



Understanding Newcomer English Learner Students' English Language Development: Comparisons and Predictors

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An important subgroup of English learner-classified (EL) students immigrate to the U.S., entering U.S. schools upon their arrival. Using growth models and statewide data, this study asks first, how newcomers' English proficiency status and growth compare to those of non-newcomer EL students; and second, what characteristics are associated with differences in English language growth patterns among newcomers. We find that newcomers enter school at earlier stages of English proficiency compared to their non-newcomer peers, but grow faster, especially in their first two years. We also find variation in growth patterns suggestive that schools play an important role in fostering growth.

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**Understanding Newcomer English Learner Students' English Language Development:
Comparisons and Predictors⁺ ⁺⁺**

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Federal law in the United States groups together public school students who are acquiring English as an additional language. These students, classified as English learners (ELs), are a protected class of students, with specific rights. Yet research, policy, and practice increasingly recognize the immense diversity of this class of students—diversity that runs along countless lines, including language, birth country, generational status, sociocultural background, ethnic/racial identity, and age (García, 2011). Recognizing and understanding this diversity is key to supporting individual students with educational services that meet their needs and engage their strengths.

One important but understudied subgroup of EL students is newcomers. We define newcomers as students born outside the U.S. who have been in U.S. schools for fewer than three years. While a diverse group, newcomers differ from other EL-classified students in several important ways. The majority of EL-classified students are born in the U.S. (Zong & Batalova, 2015), entering school and beginning to receive EL services in kindergarten, with services typically adjusting as students advance in grade and English language proficiency (ELP). Newcomers, by contrast, arrive at all grade levels. They need EL services that meet their English (and academic) needs, independent of their grade of entry. Central to understanding how to support and serve newcomers is understanding their linguistic skills and needs, including, but not limited to, their incoming ELP and subsequent growth.

ELP assessments are central to identifying who, among multilingual students, are eligible for EL classification and services, what those services should be, and when a given EL-classified student has acquired sufficient English proficiency to exit EL status and services. Under federal law, states set accountability targets regarding EL-classified students' ELP growth (Every Student Succeeds Act [ESSA], 2015). Increasingly, state targets take into account that not all EL

students develop English in the same way or at the same pace, and some state plans have ELP targets that differ by student age, grade, and/or initial ELP (Villegas & Pompa, 2020).

To date, however, research that examines newcomer students' initial ELP and subsequent growth is scarce (for an exception see Suárez-Orozco, Gaytán, et al., 2010). This study examines these questions by analyzing newcomer students' ELP growth in their first four years in U.S. schools. Drawing on data from an anonymous state over the years 2013/14 to 2017/18, this paper examines both how newcomers' incoming ELP and subsequent growth compare to those of non-newcomer EL students and the factors, both individual and institutional, that are associated with faster or slower growth among newcomer students. We ask:

- 1) What is the average incoming ELP status and growth trajectory among newcomer students and how do these metrics compare to those of EL-classified students who are not newcomers?
- 2) What factors are associated with initial ELP and growth among newcomer students?

In what follows we synthesize existing research on ELP assessments and growth, with a focus on what is known about newcomer students. We then turn to describing our data, methods, and findings, and conclude with a discussion of the implications of our findings for theory, policy, and practice.

Assessment of English Proficiency

Federal law requires standardized assessments of EL-classified students' English proficiency upon school entry and annually thereafter (ESSA, 2015). Several generations of ELP assessments have been used for this purpose, with current assessments focusing more clearly on literacy and more closely aligning with content standards, compared to earlier assessments (Sato & Thompson, 2020). Currently, although some states (e.g., Texas) have developed their own

assessments, many belong to multi-state consortia, such as WIDA (40 states) or ELPA21 (eight states) and use shared assessments. By law, ELP assessments must separately measure students' English reading, writing, speaking, and listening proficiency.

The ELP standards upon which these assessments are based have been designed to correspond with Common Core State Standards in English language arts and mathematics. As a result, ELP assessments in upper grade levels are tied to more advanced academic content and are considered more difficult than those at earlier grade levels (Council of Chief State School Officers [CCSSO], 2012), with critiques that these assessments may confound English proficiency with academic content knowledge (Clark-Gareca et al., 2020). That said, even at the early grades, meeting state thresholds for English proficiency can be difficult. Studies have shown that many students in the early grades who speak English as their sole or primary language fail to meet English proficiency thresholds designed for multilingual students (California Department of Education, 2011; Pray, 2005).

Research on ELP assessments also reveals wide variation in how English proficiency is defined and measured (National Research Council [NRC], 2011). As a result, there is debate about the validity of any one measure of language proficiency or of the levels within it (NASSEM, 2017). However, despite their limitations, ELP assessments are a widely used, accepted, and mandated tool to understand students' English language growth and their skills and needs in each of the four English language domains (Abedi, 2014; Sato & Thompson, 2020; Sireci & Faulkner-Bond, 2015).

English Language Proficiency Growth

Many policies created for EL-classified students are centered around English proficiency development. Reaching English proficiency is widely understood as a key outcome for EL

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students since English proficiency is considered necessary for full access to school-based instruction and for participation in much of U.S. society. By law, schools must provide English language instruction to EL-classified students. For teachers, understanding students' English skills and needs is paramount to facilitating curricular access and learning.

As such, a substantial body of literature has documented patterns of EL-classified students' ELP growth. There are several methodological complexities to undertaking such research: ELP assessments vary by state and across time, the construct of language proficiency differs across tests, and student and school characteristics vary widely across studies (Lindholm-Leary, 2019; NASEM, 2017; NRC, 2011). An additional complexity is that some research examines students' English proficiency growth while other research assesses how long students take to reach reclassification, the administrative transition of a student out of EL status. Though related, these two outcomes are not synonymous because while many states require only evidence of English proficiency for reclassification, others require additional criteria such as achievement measures (Linguanti et al., 2016). Nonetheless, several trends have emerged in existing research on ELP growth, as described next.

The process of developing English proficiency is a lengthy one, extending across many years of schooling, regardless of specific individual or institutional contexts. Estimates of the average length of time for EL-classified students to develop English proficiency typically range from three to eight years, depending on the study (e.g. Conger, 2009; Greenberg Motamedi et al., 2016; Thompson, 2017a), with evidence that oral language proficiency develops more quickly than reading and writing (Hakuta et al., 2000; Lindholm-Leary, 2019). The National Academies (2017) estimates that between 10 and 45% of EL-classified students entering U.S. schools in kindergarten are not fully proficient by the upper elementary grades.

Trends in English language growth belie the heterogeneity of the EL-classified student population, however. Few firm conclusions can be drawn about the impact of various factors, given that most research in this area is correlational (NASEM, 2017). However, several findings related to social, educational, and linguistic factors associated with English proficiency growth are relevant to this study.

Factors associated with ELP growth. Students' language proficiency at school entry, both in English and in their home languages, is related to ELP growth. Research has shown that students with higher or above-average levels of English proficiency at kindergarten entry tend to become proficient more quickly (Greenberg Motamedi et al., 2016; Kieffer & Parker, 2016; Slama et al., 2017). More advanced literacy in students' home languages (Lindholm-Leary, 2014; Relyea & Amendum, 2020) and levels of bilingualism and biliteracy (Thompson, 2017a) are also positively associated with students' subsequent English language development.

In terms of students' home or primary languages, studies have found that students with Spanish as a home language tend to have lower odds of reclassification and/or slower rates of English development than students who speak other home languages, although speakers of some other home languages demonstrate similar trends in isolated studies, including Samoan and Somali speakers (Burke et al., 2016; Greenberg Motamedi et al., 2016; Slama, 2014). Such findings have received a fair amount of attention but must be interpreted with caution: home language tends to be highly correlated with race/ethnicity and socioeconomic status, and it also likely serves as a proxy for other factors that influence students' schooling experiences, such as stereotyping, bias, and varied contexts of reception (Portes & Rumbaut, 2006; Umansky et al., 2020).

Lower socioeconomic status at the school level (Carhill et al., 2008) and at home (Burke et al., 2016; Kieffer, 2011; Slama et al., 2017) are associated with lower rates of ELP growth. EL students with disabilities, likewise, tend to take longer to reach proficiency and be reclassified (Burke et al., 2016; Kieffer & Parker, 2016; Umansky et al., 2017).

Institutional factors, as well as students' academic and social experiences in school, are also associated with ELP growth (Carhill et al., 2008). For example, enrollment in bilingual and dual language instruction predicts similar or stronger growth in ELP over time than English-only instructional models (Bibler, 2018; Steele et al., 2017; Umansky & Reardon, 2014). In addition, EL students' academic interaction with bilingual peers is associated with ELP growth above and beyond individual student factors (Carhill-Poza, 2015).

Differences in ELP growth rates over time and by proficiency level. There is evidence that language development slows over time and at higher proficiency levels (Goldschmidt, 2020; Kieffer, 2011). While students with higher initial ELP levels are more likely to reach English proficiency thresholds, as described above, EL students with earlier stages of initial ELP have relatively larger annual ELP growth. For example, research using WIDA's primary ELP assessment, ACCESS, showed that EL-classified students with lower initial English proficiency tended to grow faster on the test, both at the student and aggregate levels (Sahakyan & Cook, 2014). Other research has confirmed this finding (Doughty & Long, 2008; Rojas & Iglesias, 2013), including that slower growth at higher proficiency levels is independent of entry grade (Saunders & O'Brien, 2006). Reclassification research comes to a similar conclusion, identifying a trend in which students who enter in kindergarten but are not reclassified by the end of upper elementary grades are increasingly unlikely to ever be reclassified (Thompson, 2017a). Of note,

the pattern of slower annual growth at higher levels is not unique to language growth; It is also observed in content area assessments among the full student population (Dadey & Briggs, 2012).

There are several theories explaining faster English proficiency growth of students with lower initial English proficiency relative to those with higher initial proficiency. EL students are concentrated in the elementary grades (National Center for Education Statistics, 2018), which makes the long-standing debate on the role of age in second language acquisition relevant. On one hand, some linguists have argued for the existence of a “critical period” for second language learning, contending that children can learn language with less difficulty than adults or children who have gone through puberty (Stevens, 1999). Yet faster growth at lower proficiency levels is not constrained to younger students. For example, a descriptive study of high school newcomers’ ELP growth demonstrated faster English development amongst newcomers with lower incoming English proficiency levels compared to those in the same grades with higher incoming English proficiency (Chu & Fong, 2015).

A second hypothesis regarding why language growth tends to slow over time relates to the relative difficulty of ELP tests at higher grades and proficiency levels, especially in the current era. ELP assessments’ correspondence with Common Core standards mean that they become more advanced with grade because academic content becomes more cognitively complex at higher grade levels (CCSSO, 2012; Gottlieb, 2016). As a result, slower ELP growth at higher grades may be driven, in part, by challenging academic content rather than language proficiency (Clark-Gareca et al., 2020; Solórzano, 2008).

Associations between initial ELP and growth could also be driven by aspects of how tests and test scales are constructed. Although ELP assessments are typically based in (or verified through) empirical research, they nonetheless represent hypothesized sequences of language

development rather than patterns that are fully derived from research (NASEM, 2017). Each assessment represents a given construct of “language” that may differ from that used in a different assessment. As a result, slower language growth at higher proficiency levels and grade levels may at least in part be the product of an assessment’s content and structure (part of what Valdés, 2015, calls “curricularization”) rather than “true” language development. Results indicates, for example, that test scores are sensitive to the approach an assessment takes to vertical scaling (Briggs & Weeks, 2009).

Slower language growth at higher proficiency levels and grade levels, of course, may not be driven by age, test content, or test construction. Instead, language growth may, quite simply, take more time at higher proficiency levels. In this sense, each of an assessments’ upper levels of proficiency may represent a wide range of communicative acts that students are likely to produce only after considerable time and experience in school settings.

Newcomers and Newcomer ELP Growth

Research has yet to systematically examine newcomer students’ English language development and how it compares to that of non-newcomer ELs. However, there is a growing body of work that examines the characteristics and outcomes of newcomers, and there is also English development research that has included variables related to newcomer status and immigrant background. Here, we review these two bodies of research.

Newcomer students have characteristics and resources that differ, on average, from those of non-newcomer EL students. As such, we might expect their ELP growth patterns to also differ. A first critical difference is that newcomer students, as a group, are far more heterogenous than non-newcomer EL students with regard to background characteristics such as home language and socioeconomic status. Examining data from two states, Thompson and colleagues

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(2020) found that while 80% of non-newcomer EL students spoke Spanish as their primary language (aligned with the national average among EL-classified students), fewer than 50% of newcomers did. Larger proportions of newcomer students, instead, spoke other languages including Arabic, Somali, Vietnamese, Chinese, and Swahili. Similarly, considerably lower proportions of newcomer EL students lived in low-income households compared to non-newcomer EL students.

Aligned with the diversity of the newcomer population, research shows wide variation in the educational trajectories of newcomer students, variation that is predicted by student characteristics, including initial ELP (Suárez-Orozco, Gaytán, et al., 2010). Immigrant and newcomer student characteristics, such as time in U.S., age, and parental education and English proficiency level have been shown to predict English proficiency level (Carhill et al., 2008).

Characteristics of the newcomer population lend themselves toward hypotheses regarding English proficiency level and growth, albeit in complex ways. First, newcomers, by definition, are first-generation immigrants while non-newcomer EL students predominantly are not. Research has found different educational trajectories between first-generation students and those born in the U.S. Specifically, first-generation immigrant families have important personal, familial, and community assets that can facilitate growth and success in school (Alba & Nee, 1997; Jiménez & Horowitz, 2013; Portes & Zhou, 1993). On the other hand, initial newcomer ELP is, on average, lower than that of their non-newcomer EL peers (Thompson et al., 2020) and a far larger proportion of newcomer students compared to non-newcomer ELs have histories of limited or interrupted formal schooling — often due to inaccessible education in students' birth countries or lost schooling during the immigration process (Birman & Tran, 2017; Potochnick, 2018). While first-generation status and lower initial ELP both suggest a hypothesis of faster

English growth compared to that of non-newcomers, lower initial ELP might suggest longer times to proficiency, and those with interrupted schooling might have slower growth than their peers with uninterrupted schooling.

Research on factors associated with ELP growth and reclassification has, at times, incorporated variables related to newcomer status. Most directly, EL students born outside the U.S. show lower initial English proficiency levels but faster growth compared to U.S.-born EL peers (Slama, 2012). Studies also suggest that language development and reclassification occur more quickly for students who are younger upon school entry (NASEM, 2017). Taken together, these findings suggest that while newcomers' initial ELP may be lower than their non-newcomer peers, their ELP growth is likely rapid, especially for those who enter U.S. schools in early grades. We next describe the data and methods we used to answer our two research questions.

Data & Methods

Data

We drew on longitudinal student-level administrative data from an anonymous state for academic years 2013/14 through 2017/18. Descriptive statistics are provided in Table 1 for both the newcomer and the non-newcomer EL-classified samples. For our first research question, which compared newcomers to non-newcomer EL students, we limited our sample to all EL-classified students in the state (62,846 students; 199,610 student-year observations). For our second research question, which examined growth trends among newcomers only, we limited our sample to the newcomer students in the state (6,737 students; 22,927 observations). Table 2 shows the number of newcomer and non-newcomer EL students in each grade level, pooled over the observed academic years.

[TABLES 1 AND 2 ABOUT HERE]

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As described in depth below, our models estimated ELP growth rates by examining the relationship of time, measured by grade, to ELP scale scores. Our primary outcome variable for both research questions was students' scale scores on the WIDA ACCESS assessment. ACCESS is an annual English language proficiency assessment used in 40 states for the purposes of assessing students' English proficiency and their eligibility for reclassification. Specifically, it assesses students English reading, writing, speaking, and listening, providing individual subtest scores and an overall score, the latter of which we used in our analyses. ACCESS is vertically-scaled across grades K-12 allowing for the comparison of growth across grade levels (WIDA, 2021). Possible scale scores range from 100 to 600.

For research question one, our primary predictor of interest was whether a student was a newcomer. Following the federal definition for immigrant students, newcomers were defined as students born outside the U.S. who had been in U.S. schools for up to three academic years (ESSA, 2015). The state identified newcomers in their data system using a binary flag. We checked the validity of this flag against each student's date of entry into the state school system. Specifically, we removed any students with the newcomer flag if their date of entry was more than three years prior.

Our second main predictor was a variable counting years. For any student identified in the data as a newcomer, we analyzed ELP outcomes over their first four years in U.S. schools, counting from their date of entry. We chose four years because we consider these critical initial years for students first arriving in the U.S. For non-newcomers, we counted years based on year first observed in the dataset.

For research question two, our predictors of interest were student, program, and school characteristics. Student-level variables included grade of entry into U.S. schools, free or reduced

price lunch eligibility, special education status, refugee status, unaccompanied minor status, indicator variables for each of the top five language groups among newcomers in the state (Spanish, Arabic, Somali, Swahili, and Portuguese), and a variable for bilingual program enrollment.¹ School-level variables included the proportion of current and former EL students within the school and the proportion of students within the school that shared the individual's home language.

Methods

Comparing newcomer to non-newcomer English proficiency status and growth. We followed students longitudinally, documenting how ELP changed within students over time. Documenting within-student growth was critical because changing patterns of who was an EL in any given grade, due to newly arrived newcomers entering the data and reclassified students exiting the data, made raw comparisons of ELP by grade and newcomer status misleading. Table A in the appendix presents just such a raw description and is an important point of comparison to our findings from growth modeling. Specifically, raw comparisons of ELP means by grade and newcomer status suggest a persistent gap in ELP between newcomer and non-newcomer ELs of between .4 and .8 standard deviations (SD) depending on the grade level.

Trying to understand how newcomers' English language development compares to that of non-newcomers poses some complex questions, especially about whose ELP growth newcomers' growth should be compared to. We argue that, for a given newcomer student, the most appropriate comparison is a non-newcomer EL student enrolled in the same grade level. This approach directly considers how the characteristics and needs of newcomers may differ from those of non-newcomers within the same classrooms and grades; thus, results have direct application to policy and instruction. In effect, this means that for newcomer students who, for

example, entered U.S. schools in 4th grade, we compared their ELP growth from 4th to 7th grade to that of other EL students who were also advancing from 4th to 7th grade but who were not newcomers.

We employed 3-level growth models to examine student ELP initial status and growth, with timepoints (level 1; N=238,592) nested in students (level 2; N=80,770) nested in schools (level 3; N=992). ELP_{tij} represents a time-specific ELP score in time t for student i in school j . Our final full growth model for research question one, which compared newcomers' English proficiency status and growth to that of non-newcomers was:

Level 1:

$$ELP_{tij} = \pi_{0ij} + \pi_{1ij}year_{tij} + \pi_{2ij}year_{tij}^2 + e_{tij}. \quad (1)$$

Level 2:

$$\begin{aligned} \pi_{0ij} &= \beta_{00j} + \beta_{01j}NEW_i + \beta_{02j}EGRADE_i + \mathbf{B}_{0Xj}\mathbf{X}_i + r_{0ij} \\ \pi_{1ij} &= \beta_{10j} + \beta_{11j}NEW_i + \beta_{12j}EGRADE_i + \mathbf{B}_{1Xj}\mathbf{X}_i + r_{1ij} \\ \pi_{2ij} &= \beta_{20j} + \beta_{21j}NEW_i + \beta_{22j}EGRADE_i + \mathbf{B}_{2Xj}\mathbf{X}_i \end{aligned} \quad (2)$$

Level 3:

$$\begin{aligned} \beta_{00j} &= \gamma_{000} + \gamma_{001}PropEL_j + \gamma_{002}PropLang_j + u_{00j} \\ \beta_{10j} &= \gamma_{100} + \gamma_{101}PropEL_j + \gamma_{102}PropLang_j + u_{10j} \\ \beta_{20j} &= \gamma_{200} + \gamma_{201}PropEL_j + \gamma_{202}PropLang_j \\ \beta_{01j} &= \gamma_{010} \\ \beta_{11j} &= \gamma_{110} \\ \beta_{21j} &= \gamma_{210} \\ &\dots \end{aligned} \quad (3)$$

Variance component specification:

$$e_{tij} \sim N(0, \sigma_{tij}^2), \quad \mathbf{r}_{ij} \sim MVN(\mathbf{0}, \mathbf{T}_\beta), \quad \mathbf{u}_j \sim MVN(\mathbf{0}, \mathbf{T}_\gamma) \quad (4)$$

All analyses were conducted using Stata version 15; growth models were run using the 'mixed' command. We began with an unconditional model and built the model up based on model fit and theory. This allowed us to examine how much variance in initial ELP status and growth was

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explained at the school level (school intercept and school slope interclass correlations [ICCs] respectively) and how this changed as we added covariates. Importantly, these analyses are descriptive; differences in newcomer and non-newcomer growth rates are not attributable to newcomer status.

At level 1, $year_{tij}$ is a variable that counts academic years as students progress through school. As stated above, for newcomers, we counted students' first four academic years in the U.S. For other EL-classified students, we count four years consecutively, beginning in students' first observed year of data regardless of what grade they were in during that year. $year_{tij}$ counts 0-3 rather than 1-4 for ease of interpretation, with the intercept centered at the first timepoint. $year_{tij}^2$ represents years squared, allowing ELP to change nonlinearly with time.

Level 2 represents the student level and includes our primary predictor of interest, *NEW*, a binary variable indicating whether the EL student was a newcomer student during the time period examined. To account for differences in growth by grade we included an entry grade variable, *EGRADE*, as a level-2 predictor of both the intercept and slope. This variable is defined as newcomers' entry grade into U.S. schools, and non-newcomers' first observed grade in the dataset. By including this variable as a predictor of both intercept and slope, we avoided comparing newcomers' ELP to non-newcomers in different grade levels. Instead, our model compares newcomer student ELP status and growth to that of non-newcomer ELs who were advancing through the same grade levels.

Our final model also included a set of additional student-level predictors, represented by *X* in the Level 2 equations, including free/reduced lunch eligibility, disability identification, refugee and unaccompanied minor statuses, home language indicators for the top five EL language groups, and an indicator for whether a student was enrolled in a bilingual program. All

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variables in level 2 were treated as fixed at level 3. The primary coefficients of interest are β_{01j} , which represents the relationship of being a newcomer with ELP level in the first year, and β_{11j} plus β_{21j} , both of which quantify the relationship between being a newcomer and ELP growth by year.

Level 3 represents the school level and accounts for the fact that students are clustered within schools. We included two variables at this level that theory suggests may be linked to faster or slower ELP growth (Thompson et al., 2020): *PropEL_j*, the proportion of the school comprised of current and former EL students, and *PropLang_j*, the proportion of the school that spoke the same language as student *i*. We present findings both graphically and in table form (Singer & Willett, 2003).

Robustness and sensitivity checks. The model above represents our main model. However, there are some limitations to this method. The method compares newcomers' *initial* English proficiency growth to other EL students' *continuous* growth. We call this the *comparability* dilemma. Specifically, while the newcomers in a given class have, by definition, been in U.S. schools for three or fewer years, the other EL-classified students have likely been learning English in U.S. schools since kindergarten. While this does not invalidate the usefulness of knowing how newcomers' English growth compares to their peers in their same grade levels, an alternative question might relate to how newcomers' initial English growth compares to non-newcomer ELs' initial English growth.

A second dilemma of comparing newcomer growth to that of non-newcomer ELs is that each year some proportion of EL students are reclassified, at which point they no longer take ELP assessments (and, therefore, we cannot examine their ELP growth). Thus, when we compare newcomer growth to the growth of non-newcomer EL students, we are examining the

ELP growth of only non-reclassified students in each group. Furthermore, cumulative reclassification rates are higher among non-newcomers compared to newcomers. For example, in the sixth grade, 36% of the non-newcomer sample of students ever observed in the data as EL has been reclassified while the corresponding figure for newcomer students is 18%. This may bias our estimates of ELP growth since a non-random set of students in both the newcomer and non-newcomer groups exit the sample in each year. This dilemma, which is present in much research on ELs (Hopkins et al., 2013), we call the *reclassification* dilemma.

Because of the *comparability* and *reclassification* dilemmas, our study employed a wide set of sensitivity checks to see if our findings were vulnerable to different ways of conceptualizing the control group or of modeling growth. We describe some of the main sensitivity checks below and present their results in the appendix. Importantly, all results from our sensitivity checks aligned with those from our main model indicating robustness of our main findings.

Early grade analyses among non-reclassifiers. A first sensitivity check, which attempted to minimize biases created by both dilemmas, limited the sample to students in grades two through four and removed any students from the sample who reclassified during the grades examined. This allowed us to examine ELP growth of newcomers and non-newcomers without growth trajectories being biased by students leaving the analytic sample as they were reclassified. We limited the analyses to early grades because the characteristics of students, especially non-newcomer students, who are not reclassified become increasingly different from those of students who are reclassified as grade level increases (Hopkins et al., 2013; Saunders & Marcelletti, 2012). While some differences remained between those who are reclassified and those who are not in both the newcomer and non-newcomer groups in this sensitivity check, the

differences were considerably smaller than in later grade levels.² A weakness of this approach, however, is that newcomer characteristics, including their educational experiences, strengths, and needs, differ systematically by grade of entry (Thompson et al., 2020), so limiting the sample to only those newcomers who we observe in early- to mid-elementary grades limits the generalizability of the findings.

Grade-band analyses. Our main analyses pooled students across all grade levels but accounted for differences by grade. To further explore whether growth trajectories differed at different grade spans we ran a set of sensitivity checks that separated out the samples by grade span. Specifically, we ran separate models for those students first observed in grades K-2, 3-5, 6-8, and 9-12. The early grade band, K-2, furthermore, minimized the *comparability* and *reclassification* analyses by focusing on initial growth of both newcomer and non-newcomer students, grades when reclassification rates remain relatively low in both grades.

Alternative state. As a final sensitivity check, we ran our analyses using data from an alternate state. Here we were interested in whether the patterns we observed regarding newcomer and non-newcomer ELP growth were paralleled in a separate state with a different newcomer population and a different ELP assessment, ELPA21. Of note, the ELPA21 assessment is vertically scaled within grade bands, not across K-12, so we limited the analysis to single vertically scaled bands. In addition, we only had three years of consecutive data, so our analyses were across three, rather than four years of growth.³ We ran the analyses for different grade bands but show the results for the 6-8 grade band (results were comparable across grade bands). These analyses help assess the extent to which growth patterns are specific to a particular newcomer population, or a single assessment scale or set of IRT assumptions.

Factors associated with English proficiency status and growth among newcomers.

For research question two, we turned to examine what factors predicted initial English proficiency level and growth among newcomers. The main model for this research question paralleled that for research question one with timepoints (Level 1, N=22,911) nested within students (Level 2, N=10,894), nested within schools (Level 3, N=778), but the sample included only newcomers, rather than newcomers and other EL students. In addition, level 2 did not include a variable for whether the student was a newcomer. The coefficients of interest were those associated with level 2 and 3 covariates, including home language, grade of entry, free/reduced price lunch status, refugee and unaccompanied minor statuses, and disability identification. After running the full model, we plotted ELP trajectories for students with different values on our covariates of interest in order to illustrate the association of these factors with initial ELP level and growth. To do so, for each predictor of interest we set all other covariates to their sample means and predicted initial level and growth over time based on different prototypical values of the predictor of interest (Singer & Willett, 2003).

Findings

Comparing ELP Status and Growth for Newcomer and Non-newcomer EL Students

Newcomer students had significantly lower ELP the first year that they entered schools compared to their non-newcomer counterparts in the same grades; however, they experienced faster ELP growth. This is true in both a base model with no covariates, and in a full model that included student and school control variables (Table 3). Figure 1 presents full model results visually. By year four, newcomer students were estimated to have caught up with, and have slightly higher ELP levels, on average, compared to the non-newcomer EL students in their same grade levels, accounting for grade, student, and school covariates.

The differences in average growth between newcomers and non-newcomer ELs are meaningful in magnitude. One way of interpreting the magnitude of the difference in growth rates is examining the difference in initial growth (from time zero) in standardized terms. To do so, we divide the coefficient estimating the linear difference between newcomer and non-newcomer growth by the standard deviation (SD) of the student-level growth parameter (i.e., the square root of the student-level random slope variance). This calculation indicates that in the unconditional model, newcomer ELP growth is .63 SD faster than that of non-newcomers. In the conditional model where we control for student and school covariates, this standardized difference is even larger: 1.39 SD. There are several caveats to consider when interpreting these results. First, the quadratic term shows that newcomers' growth slows more quickly than that of non-newcomers (see Figure 1). Second, empirical benchmarks for growth among ELs are not readily available. Nonetheless, this difference in growth when newcomers first arrive in U.S. schools is very substantial and of practical significance.

For both groups of students, ELP growth was predicted to slow over time. Between year one and year two, for example, newcomers were estimated to grow by 40 points on the state ELP assessment, but growth slowed to 19 points between years three and four. Meanwhile, non-newcomer EL students were estimated to grow 26 points between years one and two, slowing to eight points from years three to four.

[FIGURE 1 & TABLE 3 ABOUT HERE]

In the unconditional model, school slope intraclass correlation coefficients (ICCs) showed that 35% of the variation in ELP growth between newcomers and non-newcomers was explained at the school level (Table 3). This increased to 57% in the full model, suggesting that

there is considerable variation in ELP growth between schools after controlling for key observable student and school covariates.

Results also indicated that a driver of newcomers' faster growth is their lower initial ELP level. The student-level correlation between initial status and the linear slope parameter was $-.815$ (Table 3 reports random effects as variances and covariances, but these can be converted to SDs and correlations). This estimate indicates that students with lower initial ELP tended to grow faster regardless of whether they are newcomers.

Robustness and sensitivity checks. To determine the robustness of these results and address complexities of understanding the relative growth of newcomers, we conducted several checks as described in the methods section. Results from these checks are shown visually in sets of panels in Figure 2 (model results are in Table B in the appendix). Across these alternate samples and models, results are consistent with our main findings. Analyses of growth among non-reclassifiers (Panel A in Figure 2) and among students separated by grade band (Panels B1 to B4), all show parallel findings of lower initial ELP status among newcomers with faster growth that results in equally high or higher ELP levels by the end of four years. Results were also consistent in the models using data from a different state (Panel C). The statistically-significant pattern of lower initial ELP and faster ELP growth among newcomers remained. However, we did not observe newcomer students catching up or surpassing non-newcomer ELs. This is likely due, at least in part, to the analyses being limited to three, instead of four, years of growth.

[FIGURE 2 ABOUT HERE]

Factors Associated with Variation in ELP among Newcomer Students

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As demonstrated in the panels in Figure 3 and Table C in the online appendix, a variety of factors were associated with differences in ELP among newcomer students. As above, these results do not imply causal relationships. Instead, they reflect observed relationships between a particular characteristic and student ELP status and growth, once accounting for other student and school covariates.

[FIGURE 3 ABOUT HERE]

Several student-level demographic factors—specifically, entry grade, socioeconomic status, home language, disability, and refugee and unaccompanied minor statuses—had a significant relationship to ELP level and growth. The largest differences related to age of entry and disability status. Newcomer students who entered school at lower grade levels had lower ELP in their first year, but their ELP grew more quickly than newcomer students who entered at higher grade levels (Panel A in Figure 3). Newcomer students ever identified as having a disability also had lower ELP in their first year and significantly slower growth than newcomers without disabilities (Panel C). Smaller differences related to free or reduced-price lunch status (Panel B), refugee status (Panel D), and home language (Panel E). Newcomer students who qualified for free or reduced-price lunch had lower first-year ELP and somewhat slower growth than other newcomer students, but these differences were small. Newcomer students who were refugees or who were unaccompanied minors had significantly lower ELP in their first year, but they showed faster ELP growth, on average, than other newcomers.

In comparison to the reference group (newcomers who spoke a language that is not one of the five languages spoken most frequently among newcomers), Spanish- and Arabic-speaking newcomers had lower ELP in their first year, on average, but showed faster ELP growth. Somali-speaking newcomers had lower first-year ELP and also showed slower growth than the reference

group. Swahili-speaking newcomers had lower ELP in their first year, but their ELP growth was not significantly different from the reference group. Finally, Portuguese-speaking newcomers had indistinguishable ELP in their first year, compared to the reference group, but showed faster ELP growth, on average.

Variables about the instructional program models in which newcomers participated and the peer composition of their schools revealed few differences. Specifically, newcomers who participated in a bilingual program had similar ELP growth rates compared to newcomers who were not in a bilingual program (Panel F). Similarly, newcomers showed similar ELP growth regardless of the concentration of ever-ELs within their schools (although higher concentration schools had lower first year ELP levels) and regardless of their schools' concentration of other students who shared their home language (Panels G and H).

In our unconditional model, 38% of the variance in ELP growth for newcomer students was attributable to the school level. Including student and school covariates reduced this ICC to 18%, suggesting that student, program, and school characteristics explain some, but not all, of the variation in ELP growth observed across schools. This ICC is considerably lower than when looking at growth for all ELs as in research question one, indicating that less of the growth for newcomers, compared to all EL students, may be attributable to schools. Nonetheless, these findings suggest that schools may play an important role in supporting the English language growth of their non-newcomer and newcomer EL students.

Discussion

The backgrounds and linguistic and academic skillsets of EL-classified students vary widely. This diversity has direct implications for policy and practice because students with different skills and needs likely benefit from differentiated supports, services, and instructional

techniques. This study examines one important subgroup of EL-classified students, those new to the U.S. Prior research has established that newcomers themselves come from highly diverse backgrounds (Thompson et al., 2020) and that their needs often encompass those associated with their immigration experiences and adjustment to a new country with new norms and structures (Dentler & Hafner, 1997; McBrien, 2005).

We look specifically at newcomers' English language development as measured by standardized ELP assessments, as this is a key goal for and among immigrant students (ESSA, 2015) and a strong predictor of these students' schooling outcomes (Suárez-Orozco, Bang, et al., 2010). Furthermore, ELP is the primary indicator that both qualifies students for EL identification and services, and later, enables them to exit EL classification. Prior research on factors associated with English proficiency growth points to a hypothesis that newcomers may experience faster growth relative to their non-newcomer peers. This is, in part, because prior work has found that newcomers have relatively low incoming English proficiency (Thompson et al., 2020), and that students at earlier stages of English proficiency grow more quickly than those with more advanced proficiency (Goldschmidt, 2020; Kieffer, 2011; Long, 2008; Rojas & Iglesias, 2013; Saunders & O'Brien, 2006). Yet prior research has not examined newcomers' English growth specifically.

Our study confirms that newcomer EL students typically have lower initial English proficiency compared to non-newcomer ELs in the same grade levels; further, findings show that newcomers' ELP advances more quickly over time. The magnitude of this difference in growth rate is sizable. Accounting for student and school covariates, it amounts to more than a standard deviation difference when students first enter U.S. schools. These findings are robust to a diverse set of model and sample specifications, including data from a second state and data that omits

any students that are reclassified during the time period examined. A second core finding from our first research question is that newcomers' ELP growth, like that of non-newcomers, slows over time, with average estimated growth rates between their first and second years in U.S. schools that are twice that of growth rates between students' third and fourth years.

While these findings suggest important average differences between newcomers and non-newcomer EL-classified students, findings from our second question shed light on differences within the newcomer population regarding initial ELP and ELP growth. The largest differences were found by entry grade, with students coming to the U.S. in higher grades having higher initial ELP but considerably slower growth over their first four years in U.S. schools. We also found sizable differences between the ELP levels and growth of newcomers with and without disabilities. Differences across language groups were smaller but showed diverse patterns. Other factors were either not significantly related to ELP level or growth or differences were not meaningful in size.

This study cannot answer the question of why we observe faster ELP growth for newcomer students compared to non-newcomer EL students. However, findings from our analyses of growth by grade band suggest that differential growth appears to be driven, to a considerable extent, by a widely-observed phenomenon in education of rapid growth at lower proficiency levels and/or earlier grades and ages (NASEM, 2017). Interestingly, this pattern has been documented both with regard to language development (Cook et al., 2008; Genesee et al., 2006) and with regard to academic skills (Dadey & Briggs, 2012; Soland & Sandilos, 2020). Various theories addressed earlier in this paper have been put forward to explain this observed pattern, including the increasing complexity of language considered necessary to be proficient at

each grade level (NASEM, 2017), the stabilization of language acquisition at intermediate levels (Long, 2008), and issues with test scaling and test construction (Briggs, 2013).

Some degree of faster growth among newcomers persists once accounting for newcomers' lower incoming ELP levels, however. A possible explanation for newcomers' faster ELP growth may lie in these students' home language literacy levels (Dixon & Wu, 2014; Macias, 1990). Home language literacy has been linked to faster English proficiency growth (Thompson, 2017a) and newcomers who arrive in the U.S. after kindergarten have, by and large, attended school in their countries of origin (Potochnick, 2018). An additional explanation relates to newcomer students' strong connections to immigrant communities' cultures and assets (Alba & Nee, 1997; Jiménez & Horowitz, 2013), connections that have been linked to improved educational outcomes (Portes & Rumbaut, 2006; Zhou & Kim, 2006).

Regardless of the reasons, results from this study suggest that newcomers' first years in U.S. schools are a *window of opportunity* where we can expect many students' ELP to grow quickly. However, our findings about the strong role of schools in ELP growth suggests that teachers and administrators should not take rapid newcomer ELP growth for granted, but rather build on students' language skills to support their rapid growth. In addition, knowing this pattern of rapid ELP growth is useful for administrators and teachers. For example, newcomer students whose growth is slower than that of their fellow newcomer peers between their first and second year could potentially have underlying needs that should be identified and attended to.

For newcomers entering in middle and high school, growth patterns are slower. As a result, it is critical that educators not fault or otherwise pathologize students entering at higher grade levels. As shown in this analysis, such rates of growth are normative for EL-classified students from varied backgrounds. While it is critical for newcomers at the secondary level to

receive thoughtfully planned, carefully scaffolded, interactive, language-rich, and academically-rigorous instruction (Hersi & Watkinson, 2012; Kibler et al., 2015; Walqui, 2006), it is to be expected that these students will not experience the same rate of ELP growth as their younger peers.

Importantly, none of our findings suggest that academic or linguistic expectations should be lowered for any group of EL-classified students: newcomer or not. By contrast, these results add to existing research confirming students' skills and growth, including recent work indicating that EL-classified students' reading typically develops as fast or faster than non-EL students (Richardson et al., 2020), pointing to the importance of "amplifying" (Walqui & Bunch, 2019) rather than diminishing curricular quality and access for EL-classified students. Our findings also add to growing understanding that students' pace of English growth is varied and that both individual characteristics of students *and* characteristics of their schools and schooling experiences are related to their linguistic growth (Greenberg Motamedi et al., 2016; Slama et al., 2017; Thompson, 2017a; Umansky & Reardon, 2014). This knowledge can be used to inform states' English language proficiency progress indicators in their ESSA plans, as well as inform teachers' and specialists' understanding and assessment of student growth patterns.

We found that 57% of the variance in ELP growth among all ELs is explained at the school level after accounting for covariates. While this proportion dropped considerably, to 18%, when looking just at newcomer ELP growth, it still represents a considerable amount of variation in growth. Of note, the difference in the two percentages suggest that newcomer ELP growth may be more independent of school, program, and service features compared to that of non-newcomer EL students. In other words, EL supports may be particularly important for the ELP trajectories of non-newcomer EL students.

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For both groups, however, school-level variation in the programs, services, and instruction of newcomers and non-newcomers likely play an important role in influencing newcomer and non-newcomer student ELP growth. In our grade band sensitivity checks, schools explained more variation in ELP growth in higher grade bands compared to lower grade bands suggesting a larger influence of schools in the language growth trajectories of secondary, compared to elementary, school students. Existing research points to promising programs and services supporting more robust linguistic development. These include bilingual programs (Steele et al., 2017), as well as equitable course placement policies (Aguirre-Muñoz & Boscardin, 2008; Thompson, 2017b) and pedagogies designed to provide students with meaningful and rigorous access to content-area curricula (Kibler et al., 2015; Walqui & Bunch, 2019).

This study has important limitations. Among these are that we could only examine students' first four years in U.S. schools. Future research should examine longer time periods. We also only examined students' ELP growth and not students' academic, nor home language, trajectories. We had no measure of students' home language literacy levels or prior schooling experiences, yet these have been found to be critical predictors of students' ELP growth and other educational outcomes. Finally, while we were able to examine heterogeneity in newcomers' ELP as associated with a number of student and school characteristics, other characteristics are likely critical, such as those related to service and resource provision, and quality of instruction. More research is needed to better understand the relationships between particular services and newcomer students' opportunities and outcomes.

Endnotes

¹ These same student-level variables are included in the full model for research question one with minor differences. Refugee and unaccompanied minor status variables were omitted as they were not available for the full sample of ELs. Rather than grade of entry, the corresponding variable among non-newcomer ELs for research question one was the first observed grade in the dataset. Finally, the top five language groups for the combined newcomer and non-newcomer EL sample was slightly different than those among newcomers alone.

² Descriptive statistics of those who reclassified and those who did not in both the newcomer and non-newcomer groups are available on request. We also ran a parallel analysis using a sample of non-reclassifiers in grades 1-3. This further limited the differences between those who reclassified and those who did not in both the newcomer and non-newcomer groups. Results were comparable and are available on request. We present the grade 2-4 analyses in this paper as the grade 1-3 analysis had a sample that was very similar to that of our early entrants sensitivity check.

³ Because only three years of ELP assessment data are available in the second state, we estimated a linear, rather than quadratic, model.

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Table 1. Descriptive statistics of the analytic sample in their first observed year.

	Full sample	Newcomers	Non-newcomer EL students	f-test comparing means
Student level variables				
ELP (scale score)	288.69	284.35	289.21	***
Newcomer	10.72%	100.00%	0.00%	***
FRPL-eligible	79.78%	72.18%	80.70%	***
First observed grade	3.08	4.88	2.87	***
Disability flag	14.75%	1.44%	16.34%	***
Refugee flag	2.79%	16.58%	1.13%	***
Spanish L1	76.32%	52.68%	79.16%	***
English L1	4.49%	1.22%	4.88%	***
Navajo L1	1.92%	0.00%	2.15%	***
Arabic L1	1.58%	7.33%	0.88%	***
Portuguese L1	1.21%	6.17%	0.61%	***
Somali L1	1.19%	4.48%	0.80%	***
Swahili L1	0.60%	3.28%	0.28%	***
Bilingual enrollment	10.68%	7.26%	11.09%	***
School level variables				
% Ever EL	24.65%	23.70%	24.76%	***
% Same L1	23.88%	12.38%	25.26%	***
N	62846	6737	56109	

Note: EL = English learner. ELP = English language proficiency. L1 = primary language. FRPL = Free/reduced priced lunch eligibility. Newcomers are defined as students born outside the U.S., who first arrive in U.S. schools after the start of kindergarten, and who have been in U.S. schools for fewer than three full years.

*** < .05; ** < .01; * < .05; ~ < .1

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Table 2: Number of EL student-year observations, by newcomer status and grade.

Grade	All EL students	Newcomers	Non-newcomers
K	25,632	1,833	23,799
1	30,690	2,298	28,392
2	30,086	2,313	27,773
3	26,061	2,351	23,710
4	14,522	1,653	12,869
5	11,841	1,642	10,199
6	10,311	1,582	8,729
7	10,160	1,580	8,580
8	9,682	1,631	8,051
9	9,201	1,645	7,556
10	8,065	1,673	6,392
11	7,104	1,565	5,539
12	6,255	1,161	5,094
Total	199,610	22,927	176,683

Note: EL = English learner. K=Kindergarten. Sample reflects analytic sample across all years 2013/14-2017/18. Newcomers are defined as students born outside the U.S., who first arrive in U.S. schools after kindergarten, and who have been in U.S. schools for fewer than three full years.

RUNNING HEADER: NEWCOMER ELP GROWTH

Table 3: ELP growth of newcomers and non-newcomer EL students, by year, base and full models.

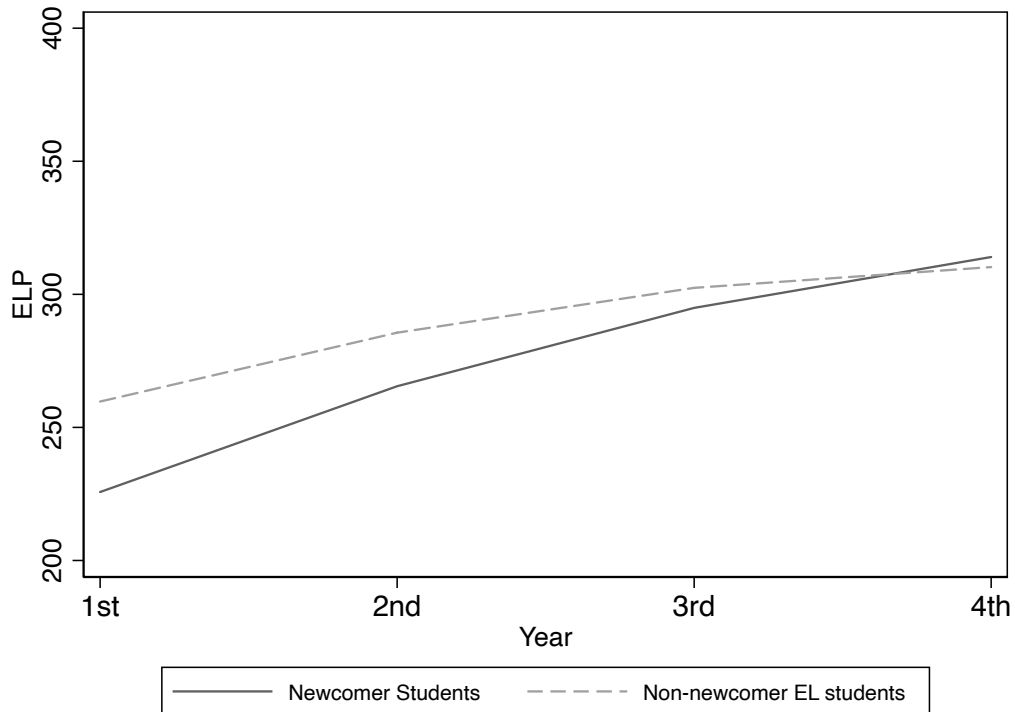
	Unconditional Model		Conditional Model	
Fixed effects				
Year	41.381	***	24.963	***
	(0.416)		(0.488)	
Year^2	-9.173	***	-3.662	***
	(0.053)		(0.062)	
Newcomer	-27.131	***	-34.000	***
	(0.739)		(0.566)	
Newcomer*Year	9.438	***	14.527	***
	(0.568)		(0.587)	
Newcomer*Year^2	0.717	***	-0.644	**
	(0.181)		(0.198)	
Random effects				
School: slope variance	118.522		148.130	
	(6.651)		(8.734)	
School: intercept variance	1942.552		2256.159	
	(101.285)		(116.412)	
School: intercept-slope cov.	-467.579		-565.081	
	(25.293)		(30.907)	
Student: slope variance	220.942		110.312	
	(2.390)		(1.796)	
Student: intercept variance	3013.700		1282.609	
	(18.202)		(8.963)	
Student: intercept-slope cov.	-738.271		-306.550	
	(5.954)		(3.617)	
Residual variance	359.388		345.074	
	(2.051)		(1.978)	
School slope ICC	0.349		0.573	
School intercept ICC	0.392		0.638	
Student covariates			X	
School covariates			X	
Log likelihood	-866,861		-838,229	
N	174,856		174,856	

Note. Standard errors shown in parentheses. Cov. = covariance. ICC = Intraclass correlation. Conditional model includes level 2 covariates (grade, free/reduced lunch eligibility, disability identification, refugee status, home language for top five language groups, and bilingual program enrollment) and level 3 covariates (proportion of the school that is ever-EL and proportion of the school that speak the student's home language). Newcomers are defined as students born outside the U.S., who first arrive in U.S. schools after kindergarten, and who have been in U.S. schools for fewer than three full years.

*** < .05; ** < .01; * < .05; ~ < .1

RUNNING HEADER: NEWCOMER ELP GROWTH

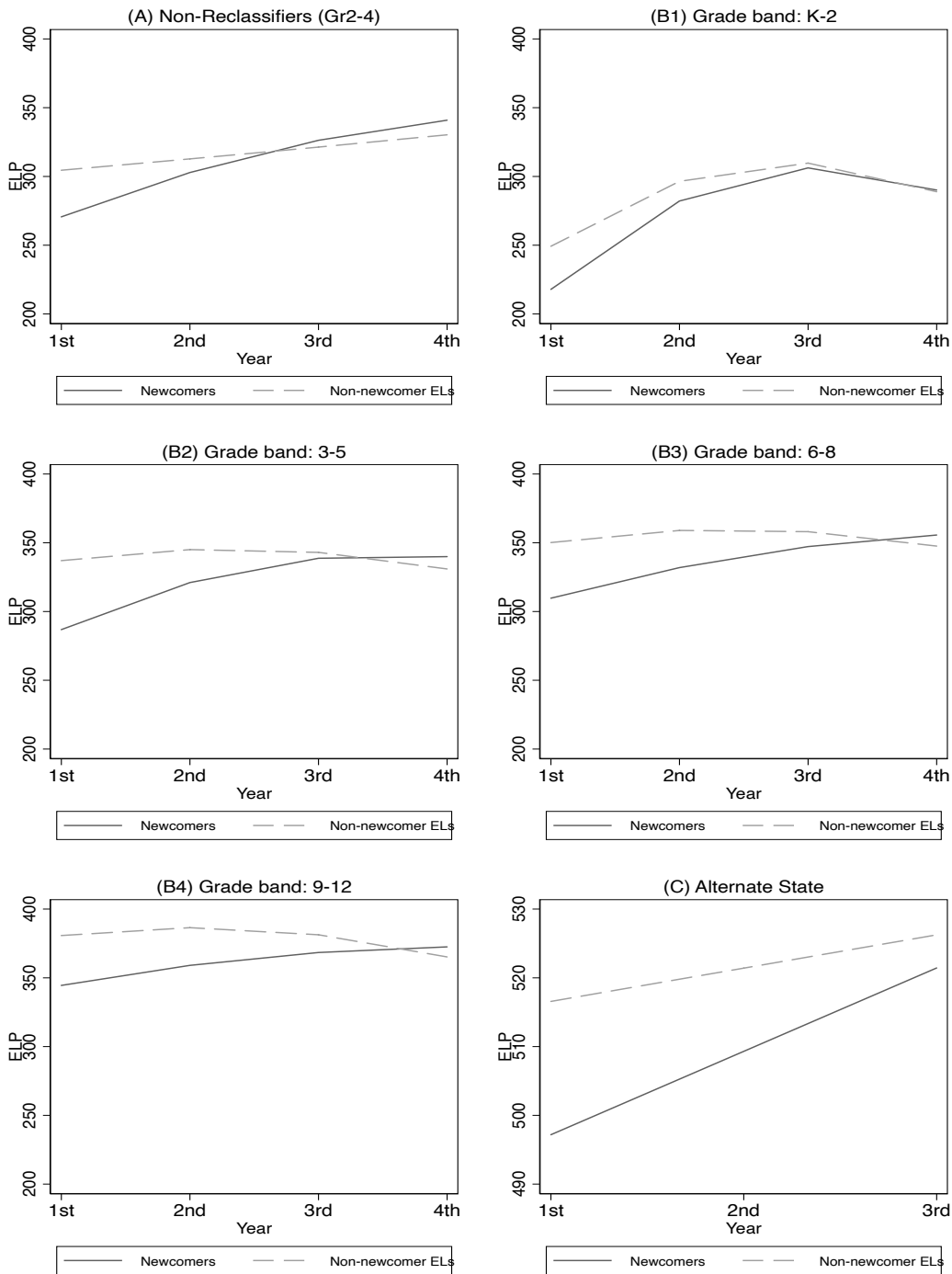
Figure 1: ELP growth among newcomers and non-newcomer EL students, by year, full conditional model.



Note. ELP = English language proficiency. EL = English learner. Newcomers are defined as students born outside the U.S., who first arrive in U.S. schools after kindergarten, and who have been in U.S. schools for fewer than three full years. Full model includes level 2 covariates (grade, free/reduced lunch eligibility, disability identification, refugee status, home language for top five language groups, and bilingual program enrollment) and level 3 covariates (proportion of the school that is ever-EL and proportion of the school that speak the student's home language).

RUNNING HEADER: NEWCOMER ELP GROWTH

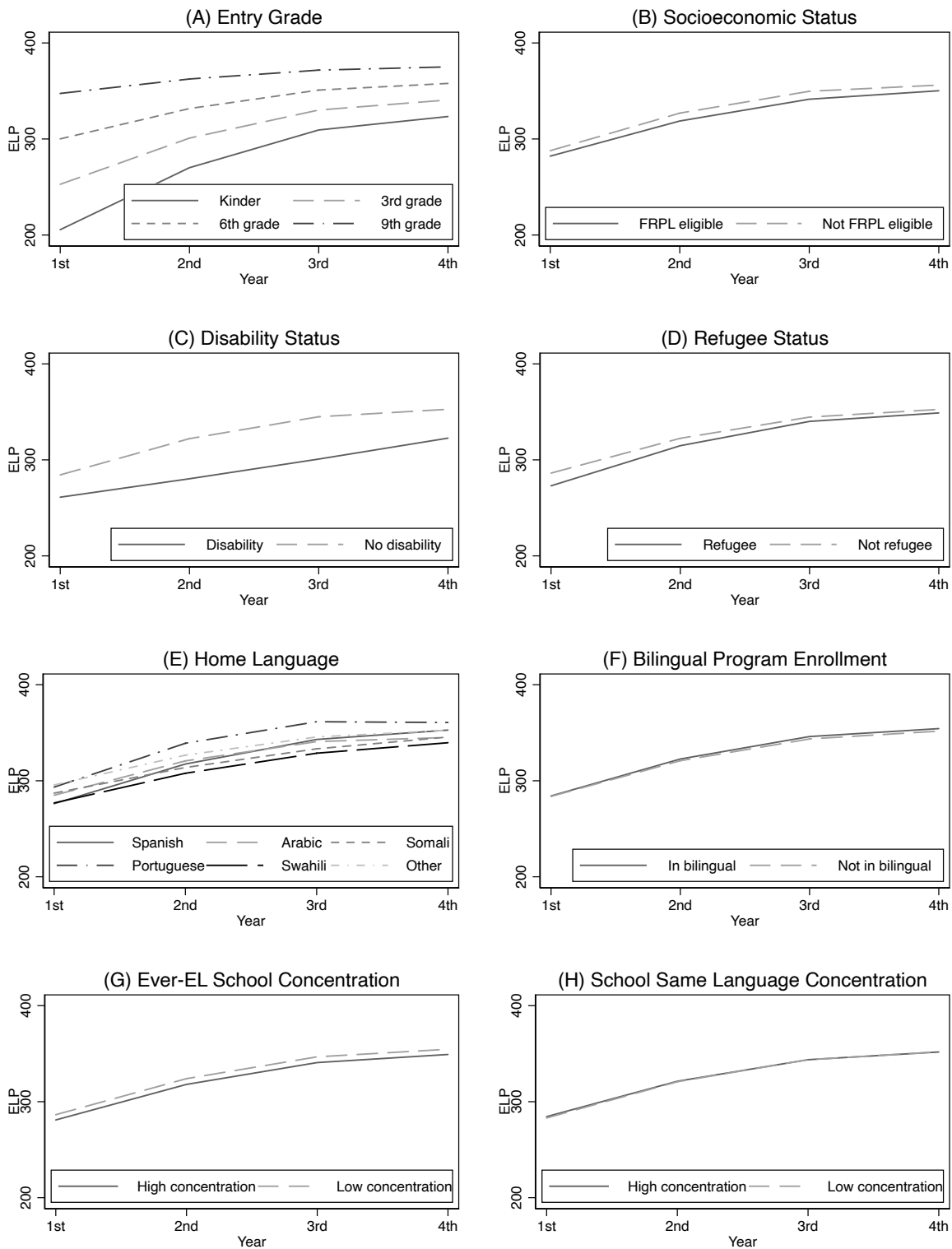
Figure 2: Sensitivity checks of ELP status and growth among newcomer and non-newcomer EL students, by year.



Note. ELP = English language proficiency. EL = English learner. All sensitivity checks reflect unconditional models. Newcomers are defined as students born outside the U.S., who first arrive in U.S. schools after kindergarten, and who have been in U.S. schools for fewer than three full years. Sensitivity check (A) removed all reclassified students from sample and examined growth between grades 2 and 4. Sensitivity check (B1-B4) split the main analytic sample up into grade bands: K-2, 3-5, 6-8, 9-12. Sensitivity check (C) used data from an alternate state (grades 6-8). Table results are available in appendix Table B.

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Figure 3: Factors associated with ELP growth by year among newcomer students, full model.



Note. EL = English learner. Graphs are created using full conditional model in which covariates are set to sample means. Newcomers are defined as students born outside the U.S., who first arrive in U.S. schools after kindergarten, and who have been in U.S. schools for fewer than three full years.

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