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Differential impact of COVID-19 school closures on immigrant students: A transnational comparison

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Introduction: The COVID-19 pandemic had a major impact on many aspects of life, perhaps most notably education. Efforts to mitigate the negative effects of the pandemic, particularly lockdowns, led to major disruptions in schools and resulted in both learning loss and increased mental health challenges for students. These deleterious impacts appear to have been felt most keenly by students from marginalized communities, including first and second generation students.

Materials and methods: This study sought to investigate the mechanisms underlying these negative effects of pandemic mitigation efforts, particularly in terms of school efforts to support teachers and parents of students not speaking the language of instruction for three nations (Denmark, Russia, and Slovenia) included in the Responses to Educational Disruption Survey (REDS) survey.

Results: Results of the study revealed that in Denmark greater school-level support to teachers of non-native language students moderated the relationship between home language status and student perceptions of their relative academic performance before and during the pandemic, but that such was not the case in Russia or Slovenia. Likewise, school-level support to teachers moderated the relationship between home language status and perceived teacher support in Denmark but not in Russia or Slovenia. Implications of these results are discussed.

KEYWORDS

COVID-19, non-native speaker, teacher support, moderation model, school support personnel

Introduction

In early 2020, a novel Coronavirus, later named COVID-19, emerged and soon spread globally. The impact of this virus was felt in many aspects of life in nearly every country. One area that was greatly impacted across nations was education (e.g., [Kuhfeld et al., 2020](#)). In reaction to the pandemic, governments throughout the world closed

schools in an effort to mitigate virus spread and lower death rates. Subsequently, these closures were found to have negatively impacted the intellectual and social development of children, with marked academic losses in many disciplines (Kaffenberger, 2021; Rezapour et al., 2022). These losses were particularly severe for the most vulnerable students in society (Engzell et al., 2021). The educational experience of immigrant and first-generation students (hereafter, immigrant students) may have been especially negatively impacted by efforts to deal with the COVID-19 pandemic (e.g., González and Bonal, 2021).

Given these pandemic induced disruptions to education systems globally, and particularly the potential deleterious impact on immigrant students, the goal of the current study was to examine the confluence of the pandemic with immigration status on student educational experiences. Specifically, the primary goal was to use student and administrator data from the Responses to Educational Disruption Survey (REDS; International Association for the evaluation of educational achievement [IEA], 2022) to ascertain how experiences of children coming from homes in which the instructional and home languages differed was divergent from those where these languages matched. Special attention was paid to students' perceptions of how their own learning differed during the pandemic as compared to previously. In addition, the current study examined whether school efforts to support teachers and parents of non-native language students moderated the relationship between language status and student perceptions of the pandemic's impact on their learning.

Impact of COVID-19 on education

Researchers investigating the global impact of the pandemic on children's education have found that transition from in-person to online learning was disruptive in a number of important ways (e.g., Rezapour et al., 2022). For example, the Center for Education Policy Research at Harvard University reported that the impact of school closures and disruptions brought about by the pandemic led to a loss in mathematics achievement equivalent to what would be expected were students to miss between 7 and 10 weeks of school in a year (Goldhaber et al., 2022). This study also reported that low income school districts in the United States suffered most in terms of learning loss during the pandemic. Kuhfeld et al. (2020) reported similar findings early in the pandemic, estimating that students entered Fall 2020 with approximately 2/3 of the typical learning gains made in non-pandemic years. Researchers also found evidence of widespread academic losses across subjects and nations as a result of the pandemic (Ardington et al., 2021; Feng et al., 2021; González and Bonal, 2021; Hammerstein et al., 2021; Loganathan et al., 2021; Maelan et al., 2021; Jung et al., 2022;

Konig and Frey, 2022). Students reported less interaction with their teachers during the pandemic (e.g., Maelan et al., 2021; Jung et al., 2022), leading to potentially greater problems in learning new and challenging material. Furthermore, students from marginalized communities experienced particularly detrimental pandemic-related learning impacts (Bailey et al., 2021; Drane et al., 2021; González and Bonal, 2021).

In addition to the aforementioned negative academic impacts of the COVID-19 pandemic, researchers have also found that some students suffered acute mental health injury, including increases in depression and anxiety (e.g., Drane et al., 2021; Ertanir et al., 2021; Rezapour et al., 2022). Rao and Rao (2021) found that American high school students reported greater stress and isolation as a direct result of changes to schooling brought about by the pandemic. In addition, approximately 12% of students in their study also indicated that they lacked the necessary support to deal with their mental health struggles. Similar results were reported from China, where researchers found increased rates of suicide along with higher levels of anxiety and depression than was experienced prior to the arrival of COVID-19 (Liang et al., 2020; Hou et al., 2021). Researchers working in Ecuador and Greece also found similar increases in anxiety and depression that were associated with changes in society and schools as a result of COVID-19 (Asanov et al., 2021; Giannopoulou et al., 2021).

Immigration status, COVID-19, and academic performance

As noted above, the impacts of COVID-19 on the educational and psychological lives of students around the world was extremely negative. These deleterious effects were particularly strong among the most disadvantaged members of society (e.g., Bailey et al., 2021; Goldhaber et al., 2022). One such marginalized group includes students from immigrant families and those whose first language was not that being used in school. Such students may also be economically disadvantaged. Multiple researchers have found that students from this population typically exhibit lower test scores than do native-born students across academic disciplines and nations (Schleicher, 2006; Levels and Dronkers, 2008; Marx and Stanat, 2011; Shapira, 2012; Andon et al., 2014; Pivovarova and Powers, 2019; Borgonovi and Ferrara, 2020; He and Fischer, 2020).

These achievement gaps were identified prior to the pandemic and reflect the fact that many immigrant students entered the COVID-19 era behind their native born peers academically. Therefore, it is reasonable to expect that the negative impacts of the pandemic will, at the very least, maintain these gaps and could potentially exacerbate them. And indeed, research in the context of COVID-19 has found

that immigrant/first-generation students were particularly vulnerable to deleterious learning impacts as a result of mitigation efforts to fight the spread of the virus (González and Bonal, 2021; Loganathan et al., 2021; Santiago et al., 2021). Immigrant students tended to experience the greatest losses due to the shift from in person to online instruction, for example (Sugarman and Lazarin, 2020; Loganathan et al., 2021). Several factors unique to immigrant students were found to exacerbate challenges associated with the pandemic that in turn impacted learning including lack of access to the technology needed to engage in online instruction, difficulty communicating with school personnel due to language barriers, and unfamiliarity with the workings of the host nation educational system (Sugarman and Lazarin, 2020; Obinna, 2021; Santiago et al., 2021). In addition, some parents of immigrants worked in jobs that did not allow them to remain home with their children, whereas others were laid off of work leading to increased financial problems further increasing stress within the family and negatively impacting student learning (Santiago et al., 2021).

Research prior to the pandemic identified multiple variables that helped explain the achievement test score gap for immigrant students, and that may help in understanding the specific impact of COVID-19 on academic outcomes for these individuals. Trenchant factors identified by this earlier work include lower income (Andon et al., 2014; Giannelli and Rapallini, 2016; Radišić et al., 2021), a lack of facility in the host-nation language (Marks, 2005; Schnepf, 2006; Pivovarova and Powers, 2019), cultural barriers (Rindermann and Thompson, 2014; Bilican Demir and Yildirim, 2020), and lower parental education attainment (Schnepf, 2006; Andon et al., 2014).

In addition to the impact of these student-level factors, researchers have also identified school-level effects associated with the academic achievement of immigrant students. For example, Martin et al. (2012) reported that when teachers working with immigrant children were allocated more resources for this work, their students exhibited higher academic performance in a variety of domains. In addition, a supportive learning environment for immigrant students (Schleicher, 2006), and a sense of welcome and belonging in their school (Rodríguez et al., 2020) were also associated with higher achievement test scores. In contrast, when immigrant students are segregated into schools with higher concentrations of other immigrants and thereby less contact with native born children, the achievement gap vis-à-vis these native-born students was higher (Melkonian et al., 2019; Pivovarova and Powers, 2019). These results highlight the important role that schools can play in fostering academic success for immigrant students, through the provision of sufficient resources, the creation of a positive environment for learning, and the opportunity to interact with native born children.

Following in the line of research focused on the relationship between the environment in which immigrant children learn

and their academic performance, Finch et al. (2021) investigated the impact of national attitudes toward and treatment of immigrant families moving into their country. This work showed that beyond the individual and school level factors, national level policies toward immigrants was also related to academic performance, after accounting for student and school level effects. These authors fit a growth mixture model to the Fragile State Index (The Fund for Peace, 2020) subscale measuring treatment of immigrants for the years from 2006 to 2018. Their models identified 4 latent classes of nations based upon mean immigrant policy scores (low values indicating unfavorable policies) at the initial time point and changes in those scores over the period under study: (1) unfavorable initial policies that didn't change, (2) unfavorable initial policies that improved, (3) favorable initial policies that became less positive, and (4) favorable initial policies that remained positive. After controlling for individual and school level variables, Finch et al. (2021) found that immigrant students living in Group-4 nations exhibited the highest levels of academic performance based on PISA test scores, and also benefitted the most from positive school support. Given this salience of national level factors, the results from Finch et al. were used to inform which nations were included in the current study.

Study goals

Given the clear deleterious impact of the COVID-19 pandemic on education systems internationally, its particularly negative impact on students from immigrant families, the longstanding evidence that immigrant students often experienced a gap in achievement test scores pre-pandemic, and evidence that school policies can ameliorate these negative outcomes, the primary goal of this study was to examine the relationship between students' perceptions of the pandemic's impact on their learning and their home-language status (i.e., language of the test or not), and whether this relationship was moderated by student perceived level teacher support, as well as school-level support factors. A second question focused on the relationship between home language and teacher support itself, as moderated by the level of support offered to teachers to address the needs of non-native language students, the percent of non-native language students, and increase in support to non-native language parents. From the REDS dataset, Denmark, Slovenia, and Russia were selected for inclusion in this study for three reasons. First, they are the only nations included in both REDS and the PISA data used in the Finch et al. (2021) research, and therefore have identified membership in the latent classes reported there. Second, they are representative of different typologies/groups with respect to treatment of immigrants (Table 1). Third, they are all situated in Europe and therefore may be more comparable to one another than they would be with nations from other world regions.

TABLE 1 Latent class characteristics from Finch and Hernández Finch.

Class	Nation included in REDS data	Characteristics based on the Fragile States index
1*		Least favorable attitudes toward immigrants with no change over time
2	Russia	Next to least favorable attitudes toward immigrants with improvements over time
3	Slovenia	Second most positive attitudes toward immigrants with declines in treatment over time
4	Denmark	Most favorable attitudes toward immigrants with no change over time

*The REDS data did not include any nations in latent class 1; adapted from Finch et al. (2021).

Materials and methods

Sample

The research objectives described above were addressed using data taken from the REDS survey which included students, teachers, and school leaders, and was managed by the International Association for the Evaluation of Educational Achievement ([International Association for the evaluation of educational achievement \[IEA\], 2022](#)). The REDS student sampling frame included all students in the participating nations who were in their eighth year of schooling. A two-stage stratified random sample was drawn within each nation in which schools were selected with probability proportional to student enrollment in the target grade. Students in the target grade were randomly selected from each school. The methodology for selecting teachers was very similar to that of students, with teachers who instruct students in the target grade being randomly selected. School leaders from each selected school also completed surveys. For the purposes of this study, survey items associated with the student and school levels were used.

As explained above, data from Denmark, Slovenia, and Russia were used in this study. [Table 1](#) shows the latent class from Finch et al. (2021) to which each of these nations belonged. Russia exemplifies nations that had relatively unfavorable attitudes toward immigrants but whose attitudes improved over time. Slovenia was a nation that had the second most positive attitudes toward immigrants but with these attitudes declining over time. Finally, Denmark was a member of the class that had the most favorable attitudes toward immigrants and those attitudes remained stable over time. For Russia, 20 grade 8 students from each participating school were randomly selected to receive surveys. In Denmark and Slovenia, grade 8 classes were randomly selected from within each selected school and then all students within these classes were asked to participate. The number of schools/students from each nation were as follows: Denmark (75/1,431), Slovenia (136/2,552), and Russia (192/3,516). Sampling weights were employed in all analyses used in this study. Sampling weights are designed to reflect the distribution of various subgroups in the population (e.g., genders; schools; language groups). Therefore, the use of sampling weights in these analyses ensures that the analyses reflect the appropriate balance of these important subgroups.

Measures

The overriding purpose of REDS was to assess the impact of the COVID-19 pandemic on students and teachers. More specifically, the survey associated with REDS was designed to measure the experiences of students, teachers, and school leaders with respect to changes in their school experience that were brought about due to mitigation efforts used to deal with the pandemic, chief among these a move from in person to online instruction. For the student survey, items were written around the following topics: demographic background, pandemic impact on classroom learning, assessment of student learning and teacher feedback, home engagement/support, student wellbeing, and persistent changes following pandemic caused disruptions. The underlying themes for school leaders were similar to those for students, with the addition of items measuring teacher professional support and manifestations of the pandemic within the nation.

For the purposes of this study, the item “*I learned about as much as before the COVID-19 disruption*” was the primary outcome variable. The item was transformed to be dichotomous with strongly agree/agree (1) vs. disagree/strongly disagree (0) in this study. The primary independent variable was language status (test language primarily spoken vs. not primarily spoken in home), here after referred to as native or non-native speakers. In addition to these two variables, the set of items designed to measure student perceptions of teacher support during the pandemic were used to construct a teacher support score, as described in the section “Data analysis”. These items, which had a 4-level likert response option set, appear in [Table 2](#). Family socioeconomic status (SES) was measured using a score created using student reported information on parental education, parental occupation and the number of books in the home ([Meinck et al., 2022](#)). Higher values indicated higher family SES. Survey items from the school leaders used in this study included an item asking whether the school provided additional support to teachers to address unique learning needs of students whose first language was not that of the school (Yes or No). In addition, school leaders were asked to estimate the percentage of students in the school whose home language is different from that of instruction, and an item asking whether the support for families of non-native language speakers changed during the pandemic. Finally, the student to teacher ratio for the school was also used in the study. All survey items used in the study appear in [Table 2](#).

TABLE 2 Variables used in the analyses.

Level-1 variables	
Item	Response options
Teacher support items	
My teachers were available when I needed their help.	SA/A/D/SD*
My teachers made it clear how to best contact them.	SA/A/D/SD*
My teachers gave me feedback that I could understand.	SA/A/D/SD*
My teachers made a special effort to keep in contact with me.	SA/A/D/SD*
My teachers showed interest in my learning.	SA/A/D/SD*
I had a good relationship with my teachers.	SA/A/D/SD*
My teachers encouraged me to learn.	SA/A/D/SD*
My teachers adapted my schoolwork to meet my individual needs.	SA/A/D/SD*
Home language is language of the test	Yes/No
Family socioeconomic status (SES)	Continuous; larger value indicates higher SES
Level-2 variables	
Moderators	
During the COVID-19 disruption, did your school provide additional support to teachers to address the learning needs of students whose first language is not the language of instruction?	Yes/no
Please estimate the percentage of students at your school whose language is different from the language of instruction.	<5%, 5–10%, 11–25%, 26–50%, >50%
During the COVID-19 disruption, to what extent did provisions of support services for parents/guardians of students whose home language is not the language of instruction change in comparison with time before the COVID-19 disruption?	SI/I/DNC/D/SD**
School student to teacher ratio	Continuous ratio

*Strongly agree/agree/disagree/strongly disagree.

**Substantially increased/increased to some degree/did not change/decreased to some degree/substantially decreased.

Data analysis

In order to address the research goals outlined above, a moderation model (Figure 1) was fit separately for each target nation using multilevel logistic regression. The model assessed whether the relationship between language status and the learning outcome variable was moderated by three school-level variables (Table 2), while controlling for family socioeconomic status (SES), teacher support (latent variable based upon survey items measuring it; Table 2), and student-teacher ratio. The bootstrap was used to estimate standard errors in order to account for the non-normality inherent in the moderation terms (Preacher et al., 2006). The teacher support construct was created using composite structural equation modeling based on a full variance-covariance matrix (Henseler, 2021). The resulting emergent variable was subsequently used as a level-1 predictor in the multilevel logistic regression model. In addition, language status, SES, and teacher support were also treated as level-1 independent variables in the multilevel model. The level-2 (school-level) variables used in the analysis appear in Table 2, and include provision of support to teachers, percent of students not primarily speaking the test language at home, change in provision of support to parents/guardians of students whose home language was not that of the test,

and the school's student to teacher ratio. The multilevel model included random effects for both the intercept and the native language coefficient. A multilevel moderation model treating teacher support as the outcome was also fit to the data, using the same independent variables as for the first model (Figure 2). All analyses were conducted with Mplus, version 8.2 (Muthén and Muthén, 2020) with sampling weights applied.

Results

Descriptive statistics

Descriptive statistics appear in Table 3. For this sample, Slovenia had a higher percent of non-native speakers than did either Denmark or Russia. Russia had the largest student-teacher ratio and the lowest mean family SES, for this sample. Slovenian school personnel reported receiving the most additional support for teachers working with non-native speakers, as well as greater support for parents of non-native speakers. Finally, school segregation of students by language status was highest in Russia, with 71% of the schools having less than 5% non-native speaking students and 9.5% having more than 50% non-native speakers

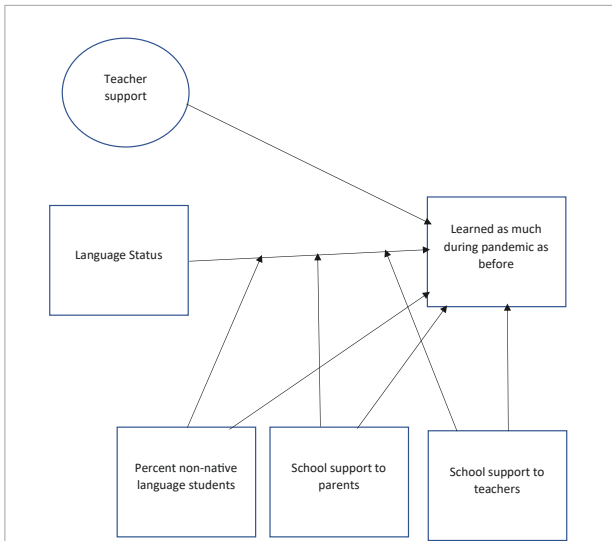


FIGURE 1
Multilevel moderation logistic regression model for “I learned as much during the pandemic as before” as dependent variable.

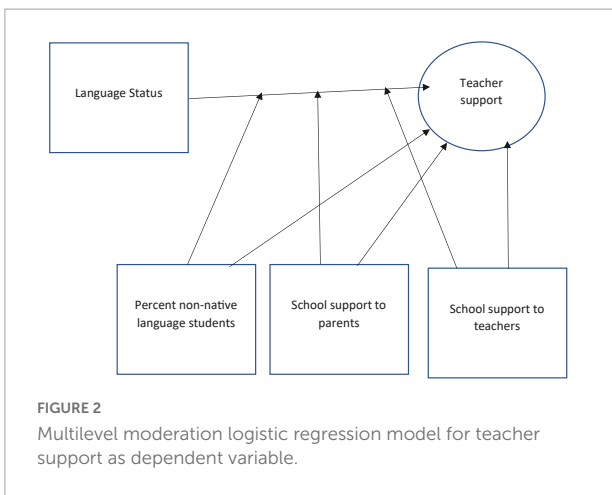


FIGURE 2
Multilevel moderation logistic regression model for teacher support as dependent variable.

within students. In other words, over 80% of the schools in Russia had either fewer than 5% of the student body not being native speakers of Russian or more than half being non-native Russian speakers. In contrast, both Denmark and Slovenia had comparable distributions of students by native language status, and with less linguistic segregation than was observed in Russia.

Learned as much during the pandemic as before

Denmark/group-4/immigrant-favorable

Denmark was identified by Finch et al. (2021) as being part of the national group that had the most favorable attitudes toward immigrants, and with those attitudes remaining

largely unchanged across time (Table 1). The multilevel moderation model results for Denmark (Table 4) revealed that students reporting higher levels of teacher support during the pandemic were more likely to report learning as much during the pandemic as before ($OR = 1.11$). In addition, after controlling for other terms in the model, the school level variables Percent of students whose first language was not language of instruction (IP1G35A) and Increase in support for parents whose first language was not language of instruction (IP1G17B) were statistically significantly related to the outcome variable. There were also statistically significant interactions between language status and each of the school-level variables, meaning that the interpretive focus will be on the interaction effects rather than these significant main effects.

The simple main effects for language status appear in the bottom panel of Table 4. These values reflect the relationship between each school variable and the likelihood that an individual reported learning as much during the pandemic as before for non-native language students. Non-native speakers attending schools providing additional support for teachers of non-native speakers ($OR = 2.94$), schools with a higher percentage of students whose home language was not the test language ($OR = 2.09$), and those attending schools reporting an increase in support for parents of non-native language students during the pandemic ($OR = 10.47$) were more likely to report learning as much during the pandemic as before.

Slovenia/group-3/favorable-but-declining

In prior research, Slovenia was found to belong to a group of nations that had the second most positive attitudes toward immigrants but which declined over time. Results in Table 5 revealed that in Slovenia native speakers were more likely than non-native speakers to report that they learned as much during the pandemic as before ($OR = 1.21$), as were students who reported greater teacher support ($OR = 1.24$). Individuals attending schools with larger student/teacher ratio ($OR = 1.07$) were more likely to report learning as much during the pandemic. There were no statistically significant interactions between language status and school-level variables and thus simple main effects are not reported for Slovenia.

Russia/group-2/lesser-favorable-improving

For Russia (Table 6), native speakers of the test language were more likely than non-native speakers to report learning as much during the pandemic as before ($OR = 1.38$), as were those who reported greater teacher support during the pandemic ($OR = 1.65$). In addition, there was a statistically significant random language slope variance for language status ($OR = 1.23$), meaning that differences between native and non-native speakers differed across schools. This result indicates that the relationship between language status

TABLE 3 Descriptive statistics for variable used in the model.

Variable	Denmark	Russia	Slovenia
Percent non-native speaker	8.2%	9.5%	12.5%
Student teacher ratio	11.67* (2.02)	16.01 (4.83)	9.54 (1.75)
SES	53.65 (11.89)	51.11 (9.82)	52.43 (11.23)
Learn as much during pandemic as before	0.39	0.64	0.53
Additional support to teachers for non-native speakers	45.1%	27.1%	89.3%
Increase support to parents of non-native speakers	20.7%	37.8%	76.4%
< 5% non-native speakers	59.8%	71.0%	58.5%
5–10% non-native speakers	23.0%	10.5%	22.6%
11–25% non-native speakers	12.6%	6.1%	12.3%
26–50% non-native speakers	4.6%	2.9%	5.4%
More than 50% non-native speakers	0%	9.5%	1.2%
Teacher support	17.32 (4.21)	16.62 (4.76)	16.44 (4.53)

*Mean (standard deviation).

TABLE 4 Multilevel moderation model results for "I learned as much during the pandemic as before": Denmark.

Variable	Coefficient	SE	<i>t</i>	<i>p</i>	OR ⁺
Native speaker	0.186	0.214	0.753	0.386	1.20
Teacher support	0.100	0.0001	10.164	<0.001	1.11
SES	−0.008	0.006	−1.276	0.202	0.99
IP1G06C*	−0.853	0.524	−1.628	0.104	0.43
IP1G35A	−0.601	0.257	−2.337	0.019	0.55
IP1G17B	−2.548	0.698	−3.653	<0.001	0.08
Ratio	0.016	0.048	0.327	0.744	1.02
Native speaker X IP1G06C	0.122	0.014	5.083	<0.001	1.13
Native speaker X IP1G35A	0.278	0.016	17.375	<0.001	1.32
Native speaker X IP1G17B	0.182	0.011	16.545	<0.001	1.20
Random language slope variance	0.092	0.071	1.295	0.195	1.10
Interaction simple main effects for non-native speakers					
IP1G06C	1.078	0.551	1.956	0.050	2.94
IP1G35A	0.739	0.270	2.736	0.006	2.09
IP1G17B	2.348	0.702	3.347	0.001	10.47

*IP1G06C, Additional support to teachers for addressing learning needs of students whose first language is not language of instruction; IP1G35A, Percent of students whose first language is not language of instruction; IP1G17B, Increase in support for parents of students whose first language is not language of instruction. ⁺ *t*, test statistic value; *p*, *p*-value; OR, Odds ratio.

and the likelihood of reporting having learned as much during the pandemic as before differed across schools. Finally, there were no statistically significant interactions in the model.

Teacher support

Denmark

The results of the multilevel moderation model for teacher support in Denmark (Table 7) include statistically significant interactions between native language status and additional support provided by schools to teachers for addressing needs of students whose first language is not the language of instruction (IP1G06C), as well as between

language status and the percent of students in the school whose home language was not that of instruction (IP1G35A). The only statistically significant main effect involved the school level variable receiving additional support to teachers for addressing learning needs of students whose first language was not Danish. Because this variable was involved in a statistically significant interaction, this main effect will not be discussed further.

The bottom panel of Table 7 displays the simple slopes for each school level variable for the non-native speakers. These values indicate that non-native language students who attended schools providing additional support to teachers of non-native speakers reported higher levels of teacher support during the pandemic. Likewise, non-native language students attending schools with higher percentages of students whose first language

TABLE 5 Multilevel moderation model results for “I learned as much during the pandemic as before”: Slovenia.

Variable	Coefficient	SE	<i>t</i>	<i>p</i>	OR ⁺
Native speaker	0.187	0.043	18.565	< 0.001	1.21
Teacher support	0.213	0.0001	13.288	< 0.001	1.24
SES	0.008	0.004	1.892	0.058	1.01
IP1G06C*	0.261	0.631	0.413	0.679	1.30
IP1G35A	-0.131	0.101	-1.291	0.197	0.88
IP1G17B	0.041	0.129	0.320	0.749	1.04
Ratio	0.066	0.027	2.412	0.016	1.07
Native speaker X IP1G06C	0.024	0.021	1.143	0.229	1.02
Native speaker X IP1G35A	0.010	0.023	0.435	0.369	1.01
Native speaker X IP1G17B	0.015	0.020	0.750	0.295	1.02
Random language slope variance	0.078	0.044	1.758	0.079	1.08

*IP1G06C, Additional support to teachers for addressing learning needs of students whose first language is not language of instruction; IP1G35A, Percent of students whose first language is not language of instruction; IP1G17B, Increase in support for parents of students whose first language is not language of instruction. ⁺ *t*, test statistic value; *p*, *p*-value; OR, Odds ratio.

TABLE 6 Multilevel moderation model results for “I learned as much during the pandemic as before”: Russia.

Variable	Coefficient	SE	<i>t</i>	<i>p</i>	OR ⁺
Native speaker	0.320	0.006	2515.564	< 0.001	1.38
Teacher support	0.5	0.0001	12.971	< 0.001	1.65
SES	0.001	0.005	0.280	0.780	1.00
IP1G06C*	-0.265	0.255	-1.039	0.299	0.77
IP1G35A	-0.068	0.070	-0.976	0.329	0.93
IP1G17B	-0.158	0.191	-0.825	0.409	0.85
Ratio	-0.014	0.013	-1.080	0.280	0.99
Native speaker X IP1G06C	0.019	0.020	0.95	0.256	1.02
Native speaker X IP1G35A	0.009	0.024	0.375	0.386	1.01
Native speaker X IP1G17B	0.020	0.018	1.111	0.233	1.02
Random language slope variance	0.205	0.063	3.265	0.001	1.23

*IP1G06C, Additional support to teachers for addressing learning needs of students whose first language is not language of instruction; IP1G35A, Percent of students whose first language is not language of instruction; IP1G17B, Increase in support for parents of students whose first language is not language of instruction. ⁺ *t*, test statistic value; *p*, *p*-value; OR, Odds ratio.

TABLE 7 Multilevel moderation model results for teacher support: Denmark.

Variable	Coefficient	SE	<i>t</i>	<i>p</i>	OR ⁺
Native speaker	0.231	0.194	1.186	0.236	1.26
SES	0.003	0.045	0.070	0.944	1.00
IP1G06C*	0.443	0.133	3.325	0.001	1.56
IP1G35A	0.027	0.047	0.585	0.559	1.03
IP1G17B	0.030	0.106	0.282	0.778	1.03
Native speaker X IP1G06C	0.499	0.109	4.578	< 0.001	1.65
Native speaker X IP1G35A	0.324	0.087	3.724	< 0.001	1.38
Native speaker X IP1G17B	0.033	0.102	0.322	0.747	1.03
Ratio	0.007	0.009	0.783	0.433	1.01
Random language slope variance	0.001	0.106	0.012	0.990	1.00
Interaction simple effects for non-native speakers					
IP1G06C	0.457	0.121	3.763	< 0.001	1.58
IP1G35A	0.115	0.057	2.003	0.045	1.22

*IP1G06C, Additional support to teachers for addressing learning needs of students whose first language is not language of instruction; IP1G35A, Percent of students whose first language is not language of instruction; IP1G17B, Increase in support for parents of students whose first language is not language of instruction. ⁺ *t*, test statistic value; *p*, *p*-value; OR, Odds ratio.

was not the test language also reported receiving greater teacher support.

Slovenia

The only statistically significant effect in the moderation model for teacher support (**Table 8**) in Slovenia was language status ($OR = 2.32$). Native speakers reported greater teacher support during the pandemic than did non-native language speakers. There were no other statistically significant main effects or interactions with regard to teacher support in Slovenia.

Russia

Table 9 includes the multilevel moderation results for teacher support in Russia. These results revealed that native speakers reported greater teacher support during the pandemic than did their non-native language peers ($OR = 1.65$). Furthermore, students from higher-SES backgrounds also reported receiving greater teacher support ($OR = 1.36$), whereas those attending schools with a higher percentage of non-native speakers reported lower levels of teacher support ($OR = -0.94$). There were no statistically significant interactions in the model and thus no simple main effects are reported.

Discussion

The COVID-19 pandemic has had a deleterious impact on education systems and students worldwide (Kuhfeld et al., 2020). These negative effects were perhaps most acute for marginalized populations, including immigrant students (González and Bonal, 2021; Loganathan et al., 2021; Santiago et al., 2021). This study explored a set of mechanisms that previous research suggested might be associated with the pandemic's effects on the educational experiences of immigrant students (Schleicher, 2006; Levels and Dronkers, 2008; Marx and Stanat, 2011; Shapira, 2012; Andon et al., 2014; Pivovarova and Powers, 2019; Borgonovi and Ferrara, 2020; He and Fischer, 2020). The three nations selected from the REDS survey database were chosen because they have been shown to be representative of differing attitudes and policies toward immigration over the last decade (Finch et al., 2021). Thus, the goal of this research was to examine how potentially relevant factors were associated with educational outcomes for students from immigrant backgrounds in these nations.

The results presented above did indeed reveal different cross-national patterns in the experiences of non-native language students with respect to perceptions of their own learning and to the support they felt from teachers. In Denmark, which exhibited positive and continuing positive policies toward immigrants (Finch et al., 2021), non-native speakers attending schools reporting increased support to teachers and parents of non-native speakers, and a higher percent of students whose

first language was not Danish were more likely to report learning as much during the pandemic as before. Additionally, non-native speakers in these types of schools also reported higher levels of teacher support. These patterns were not present in either Slovenia or Russia, both of which Finch et al. found to belong to national groups with less positive attitudes and policies toward immigrants. In addition, for both Slovenia and Russia, non-native speakers were less likely than native speakers to report learning as much during the pandemic.

For all three countries, students reporting higher levels of teacher support also reported learning as much during the pandemic as beforehand. In Denmark, greater non-native language student perceptions of teacher support were associated with schools that provided more support to teachers of non-native language students, as well as those who attended schools with a greater share of non-native language students. As was true of perceived learning, the pattern seen in Denmark did not hold in Slovenia or Russia. There was not a relationship between school policies and student perceived teacher support in either country, and native speakers were more likely to report receiving greater teacher support when compared to non-native speakers. In Russia, students from higher SES families and those attending schools with a lower percent of non-native speakers reported higher levels of teacher support.

Implications

The results of this study present several implications for educational practice and policy. First, there appears to be a clear link between the degree to which students felt supported by their teachers during the pandemic and whether they believed that they had learned as much as prior to the pandemic. This result is not surprising given prior work showing that teacher support is important for student success (Schleicher, 2006). However, when viewed through the lens of the COVID-19 pandemic, it seems clear that teachers continued to play a key role in student's perceptions of their own success even when education was disrupted and largely online. In addition, in Denmark, a nation with relatively positive national policies and attitudes toward immigrants, efforts to empower teachers and parents of non-native language speakers to facilitate their success appeared to have been effective. Such was not the case in Slovenia or Russia, however. These results present evidence that national level immigration policies may be related to the effectiveness of school level efforts to assist non-native language speaking students. Given the limitations of the sample used in the REDS study, we cannot definitively reach such a conclusion. However, prior work in this area has shown that student academic performance in the context of PISA is associated with national level attitudes and policies toward immigrants (Finch et al., 2021). This confluence of results

TABLE 8 Multilevel moderation model results for teacher support: Slovenia.

Variable	Coefficient	SE	<i>t</i>	<i>p</i>	OR ⁺
Native speaker	0.840	0.205	4.090	< 0.001	2.32
SES	0.001	0.001	1.160	0.246	1.00
IP1G06C*	0.042	0.126	0.334	0.739	1.04
IP1G35A	0.031	0.037	0.837	0.403	1.03
IP1G17B	0.009	0.045	0.198	0.843	1.01
Ratio	0.016	0.010	1.688	0.091	1.02
Native speaker X IP1G06C	0.013	0.211	0.062	0.981	1.01
Native speaker X IP1G35A	0.021	0.194	0.108	0.966	1.02
Native speaker X IP1G17B	0.020	0.204	0.100	0.971	1.02
Random language slope variance	0.002	0.008	0.213	0.831	1.00

*IP1G06C, Additional support to teachers for addressing learning needs of students whose first language is not language of instruction; IP1G35A, Percent of students whose first language is not language of instruction; IP1G17B, Increase in support for parents of students whose first language is not language of instruction. ⁺*t*, test statistic value; *p*, *p*-value; OR, Odds ratio.

TABLE 9 Multilevel moderation model results for teacher support: Russia.

Variable	Coefficient	SE	<i>t</i>	<i>p</i>	OR ⁺
Native speaker	0.502	0.015	32.786	< 0.001	1.65
SES	0.304	0.001	2.699	0.007	1.36
IP1G06C*	0.146	0.078	1.874	0.061	1.16
IP1G35A	-0.060	0.023	-2.643	0.008	0.94
IP1G17B	-0.064	0.059	-1.079	0.280	0.94
Ratio	-0.002	0.004	-0.505	0.614	1.00
Native speaker X IP1G06C	0.043	0.180	0.239	0.425	1.04
Native speaker X IP1G35A	0.026	0.188	0.138	0.456	1.03
Native speaker X IP1G17B	0.038	0.179	0.212	0.433	1.04
Random language slope variance	0.017	0.009	1.779	0.075	1.02

*IP1G06C, Additional support to teachers for addressing learning needs of students whose first language is not language of instruction; IP1G35A, Percent of students whose first language is not language of instruction; IP1G17B, Increase in support for parents of students whose first language is not language of instruction. ⁺*t*, test statistic value; *p*, *p*-value; OR, Odds ratio.

supports suggests that school level policies and practices cannot be viewed in isolation from what is happening at the broader national level when it comes to understanding student academic outcomes.

A third implication of this study, drawing from those discussed above, is that when schools' efforts to provide additional support to teachers of non-native language speakers do not yield higher perceptions of teacher support among students there may be an impact on student learning for these individuals. In the current study, school efforts to provide such support to teachers was not associated with higher perceived teacher support as reported by students in either Slovenia or Russia. In contrast, for all three nations higher teacher support was found to be positively related to students feeling that their learning during the pandemic was equivalent to what it had been before lockdown. Furthermore, in both Russia and Slovenia native language students reported higher levels of both teacher support and the likelihood of their learning remaining unchanged during the pandemic. When considered together, these findings suggest that a lack of effectiveness in

supporting teachers of non-native language students may have a direct negative impact on their academic performance in part through a lack of teacher support felt by students. Thus, further work needs to be conducted to gain greater insights into how such school supports can be more effective, particularly in nations with relatively more negative attitudes and policies toward immigrants. Finally, this study yielded interesting and somewhat differential results to prior findings that showed lower academic performance for immigrant students who attended schools with a large percentage of immigrants (Melkonian et al., 2019). In the current work, Russian students attending schools with higher concentrations of non-native speakers reported lower levels of teacher support, regardless of their own language status. This result was not found to hold in either Slovenia or Denmark, however. In addition, there was not a direct relationship between school language makeup and student comparative perceptions of learning before and during the pandemic in Russia or Slovenia. In contrast, non-native language speakers in Denmark who attended schools

with higher concentrations of other non-native speakers did have a higher likelihood of believing that they learned as much during the pandemic as beforehand. Thus, it would appear that the impact of the language concentration of one's school may be associated with differential perceptions about outcomes depending upon the broader national context with respect to immigrants. Clearly further work in this area is needed.

Study limitations and directions for future research

There are limitations to the current study that should be acknowledged and which open directions for future work in this area. First, the primary academic outcome used in this work was student perception of comparative learning before and during the pandemic. Certainly it would have been ideal to also have a measure of academic performance in the form of school grades and/or standardized test results. Thus, future work examining the academic impact of the pandemic with respect to non-native language speakers should incorporate such scores where possible. Nonetheless, we believe that the current work does add to the literature by reporting how school policies interact with student language status and teacher support in terms of perceived learning. Future work should also examine a broader range of nations where possible. Although very rich in terms of data quality, the REDS survey included a relatively small number of nations. The current study examined a subset of these nations based upon their inclusion in prior work examining the relationship between national policies and academic outcomes for first and second-generation students. These limitations to the sample allowed us to place the results reported here into a broader context based on the earlier work of Finch et al. (2021). Nonetheless, it would also be helpful to include a broader range of nations in future work examining differential educational impacts of the pandemic based on native language status. Third, immigration status was measured by the proxy variable of language spoken in the home. It is reasonable to assume that most students whose home language differs from that of the test come from families that are first or second-generation immigrants to the nation in which they live. However, it is also certainly the true that for some families this will not be the case. Therefore, future work should consider identifying students based upon their family immigration status.

Conclusion

The purpose of this study was to gain insights into potential mechanisms underlying relationships between student home

language status and their perceived academic performance before and during the pandemic, as well as their beliefs about support that they received from their teachers. The results showed that such relationships are complex and differ cross-nationally. In some nations, such as Denmark, efforts to support teachers of non-native language students bore fruit in the sense that students perceived their learning to hold steady during the pandemic. However, in other nations this was not the case. Similarly, efforts to support teachers were associated with higher student perceptions of teacher support in Denmark but not in Russia or Slovenia. It is possible, therefore, that national level policies toward immigrants may be associated with the effectiveness of efforts to assist teachers in working with immigrant students. Certainly, further work in this area is needed. However, based on these results, it does appear possible to conclude that the link between teacher support and student's perceived learning during the pandemic is moderated by school level efforts to support teachers, as well as parents, but that these effects are not uniform cross-nationally.

Data availability statement

Publicly available datasets were analyzed in this study. This data can be found here: <https://www.iea.nl/studies/iea/REDS>.

Author contributions

HF ran data analysis and led writing effort. MH provided original research idea, literature review, and editing. BA contributed to the literature review. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

- Andon, A., Thompson, C. G., and Becker, B. J. (2014). A quantitative synthesis of the immigrant achievement gap across OECD countries. *Large-Scale Assessments Educ.* 2:7. doi: 10.1186/s40536-014-0007-2
- Ardington, C., Wills, G., and Kotze, J. (2021). COVID-19 learning losses: early grade reading in South Africa. *Int. J. Educ. Dev.* 86:102480. doi: 10.1016/j.ijedudev.2021.102480
- Asanov, I., Flores, F., McKenzie, D., Mensmann, M., and Schulte, M. (2021). Remote-learning, time-use, and mental health of ecuadorian high-school students during the COVID-19 quarantine. *World Dev.* 138:105225. doi: 10.1016/j.worlddev.2020.105225
- Bailey, D. H., Duncan, G. J., Murnane, R. J., and Yeung, N. A. (2021). Achievement gaps in the wake of COVID-19. *Educ. Researcher* 50, 266–275. doi: 10.3102/0013189X211011237
- Bilican Demir, S., and Yildirim, O. (2020). Indirect effect of economic, social, and cultural status on immigrant students' science performance through science dispositions: a multilevel analysis. *Educ. Urban Soc.* 53, 336–356. doi: 10.1177/0013124520928602
- Borgonovi, F., and Ferrara, A. (2020). Academic achievement and sense of belonging among non-native-speaking immigrant students: the role of linguistic distance. *Learn. Individual Differ.* 81:101911. doi: 10.1016/j.lindif.2020.101911
- Drane, C. F., Vernon, L., and O'Shea, S. (2021). Vulnerable learners in the age of COVID-19: a scoping review. *Australian Educ. Researcher* 48, 585–604. doi: 10.1007/s13384-020-00409-5
- Engzell, P., Frey, A., and Verhagen, M. D. (2021). Learning loss due to school closures during the COVID-19 pandemic. *Proc. Natl. Acad. Sci. U S A.* 118:e2022376118. doi: 10.1073/pnas.2022376118
- Ertanir, B., Kassis, W., and Garrote, A. (2021). Longitudinal changes in Swiss adolescent's mental health outcomes from before and during the COVID-19 pandemic. *Int. J. Environ. Res. Public Health* 18, 1–14. doi: 10.3390/ijerph182312734
- Feng, X., Ioan, N., and Li, Y. (2021). Comparison of the effects of online teaching during COVID-19 and pre-pandemic traditional teaching in compulsory education. *J. Educ. Res.* 114, 307–316. doi: 10.1080/00220671.2021.1930986
- Finch, W. H., Hernández Finch, M. E., and Avery, B. (2021). The impact of national and school contextual factors on the academic performance of immigrant students. *Front. Educ.* 6:793790. doi: 10.3389/feduc.2021.793790
- Giannelli, G. C., and Rapallini, C. (2016). Immigrant student performance in math: does it matter where you come from? *Econ. Educ. Rev.* 52, 291–304. doi: 10.1016/j.econedurev.2016.03.006
- Giannopoulou, I., Efstathiou, V., Triantafyllou, G., Korkoliakou, P., and Douzenis, A. (2021). Adding stress to the stressed: Senior high school students' mental health amidst the COVID-19 nationwide lockdown in Greece. *J. Psychiatry Res.* 295:113560. doi: 10.1016/j.psychres.2020.113560
- Goldhaber, D., Kane, T. J., McEachin, A., Morton, E., Patterson, T., and Staiger, D. O. (2022). *The consequences of remote and hybrid instruction during the pandemic*. Cambridge, MA: Harvard University, Center for Education Policy Research.
- González, S., and Bonal, X. (2021). COVID-19 school closures and cumulative disadvantage: assessing the learning gap in formal, informal and non-formal education. *Eur. J. Educ.* 56, 607–622. doi: 10.1111/ejed.12476
- Hammerstein, S., Konig, C., Dreisörner, T., and Frey, A. (2021). Effects of COVID-19 related school closures on student achievement – a systematic review. *Front. Psychol.* 12:746289. doi: 10.3389/fpsyg.2021.746289
- He, J., and Fischer, J. (2020). Differential associations of school practices with achievement and sense of belonging of immigrant and non-immigrant students. *J. Appl. Dev. Psychol.* 66:101089. doi: 10.1016/j.appdev.2019.101089
- Henseler, J. (2021). *Composite-based structural equation modeling: Analyzing latent and emergent variables*. New York, NY: The Guilford Press.
- Hou, W. K., Le, T. M. C., Liang, L., Li, T. W., Liu, H., Tong, H., et al. (2021). Psychiatric symptoms and behavioral adjustment during the COVID-19 pandemic: Evidence from two population-representative cohorts. *Transl. Psychiatry* 11:174. doi: 10.1038/s41398-021-01279-w
- International Association for the evaluation of educational achievement [IEA] (2022). *Response to Educational Disruption Survey: User Guide for the International Database*. New York, NY: United Nations Educational, Scientific, and Cultural Organization.
- Jung, G., Yim, S. S., and Jang, S. H. (2022). When home becomes classroom: the shifting roles of Korean immigrant mothers in the management of children's education during COVID-19 in the US. *Women's Stud. Int. Forum* 92, 1–9. doi: 10.1016/j.wsif.2022.102598
- Kaffenberger, M. (2021). Modelling the long-run learning impact of Covid-19 learning shock: actions to (more than) mitigate loss. *Int. J. Educ. Dev.* 81:102326. doi: 10.1016/j.ijedudev.2020.102326
- Konig, C., and Frey, A. (2022). The impact of COVID-19 related school closures on student achievement – a meta-analysis. *Educ. Measurement: Issues Practice* 41, 16–22. doi: 10.1111/emip.12495
- Kuhfeld, M., Soland, J., Tarasawa, B., Johnson, A., Ruzek, E., and Liu, J. (2020). Projecting the potential impact of COVID-19 school closures on academic achievement. *Educ. Researcher* 49, 549–565. doi: 10.3102/0013189X20965918
- Levels, M., and Dronkers, J. (2008). Educational performance of native and immigrant children from various countries of origin. *Ethnic Racial Stud.* 31, 1404–1425. doi: 10.1080/01419870701682238
- Liang, L., Ren, H., Cao, R., Hu, Y., Qin, Z., Li, C., et al. (2020). The effect of COVID-19 on youth mental health. *Psychiatry Q.* 91, 841–852.
- Loganathan, T., Chan, Z. X., Hassan, F., Kunpeuk, W., Suphanchaimat, R., Yi, H., et al. (2021). Education for non-citizen children in Malaysia during the COVID-19 pandemic: a qualitative study. *PLoS One* 16:e0259546. doi: 10.1371/journal.pone.0259546
- Maelan, E. N., Gustavsen, A. M., Stranger-Johannessen, E., and Nordahl, T. (2021). Norwegian students' experiences of homeschooling during the COVID-19 pandemic. *Eur. J. Special Needs Educ.* 36:5019. doi: 10.1080/08856257.2021.1872843
- Marks, G. N. (2005). Accounting for immigrant non-immigrant differences in reading and mathematics in twenty countries. *Ethnic Racial Stud.* 28, 925–946. doi: 10.1080/01419870500158943
- Martin, A. J., Liem, G. A., Mok, M. M., and Xu, J. (2012). Problem solving and immigrant student mathematics and science achievement: multinational findings from the Programme for International Student Assessment (PISA). *J. Educ. Psychol.* 104, 1054–1073. doi: 10.1037/a0029152
- Marx, A. E., and Stanat, P. (2011). Reading comprehension of immigrant students in Germany: research evidence on determinants and target points for intervention. *Reading Writing* 25, 1929–1945. doi: 10.1007/s11145-011-9307-x
- Meinck, S., Fraillon, J., and Strietholf, R. (2022). *The impact of the COVID-19 pandemic on education: International evidence from the responses to educational disruption survey (REDS) (Revised edition)*. Paris: UNESCO, International Association for the Evaluation of Educational Achievement.
- Melkonian, M., Areepattamannil, S., Menano, L., and Fildago, P. (2019). Examining acculturation orientations and perceived cultural distance among Immigrant adolescents in Portugal: links to performance in reading, mathematics, and science. *Soc. Psychol. Educ.* 22, 969–989. doi: 10.1007/s11218-019-09506-5
- Muthén, L. K., and Muthén, B. O. (2020). *Mplus User's Guide*, 8th Edn. Los Angeles, CA: Muthén & Muthén.
- Obinna, D. N. (2021). Confronting disparities: race, ethnicity, and immigrant status as intersectional determinants in the COVID-19 era. *Health Educ. Behav.* 48, 397–403. doi: 10.1177/10901981211011581
- Pivovarova, M., and Powers, J. M. (2019). Generational status, immigrant concentration and academic achievement: comparing first and second-generation immigrants with third-plus generation students. *Large-Scale Assess. Educ.* 7:7. doi: 10.1186/s40536-019-0075-4
- Preacher, K. J., Curran, P. J., and Bauer, D. J. (2006). Computational tools for probing interactions in multiple linear regression, multilevel modeling, and latent curve analysis. *J. Educ. Behav. Statist.* 31, 437–448. doi: 10.3102/10769986031004437
- Radišić, J., Selli, P., Carugati, F., and Baucal, A. (2021). Are students in Italy really disinterested in science? a person-centered approach using the PISA 2015 data. *Sci. Educ.* 105, 438–468.
- Rao, M. E., and Rao, D. M. (2021). The mental health of high school students during the COVID-19 pandemic. *Front. Educ.* 6:719539. doi: 10.3389/feduc.2021.719539

Rezapour, M., Dehzangi, A., and Saadati, F. (2022). Students' negative emotions and their rational and irrational behaviors during COVID-19 outbreak. *PLoS One* 17:e0264985. doi: 10.1371/journal.pone.0264985

Rindermann, H., and Thompson, J. (2014). The cognitive competences of immigrant and Native students across the world: an analysis of gaps, possible causes and impact. *J. Biosoc. Sci.* 48, 66–93. doi: 10.1017/S0021932014000480

Rodríguez, S., Valle, A., Gironelli, L. M., Guerrero, E., Regueiro, B., and Estévez, I. (2020). Performance and well-being of native and immigrant students. comparative analysis based on Pisa 2018. *J. Adolescence* 85, 96–105. doi: 10.1016/j.adolescence.2020.10.001

Santiago, C. D., Bustos, Y., Jolie, S. A., Toussaint, R. F., Sosa, S. S., Raviv, T., et al. (2021). The impact of COVID-19 on immigrant and refugee families: qualitative perspectives from newcomer students and parents. *School Psychol.* 36, 348–357. doi: 10.1037/spq0000448

Schleicher, A. (2006). Where immigrant students succeed: a comparative review of performance and engagement in Pisa 20031. *Int. Educ.* 17,507–516. doi: 10.1080/14675980601063900

Schnepf, S. V. (2006). Immigrants' educational disadvantage: an examination across ten countries and three surveys. *J. Population Econ.* 20, 527–545. doi: 10.1007/s00148-006-0102-y

Shapira, M. (2012). An exploration of differences in mathematics attainment among immigrant pupils in 18 OECD countries. *Eur. Educ. Res. J.* 11, 68–95. doi: 10.2304/eej.2012.11.1.68

Sugarman, J., and Lazarin, M. (2020). *Educating English learners during the COVID-19 pandemic: Policy ideas for states and school districts*. Washington, DC: Migration Policy Institute.

The Fund for Peace (2020). *Fragile States Index*. Available online at: <https://fragilestatesindex.org/> (accessed August 11, 2022).