United States. Of the nearly 300 ELs in the school district, 199 consented to participate in the study. Of those 199, there were 165 cases that provided the data required for this study. As Table 1 shows, the sample was diverse in that it was not dominated by any one ethnic or language group, and it included students of many socioeconomic backgrounds: children of well-educated professionals as well as students from low socio-economic backgrounds. Of special interest were the large number of students who had arrived recently from Burma/Myanmar as refugees of a civil war and the many other students who, for one reason or another, had not received adequate schooling before emigrating to the United States. It is noteworthy that the average age for students in this sample was 17.5 years, although most were in ninth or 10th grade. In the U.S., ninth graders are usually 15 years old.

	Mean or %	Standard deviation	% missing
Age (in years, 14-21)	17.5	1.66	1.8%
Length of residence (yrs, 0-7)	2.34	1.61	0.0%
Parental education (yrs, 0-26)	11.71	5.48	3.0%
Elementary or lower (0-5)	15.6%		
Primary (6-8)	11.8%		
Secondary (9-11)	15.0%		
High school + (12-15)	27.5%		
College (16+)	30.0%		
Grade in high school (9-12)			1.8%
9th	36.4%		
10th	29.0%		
11th	19.8%		
12th	14.8%		
Country/region of origin			0.0%
Africa (not including North Africa)	5.5%		
Burma/Myanmar	23.0%		
Central America & Caribbean	18.8%		
Central Asia, Middle East, & Russia	14.9%		
China	6.1%		
Korea	12.1%		
Mexico	7.3%		
Other Asian	4.9%		
Other Latin	7.9%		

Table 1. Sample Demographics

Variables

Dependent variables: educational outcomes. In this study, educational resilience was measured by two educational outcomes: gains in English proficiency in the 2011–2012 school year and academic achievement measured by scores on standardized tests of academic content taken in the 2011–2012 school year. Each student's gain in English was measured by subtracting his or her 2011 English as a second language proficiency test score from his or her 2012 score. Academic achievement was measured by scores on standardized tests of algebra, biology, and English language arts, which students took in 2012 (Maryland State Department of Education, 2013). I have merged standardized versions of these scores (*z* scores) to create a compound measure to show each student's performance on these exams in general instead of specifically in each area. This was necessary since, in the year of the study, each test was only taken by students who were taking the corresponding class that year (i.e., only students taking algebra took the algebra test), so the number of students taking each test was small—but larger numbers were necessary for robust analyses. Preliminary analyses were conducted to ensure that the associations between each test and each independent variable were not significantly different, which in turn ensured that the compound measure was reliable. Interestingly, scores on all three tests, even the algebra test, were found to be correlated with English proficiency.

Key independent variables: SLIFE and SLIFE indicators. To be consistent with descriptions of SLIFE in the literature, I have operationalized limited or interrupted formal education both in terms of time spent in school and the educational outcomes of that time (Mace-Matluck, Alexander-Kasparik, & Queen, 1998; New York State Department of Education, 1997; Ruiz-de-Valasco & Fix, 2000; Advocates for Children of New York, 2010). In this study, SLIFE participants were identified using three indicators: (1) schooling gaps, (2) low L1 literacy, and (3) beginner English. Each indicator was operationalized as a dichotomous variable in which scores of 0 equaled "no" and scores of 1 equaled "yes" to identify students with that particular indicator of limited or interrupted formal education. These indicators were measured on arrival, when the student first emigrated to the United States and enrolled in a U.S. school. Therefore, limited or interrupted formal education in this study describes the students' educational backgrounds on arrival, which may be different from their education at the time of the study if they had made progress since arriving. In this manner, we will be able to observe how some students may have overcome the challenge of arriving as SLIFE.

The schooling gap. This was the first indicator used to identify SLIFE in this study. It was a dichotomous variable that identified students with at least one missing year of schooling relative to what was expected for their grade placement on arrival. So, a student who completed sixth grade before immigration but who was enrolled in ninth grade instead of seventh upon arrival in the United States had a two-year gap in his or her grade-relative schooling and would have a score of 1 for the schooling gap variable. This study acquired the data for this indicator from school system records.

Low L1 literacy. This was the second indicator to identify SLIFE in this study. This study used the term "L1 literacy," but the students' first languages were not always their languages of previous literacy and schooling before coming to the United States. In many countries, students speak a different language at home than what they use for reading and writing in school or elsewhere. This study acquired the data for this indicator from the students by using two survey items in which students evaluated their L1 literacy relative to their grade level on arrival in the United States. Students were asked, "How well could you read and write in [your first language] when you came to America?" Then, using Likert-type responses with a range of 1 through 4, students agreed or disagreed with statements such as, "I could read as well in [my first language] as most American kids my age can read in English." Surveys were customized to state the students' first language in the brackets. Scores for the two items were averaged together, and students with scores of 2.5 or lower were identified as having low L1 literacy. Admittedly, it was a limitation to have to rely on self-report data for this vital indicator, but students' L1 literacy had not been tested on arrival, so these data had to be collected after the fact from a large number of students from many different language backgrounds.

Beginner English. This was the third indicator used to identify SLIFE. Proficiency in English as a second language was used as an indicator for SLIFE in this study because it is an outcome of schooling in countries in which English is taught as an academic subject and not used as a first language, and also because SLIFE tend to have lower English proficiency than other ELs (DeCapua et al., 2010). The beginner-English variable was a dichotomous variable that identified students with scores of one or two on the six-band English proficiency test taken on arrival. This study acquired the data for this indicator from school system records.

SLIFE. This was a composite dichotomous variable used to identify students for the SLIFE subgroup in this study who had at least two of the three indicators of limited or interrupted formal education. It is important to note that factor analysis of a scale comprised of the three SLIFE indicators revealed that the scale did not have a Cronbach's alpha sufficient to show adequate reliability because low L1 literacy was not correlated with schooling gaps. For this reason, this study will share findings for the individual indicators instead of relying solely on a single composite SLIFE variable. Even though low L1 literacy did not correlate with schooling gaps, I retained it as a SLIFE indicator because this characteristic is used to describe SLIFE in educational literature. Incidentally, this is not the first study to find that low L1 literacy does not correspond with missing years of schooling (Tarone, 2010). This lack of correspondence may represent a reality of education that is contrary to popular assumptions. Research shows that much of students' literacy may be acquired out of school (Schultz & Hull, 2002), so youth attending school may sometimes be low-literate, and youth not attending school may sometimes be very literate.

Independent variables related to educational resilience. Data for variables related to educational resilience were mostly obtained through a student survey that I administered at the end of the 2011–2012 school year at roughly the same time the students were taking their English tests and tests of academic achievement. These variables included school-related protective factors and personal risk factors identified as important in other studies and literature reviews (Siu, 1996). The school-related protective factors included academic self-concept (Gordon Rouse, 2001; Gordon, Rouse, & Cashin, 2000), perceived pedagogical caring (Wentzel, 1997), perceived positive social integration at school (Alva, 1993), the number of ESOL classes taken by each student (Callahan, Wilkinson, & Muller, 2010; Callahan, Wilkinson, Muller, & Frisco, 2009; Flores, Batalova, & Fix, 2012), and extra help that students received with English and/or schoolwork outside of school (Portes & Rumbaut, 2007). The personal risk factors included past traumatic experiences (Sankey, 2010), perceived social distance (Schumann, 1976; Alva, 1993; Portes & Bach, 1985), exposure to non-educationally oriented peers (Ainsworth-Darnell & Downey, 1998; Rumberger, 1995), low authoritative adult supervision (Baumrind, 1966; Dornbusch, Ritter, Leiderman, Roberts, & Fraliegh, 1987; Perlmutter, Tauliatos, & Holden, 1995), and employment (Singh, Chang, & Dika, 2007; Steinberg & Dornbusch, 1991). Except for the number of ESOL classes, all data on these factors were collected from student survey items largely modeled after items used in previous studies, and nearly all used Likert-type responses (scores: 1 = strongly disagree; 2 = disagree, 3 = agree; 4 = strongly agree). Scales used in this study were shown to have acceptable reliability in previous studies. The data in this study were based on the Cronbach's alpha of those previous studies.

Results

The Prevalence of SLIFE and SLIFE Indicators

Schooling gap. Table 2 indicates that, on average, students had no gaps in their grade-relative schooling on arrival, but nonetheless, there was a notable number of students who had experienced such gaps. In fact, over one-fifth of the students were missing at least one year of schooling and, therefore, had this indicator used to identify SLIFE in this study.

Length of schooling gap (years)	Number of participants	Percent	Cumulative percent
5	1	0.6%	0.6%
4	1	0.6%	1.2%
3	8	4.8%	6.0%
2	13	7.9%	13.9%
1	14	8.5%	22.4%
0	77	77.6%	100.0%
Total	165	100.0%	

Table 2. EL Participants with Gaps in Grade-Relative Schooling upon Arrival in the United States (n = 165)

Note: Numbers in the column headed "Length of schooling gap (years)" indicate the number of years of schooling that students were missing relative to their grade placement on arrival in the United States. Greater numbers indicate greater gaps and greater risk. Scores ≥ 1 were used to form the SLIFE indicator "schooling gap."

Nearly 14% of the students had missed two years or more, and 6% had missed three years or more. These estimates are similar to those found in other studies and reports (DeCapua et al., 2007; Fleischman & Hopstock, 1993; Ruiz-de-Valasco & Fix, 2000; Walsh, 1999).

Low L1 literacy. Table 3 indicates that, on average, students reported being as literate in their first language when they arrived as their same-grade U.S. peers were in English. Low L1 literacy was uncommon. Fewer than 18% of the students in this study gave themselves any negative evaluation for L1 literacy on arrival, and many of those negative evaluations were moderate (scores of 2.5 out of 4). Thus, fewer than 18% had this indicator used to identify SLIFE, and only 10% gave themselves stronger negative evaluations (scores of 2 out of 4). These estimates are also similar to those found in other studies and reports (Fleischman & Hopstock, 1993).

Self-reported L1 literacy level	Number of participants	Percent	Cumulative Percent
1 (very low / below grade-level)	3	1.8%	1.8%
1.5 (very low / below grade-level)	4	2.4%	4.2%
2 (very low / below grade-level)	10	6.1%	10.3%
2.5 (low / below grade-level)	12	7.3%	17.6%
3-4 (on or above grade-level)	88	82.4%	100.0%
Total	165	100.0%	

Table 3. L1 Literacy on Arrival in the United States among EL Participants (n = 165)

Note: Numbers in the column headed "Self-reported L1 literacy" indicate students' level of L1 literacy relative to their grade placement on arrival in the United States. Lower L1 literacy scores indicate lower L1 literacy and greater risk. Scores ≤ 2.50 were used to form the SLIFE indicator" low L1 literacy."

Beginner English. Table 4 indicates that over 60% of the students arrived with beginner-level English proficiency (i.e., scores of 1 or 2 out of 6) and, therefore, had one of the indicators used to identify SLIFE. Over 45% arrived with scores of 1, the absolute minimum.

English proficiency	Number of participants	Percent	Cumulative Percent
1 (low-beginner)	75	45.5%	45.5%
2 (high-beginner)	25	15.2%	60.6%
3 (low-intermediate)	30	18.2%	78.8%
4 (high intermediate)	28	17.0%	95.8%
5 (proficient)	7	4.2%	100.0
Total	165	100.0	

Table 4. English Proficiency upon Arrival to the United States among EL Participants (n =165)

Note: Numbers in the column headed "English proficiency" indicate students' level of English proficiency on arrival in the United States. Lower English proficiency scores indicate lower English proficiency and greater risk. Scores ≤ 2 were used to form the SLIFE indicator "beginner English."

SLIFE. As shown in Table 5, over 70% of the students had at least one of the indicators. Over a quarter of the students had two or more of the indicators and were thus classified as SLIFE for the purposes of this study. Of the three indicators, beginner English was the most prevalent at 60%. The second most common was schooling gap at 22%, followed by low L1 literacy with less than 18%.

Number of SLIFE indicators per student	Number of participants	Percent	Cumulative Percent
3	5	3.0	3.0%
2	39	23.6	26.6%
1	72	43.6	70.3%
0	49	29.7	100.0%
Total	165	100.0	

Table 5. SLIFE Indicators Occurring among the EL Participants (n = 165)

Note: Higher scores show a greater number of SLIFE indicators and greater risk. Scores ≥ 2 were used to identify students for the SLIFE subgroup.

As shown in Table 6, among the total sample of EL participants (n = 165), the 44 participants who comprised the SLIFE sub-group typically had at least one year of missing schooling but generally did not have low L1 literacy. Nearly all SLIFE had beginner English; in fact, they typically had scores around 1, the lowest possible. Therefore, nearly all SLIFE had beginner English and at least one other indicator.

	Number of SLIFE indicators	Missing years of schooling	Schooling gaps (%)	L1 literacy level	Low L1 literacy (%)	English proficiency level (1-6)	Beginner English (%)
Mean	2.11	1.55	77%	2.93	39%	1.19	95%
Standard deviation	0.32	1.30		0.85		0.50	
Minimum	2.00	1.00		1.00		1.00	
Maximum	3.00	5.00		4.00		3.00	

Table 6. Descriptive Statistics for SLIFE Indicators with the SLIFE Subgroup (n = 44)

The Prevalence of Protective and Risk Factors for the SLIFE Subgroup

As Table 7 shows, with the exception of their ESOL classes, SLIFE had lower levels of protective factors than non-SLIFE, but the prevalence of protective factors was generally high for most students.

	All ELs (n = 165)	SLIFE (n = 44)	Non-SLIFE (n = 121)	Difference for SLIFE
Academic self-concept	3.37	3.29	3.39	-0.11*
(from 1 = sd to 4 = sa)	(0.31)	(0.05)	(0.03)	(0.05)
Pedagogical caring	3.14	3.00	3.20	-0.20**
(from 1 = sd to 4 = sa)	(0.43)	(0.06)	(0.04)	(0.07)
Social integration	2.66	2.52	2.71	-0.19†
(from 1 = sd to 4 = sa)	(0.64)	(0.10)	(0.06)	(0.11)
# of ESOL classes 2011-12	2.15	2.86	1.88	0.98***
(0-5)	(1.49)	(0.23)	(0.13)	(0.25)
Out-of-school help	2.59	2.50	2.62	-0.12
(from 1 = sd to 4 = sa)	(.97)	(0.13)	(0.09)	(0.17)
# of extra-curricular activities	1.41	1.41	1.42	-0.01
(0-4)	(1.20)	(0.16)	(0.11)	(0.21)

Note. Higher numbers indicate stronger protective factors assumed to facilitate resilience. sd = strongly disagree and sa = strongly agree on variables measured by Likert-type responses. Means and their standard deviations in parentheses are shown in the columns for "All ELs," "SLIFE," and "non-SLIFE." Mean differences were estimated using T tests and are listed with their standard errors in parentheses in the column for "Difference for SLIFE." Statistically significant differences are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 7. Mean Differences between SLIFE and Non-SLIFE in the Prevalence of Protective Factors (n = 165)

SLIFE were significantly more likely to have lower academic self-concepts and perceived pedagogical caring, but they were significantly more likely to be taking a greater number of ESOL classes. Despite the differences, the academic self-concepts and perceived pedagogical caring for SLIFE were positive on average.

As Table 8 shows, with the exception of employment, there were no significant differences in the prevalence of risk factors between SLIFE and non-SLIFE, and risk factors were generally low for all students. SLIFE were significantly less likely to work longer hours in employment, but the hours of employment were extremely variable for all students. Students worked 6.23 hours a week on average, but most students did not work at all. Ten percent worked as many as 20 hours or more, and six of the students worked 40 hours or more.

	All ELs (n = 165)	SLIFE (n = 44)	Non-SLIFE (n = 121)	Difference for SLIFE
Traumatic experiences	2.07	1.95	2.11	-0.16
(from 1 = sd to 4 = sa)	(0.07)	(0.85)	(0.74)	(0.14)
Separations from caretakers	2.45	2.44	2.46	-0.02
(from 1 = sd to 4 = sa)	(1.04)	(0.99)	(1.06)	(0.18)
Social distance	2.33	2.33	2.33	-0.00
(from 1 = sd to 4 = sa)	(0.58)	(0.59)	(0.58)	(0.10)
Non-educationally oriented peers	1.95	2.02	1.91	0.11
(from 1 = sd to 4 = sa)	(0.49)	(0.41)	(0.52)	(0.09)
Low authoritative adult supervision	1.74	1.85	1.71	0.14
(from 1 = sd to 4 = sa)	(0.51)	(0.45)	(0.52)	(0.09)
Employment	6.23	3.68	7.33	-3.50*
(0-48 hours)	(10.28)	(7.33)	(11.06)	(1.50)

Note. Higher numbers indicate stronger risk factors assumed to hinder resilience. sd = strongly disagree and sa = strongly agree on variables measured by Likert-type responses. Means and their standard deviations in parentheses are shown in the columns for "All ELs," "SLIFE," and "non-SLIFE." Mean differences were estimated using T tests and are listed with their standard errors in parentheses in the column for "Difference for SLIFE." Statistically significant differences are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 8. Mean Differences between Non-SLIFE and SLIFE in the Prevalence of Risk Factors (*n* = 165)

As Table 9 shows, there were major differences between SLIFE and non-SLIFE in terms of other factors of interest. For example, there was a marginally significant difference between SLIFE and non-SLIFE in length of residence in the United States, with SLIFE being more likely to have spent more years in the United States. As the sample only included students classified as EL at the time of the study and not students who had arrived at the same time but had met state proficiency standards and been reclassified, this finding suggests that students with longer lengths of residence had spent more time classified as EL without meeting state proficiency standards. Therefore, the longer lengths of residence for SLIFE imply that those students took longer to become proficient in English. SLIFE were also significantly more likely to have less-educated parents. For SLIFE, the most educated of their parents had about eight years of schooling on average, compared to those of non-SLIFE, who had over 11. SLIFE were also more likely to be in lower grades despite having longer lengths of residence on average. This difference implies that SLIFE were less likely to arrive with transfer credits from their homeland and/or may have had trouble completing courses to advance grades while in U.S. schools.

	All ELs (n = 165)	SLIFE (n = 44)	Non-SLIFE (n = 121)	Difference for SLIFE
Length of residence in U.S.	2.34	2.72	2.20	+0.52†
(0-7 years)	(1.59)	(1.58)	(1.57)	(0.28)
Parental education	11.71	8.14	13.02	-4.88***
(0-26 years)	(5.48)	(5.13)	(5.02)	(0.90)
Age	17.47	17.32	17.53	-0.21
(14-21 years)	(1.65)	(1.62)	(1.66)	(0.29)
Grade	10.13	9.84	10.24	-0.40*
(9-12)	(1.07)	(0.94)	(1.10)	(0.19)

Note. Means and their standard deviations in parentheses are shown in the columns for "All ELs," "SLIFE," and "non-SLIFE." Mean differences were estimated using T tests and are listed with their standard errors in parentheses in the column for "Difference for SLIFE." Statistically significant differences are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 9. Mean Differences between Non-SLIFE and SLIFE in the Prevalence of Other Factors of Interest (*n* = 165)

Associations between SLIFE Indicators and Educational Outcomes

Schooling gap. As shown in Table 10, bivariate analyses revealed strong and significant negative associations between schooling gaps on arrival and academic achievement measured by standardized tests. On average, students who had arrived with schooling gaps had test scores that were more than a half a standard deviation below those of the other students. Supplementary analyses not shown here revealed that larger gaps (two years or more of missing schooling) were associated with even stronger and more significant decreases in scores. In contrast, there were no significant associations between schooling gaps on arrival and gains in English proficiency during the study year. Supplementary analyses revealed that this was true even for students with greater gaps. In other words, students with schooling gaps were not learning English more slowly than those without schooling gaps.

	Academic achievement (n = 116)		English gains 2011-12 (n = 127)	
	b	β	b	β
Schooling gap (1 = yes)	-0.50* (0.20)	-0.22	-0.14 (0.15)	-0.08

Note. Unstandardized coefficients are shown with their standard errors in parentheses in the columns headed "b." Standardized coefficients are shown in the columns headed "β." Statistically significant findings are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 10. Regression Estimates for the Association between Schooling Gaps and Educational Outcomes

Low L1 literacy. Table 11 indicates that there were no significant associations between low L1 literacy on arrival and academic achievement on tests. This was also true in supplementary analyses (not shown here) with lower L1 literacy (scores of 2 or lower out of 4). Likewise, low L1 literacy on arrival was not significantly associated with gains in English. Supplementary analyses not shown here, however, revealed that students who arrived with lower L1 literacy (scores of 2 or lower out of 4) showed significantly lower gains in English proficiency than the other students. Such students' English proficiency increased nearly half a level slower per year than that of their peers. Therefore, we may conclude that the effect of low L1 literacy upon arrival on English learning depended on how low those levels were on arrival. Students with very low L1 literacy seemed to have been learning English more slowly.

	Academic achievement (n = 116)		English gains 2011-12 (n = 127)	
	b	β	b	β
Low L1 literacy (1 = yes)	-0.14 (0.23)	-0.06	-0.26 (0.17)	-0.14

Note. Unstandardized coefficients are shown with their standard errors in parentheses in the columns headed "b." Standardized coefficients are shown in the columns headed "β." Statistically significant findings are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 11. Regression Estimates for the Association between Low L1 Literacy and Educational Outcomes

Beginner English. As indicated by Table 12, beginner English on arrival showed no relationship to gains in English, even in supplementary analyses of students arriving with low beginner English (scores of 1 out of 6). It did, however, have a strong and significant negative relationship to academic achievement on tests. Students with beginner English on arrival were earning exam scores that were nearly a half a standard deviation lower on average than those of the other ELs.

	Academic achievement (n = 116)		English gains 2011-12 (n = 127)	
	b	β	b	β
Beginner English (1 = yes)	-0.41 (0.18)	-0.22	-0.13 (0.13)	-0.08

Note. Unstandardized coefficients are shown with their standard errors in parentheses in the columns headed "b." Standardized coefficients are shown in the columns headed "β." Statistically significant findings are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 12. Regression Estimates for the Association between Beginner English and Educational Outcomes

SLIFE. As Table 13 shows, the SLIFE dichotomous variable used to identify students with two or more of the indicators of limited or interrupted formal education showed a strong and significant negative association with academic achievement on tests. Similarly, the SLIFE variable showed a marginally significant negative association with gains in English proficiency ($p < 0.1$), suggesting that the findings may have been significant given a larger sample size.

	Academic achievement (n = 116)		English gains 2011-12 (n = 127)	
	b	β	b	β
SLIFE (1 = yes)	-0.66*** (0.19)	-0.31	-0.24† (0.15)	-0.15

Note. Unstandardized coefficients are shown with their standard errors in parentheses in the columns headed "b." Standardized coefficients are shown in the columns headed "β." Statistically significant findings are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 13. Regression Estimates for the Association between SLIFE and Educational Outcomes

Because preliminary analyses had shown that the scores on tests of academic achievement were so strongly correlated with students' level of English proficiency at the time of the test, I determined to run multiple regression analyses to estimate associations with the SLIFE variable while controlling for differences in students' 2012 English proficiency scores. As indicated by Model 1 on Table 14, which included only SLIFE as an independent variable, the SLIFE variable explained only 9% of the variability in the test scores (an adjusted R^2 of .09), but Model 2, which included English proficiency at the time of the test, explained 33% (an adjusted R^2 of .33). Moreover, when I controlled for the effect of English proficiency in Model 2, the association between SLIFE and the test scores was no longer statistically significant. Therefore, it can be said that much of the relationship between the SLIFE variable and academic achievement can be explained by lower English proficiency at the time of the tests.

	Model 1		Model 2	
	b	β	b	β
SLIFE (1 = yes)	-0.65*** (0.18)	-0.31	-0.30† (0.17)	-0.14
English proficiency at time of test (1-6)			0.48** (0.07)	0.52

Note. Unstandardized coefficients are shown with their standard errors in parentheses in the columns headed "b." Standardized coefficients are shown in the columns headed "β." Statistically significant findings are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 14. Multiple Regression Estimates with SLIFE and English Proficiency on Academic Achievement (*n* = 116)

Table 15 shows multiple regression analyses in which the association between each SLIFE indicator and academic achievement was estimated while controlling for the effect of the other two SLIFE indicators. The differences between Model 3 and Model 4 support the theory that the relationship between beginner English and academic achievement can be largely explained by limited English proficiency at the time of the test, but Model 4 shows that a negative association remained between schooling gap and academic achievement that was not explained by differences in English proficiency. Thus, we may suspect that schooling gaps continued to cause the SLIFE to have lower academic achievement, even when the study controlled for limited English proficiency.

	Model 3		Model 4	
	b	β	b	β
Schooling gap (1 = yes)	-0.38† (0.21)	-0.17	-0.34† (0.18)	-0.15
Low L1 literacy (1 = yes)	-0.23 (0.22)	-0.10	0.07 (0.19)	0.03
Beginner English (1 = yes)	-0.39* (0.18)	-0.20	-0.03 (0.16)	-0.02
English proficiency at time of test (1-6)			0.50*** (0.08)	0.55

Note. Unstandardized coefficients are shown with their standard errors in parentheses in the columns headed "b." Standardized coefficients are shown in the columns headed "β." Statistically significant findings are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 15. Multiple Regression Estimates with the Individual SLIFE Indicators and English Proficiency on Academic Achievement (*n* = 116)

Factors Involved with Educational Resilience in SLIFE

To estimate the associations between the variables in question, I conducted bivariate regression analyses on each protective or risk factor and each educational outcome on both a non-SLIFE subgroup and a SLIFE subgroup.

Table 16 shows that the protective factors generally had positive relationships to the educational outcomes, but only ESOL classes had findings that were statistically significant. ESOL classes had a strong and significant positive association with gains in English for non-SLIFE. Although the association evident in the coefficient for ESOL classes was stronger for SLIFE than it was for non-SLIFE, it was not statistically significant at an alpha of .05, probably on account of the small sample size.

	Academic achievement (non-SLIFE n = 83; SLIFE n = 33)		English gains 2011-12 (non-SLIFE n = 88; SLIFE n = 39)	
	b	β	b	β
Academic self-concept (from 1 = sd to 4 = sa)				
Non-SLIFE	0.12 (0.33)	0.04	0.19 (.26)	0.08
SLIFE	0.32 (0.49)	0.18	0.32 (0.37)	0.14
Pedagogical caring (from 1 = sd to 4 = sa)				
Non-SLIFE	0.13 (0.23)	0.06	0.10 (0.18)	0.06
SLIFE	0.09 (0.39)	0.04	0.39 (0.28)	0.22
Social integration (from 1 = sd to 4 = sa)				
Non-SLIFE	-0.16 (0.16)	-0.11	0.07 (0.13)	0.06
SLIFE	0.03 (0.24)	0.02	0.10 (0.18)	0.09
# of ESOL classes 2011-12 (0-5)				
Non-SLIFE	-0.07 (0.10)	-0.08	0.13* (0.06)	0.24
SLIFE	-0.04 (0.10)	-0.07	0.14† (0.07)	0.31
# of extra-curricular activities (0-4)				
Non-SLIFE	0.03 (0.08)	0.04	0.06 (0.06)	0.11
SLIFE	-0.12 (0.14)	-0.15	-0.14 (0.10)	-0.21
Out-of-school help (from 1 = sd to 4 = sa)				
Non-SLIFE	-0.06 (0.10)	-0.07	-0.08 (0.08)	-0.11
SLIFE	0.17 (0.18)	0.17	0.14 (0.14)	0.16

Note. Unstandardized coefficients are shown with their standard errors in parentheses in the columns headed "b." Standardized coefficients are shown in the columns headed "β." Statistically significant findings are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 16: Bivariate Regression Estimates for Protective Factors and Educational Outcomes

Table 17 shows that the risk factors did not always have negative relationships to the educational outcomes and that there was a great deal of variability in outcomes, so much so that only traumatic experiences showed any statistically significant relationship. For SLIFE, but not for non-SLIFE, traumatic experiences showed a significant negative association with English gains. In other words, SLIFE who had experienced traumatic events learned English more slowly than SLIFE who had not.

	Academic achievement (non-SLIFE n = 83; SLIFE n = 33)		English gains 2011-12 (non-SLIFE n = 88; SLIFE n = 39)	
	b	β	b	β
Traumatic experiences (from 1 = sd to 4 = sa)				
Non-SLIFE	-0.07 (0.14)	-0.06	-0.02 (0.11)	-0.02
SLIFE	0.21 (0.18)	0.20	-0.30* (0.13)	-0.37
Separations from caretakers (from 1 = sd to 4 = sa)				
Non-SLIFE	0.08 (0.10)	0.09	0.05 (0.08)	0.07
SLIFE	0.07 (0.16)	0.08	0.12 (0.12)	0.17
Social distance (from 1 = sd to 4 = sa)				
Non-SLIFE	0.01 (0.19)	0.01	0.00 (0.14)	0.00
SLIFE	-0.37 (0.24)	-0.27	0.18 (0.19)	0.15
Non-educationally oriented peers (from 1 = sd to 4 = sa)				
Non-SLIFE	-0.08 (0.18)	0.05	-0.12 (0.15)	-0.09
SLIFE	0.06 (0.35)	0.03	-0.18 (0.28)	-0.10
Low authoritative adult supervision (from 1 = sd to 4 = sa)				
Non-SLIFE	-0.08 (0.19)	-0.05	-0.08 (0.19)	-0.05
SLIFE	-0.33 (0.34)	-0.18	-0.33 (0.33)	-0.18
Employment (0-48 hours)				
Non-SLIFE	-0.01 (0.01)	-0.11	0.01 (0.01)	0.09
SLIFE	-0.01 (0.02)	-0.06	0.02 (0.02)	0.21

Note. Unstandardized coefficients are shown with their standard errors in parentheses in the columns headed "b." Standardized coefficients are shown in the columns headed "β." Statistically significant findings are identified as follows: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$. † indicates marginal significance with $p \leq .1$

Table 17. Bivariate Regression Estimates for Risk Factors and Educational Outcomes

Discussion

This study supports claims that many of the ELs in U.S. high schools are SLIFE (DeCapua et al., 2007; Fleischman & Hopstock, 1993; Ruiz-de-Valasco & Fix, 2000; Walsh, 1999; Advocates for Children of New York, 2010). Indicators of limited or interrupted formal schooling, such as gaps in grade-relative schooling or low L1 literacy on arrival, were common in the ELs in this study (17.6% and 22.4%, respectively). Incidentally, students who arrived with gaps in their schooling tended also to arrive with beginner English proficiency, but students with schooling gaps or beginner English proficiency were not more likely to have low L1 literacy.

This study also supports claims that SLIFE are at greater risk for lower academic achievement (Office of English Language Learners, New York City Department of Education, 2009; Advocates for Children of New York, 2010). SLIFE in this study were significantly more likely than other ELs to have much lower academic achievement measured by standardized tests, especially when they had gaps in their schooling. Much of this disadvantage was due to their having lower English proficiency, which was due to their arriving with lower proficiency and learning English more slowly.

Most importantly, however, this study offers empirical support for claims that SLIFE can be educationally resilient (Bartlett, 2007; Bigelow, 2007; Short et al., 2003; Tellez & Walker de Felix, 1993; Walsh, 1999). This study found that there was no statistically significant difference in the academic achievement of SLIFE and non-SLIFE in analyses when English proficiency was held constant, which suggests that SLIFE could succeed in school if they became proficient in English. Lower academic achievement for SLIFE was largely due to their having lower English proficiency at the time of the tests. If they could attain higher proficiency by the time they were required to take the test, then they would not be at any significantly greater risk, except for a marginally significant risk associated with arriving with missing years of schooling.

Fortunately, SLIFE were not significantly more likely to learn English more slowly unless they arrived with very low L1 literacy and had experienced traumatic events such as witnessing violence. Thus, resilience in SLIFE depended largely on L1 literacy, since L1 literacy influenced their rate of English learning and since English proficiency is crucial for success in English-only schools. It is important to note that ELs with schooling gaps were not any more likely to have low L1 literacy. Some SLIFE did not have low L1 literacy, and some non-SLIFE had low L1 literacy.

In conclusion, this study had three findings that, when considered together, have important implications for educational policy. The first is that the SLIFE in the study could be academically successful in high school given enough English proficiency. The second is that SLIFE could learn English at a rate that is not significantly different from that of non-SLIFE. The third was that SLIFE who took more ESOL classes tended to learn English faster. These three findings together demonstrate that money spent supporting the education of SLIFE is money well spent.

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