



Journal of International Students
Volume 16, Issue 10 (2026), pp. 269-294
ISSN: 2162-3104 (Print), 2166-3750 (Online)
jistudents.org
<https://doi.org/10.32674/pm2b3f94>



Schools as Mediators of Immigrant Children's Cognitive Performance: Young International Students

Sandra Figueiredo

*Associate Professor of Department of Psychology
Assistant Researcher of the Psychology Research Centre and of University
Centre for Research in Psychology
Universidade Autónoma de Lisboa
ORCID: 0000-0002-5152-4467
sfigueiredo@autonoma.pt*

ABSTRACT: ***Background:** Previous research has demonstrated that the availability of educational resources for nonnative children varies significantly, even among schools within the same geographical area. This study investigates whether such disparities account for notable differences in students' academic performance. **Methods:** Using a multiple-case study design, we examined the impact of school-level variables and available educational resources—particularly language proficiency testing—on the performance of 36 immigrant learners across three custom-developed tasks: verbal reasoning, vocabulary, and writing. Data were analyzed through structural equation modeling (SEM) and confirmatory factor analysis (CFA) in AMOS to assess whether students' outcomes were significantly influenced by school characteristics and the presence of targeted resources. **Findings:** The findings indicate that institutional practices and tailored resources significantly affect students' academic outcomes. Students attending schools without structured support measures and differentiated instruction for low-proficiency learners exhibited lower performance across all tasks. While nationality and mother tongue were relevant predictors when the school factor was controlled, socioeconomic status (SES) demonstrated predictive power only within the confirmatory analysis. **Contribution:** The results highlight that school-level resources exerted a stronger influence on achievement outcomes than individual demographic or linguistic characteristics, emphasizing the mediating role of schools in immigrant children's cognitive performance.*

Keywords: school resources, immigrant students, second language learners, cognitive performance, case study.

Academic Editor: Rachel Trotter

© *Author(s)*, 2026. This article is distributed under the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. <https://creativecommons.org/licenses/by/4.0/>

INTRODUCTION

Research on second language (L2) acquisition has traditionally examined factors such as age, nationality, socioeconomic status (SES), length of residence, and home language (L1) to explain variability in academic performance among immigrant students. However, the school itself, as a potential mediator of academic and cognitive development, remains underexplored, especially within Europe. Schools can act both as direct influences and as mediators of broader variables such as SES or L1 proficiency in determining educational success or failure. Much of the existing research stems from the U.S. context, where school characteristics such as location, teacher training, and institutional resources are strongly linked to academic outcomes (Gandara et al., 2003; Jackson et al., 2019; Reese et al., 2022; Rodriguez et al., 2024). However, European studies—particularly in Portugal—have only recently begun to address the school’s mediating role. Portugal has seen an unprecedented increase in immigration since 2022, including approximately 60,500 arrivals from Ukraine alone (WHO, 2023), 25% of whom are children. Many face difficulties integrating into schools, with only one-third enrolled nationwide.

Given this rapidly changing demographic landscape, Portuguese schools face pressing challenges in assessing and supporting immigrant learners. Reliable, culturally responsive diagnostic tools remain limited, particularly for evaluating linguistic and cognitive abilities. The diversity of linguistic and cultural backgrounds among these students demands institutional adaptation, including proficiency testing and differentiated pedagogical strategies.

While SES is a well-documented predictor of academic attainment (Ibáñez-Alfonso et al., 2021; Torres, 2018), recent findings indicate that immigrant students may underperform even in socioeconomically privileged schools, often due to cultural mismatch or inadequate institutional support (Alivernini et al., 2020; Astley, 2024; Ji, 2022; Trebits et al., 2021). Schools that fail to provide targeted resources for minority learners risk widening achievement gaps despite overall high resource availability (Banjong, 2015; Ee & Gándara, 2020).

Furthermore, school-level practices influence parental engagement and children’s adaptation (Chang, 2024; Chovpan, 2024; Ichikawa, 2021;

Dombinskaya, 2023). However, empirical studies in Portugal remain scarce (Campos & Peixoto, 2025).

Addressing this gap, the present research explores how school type and institutional resources moderate the relationship between cognitive performance and variables such as nationality, L1, and SES. Despite a substantial body of research on immigrant student achievement, much of the literature has focused either on individual-level determinants (such as socioeconomic status, first language, or length of residence) or on broad school effects derived from large-scale assessments (e.g., PISA). Less attention has been given to how specific school-level resources and institutional practices function as mediating mechanisms linking students' backgrounds to their cognitive and academic outcomes, particularly in European contexts undergoing rapid demographic change (Borgen, 2023; Figueiredo & Silva, 2009; 2019; Guo & Xin, 2026). Moreover, studies of international and immigrant students have often relied on standardized achievement indicators, with limited integration of fine-grained cognitive measures capturing language-related processing skills. This creates a gap in understanding how institutional environments shape not only academic attainment but also underlying cognitive-linguistic performance (Koo & Mathies, 2022; Välimäki et al., 2024).

The present study addresses these gaps by explicitly examining the mediating role of school-level resources—such as diagnostic language assessment and targeted support programs—on immigrant students' cognitive performance. In doing so, it contributes to the international literature by bridging research on migration, language acquisition, and school effectiveness while providing context-specific evidence from Portugal, a country currently experiencing significant increases in school-age immigrant populations. To provide a stronger conceptual grounding for the proposed mediation model, this study draws on three complementary theoretical perspectives. First, from an ecological standpoint, educational outcomes are shaped by interactions across multiple contextual layers, with the school representing a central mesosystem that directly structures students' learning opportunities and developmental trajectories (Figueiredo et al., 2019; Figueiredo, 2024). In this view, immigrant students' performance cannot be understood solely through individual characteristics but must be interpreted within the institutional environments in which learning occurs.

Second, research on school effectiveness has consistently demonstrated that differences in school organization, instructional quality, and resource allocation play a critical role in shaping student achievement. Within this tradition, schools are not neutral contexts but active agents that can either mitigate or amplify educational inequalities, particularly for vulnerable populations such as immigrant learners.

Third, institutional mediation frameworks provide a useful lens for understanding how school-level structures and practices function as mechanisms linking students' background characteristics (e.g., socioeconomic status, first language, or nationality) to academic outcomes. Rather than exerting only direct effects, institutional factors operate by transforming, filtering, or moderating the influence of individual-level variables.

Within this framework, the concept of school resources is defined as a multidimensional construct encompassing (a) material resources (e.g., digital tools, learning materials), (b) organizational resources (e.g., availability of diagnostic assessment procedures, support programs, and institutional policies), and (c) pedagogical resources (e.g., differentiated instruction, teacher training, and language support strategies). Particular emphasis is placed on resources specifically designed to support immigrant students, such as proficiency diagnostic tools and targeted language interventions, which are expected to play a key mediating role in shaping cognitive and academic performance. By integrating these perspectives, the present study conceptualizes schools not only as contextual variables but also as central mediating structures in the relationship between immigrant students' backgrounds and their learning outcomes.

This study adopts a multiple-case comparative design in which schools are conceptualized as distinct institutional contexts (cases). While the design is case-oriented, the analytical strategy is primarily quantitative, allowing for systematic comparison across cases through statistical modeling. This approach enables the examination of how differences between school environments relate to variation in immigrant students' performance. Each represents a distinct institutional environment varying in available resources, teacher training, and support programs for nonnative students. The case is therefore defined as the institutional configuration and pedagogical environment of each participating school. The selection of schools reflects both representativeness (typical Portuguese urban schools with immigrant populations) and contrast (variation in resource availability), aligning with the logic of instrumental case study design (Stake, 1995).

Building on the theoretical assumptions outlined above, this study aims to examine how institutional factors—specifically school-level resources and practices—mediate the relationship between immigrant children's background variables (first language - L1, nationality, and socioeconomic status) and their cognitive performance in language-based tasks.

Hypotheses

It was hypothesized that differences in school environments, particularly in terms of the availability and quality of resources, significantly influence the cognitive performance of immigrant students.

Cognitive performance encompasses a broader range of age-related skills, including memory, language, attention, and processing speed. These cognitive and academic competencies are intrinsically linked, as cognitive readiness supports and predicts academic success. The development and efficiency of cognitive functions provide a foundational explanation for individual variability in school performance (Gu, 2018; Pot et al., 2018). School performance is linked here to academic performance as a concept that pertains to specific competencies evaluated within the school curriculum and reflects the outcomes expected of all students—regardless of whether they are immigrants or native-born—according to their respective grade levels.

METHOD

The mediation model tested in this study conceptualizes school-level resources as an intervening mechanism through which individual background variables influence cognitive performance. This allows us to move beyond direct-effect interpretations and to examine how institutional contexts and school resources transform the impact of students' characteristics.

The variable "school resources" was operationalized as a composite indicator reflecting the availability of institutional support for immigrant students across participating schools. This included:

(1) diagnostic resources – presence or absence of formal language proficiency assessment procedures upon school entry;

(2) Support programs – availability of structured support measures for nonnative students (e.g., language support classes, individualized learning support);

(3) Pedagogical resources – use of differentiated instruction and adapted teaching strategies targeting students with low proficiency in Portuguese;

(4) Material/digital resources – access to digital tools and learning materials supporting language acquisition.

Each school was coded based on the presence and combination of these resources, allowing for comparison across institutional contexts. This operationalization follows a functional approach, focusing on the availability of support mechanisms rather than formal resource allocation alone. Using data from a subsample of 36 students drawn from a larger scientific project (N = 108) in Portugal, the study addresses the following research questions:

- To what extent do differences among schools explain variation in immigrant students' performance on verbal reasoning, vocabulary, and writing tasks?
- Do school-level resources (e.g., diagnostic proficiency tests and support programs) mediate the effects of socioeconomic status, nationality, and first language on performance?
- Which variables—individual or institutional—most strongly predict academic achievement in second language contexts?

Participants

The study involved 36 immigrant students enrolled in Portuguese schools, all of whom had European Portuguese as their second language (L2). Participants ranged in age from 7 to 17 years and represented diverse national and linguistic backgrounds. Countries of origin included Latin American nations (namely, Brazil, Colombia and Venezuela), Eastern European countries (namely, Ukraine, Russia, Moldova and Romania), Portuguese-speaking African countries (namely, Angola, Cabo Verde, São Tomé and Guiné), and Asian countries (namely, China, Bangladesh, India, Nepal and Philippines). Based on language family classification, participants' home languages were grouped into six

categories: Mandarin (Sino-Tibetan), Romance languages (mainly Spanish), Slavic languages (Ukrainian and Russian, Romaine), Portuguese-based Creoles, Indo-Aryan languages (Bangla, Hindi, Punjabi), and Afro-Asiatic languages (primarily Arabic and Farsi).

Regarding the age of onset of schooling in Portugal, participants had arrived between 2020 and 2024, referring to the 2023/2024 academic year. Socioeconomic status (SES) ranged from lower to middle levels, determined using education skills and occupation indicators of the immigrant families (parents of the children examined). Family income data were not available. Based on these criteria, participants were categorized into three SES groups. All 36 students were recruited from four public schools within the same geographical (and metropolitan) region of Lisbon, Portugal. Ethical approval for the research protocol was granted by the participating schools and parents.

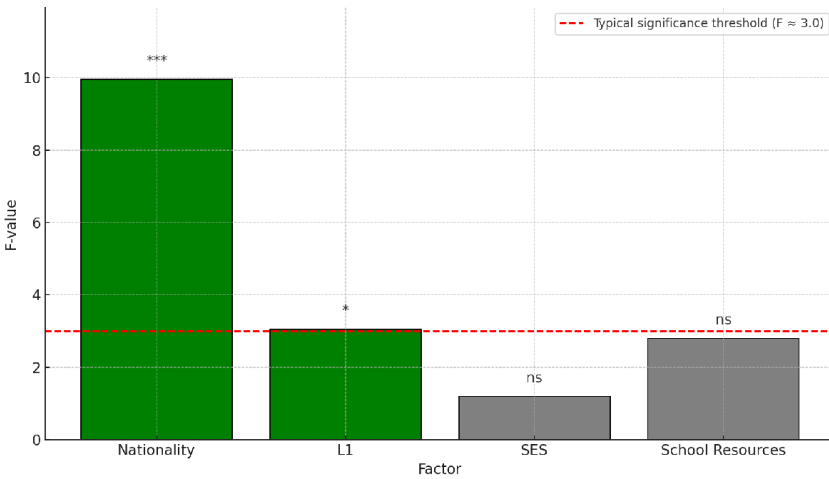


Figure 1: Effects on immigrant students’ performance (up to 17 years old)

With regard to parallel instruction, only Mandarin-speaking students received first language (L1) instruction in Portugal, which was provided as a supplementary component to the standard school curriculum. No students presented with disabilities, and the majority were right-handed (laterality was recorded). All participants attended schools within the same geographical area—Lisbon.

Regarding language proficiency, the schools reported students' proficiency levels; however, only a limited number of students had been formally assessed according to the Common European Framework of Reference for Languages (CEFR, Council of Europe, 2001). Among the 36 students, proficiency data were available for 21: 8 were classified at the A1 level, 10 at A2, 1 at B1, and 2 at B2.

A series of univariate analyses of variance (ANOVAs) were conducted to assess differences in student performance across schools based on four

hypothesized factors: nationality, first language (L1), socioeconomic status (SES), and school resources. The results showed a statistically significant effect for nationality: $F(3, 39) = 9.956, p < .001$, and for L1: $F(3, 39) = 3.050, p = .040$. However, no significant differences were found across the SES groups. This summary is presented in Figure 1.

Instruments

Three tasks were analyzed to assess verbal reasoning, vocabulary acquisition, and writing abilities. They were specifically naming, semantics and extraction. The verbal reasoning task required participants to complete sentences by interpreting, decoding, and transforming Portuguese sentences that involved both literal and nonliteral language structures. Additionally, this task included components such as cognate recognition. In particular, the naming task assessed vocabulary retention by presenting individuals with 36 pictures. The semantics task involved differentiating between synonyms and antonyms within six sentences. The extraction task assessed the ability to understand relationships among words within the same semantic family (3 items).

These assessments were administered to examine performance differences among immigrant children enrolled in regular public schools. The tasks are part of a broader battery, which will be described in more detail to provide context.

A battery of tests was developed to assess verbal behavior in a second language context (Cronbach's alpha of .76; $N = 42$ items). The test battery was implemented in digital format to ensure greater efficiency, validity, and data organization and to present the tasks in a dynamic and engaging way. The platform simultaneously generates response sheets, result summaries, and scoring forms, accompanied by a printed manual. The test was made available online in an observatory, with publication of access and usage guidelines. All data - including participants' responses and response time (measured in seconds for each task) - are securely recorded in a purpose-built database. The programming of the test was developed in ASP and dependent on the IIS server, installed on a single laptop.

The test targets the Portuguese immigrant population (learners of Portuguese as a second language) aged between 7 and 30 years and ranging from A1 to B1 proficiency levels, according to the Common European Framework of Reference for Languages (Council of Europe, 2001). In this study, we selected an interval of ages (7-17) to focus on the school age of immigrant groups.

The test instructions were formulated in accessible language, primarily to ensure comprehension among younger users (up to 12 years old). This same version was retained for older participants, as the clarity of the language aids comprehension, especially for individuals who experience difficulty processing more complex texts, regardless of age.

In the following, the advantages of the test are identified:

- Simple and quick administration
- Allows for calculation of a global score

- Identifies learners of Portuguese as a second language who are at risk of poor literacy skill acquisition
- The English version available enables individuals with no prior knowledge of Portuguese (A1 level) to navigate the test using a more widely spoken language, increasing accessibility for a broader population of users and researchers
- Scoring

The digital database functions simultaneously as both the response and scoring sheet. The test evaluates error patterns in participant responses and provides a global score based on an assessment parameter aligned with a calculated cutoff score (24.2 points). Additionally, cutoff points were established using percentiles as follows:

Percentile < 25: Negative performance (Level 0)

Percentile ≥ 25 and < 45: Minimally positive but not significant performance (Level 1)

Percentile ≥ 45 and < 75: Positive performance (Level 2)

Percentile ≥ 75 and < 95: Strong positive performance (Level 3)

Percentile ≥ 95 : Highly positive performance (Level 4)

- Rationale for Test Selection

This test battery is specifically designed for a population that may present with limited familiarity with the Portuguese alphabet. Thus, the evaluation begins with tasks aimed at fostering an understanding of letter sequencing in the new language (Test 1). Tasks were included to assess the discrimination of phonologically similar sounds (Test 2: random sound discrimination; Tests 3 and 4: nonrandom phoneme tasks). Writing difficulties, typically arising from limited exposure to the language, are addressed in Test 5. Phonetic and prosodic awareness are evaluated through alliteration, rhyme, and syllable segmentation tasks (Tests 6 and 7). Lexical knowledge is examined in Test 9, while syntactic awareness and the notion of word boundaries are tested in Test 10. Reading fluency and metacognitive reading evaluation are included in Test 11, and articulatory awareness necessary for phoneme production in Portuguese is assessed in Test 12.

Audio files used in some tasks were recorded using the computer's built-in device and were carefully edited to eliminate noise and ensure uniform pause intervals between sound sequences (whether isolated phonemes or words).

Procedure

Students were individually assessed over a period of approximately 60 minutes. Each examinee was provided with multiple booklets to facilitate visualization and response. The test battery was administered within the participating schools, following authorization from school administrators and the selection of immigrant students who met the inclusion criteria: aged 7–17 years, immigrant background or no prior formal schooling in Portugal before immigration, Portuguese language proficiency between A1 and B1 levels (as

defined by the CEFR, Council of Europe, 2001), linguistic diversity, and enrollment in public schools.

All test prompts listed were presented both on paper and on a computer screen, one at a time, enabling participants to listen to and view the stimuli. No feedback was provided following the experimental trials. Children were assessed at their schools, with a room prepared for administering the test. Educational practitioners and researchers were introduced to the scoring guidelines and accompanying rationale to address a range of coding challenges (e.g., scoring incomplete responses, handling multiple correct answers, and identifying and categorizing errors). All data were processed using SPSS software (version 29).

Data Analysis

Given the relatively small sample size ($N = 36$), the SEM and CFA analyses should be interpreted as exploratory and theory-driven rather than strictly confirmatory. To address sample size limitations, robust estimation methods were applied, and model interpretation focused primarily on the direction and consistency of relationships rather than on absolute model fit indices.

The SEM was specified based on the study's conceptual framework, with cognitive-academic performance modeled as a latent variable indicated by three observed measures (verbal reasoning, vocabulary, and extraction tasks). School-level variables were included as mediators, while nationality, first language (L1), and socioeconomic status (SES) were specified as exogenous predictors.

Given the small sample size, model complexity was intentionally constrained to ensure model identification and interpretability. The analysis focused on theoretically meaningful paths rather than on maximizing model fit. Model fit was evaluated using multiple indices (χ^2 , CFI, RMSEA), which were interpreted with caution given sample size limitations, as recommended in small-sample SEM research.

To confirm the causal relationships involved in the variability of Portuguese L2 learners' performance (referring to the three tasks) from four schools, a confirmatory factor analysis (CFA) was conducted with AMOS. The CFA and model testing were carried out according to the APA rules: Comparative Fit Index (CFI $> .95$), Non-Normed Fit Index (NNF $> .95$), Root Mean Squared Error of Approximation (RMSEA $< .06$ -. 08 or $< .10$), but considering the variability of the RMSEA (Maydeu-Olivares et al., 2024; Shi et al., 2022), and indices of χ^2 .

To complement the SEM analysis, univariate analyses of variance (ANOVAs) were conducted to examine between-group differences and calculate effect sizes across the independent variables. In addition, a one-way analysis of covariance (ANCOVA) was carried out to explore the influence of the school variable as a covariate, assessing how it moderated the impact of the other independent variables—namely, first language (L1), nationality, and socioeconomic status (SES)—on task performance.

The independent variables in the study were defined as follows: (1) school type; (2) L1; (3) nationality; (4) SES; and (5) school resources (with emphasis on those targeting immigrant students, such as the proficiency

measurement when existing in schools). The dependent variables consisted of performance scores from the three administered tasks.

Assumptions of normality were verified using the Shapiro–Wilk test, while homogeneity of variances was assessed using Levene’s test in relation to both dependent and independent variables. These preliminary checks confirmed the adequacy of the data for the chosen parametric analyses.

RESULTS

A structural equation modeling (SEM) approach was applied using AMOS (v.29) to test the central hypothesis that students’ cognitive-academic performance is significantly influenced by school-related variables—particularly the availability of institutional resources and diagnostic proficiency tools for immigrant learners.

A confirmatory factor analysis (CFA) was first conducted to verify the factorial structure underlying the three observed tasks: *verbal reasoning*, *vocabulary (naming)*, and *semantic extraction*. These were modeled as indicators of a single latent construct representing cognitive-academic performance. Given the relatively small sample ($N = 36$) and the ordinal nature of the scores, the maximum likelihood with robust standard errors (MLR) estimator was applied. This estimator was chosen because it performs more reliably with moderate departures from normality and limited sample sizes (Shi et al., 2022). Model specification and identification followed small-sample SEM recommendations (Maydeu-Olivares et al., 2024).

Model fit was evaluated through the chi-square statistic (χ^2), comparative fit index (CFI), and root mean square error of approximation (RMSEA). Given the exploratory design and limited N , thresholds were interpreted conservatively (CFI $> .90$, RMSEA $< .10$ acceptable). The model achieved the following values: $\chi^2(36) = 208.72$, $p < .001$; CFI = 1.00; RMSEA = .21. While the CFI indicates excellent fit, the RMSEA suggests a less optimal fit. However, this discrepancy is likely influenced by the small sample size and low degrees of freedom, which are known to inflate RMSEA values in small-sample SEMs. Therefore, fit indices should be interpreted with caution, with greater emphasis placed on the theoretical coherence and consistency of parameter estimates.

The standardized loadings for the three observed indicators ranged from $\lambda = .58$ to $.81$, demonstrating adequate internal coherence within the latent construct. The school-level variable emerged as a statistically significant predictor of the latent factor, confirming that institutional context mediates individual-level predictors (nationality, L1, and SES). The modeling strategy was developed following current best-practice guidelines and informed by Rosseel’s (2012) AMOS tutorials and JASP SEM documentation, ensuring that parameter estimation and model interpretation remained theoretically grounded and methodologically transparent.

Direct and Indirect Effects

The path analysis confirmed both direct and indirect effects of the school variable on students’ performance.

Direct effects: school type and resource availability directly predicted performance outcomes ($p < .05$).

Indirect (mediating) effects: school mediated the relationship between nationality and performance ($r = -.284, p = .025$); between L1 and performance ($r = -.521, p < .001$); and between school resources and performance ($r = .711, p < .001$).

Additional indirect pathways were also observed:

- Nationality → L1 → Performance ($r = .716, p < .001$)
- Nationality → SES → Performance ($r = .260, p = .046$)

Although these correlations should be interpreted cautiously due to sample constraints, their consistency across the CFA and SEMs reinforces the mediating role of schools in shaping cognitive outcomes.

Group Comparison (ANOVA Results)

A complementary series of one-way ANOVAs was conducted to examine between-school differences across the three task domains. Significant main effects were found for all measures. Pairwise comparisons revealed that students from School 1, which implemented structured proficiency diagnostics, digital learning tools, and tailored support programs for immigrant learners, consistently outperformed peers from other schools across all three tasks. Descriptive statistics are summarized in Table 1, showing the mean performance per school.

Table 1: Mean Achievement Differences across Schools

<i>Task</i>	<i>School</i>	<i>N</i>	<i>M</i>	<i>SD</i>	95%		<i>p</i>
					<i>CI Lower</i>	<i>CI Upper</i>	
Semantics	1	10	4.20	2.09	2.70	5.70	.019
	2	6	1.50	1.52	-.09	3.09	
	3	14	5.00	2.42	3.60	6.40	
	4	11	3.09	2.59	1.35	4.83	

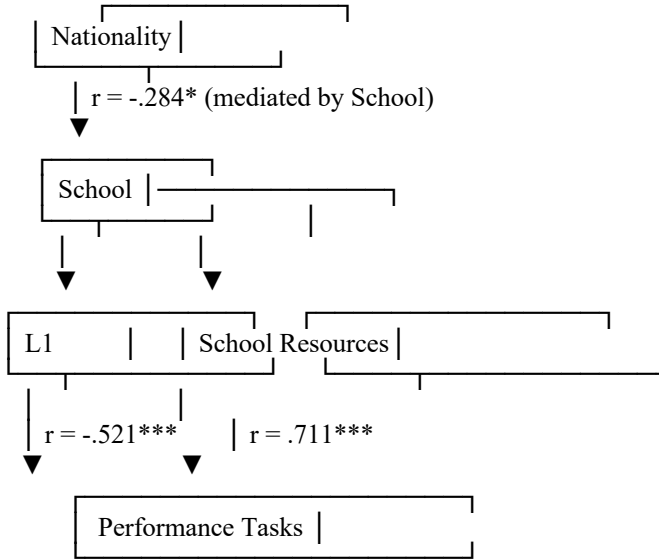
Task	School	N	M	SD	95%		p
					CI Lower	CI Upper	
Vocabulary (Naming)	1	10	11.50	3.21	9.21	13.79	.002
	2	7	6.43	3.91	2.81	10.04	
	3	14	12.64	2.84	11.00	14.29	
	4	13	10.69	3.52	8.56	12.82	
Extraction	1	10	3.00	1.63	1.83	4.17	.035
	2	7	1.71	1.60	.23	3.20	
	3	14	3.93	1.21	3.23	4.63	
	4	12	3.08	1.83	1.92	4.25	

Note. copyright of Figueiredo, S. (2017). *Learning Portuguese as a Second Language. Springer Briefs in Education. Springer*

These findings were further confirmed through ANCOVA models where school type, entered as a covariate, significantly moderated the effects of nationality and L1, but not SES, on task scores.

Model Summary and Interpretation

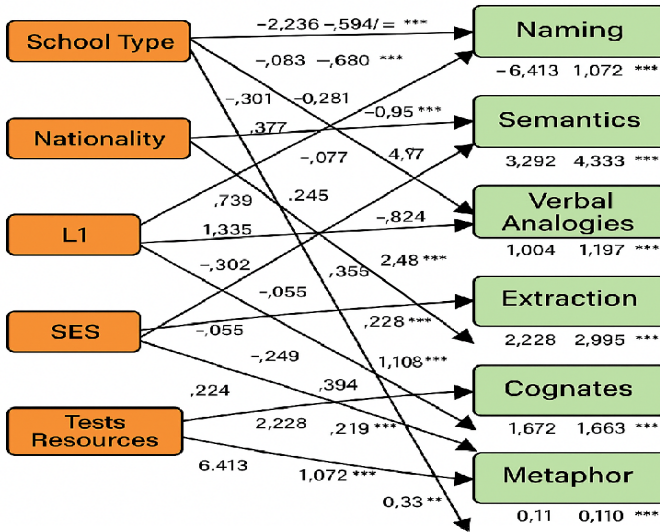
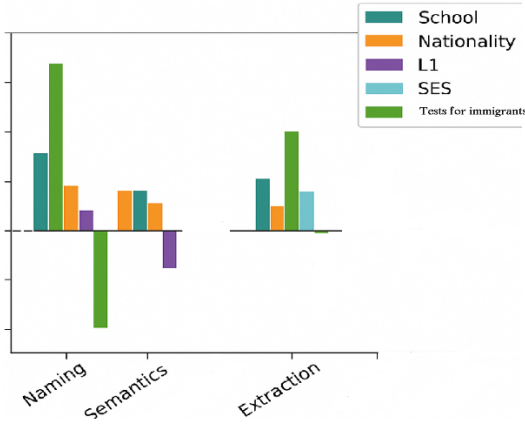
The final model (illustrated in Figure 2) identifies school type as the central mediating variable linking individual characteristics (nationality, L1, SES) and cognitive-academic performance. The results substantiate the hypothesis that institutional practices and educational resources exert stronger predictive power than demographic or linguistic factors alone. While the model's statistical fit should be considered exploratory due to the sample size and distributional assumptions, its internal logic aligns with the theoretical framework emphasizing institutional mediation. The CFA and SEM findings jointly suggest that educational inequalities among immigrant children are structurally influenced by school-level factors, confirming the relevance of institutional context in shaping learning outcomes.



Additional mediation paths: Nationality \rightarrow L1 \rightarrow Performance ($r = .716^{***}$)
 Nationality \rightarrow SES \rightarrow Performance ($r = .260^*$)
 Model Fit Indices: $\chi^2(36) = 208.72, p < .001$ CFI = 1.00 RMSEA = .21
 Significance: $p < .05$ ** $p < .01$ *** $p < .001$
 Additional mediation paths:
 Nationality \rightarrow L1 \rightarrow Performance ($r = .716^{***}$)
 Nationality \rightarrow SES \rightarrow Performance ($r = .260^*$)

Figure 2: Effects on immigrant students' performance (up to 17 years old)

Focusing on two of the four schools' environments, the results showed that the 36 participants from one of the schools (school 1) presented clearly higher scores in the three tasks, with significant differences ($p = .045$). School 1 presents more resources (proficiency diagnostic tests, digital resources and support programmes for nonnative children). Considering four school environments, the results were significant in specific tasks' performance. Figure 3 presents a summary of these results.



Note. The values refer to the estimated outputs from the CFA model.

Figure 3: Regression unstandardized values of Confirmatory Factorial Analysis: variables influence for the students’ performance in tests

In Figure 3, the estimates and regression coefficients indicate that the scores vary across the three tasks, with different expressions of the following variables: school (1-4), nationality, home language, socioeconomic status, and the presence or absence of proficiency diagnosis tests for immigrant children. These

variables appear differently for each task, explaining the significant variance in participants' performance. In the second part of Figure 3, we illustrate additional tasks from the larger study's test battery to further demonstrate how school type, L1, and other resources impact scores in cognitive tasks, which underlie the principles of academic assessments conducted in schools.

DISCUSSION

Beyond confirming the importance of school-level factors, this study contributes to the international literature on immigrant and international students by moving beyond descriptive accounts of achievement disparities. Specifically, it provides empirical support for the mediating function of institutional resources, demonstrating that school environments do not merely correlate with outcomes but actively shape the relationship between students' backgrounds and their performance. This perspective extends prior research by integrating cognitive performance measures into the analysis of school effects, offering a more nuanced understanding of how learning environments influence second language development and academic readiness. In contrast to large-scale studies that often treat school effects as contextual variables, the present study operationalizes concrete institutional practices, such as diagnostic testing and targeted support, as key explanatory mechanisms.

The results support the initial hypothesis. School environments, particularly the quality of available resources, were found to be significantly associated with the learning and inclusion of immigrant children and showed a significant relationship with cognitive performance across the three tasks administered throughout the empirical study. Additionally, mediating effects were observed in relation to other variables, including home languages of immigrant children, nationality, proficiency tests for newcomers, and socioeconomic status (considering the families of immigrant children).

Previous and solid research has conducted confirmatory factor analyses (CFA) to assess academic and cognitive differences among young immigrant participants but using different variables or less explored computed factors (den Brok et al., 2023; Danielsen et al., 2024; Figueiredo, 2022; Maydeu-Olivares et al., 2024; Shi et al., 2022; Yeh et al., 2007; Zajacova et al., 2005). Earlier studies, such as those by Guglielmi (2008) and Marsh (1998), explored the direct influence of L1 through CFA, although they did not incorporate the role of schools. Overall, evidence from CFA studies highlights that L1, cultural background, stress, socioeconomic status (SES), teacher effectiveness, and instructional quality are all critical factors in explaining achievement disparities among nonnative students. L1 and SES were included in our CFA model testing. Recent studies continue to endorse CFA as a suitable methodological approach for this research topic, especially when working with similar populations and a broader range of variables.

Large-scale studies across European contexts continue to show persistent and, in some cases, widening achievement gaps between immigrant and native students, despite overall improvements in educational systems (Guo & Xin,

2026). At the same time, research has demonstrated that these disparities are often “masked by the mean,” with substantial variation occurring within and between schools depending on institutional conditions (Borgen, 2023). In this context, the results of the present study support the argument that school-level factors should not be treated merely as background variables but as central mechanisms shaping educational outcomes. From a school effectiveness perspective, differences in institutional practices and resource allocation play a decisive role in structuring opportunities for learning. This is particularly relevant for immigrant students, whose performance trajectories are highly sensitive to the quality and responsiveness of the school environment.

The findings of the present study support our original hypothesis, confirming that (1) schools differ in their use of language assessment tools and (2) performance differences exist among immigrant children across the schools analyzed. These performance differences were further validated through CFA, which indicated that the school variable moderates the effects of other variables—particularly nationality and L1, although not SES—on task scores. Moreover, schools exerted a direct influence on participants’ outcomes. Specifically, in tasks such as picture naming, semantic associations, morphological extraction, and vocabulary assessments, the type of school emerged as a significant predictor of achievement differences among immigrant students. L1 has been widely recognized in both earlier and more recent literature as a significant factor in explaining cognitive outcomes, and it has been more extensively explored in this domain than as a predictor of academic performance among immigrant students (Bialystok & Viswanathan, 2009; Quinteros et al., 2018; Pot et al., 2018). In contrast, recent research by Jaekel et al. (2019) reported no significant effect of L1 on children’s cognitive development. However, it is important to note that this study did not control for school-level variables, which may have influenced the results.

The present study confirmed that schools with greater resources were associated with higher student performance. However, it was not merely the availability of proficiency tests that contributed to these differences; rather, the broader resources within the schools played a statistically significant role ($p < .05$). Without accounting for school-level variation, other factors showed limited explanatory power for task scores. In addition to the school variable, the availability of proficiency test resources also had a direct effect and yielded the strongest impact on student performance variance. By proficiency test resources, we refer to a battery of tests and tasks to verify the level of proficiency at the time of arrival to Portugal and school. We found no previous research about the diagnostic proficiency tests conducted by school toward immigrants to execute a comparison with our results. This is concerning because specific educational challenges, including school placement difficulties and irregular attendance among children and adolescents, are likely to emerge as a consequence of inadequate or misdirected early-stage proficiency assessments. Such issues can significantly hinder social and academic integration, particularly for children, with long-term implications for their educational and social outcomes (Choypan, 2024; Prudnikova et al., 2023; Schwartz et al., 2022).

Moreover, language is strongly related to the sense of belonging and to the importance of students' lived experiences within educational settings, including issues related to identity, belonging, and peer interaction (Ji, 2022; Koo & Mathies, 2022). These studies highlight that institutional environments influence not only academic outcomes but also students' psychological adjustment and sense of inclusion. For instance, experiences of stereotyping, marginalization, or lack of institutional support may negatively affect engagement and performance. Similarly, work focusing on emotional and social dimensions—such as migratory grief and adjustment challenges—underscores the need for schools to adopt more responsive and supportive practices (Ichikawa, 2021). Although the present study does not directly measure these dimensions, the results suggest that school-level resources may indirectly contribute to more supportive environments by structuring how students are assessed, placed, and supported academically.

The SES variable demonstrated some predictive power in confirmatory analyses, and its effect was only evident when the influence of the school was controlled. Furthermore, SES was not found to be significantly correlated with school type. These findings offer a novel contribution to the literature, as previous studies have consistently reported a linear relationship between socioeconomic status (SES) and academic achievement among immigrant students, typically associating low SES with lower academic outcomes (Ibáñez-Alfonso et al., 2021; Trebits et al., 2021). These findings are also consistent with recent analyses of school policies and institutional practices, which show that the extent to which immigrant students' needs are addressed varies considerably across schools, depending on how inclusion and support are operationalized (Välimäki et al., 2024). This finding reinforces the importance of examining not only formal policies but also the actual implementation of resources and practices at the school level. Our results suggest that factors such as school type and available resources should be accounted for within this systematic evidence. In particular, school type appears to function as a mediating variable in the relationship between SES and academic performance.

In what respects the school type, our findings align with previous research that has established a link between school type and the academic outcomes of immigrant students, within the European context (Cavicchiolo et al., 2020) and between European settings and Asian-American settings that measured the school level in the academic PISA outcomes (Masci et al., 2018). Despite little evidence on this topic, three recent studies further support this correlation, emphasizing that schools offering more comprehensive resources and student support tend to achieve better educational outcomes for minority students (Alivernini et al., 2020; Hajjoteriou et al., 2017; Triventi et al., 2022). It is also worth noting the study by Ialuna et al. (2024), which examined the dynamics within schools in Germany, highlighting the immigrant child–teacher relationship as a buffering factor that mitigates challenges related to language proficiency and academic development. That school staff investment apparently becomes more expressive as a protective factor than parental investment, which can appear to be a risk factor for immigrant children in their schooling (Kaya & Selvitopu, 2024). Conversely, some studies (Feniger & Lefstein, 2014; Zhu et al., 2024) present contrasting results,

identifying cultural background as the primary factor affecting immigrant student performance, rather than school type or structure (Triventi et al., 2022).

However, recent studies continue to overlook the importance of school-level factors in explaining cognitive outcomes among immigrant children, often presenting narratives that conflate immigrant and native student performance (Karakus et al., 2023). Furthermore, some research emphasizes the role of acculturation in cognitive development, potentially misdirecting the analysis by prioritizing cultural adaptation over structural factors such as school quality and resources (Mendoza et al., 2022).

Policy implications

The findings of this study have important implications for educational policy and school practice, particularly in systems experiencing increasing migration flows.

First, the results highlight the importance of early and systematic diagnostic assessment. As suggested by the mediation model, schools that implement structured proficiency assessment are better able to identify students' needs and provide appropriate support, thereby reducing achievement gaps.

Second, the study underscores the need for targeted and sustained support programs, including language instruction, individualized learning pathways, and continuous monitoring. These practices are essential to counteract structural inequalities identified in large-scale studies.

Third, the findings point to the importance of creating inclusive and responsive school environments, where students' experiences and identities are acknowledged. Research on international students has shown that institutional recognition and support play a key role in fostering engagement and academic success.

Finally, from a policy perspective, the results suggest that resource allocation should be strategically aligned with student diversity rather than uniformly distributed. Schools serving immigrant populations require specific investments in diagnostic tools, teacher training, and pedagogical support systems to effectively address diverse learning needs.

Limitations

The findings should be interpreted with caution due to the limited sample size, which constrains the generalizability and stability of parameter estimates. Rather than providing definitive evidence, the results should be understood as indicative of underlying patterns that warrant further investigation in larger samples. The findings suggest that schools with structured diagnostic assessment and targeted support mechanisms may be better equipped to support immigrant students' cognitive and academic development. However, these implications should be interpreted as context-specific and exploratory, given the limited sample and case-based design of the study.

Conclusion

The present study contributes to the ongoing debate by emphasizing that achievement disparities among nonnative learners should be examined with careful consideration of both school type and the potential cultural dissonance experienced by immigrant and minority students within host educational systems. Importantly, there is an urgent need to develop assessment tools specifically designed for minority populations in European schools—particularly in non-English-speaking countries such as Portugal—to ensure valid, equitable evaluations that are responsive to the cognitive demands faced by today’s immigrant youth. Moreover, these findings offer valuable insights for ongoing research in Portugal and across Europe, where there remains a limited understanding of the distinct challenges faced by immigrants, refugees, and asylum-seekers. The current lack of comprehensive data—particularly regarding the cognitive profiles and learning needs of refugee populations—highlights a critical gap that this study begins to address.

Importantly, this study advances current research by demonstrating that institutional resources should not be treated as secondary contextual factors but as central mechanisms in explaining immigrant students’ performance. By empirically modeling the mediating role of schools and incorporating cognitive-based assessment, this research offers a more integrative framework for understanding educational inequalities among immigrant learners. This approach has implications for both future research and policy, particularly in emerging immigration contexts where educational systems are still adapting to increasing diversity.

Funding: This work was funded by national funds through FCT - Fundação para a Ciência e a Tecnologia – Psychology Research Centre (CIP) as part of the University Research Center in Psychology (CUIP) - Ref^o UID/06317/2023; DOI <https://doi.org/10.54499/UID/06317/2025>

Institutional Review Board Statement: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The Ethics Committee of the Psychology Research Centre (CIP) of Universidade Autónoma de Lisboa granted approval, as well as the Foundation for Science and Technology.

Informed Consent Statement: The consents were delivered and ensured the anonymous principle of data collection, treatment and dissemination (for academic purposes only). All the participants agreed with the consent statement.

Data Availability Statement: Data generated and analyzed during this study are included and clearly identified in this article.

Acknowledgments: Administration Board and CIP of UAL.

Conflicts of Interest: The authors declare no conflicts of interest.

REFERENCES

- Alivernini, F., Cavicchiolo, E., Manganelli, S., Chirico, A., & Lucidi, F. (2020). Students' psychological well-being and its multilevel relationship with immigrant background, gender, socioeconomic status, achievement, and class size. *School Effectiveness and School Improvement*, 31(2), 172-191. <https://doi.org/10.1080/09243453.2019.1642214>
- Astley, M. (2024). Cross-Cultural Challenges Faced by International Students: A Case Study of Indian Postgraduate Students at a London-Based Business School. *Journal of International Students*, 14(4), 971-988. EJ1445767
- Banjong, D. N. (2015). International students' enhanced academic performance: Effects of campus resources. *Journal of International Students*, 5(2), 132-142. <https://doi.org/10.32674/jis.v5i2.430>
- Bayona-i-Carrasco, J., & Domingo, A. (2021). School segregation of migrants and their descendants in a dual school system: The case of Barcelona. *Population, Space and Place*, 27(8), e2446. <https://doi.org/10.1002/psp.2446>
- Bialystok E., & Viswanathan, M. (2009). Components of executive control with advantages for bilingual children in two cultures. *Cognition*, 112(3), 494–500. <https://doi.org/10.1016/j.cognition.2009.06.014>
- Borgen, S. T. (2023). Masked by the mean: immigrants in school and differential effects on student achievements. *European Sociological Review*, 39(3), 333-351. <https://doi.org/10.1093/esr/jcac035>
- Borrelli, L., Pinkerton, P., Safouane, H., Jünemann, A., Götttsche, S., Scheel, S., & Oelgemöller, C. (2022). Agency within mobility: Conceptualizing the geopolitics of migration management. *Geopolitics*, 27(4), 1140-1167. <https://doi.org/10.1080/14650045.2021.1973733>
- Bradlow, A. R. (2022). Information encoding and transmission profiles of first-language (L1) and second-language (L2) speech. *Bilingualism: Language and Cognition*, 25(1), 148-162. doi:10.1017/S1366728921000717
- Campos, M. L., & Peixoto, F. (2025). Relating differently: Assessing and comparing associations between social and affective adjustment factors in immigrant and non-immigrant students. *British Journal of Educational Psychology*. <https://doi.org/10.1111/bjep.12774>
- Cavicchiolo, E., Manganelli, S., Bianchi, D., Biasi, V., Lucidi, F., Girelli, L., & Alivernini, F. (2023). Social inclusion of immigrant children at school: The impact of group, family and individual characteristics, and the role of proficiency in the national language. *International Journal of Inclusive Education*, 27(2), 146-166. <https://doi.org/10.1080/13603116.2020.1831628>
- Chang, S. (2024). Enrichment, empowerment, and emancipation: Chinese and Latinx immigrant parental investment in US bilingual education. *International Multilingual Research Journal*, 18(4), 327-346. <https://doi.org/10.1080/19313152.2023.2298060>
- Chovpan, G. (2024). Parental uncertainty in plans and education of Ukrainian refugee children in European countries: a pilot study introduction.

- ScienceRise: Pedagogical Education*, 58(1). 10.15587/2519-4984.2024.296502
- Danielsen, A. G., Kristensen, S. M., Larsen, T. M. B., & Urke, H. B. (2024). Positive Youth Development in Norwegian Upper Secondary: The Impact of Sex, Socioeconomic Status, and Immigrant Background on the Developmental Trajectories of Academic Initiative, Academic Self-efficacy, and Grade Point Average. *Addressing Social Justice: A Positive Youth Development Approach*. <http://dx.doi.org/10.55669/oa311009>
- De Angelis, G. (2021). *Multilingual testing and assessment* (Vol. 151). Multilingual Matters.
- den Brok, P., van Tartwijk, J., & Mainhard, T. (2023). Effective interpersonal relationships: On the association between teacher agency and communion with student outcomes. In R. Maulana, M. Helms-Lorenz, and R. Klassen (Eds.), *Effective Teaching Around the World: Theoretical, Empirical, Methodological and Practical Insights* (pp. 489-507). Springer.
- Dombinskaya, N. (2023). Ukrainian Parents' Engagement with Czech Public Schools: Challenges and Roles for Parents. *Studia Paedagogica*, 28(2), 97-118. <https://doi.org/10.5817/SP2023-2-5>
- Ee, J., & Gándara, P. (2020). The impact of immigration enforcement on the nation's schools. *American Educational Research Journal*, 57(2), 840-871. <https://doi.org/10.3102/0002831219862998>
- Feniger, Y., & Lefstein, A. (2014). How not to reason with PISA data: An ironic investigation. *Journal of Education Policy*, 29(6), 845-855. <https://doi.org/10.1080/02680939.2014.892156>
- Figueiredo, S. (2017). *Learning Portuguese as a Second Language*. Springer Briefs in Education. Springer.
- Figueiredo, S., & Silva, C. (2009). Cognitive differences in second language learners and the critical period effects. *L1 – Educational Studies in Language and Literature*, 9(4), 157-178. <https://doi.org/10.17239/L1ESLL-2009.09.04.05>
- Figueiredo, S. (2022). Achievement of Two Cohorts of Immigrants: Cognitive Mapping Changes and the Country of Origin as Moderator. *Journal of Psycholinguistic Research*, 51 (6), 1231–1245. 10.1007/s10936-022-09883-7
- Figueiredo, S. (2019). Competition Strategies during Writing in a Second Language: Age and Levels of Complexity. *Languages*, 4(11), 1-13. <https://doi.org/10.3390/languages4010011>
- Figueiredo, S., Brandão, T., & Nunes, O. (2019). Learning styles determine different immigrant students' results in testing settings: relationship between nationality of children and the stimuli of tasks. *Journal of Behavioral Sciences*, 9(12), 1-10. <https://doi.org/10.3390/2Fbs9120150>
- Figueiredo, S. (2024). Bullying and victimization in schools: causal relationship between adolescent disruptive behavior, sleep schedules, and extended school hours. *Psychol. Sch.* 61, 43–66. doi: 10.1002/pits.23029

- Gandara, P., Rumberger, R., Maxwell-Jolly, J., & Callahan, R. (2003). English Learners in California Schools: Unequal resources, Unequal outcomes. *Education policy analysis archives, 11*, 36.
- Gu, Y. (2018). Cognitive academic language learning approach (CALLA). *The TESOL encyclopedia of English language teaching, 2*(4), 1-6.
- Guglielmi, R. S. (2008). Native language proficiency, English literacy, academic achievement, and occupational attainment in limited-English-proficient students: A latent growth modeling perspective. *Journal of Educational Psychology, 100*(2), 322-342. <https://psycnet.apa.org/doi/10.1037/0022-0663.100.2.322>
- Guo, Q., & Xin, X. (2026). Larger immigrant-native academic achievement gaps in EU countries: A study of the PISA assessment from 2006 to 2022. *Studies in Educational Evaluation, 88*, 101556. <https://doi.org/10.1016/j.stueduc.2025.101556>
- Hajisoteriou, C., Karousiou, C., & Angelides, P. (2017). Successful components of school improvement in culturally diverse schools. *School Effectiveness and School Improvement, 29*(1), 91–112. <https://doi.org/10.1080/09243453.2017.1385490>
- Ichikawa, A. (2021). Unsilencing the migratory grief of international students: a conversation starter to support asian international students through family loss. *Journal of International Students, 11*(4), 988-994. <https://doi.org/10.32674/jis.v11i4.3032>
- Ibáñez-Alfonso, J. A., Hernández-Cabrera, J. A., Duñabeitia, J. A., Estévez, A., Macizo, P., Bajo, M. T., ... & Saldaña, D. (2021). Socioeconomic status, culture, and reading comprehension in immigrant students. *Frontiers in Psychology, 12*, 752273. <https://doi.org/10.3389/fpsyg.2021.752273>
- Jackson, M., Ray, S., & Bybell, D. (2019). International students in the US: Social and psychological adjustment. *Journal of International Students, 3*(1), 17-28.
- Jaekel, N., Jaekel, J., Willard, J., & Leyendecker, B. (2019). No evidence for effects of Turkish immigrant children’s bilingualism on executive functions. *PloS one, 14*(1), e0209981. <https://doi.org/10.1371/journal.pone.0209981>
- Ji, Y. (2022). Stereotypes from the inside: Chinese international students’ experiences with Peers’ outgroup favoritism. *Journal of International Students, 12*(1), 258-274. <https://doi.org/10.32674/jis.v12i1.3174>
- Karakus, M., Courtney, M., & Aydin, H. (2023). Understanding the academic achievement of the first-and second-generation immigrant students: A multilevel analysis of PISA 2018 data. *Educational Assessment, Evaluation and Accountability, 35*(2), 233-278. <https://doi.org/10.1007/s11092-022-09395-x>
- Kaya, M., & Selvitopu, A. (2024). The roles of family contextual factors on immigrant students’ academic achievement: a meta-analysis. *Current Psychology, 43*(5), 3853-3865. <https://doi.org/10.1007/s12144-023-05046-6>
- Keles, S., Munthe, E., & Ruud, E. (2024). A systematic review of interventions promoting social inclusion of immigrant and ethnic minority preschool

- children. *International Journal of Inclusive Education*, 28(6), 924-939. <https://doi.org/10.1080/13603116.2021.1979670>
- Kieseier, T., Thoma, D., Vogelbacher, M., & Holger, H. (2022). Differential effects of metalinguistic awareness components in early foreign language acquisition of English vocabulary and grammar. *Language Awareness*, 31(4), 495-514. <https://doi.org/10.1080/09658416.2022.2093888>
- Koo, K., & Mathies, C. (2022). New voices from intersecting identities among international students around the world: Transcending single stories of coming and leaving. *Journal of International Students*, 12(S2), 1-12. <https://doi.org/10.32674/jis.v12iS2.4776>
- Kollmayer, M., & Bürger, S. (2024). Educational Disparities in Primary School Students in Austria. *Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie*. <https://doi.org/10.1026/0049-8637/a000292>
- Kraly, E. P., Abbasi-Shavazi, M. J., Torres Colón, L. L., & Reed, H. E. (2023). Social consequences of forced and refugee migration. *Annual Review of Sociology*, 49(1), 129-153. <https://doi.org/10.1146/annurev-soc-090221-040023>
- Ialuna, F., Civitillo, S., McElvany, N., Leyendecker, B., & Jugert, P. (2024). Resilience in multicultural classrooms: School relationships can protect the school adjustment of immigrant, refugee and non-immigrant children. *British Journal of Educational Psychology*, 94(4), 1271-1293. <https://doi.org/10.1111/bjep.12713>
- Marsh, H. W., & Yeung, A. S. (1998). Longitudinal structural equation models of academic self-concept and achievement: Gender differences in the development of math and English constructs. *American Educational Research Journal*, 35(4), 705-738. <https://doi.org/10.3102/00028312035004705>
- Masci, C., Johns, G., & Agasisti, T. (2018). Student and school performance across countries: A machine learning approach. *European Journal of Operational Research*, 269(3), 1072-1085. <https://doi.org/10.1016/j.ejor.2018.02.031>
- Maydeu-Olivares, A., Ximénez, C., & Revuelta, J. (2024). Percentage of variance accounted for in structural equation models: The rediscovery of the goodness-of-fit index. *Psychological Methods*. Advance online publication. <https://doi.org/10.1037/met0000680>
- Mendoza, L., Garcia, P., Duara, R., Rosselli, M., Loewenstein, D., Greig-Custo, M. T., & Rodriguez, M. J. (2020). The effect of acculturation on cognitive performance among older Hispanics in the United States. *Applied Neuropsychology: Adult*, 29(2), 163-171. <https://doi.org/10.1080/23279095.2020.1725888>
- Morrice, L., Tip, L. K., Collyer, M., & Brown, R. (2021). ‘You can’t have a good integration when you don’t have a good communication’: English-language learning among resettled refugees in England. *Journal of Refugee Studies*, 34(1), 681-699. <https://doi.org/10.1093/jrs/fez023>

- Portes, A., & MacLeod, D. (1996). Educational progress of children of immigrants: The roles of class, ethnicity, and school context. *Sociology of Education* (pp.255-275). Routledge.
- Pot, A., Keijzer, M., & De Bot, K. (2018). Intensity of multilingual language use predicts cognitive performance in some multilingual older adults. *Brain Sciences*, 8(5), 92. <https://doi.org/10.3390/brainsci8050092>
- Prudnikova, I., Lubkina, V., Danilane, L., Dzerviniks, J., Usca, S., & Bruveris, I. (2023). Including newly arrived children in the education system of Latvia: Aspects of the associated problems and possible solutions. In *EDULEARN23 Proceedings* (pp. 6708-6717). IATED. <https://doi.org/10.21125/edulearn.2023.1765>
- Quinteros Baumgart, C., & Billick, S. B. (2018). Positive cognitive effects of bilingualism and multilingualism on cerebral function: A review. *Psychiatric Quarterly*, 89(2), 273-283. <https://doi.org/10.1007/s11126-017-9532-9>
- Reese, L., Balzano, S., Gallimore, R., & Goldenberg, C. (2022). The concept of educación: Latino family values and American schooling. In *The New Immigrants and American Schools* (pp. 305-328). Routledge.
- Rodriguez, S., Monreal, T., & Howard, J. (2024). “It is about hearing and understanding their stories”: Teacher empathy and sociopolitical awareness toward newcomer undocumented students in the New Latino South. In *Advocacy and Policy Change for Undocumented Student Success* (pp. 164-184). Routledge.
- Rubinstein-Avila, E. (2017). Immigration and education: What should K-12 teachers, school administrators, and staff know?. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 90(1), 12-17. <https://doi.org/10.1080/00098655.2016.1234817>
- Schwartz, L., Nakonechna, M., Campbell, G., Brunner, D., Stadler, C., Schmid, M., ... & Bürgin, D. (2022). Addressing the mental health needs and burdens of children fleeing war: a field update from ongoing mental health and psychosocial support efforts at the Ukrainian border. *European Journal of Psychotraumatology*, 13(2), 2101759. <https://doi.org/10.1080/20008198.2022.2101759>
- Shi, D., DiStefano, C., Maydeu-Olivares, A., & Lee, T. (2022). Evaluating SEM fit with small degrees of freedom. *Multivariate Behavioral Research*, 57(2-3), 179-207. <https://doi.org/10.1080/00273171.2020.1868965>
- Shohamy, E. (2022). Critical language testing, multilingualism and social justice. *Tesol Quarterly*, 56(4), 1445-1457. <https://doi.org/10.1002/tesq.3185>
- Smith, E., Gümüş, S., & Reimer, D. (2024). School leadership and students’ decisions about further education: exploring the roles of goal setting and school socioeconomic composition. *School Effectiveness and School Improvement*, 35(4), 457–485. <https://doi.org/10.1080/09243453.2024.2395259>
- Taylor, B. B., Wingren, M., Bengs, A., Katz, H., & Acquah, E. (2023). Educators’ perspectives related to preparatory education and integration

- training for immigrants in Finland. *Teaching and Teacher Education*, 128, 104129. <https://doi.org/10.1016/j.tate.2023.104129>
- Teltemann, J., Brinkmann, M., Huth-Stöckle, N., & Schunck, R. (2022). Immigrant achievement and language use across countries: The role of family background and education systems. In *Understanding Variability in Second Language Acquisition, Bilingualism, and Cognition* (pp. 185-216). Routledge.
- Torres, R. (2018). Tackling inequality? Teacher effects and the socioeconomic gap in educational achievement. Evidence from Chile. *School Effectiveness and School Improvement*, 29(3), 383–417. <https://doi.org/10.1080/09243453.2018.1443143>
- Trebits, A., Koch, M. J., Ponto, K., Bruhn, A. C., Adler, M., & Kersten, K. (2021). Cognitive gains and socioeconomic status in early second language acquisition in immersion and EFL learning settings. *International Journal of Bilingual Education and Bilingualism*, 25(7), 2668–2681. <https://doi.org/10.1080/13670050.2021.1943307>
- Triventi, M., Vlach, E., & Pini, E. (2022). Understanding why immigrant children underperform: evidence from Italian compulsory education. *Journal of Ethnic and Migration Studies*, 48(10), 2324-2346. <https://doi.org/10.1080/1369183X.2021.1935656>
- Tsourdí, E. (2024). *The new screening and border procedures: Toward a seamless migration process?* Policy Study. Foundation for European Progressive Studies, Friedrich-Ebert-Stiftung and European Policy Centre, Brussels.
- Ünsal, Y., & Baskan, G. (2021). The problems of teachers who have immigrant students in their classes and solutions. *Journal of Computer and Education Research*, 9(17), 199-224. <https://doi.org/10.18009/jcer.838228>
- Välimäki, M., Hipp, K., Acton, F., Echsel, A., Grădinaru, I. A., Hahn-Laudenberg, K., & O'Brien, N. (2024). Engaging with immigrant students' voices in the school environment: an analysis of policy documents through school websites. *BMC Public Health*, 24(1), 1083. <https://doi.org/10.1016/j.stueduc.2025.101556>
- World Health Organization. (2023). *Mental health of refugees and migrants: risk and protective factors and access to care*. World Health Organization.
- Yeh, C. J., Ching, A. M., Okubo, Y., & Luthar, S. S. (2007). Development of a mentoring program for Chinese immigrant adolescents' cultural adjustment. *Adolescence*, 42(168), 733. <https://doi.org/10.1007/s11162-004-4139-z>
- Zajacova, A., Lynch, S. M., & Espenshade, T. J. (2005). Self-efficacy, stress, and academic success in college. *Research in Higher Education*, 46(6), 677-706. <https://doi.org/10.1007/s11162-004-4139-z>
- Zhu, S., Yao, Y., Chan, S. D., & Zhu, X. (2024). The Effect of Self-Concept and Self-Efficacy on Learning Engagement and Subsequent Reading Performance: The Difference Between L1 and L2 Reading in First-Grade Students. *Early Education and Development*, 35(6), 1274-1291. <https://doi.org/10.1080/10409289.2024.2338698>

Author bio

SANDRA FIGUEIREDO, PhD, Associate Professor and Coordinator of the Researcher in the Psychology Department of Universidade Autónoma de Lisboa, Portugal. Her major research interests lie in cognitive processes of second language acquisition, technology applied to education and psychology, sleep patterns among different populations and their performance in workplaces and school settings; multisensorial (snoezelen method) intervention and multiculturalism issues. Email: sfigueiredo@autonoma.pt
