

## Factors Related to Teacher Resilience during COVID-19

David T. Marshall, David M. Shannon, Natalie M. Neugebauer and Savanna M. Love

Volume 19, Number 1, 2023

URI: <https://id.erudit.org/iderudit/1102526ar>

DOI: <https://doi.org/10.22230/ijep.2023v19n1a1257>

[See table of contents](#)

Publisher(s)

Simon Fraser University, University of Delaware, Phi Delta Kappa International

ISSN

1555-5062 (digital)

[Explore this journal](#)

Cite this article

Marshall, D., Shannon, D., Neugebauer, N. & Love, S. (2023). Factors Related to Teacher Resilience during COVID-19. *International Journal of Education Policy and Leadership*, 19(1), 1–18. <https://doi.org/10.22230/ijep.2023v19n1a1257>

Article abstract

Teaching during the 2020–2021 school year was fraught with challenges related to the COVID-19 pandemic. In the United States, teacher experiences varied greatly. Teacher attrition has been a concern for years, and contemporary media outlets reported that this was exacerbated by the pandemic. The authors surveyed teachers nationally between January and February 2021 (n = 334) to uncover what factors were related to teachers' reported intention to remain in the classroom after the 2020–2021 school year. Logistic regression findings indicate that teachers approaching retirement age and those teaching in private schools were significantly less likely to report an intention to remain at their school while elementary school teachers were more likely to stay. Conversely, we found that teacher autonomy, job satisfaction, and student access to resources outside of school were all positively associated with an intention to remain in their current position.

© David T. Marshall, David M. Shannon, Natalie M. Neugebauer and Savanna M. Love, 2023



This document is protected by copyright law. Use of the services of Érudit (including reproduction) is subject to its terms and conditions, which can be viewed online.

<https://apropos.erudit.org/en/users/policy-on-use/>

érudit

This article is disseminated and preserved by Érudit.

Érudit is a non-profit inter-university consortium of the Université de Montréal, Université Laval, and the Université du Québec à Montréal. Its mission is to promote and disseminate research.

<https://www.erudit.org/en/>

## Factors Related to Teacher Resilience during COVID-19

David T. Marshall, David M. Shannon, & Natalie M. Neugebauer,  
*Auburn University*  
Savanna M. Love, *Randolph-Macon College*

### Abstract

Teaching during the 2020–2021 school year was fraught with challenges related to the COVID-19 pandemic. In the United States, teacher experiences varied greatly. Teacher attrition has been a concern for years, and contemporary media outlets reported that this was exacerbated by the pandemic. The authors surveyed teachers nationally between January and February 2021 ( $n = 334$ ) to uncover what factors were related to teachers' reported intention to remain in the classroom after the 2020–2021 school year. Logistic regression findings indicate that teachers approaching retirement age and those teaching in private schools were significantly less likely to report an intention to remain at their school while elementary school teachers were more likely to stay. Conversely, we found that teacher autonomy, job satisfaction, and student access to resources outside of school were all positively associated with an intention to remain in their current position.

### Résumé

Au cours de l'année scolaire 2020–2021, l'enseignement a fait face à de nombreux défis reliés à la pandémie de la COVID-19. Aux États-Unis, les expériences des enseignants ont été très diverses. Depuis des années, l'érosion de l'effectif est un souci, et les médias contemporains signalent que la pandémie a augmenté celle-ci. En jan-

David T. Marshall, David M. Shannon, Savanna M. Love, & Natalie M. Neugebauer. (2023). Factors Related to Teacher Resilience during COVID-19. *International Journal of Education Policy & Leadership* 19(1). URL: <http://journals.sfu.ca/ijepl/index.php/ijepl/article/view/1257> doi:10.22230/ijepl.2022v19n1a1257

IJEPL is a joint publication of the Faculty of Education at **Simon Fraser University**, the **University of Delaware**, and **PDK International**. By virtue of their appearance in this open access journal, articles are free to use, with proper attribution in educational and other non-commercial settings 90 days after initial publication. Copyright for articles published in IJEPL is retained by the authors. More information is available on the IJEPL website: <http://www.ijepl.org>



vier et février 2021, les auteurs ont sondé des enseignants à l'échelle nationale ( $n = 334$ ) afin de relever les facteurs ayant motivé ceux-ci à vouloir continuer au-delà de 2020–2021. Une régression logistique effectuée par les auteurs indique que les enseignants proches de la retraite et ceux travaillant dans des écoles privées étaient moins enclins à rapporter l'intention de rester dans leurs écoles tandis que les enseignants des écoles élémentaires avaient davantage l'intention de persévérer. En général, les auteurs ont trouvé que l'autonomie de l'enseignant, la satisfaction au travail, et l'accès des étudiants à des ressources au-delà de leur école étaient tous positivement associés au désir de continuer à enseigner.

**Keywords / Mots clés :** COVID-19, teacher retention, teacher attrition, teacher autonomy, job satisfaction, retirement age / COVID-19, fidélisation des enseignants, attrition des enseignants, autonomie des enseignants, satisfaction au travail, âge de la retraite

## **Factors related to teacher resilience during COVID-19**

The COVID-19 pandemic disrupted all facets of daily life in early 2020, and K-12 schooling was no exception. By March 23, 2020, all but two states ordered their schools closed for in-person instruction as part of a larger effort to curb the spread of the virus (Bourne, 2021; Maranto, Queiroz e Melo, & Glenn, 2020; Marshall, 2022). With face-to-face instruction no longer an option, schools were forced to transition to remote instruction for the remainder of the 2019–2020 school year (Marshall, Shannon, & Love, 2020a). While schools reopened remotely or in person uniformly in most European and East Asian countries (Maranto, Glenn, & Queiroz e Melo, 2022), schools in the United States began the 2020–2021 school year with a range of learning modalities (Marshall & Bradley-Dorsey, 2020). These modalities were not stable; school districts that began the year with remote instruction often transitioned to a hybrid or fully in-person model as the year progressed (e.g., New York City). At the same time, districts that began the school year offering some amount of in-person learning often shifted to remote learning—especially as COVID-19 cases climbed in the winter months of the 2020–2021 school year—before shifting back to in-person learning for the spring of 2021 (e.g., Douglas County, CO). Teaching is a challenging profession under normal circumstances, and teaching during the COVID-19 pandemic was even more challenging (Love & Marshall, 2022; Marshall et al., 2020a; Marshall, Love, Neugebauer, & Smith, 2023). Several factors suggest that teacher conditions during the pandemic could lead to increased teacher attrition (Zamarro, Camp, Fuchsman, & McGee, 2022). This article focuses on a single research question: what factors are associated with teachers remaining in the classroom?

## **Teacher retention and attrition**

Ample research suggests that quality teachers are the greatest contributors to student achievement (e.g., Hanushek, 2016). As such, it is important for schools to retain good teachers. The literature on teacher retention and attrition suggests that this area of concern long predated the COVID-19 pandemic. Goldring, Taie, Riddles, and

Owens (2014) found that the rate at which new teachers leave the profession has doubled since 1991. Ingersoll, Merrill, and May (2014) report that 41 percent of teachers leave the classroom within the first five years of their careers. Gray and Taie (2015) estimate this figure to be lower (17%). Papay, Bacher-Hicks, Page, and Marinell (2017) suggest that teacher attrition statistics could be inflated, especially in urban contexts, when those who temporarily leave the classroom and later return are counted as attrition statistics. For example, a teacher may decide not to teach for a few years following the birth of a child and return to the classroom when the child is older. Regardless, it remains true that novice teachers are more likely than veteran teachers to leave the profession (Marshall, 2017).

Teacher attrition is not always bad. If attrition causes poor-performing teachers to leave the profession and be replaced with higher quality teachers, students would benefit. There is some evidence that teachers who leave tend to be less proficient at their job (Boyd, Grossman, Ing, Lankford, Loeb, & Wyckoff, 2011; Feng & Sass, 2017). However, this assumes two things for which there is little evidence. First, this would assume an even distribution of teacher attrition across contexts. Evidence suggests that urban and rural schools have greater difficulty attracting and retaining teachers (Lankford, Loeb, & Wyckoff, 2002; Maranto & Shuls, 2013), especially in areas with high levels of poverty (Borman & Maritza-Dowling, 2008; Glazer, 2020; Gross & DeArmond, 2010). Second, it assumes that there is a pool of quality teachers that are ready to take the place of the teachers that leave. Evidence suggests that fewer teachers are being prepared. In their research studying teacher labour force trends in Pennsylvania, Fuller and Pendola (2020) found substantial declines in the number of teachers that were being prepared between 2011 and 2019. These trends were especially true for science, technology, engineering, and math (STEM) teachers, special education teachers, and English language learner teachers (Billingsley & Bettini, 2019; Carver-Thomas & Darling-Hammond, 2019; Fuller & Pendola, 2020; Powell, Scott, Oyefuga, Dayton, Pickover, & Hicks, 2022).

There is no single reason for teacher attrition. Teachers leave the classroom for a range of reasons, several of which have little to do with the profession. For example, teachers may leave because they are relocating because of a spouse's new job (Plash & Piotrowski, 2001) or to stay home and spend time with young children (Kersaint, Lewis, Potter, & Meisels, 2007). However, there are several reasons teachers leave that are related to the work they do in schools. Teachers have cited unsupportive administrators (Fuller, Pendola, & Young, 2018; Marshall, Varier, Hope, & Abrams, 2020b; Scallon, Bristol, & Esboldt, 2021), a lack of teacher autonomy (Glazer, 2020), district demands for improvement (Holmes, Parker, & Gibson, 2019), and poor compensation (Fuller et al., 2018) as reasons they have either left or considered leaving the profession. Overall, teachers listed reasons that had to do with the adults with whom they worked, not the students they taught.

## **Teacher experiences during COVID-19**

Teaching became a much more challenging profession during the pandemic, and teacher experiences varied widely from one context to another (Marshall & Bradley-Dorsey, 2020). Teaching remotely, especially for elementary school teachers, was

found to be related to lower levels of teacher self-efficacy (Pressley & Ha, 2021; Pressley, 2021a). Zamarro, Camp, Fuchsman, and McGee (2022) explored a number of factors that predicted teachers remaining in the classroom during COVID-19 and being of retirement age was one of them. Intuitively, teachers who were eligible to retire and unsatisfied with COVID-19 working conditions might be more apt to decide to leave the profession. However, they did not find this to be a significant predictor. Teachers who taught in-person and remote students at the same time—a modality often referred to as HyFlex—to be particularly challenging (Bartlett, 2022). Findings from qualitative studies also found HyFlex teaching to be more time-consuming and difficult for teachers to balance the needs of students present in the classroom as well as those virtually attending (Bartlett, 2022; Pressley, 2021b). In terms of student performance, Wilson and Alexander (2021) conducted a study of HyFlex learners and found there to be no significant differences in student grades based on the amount of in-person class sessions attended. Pressley (2021c) found that a lack of administrative support was associated with teachers experiencing burnout during the COVID-19 pandemic. Given the additional challenges that came with teaching during COVID-19, it is important to understand the factors that are keeping teachers in the classroom. While previous literature has explored how COVID-19 impacted teaching and teachers, few studies have explored the impact that the pandemic had on teachers leaving the profession.

## Current study

This study aimed to understand PK-12 teacher experience during the COVID-19 pandemic. The authors were specifically interested in the impact that learning modalities and other COVID-19-related variables, teacher autonomy, burnout, job satisfaction, and teacher efficacy had on whether or not teachers intended to remain in the classroom for the following school year. Much literature in this area focuses on the negative, exploring factors that cause teachers to want to leave the profession. This article is interested in the factors that motivated teachers to stay during this pivotal moment in history.

## Data sources

To answer the research question, the authors surveyed a voluntary sample of teachers nationwide between January 23, 2021, and February 19, 2021. After obtaining Institutional Review Board approval, an anonymous survey link was distributed using our personal networks of teachers. The link was also shared on social media networks including Facebook and Reddit. Participants had to be currently employed as PK-12 teachers to be included in the study.

The sample included a total of 468 responses, of which 334 had complete data. Participants predominantly identified as white (86.26%), female (81.30%), had an average age of 36.83 years, and had been teaching for 9.62 years overall and for 5.12 years at their current school. More than half of the sample (54.03%) indicated that they teach in a Title I school, and a plurality teaches in a suburban setting (41.49%). Almost four in 10 (38.21%) of respondents shared that they had been forced to quarantine at some point during the 2020–2021 school year as a result of either becoming

infected with COVID-19 or being in close contact with someone who had become infected with the virus. As of January 2021, 62.39 percent of participants indicated that their school offered some in-person instruction, whether it was a hybrid model or fully in-person, and approximately one-third of them were simultaneously teaching students who were both in-person and remote. See Table 1 for descriptive statistics for the sample.

**Table 1: Demographics of participants**

Variable	%	M	SD
<i>Teacher demographics</i>			
Teaching experience (yrs.)		9.62	8.24
Years at school		5.12	5.72
Age		36.83	10.10
Age = 55+	27.46		
Race			
African American/Black	4.58		
Asian American	1.15		
Hispanic or Latina/o	5.34		
Indigenous/Native American	0.38		
White or Caucasian	86.26		
Gender			
Female	81.30		
Male	18.32		
Non-binary	0.38		
Taught elementary grade	36.72		
Taught elective course	15.82		
Special education	21.19		
<i>Contextual factors</i>			
Was in quarantine due to COVID-19	38.21		
Taught in-person as of January 2021	62.39		
Taught in-person & remote students simultaneously	33.13		
Taught in charter school	6.57		
Taught in private school	10.15		
Taught in Title I school	54.03		
<i>Geographic location</i>			
Rural	18.81		
Small town	8.36		
Suburban	41.49		
Urban	31.34		

Note: N = 334

## Instrumentation

The survey administered in this study included demographic and contextual items, factors related to COVID-19, six scales described below, and an item asking participants about their intention to remain in the classroom for the 2021–2022 school year. See Table 2 for a list of variables included in the three regression models focused on the prediction of whether teachers intended to return to their school the following year.

**Table 2: Variables included in models**

Variable	Description
<i>Teacher and contextual variables</i>	
Retirement age	Participant was age 55 or greater as of January 1, 2021 (1=Yes, 0=No)
Special education	Participant was a special education teacher (1=Yes, 0=No)
Elementary grades	Participant taught grades PK-5 (1=Yes, 0=No)
Rural	Participant's school was in a rural area (1=Yes, 0=No)
Small town	Participant's school was in a small town (1=Yes, 0=No)
Urban	Participant's school was in an urban area (1=Yes, 0=No)
Charter school	Participant taught in a charter school (1=Yes, 0=No)
Private school	Participant taught in a private school (1=Yes, 0=No)
Title I school	Participant taught in a Title I school (1=Yes, 0=No)
<i>COVID-19-related variables</i>	
Taught in-person & remote	Participant taught both in-person and remote students simultaneously (1=Yes, 0=No)
January 2021 in-person	Participant was teaching in person or hybrid (not exclusively remote) as of January 2021 (1=Yes, 0=No)
Quarantine	Participant had to quarantine at least once due to either contracting or being in close contact with someone who contracted COVID-19 (1=Yes, 0=No)

Six scales were included to measure job satisfaction, teacher sense of efficacy for student engagement and classroom management, teacher burnout, teacher autonomy, and student access to resources. Of interest was the extent to which these six constructs, along with contextual and COVID-19-related variables, were related to a teacher's decision to remain in their job.

### ***Job satisfaction scale***

The Job Satisfaction Scale (Skaalvik & Skaalvik, 2014) is comprised of four items. Each item was measured on a six-point scale with anchors (1) "strongly disagree" and (6) "strongly agree." Skaalvik and Skaalvik (2011) found the internal reliability to be .91. In this study, the internal reliability was good ( $\alpha = .89$ ) and participants had a mean score of 4.08 (SD = 1.10). See Appendix A for the full scale.

### ***Teacher sense of efficacy scale***

The Teacher Sense of Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001) is comprised of three subscales, two of which were used in this study. The Student Engagement ( $\alpha = .81$ ) and Classroom Management ( $\alpha = .86$ ) subscales are comprised of four items each. The current study used a seven-point scale. Krosnick and Presser (2010) note that increases in reliability are negligible beyond seven points. In this study, the internal reliability for the Student Engagement subscale ( $M = 4.60$ ,  $SD = 0.99$ ) was .73 and was .81 for the Classroom Management subscale ( $M = 5.32$ ,  $SD = 1.10$ ). See Appendices B and C for the two subscales.



### ***Friedman burnout questionnaire***

The Friedman Burnout Questionnaire (Friedman, 2000) is comprised of 14 items that includes a subscale for exhaustion, de-personalization, and non-self-fulfillment. Friedman (2000) found overall reliability to be .90. Items were measured on a six-point scale with anchors (1) “strongly disagree” and (6) “strongly agree.” In the current study, the internal reliability was .86 and participants had a mean score of 3.62 (SD = 0.75). See Appendix D for the full scale.

**UJEP 19(1) 2023**

Marshall, Shannon,  
Love, & Neugebauer

*Teacher Resilience  
during COVID-19*

### ***Teacher leadership and autonomy scale***

The Teacher Leadership and Autonomy Scale (Virginia Department of Education, 2021) is comprised of nine items that ask participants to respond to the following prompt: “How strongly do you agree or disagree with the following statements about your school?” Participants respond on a six-point scale with response options ranging from (1) “strongly disagree” to (6) “strongly agree.” In the current study, the internal reliability was .83 and participants had a mean score of 3.67 (SD = 0.95). See Appendix E for the full scale.

### ***Student access to resources scale***

The authors created a sixth scale for this study: the Student Access to Resources Scale. Ample evidence suggests that students having access to resources during the pandemic impacted their ability to fully participate in instruction, as well as teachers’ ability to teach (Love & Marshall, 2022; Manfuso, 2020; Marshall et al., 2020a; Marshall & Neugebauer, 2022; Marshall, Shannon, Love, & Norris, in press; Vanourek, 2020). The scale was comprised of six items that asked participants to respond to the following prompt: “To what extent would you agree with the following statement: “My students have access to . . . .” Participants responded on a six-point scale that ranged from (1) “strongly disagree” to (6) “strongly agree” for the six items. The scale had an internal reliability of .83 and participants had a mean score of 4.56 (SD = 1.14). See Appendix F for the full scale.

## **Findings**

All models were tested using logistic regression analysis (Darlington & Hayes, 2017), and all analyses were conducted in Stata 17. Prior to analyses being conducted, the data were screened to ensure that the requisite assumptions were met for logistic regression analysis. Logistic regression analysis does not require multivariate normality or homoscedasticity and does not assume a normal distribution of error terms (Tabachnick & Fidell, 2013). Any records that included missing data were removed prior to analysis. Collinearity diagnostics were run for each model, and variance inflation factor values were found to be acceptable. The dependent variable for each model was a binary variable indicating whether a teacher intended to return to their school for the following school year. The first model included teacher and contextual variables. A trio of COVID-19-related variables was added for the second model. A third model was run that included all of the variables in the first two models and added the six scales (see Table 2). The reference category for all models tested was a suburban secondary teacher under the age of 55 that teaches in a traditional public



school system in a non-Title I school. Models were evaluated in terms of model fit by comparing log pseudolikelihood values (Besag, 1977), as well as in terms of an approximation of the amount of variance that was explained by predictor variables (Hosmer, Lemeshow, & Sturdivant, 2013). See Table 3 for odds ratios and standard errors for each of the three models tested.

**Table 3: Factors related to teacher resilience—logistic regression findings**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Variable	OR (SE)	OR (SE)	OR (SE)
<i>Teacher and contextual variables</i>			
Retirement Age (55+)	.170** (.048)	.170** (.048)	0.099** (.034)
Special education	.873 (.261)	.865 (.260)	.835 (.286)
Elementary grades	1.354 (.360)	1.314 (.356)	2.130* (.705)
Rural	.954 (.338)	.973 (.348)	.911 (.376)
Small town	1.659 (.789)	1.643 (.783)	1.743 (.927)
Urban	.943 (.280)	.904 (.277)	1.316 (.462)
Charter school	1.154 (.581)	1.152 (.582)	1.141 (.675)
Private school	.432 (.186)	.450 (.196)	.302* (.151)
Title I	1.110 (.295)	1.113 (.296)	1.347 (.416)
<i>COVID-19-related variables</i>			
HyFlex (remote & in-person)		.921 (.256)	.784 (.248)
In-person/hybrid offered – Jan. 2021		.840 (.234)	1.005 (.321)
Quarantined		.947 (.238)	.955 (.268)
<i>Six scales</i>			
Job satisfaction			2.107** (.385)
Teacher efficacy – student engagement			.746 (.136)
Teacher efficacy – classroom mgmt.			1.201 (.184)
Teacher burnout			1.142 (.278)
Teacher autonomy			1.610* (.315)
Student access to resources			1.691* (.307)
N	334	334	334
McFadden's R <sup>2</sup>	.119	.121	.270
-2 Log Pseudolikelihood	-201.349	-.200.968	-166.971

Notes: \*\*  $p < .01$ ; \*  $p < .05$ ; reference category is a suburban secondary teacher under the age of 55 that teaches in a traditional public school system in a non-Title I.

### Model 1: Teacher and contextual factors

The first model tested nine factors related to the participant and the school in which they taught (see Table 2). The first model was significant ( $p < .001$ ) and yielded a McFadden's R<sup>2</sup> of .119; approximately 12 percent of the variance was explained by these variables. One variable found to significantly predict a teacher's intention to return to teach in their school the following year was whether a teacher was age 55 or above, a proxy for them being in range of retirement. Teachers in this age range

had less than one-fifth the odds of returning to the same school compared with younger peers ( $OR = .170$ ). Teaching in a private school approached statistical significance ( $p = .051$ ) and was associated with having less than half the odds of returning the following year compared with traditional public-school teachers.

## Model 2: COVID-19-related factors

The second model added three COVID-19-related factors to the teacher and contextual factors. Dummy variables were included to represent: 1) whether the participant was teaching in-person as of January 2021, 2) whether the participant was teaching in-person and remote students simultaneously (i.e., HyFlex), and 3) whether the teacher had to quarantine as a result of COVID-19 during the school year. This model did not significantly improve compared with the first model tested. It yielded a McFadden's  $R^2$  of .121 (compared with .119 for the first model). None of the three COVID-19-related variables significantly predicted whether a teacher would remain at their school.

## Model 3: Job satisfaction, teacher efficacy, burnout, autonomy, and student resources

The third and final model added six scales to test for the effects of job satisfaction, teacher efficacy, burnout, autonomy, and student access to resources on whether they intended to remain at the same school the following year. The model significantly improved over the second model ( $p < .001$ ) and yielded a McFadden's  $R^2$  of .270, which was more than double that of the first two models. Teacher autonomy ( $\beta = .478$ ,  $p < .05$ ), job satisfaction ( $\beta = .746$ ,  $p < .001$ ), and student access to resources ( $\beta = .525$ ,  $p < .05$ ) significantly and positively predicted teacher intention to stay at their school. Elementary school teachers had double the odds ( $OR = 2.130$ ,  $p < .05$ ) of remaining in their jobs, while being of retirement age ( $OR = .099$ ,  $p < .001$ ) and teaching in a private school ( $OR = .302$ ,  $p < .05$ ) negatively predicted intent to stay in the full model as well.

## Discussion

This study sought to understand what predicted teachers' desire to remain in their classrooms. Teachers of retirement age (55 and older) and those teaching in private schools were less likely to remain. Teacher autonomy and job satisfaction were positively related to having the intention to remain at their school. These findings are consistent with previous literature that suggests that job satisfaction is related to teacher retention (Perrachione, Rossier, & Petersen, 2008), as is teacher autonomy (Glazer, 2020). By contrast, where Zamarro and colleagues (2022) did not find teachers who were of retirement age to be more likely to leave the classroom, this study did.

The authors also found that elementary school teachers were more likely to report an intention to remain at their school than secondary teachers. However, neither special education teachers nor teachers in Title I schools were more likely to remain at their schools than their peers. The finding for elementary school teachers is consistent with previous literature, which suggests that they are more likely to remain in their jobs than secondary grade-level teachers (Carver-Thomas & Darling-Hammond, 2019). However, the findings are at odds with previous studies that sug-

gest that teachers in Title I schools and special education teachers have higher attrition rates than their peers. It was also found that private school teachers were more likely to express an intent to leave their current jobs, compared to teachers in traditional public-school systems.

The literature on private school teacher attrition suggests a tension that exists within this population (Scheopner, 2010). Private school teachers are typically paid less than their public-school counterparts, and this is a source of dissatisfaction with their jobs. However, private-school teachers are often more satisfied with school climate and working conditions than their public-school peers. Although teacher pay did not change drastically during the pandemic, school climate and working conditions did, which suggests that the factors that were keeping these teachers in their jobs were eroded during the crisis of the pandemic, leading these teachers to express a desire to look for greener pastures.

Based on previous quantitative work that we conducted at the start of the pandemic (e.g., Love & Marshall; Marshall et al., 2020a, 2022), the authors felt compelled to create a new scale that measured students' access to resources for this survey. According to the Return to Learn Tracker (2021) developed by the American Enterprise Institute and the College Crisis Initiative at Davidson College, approximately two-thirds of students were learning remotely at least part-time (17% fully remote, 50% hybrid) during the last week of January 2021. As such, having access to resources including email, word processing software, and reliable high-speed internet was important for students to learn successfully from home. Evidence suggests that teachers who taught remotely had low levels of self-efficacy (e.g., Pressley & Ha, 2021). That finding, in concert with previous quantitative (e.g., Marshall et al., in press) and qualitative (e.g., Love & Marshall, 2022) work suggests that teachers who did not feel they could help students succeed academically due to factors beyond their control, including a lack of resources at home, might lead teachers to consider leaving a profession in which they feel ineffective.

In this study, teachers who reported that their students had greater access to resources outside of school were more likely to remain in their jobs. Students having (or not having) resources to participate in school remotely could be a proxy for poverty. While it was a significant predictor of teachers remaining in their jobs, teaching in a Title I school (another proxy for poverty) was not significant in any of the three models tested. The third model was tested a second time, this time without the Student Access to Resources scale, and teaching in a Title I school was still not a significant predictor. As such, these findings demonstrate that teaching students living in poverty was not driving teachers to remain in (or leave) their jobs; rather, the increased difficulty of teaching students who do not have the tools to succeed in their learning environments, especially those learning remotely at the time of this study, was a unique and specific factor that influenced teachers' decisions about their futures.

Interestingly, none of the three COVID-19-related variables tested were found to be significant predictors. Three of these findings were contrary to what has previously been found in emerging COVID-19 educational literature. Previous work also found teachers who were forced to teach students who were in person and virtually at the same time found this to be extraordinarily challenging (e.g., Bartlett,

2022). However, teachers who were asked to teach using a HyFlex modality in January and February 2021 in this study were not more likely to leave their school. It is possible that teachers who had to endure this knew that this was not a long-term situation, and as such, it did not impact long-term plans regarding their employment. Future research should explore this further, given that fully remote schooling, HyFlex teaching, and lengthy quarantines marked radical departures from pre-pandemic schooling norms.

## **Implications for practice**

This study's findings have important implications for educational leaders and policy-makers. As mentioned earlier, teacher attrition trends were a concern prior to the COVID-19 pandemic. However, the pandemic has had a negative impact on the teacher labour workforce in two important ways. Teaching during the pandemic was a difficult task and one that in many cases required much more effort than before, with teacher–student relationships mediated by facial coverings, social distancing, and virtual interactions. Student–teacher relationships are an important predictor of teacher job satisfaction (Veldman, van Tartwijk, Brekelmans, & Wubbels, 2013), and teaching during the pandemic took much of the intrinsic reward out of the job for many teachers. Second, there is emerging evidence in international literature that suggests that the number of individuals who are training to be teachers is decreasing (e.g., la Velle, Newman, Montgomery, & Hyatt, 2020). When the teacher attrition figures from before the pandemic meet the unsatisfactory work conditions of the pandemic and fewer new teachers join the ranks, a potential crisis exists. Our findings suggest that teachers who reported high levels of autonomy were significantly less likely to indicate that they planned to leave. As such, school leaders should find ways to give teachers additional space to do their professional work. Teachers who feel that their leaders trust them to do their jobs are more likely to be satisfied with their jobs and less likely to leave.

There are some limitations worth noting related to this work. First, the sample was obtained by asking teachers to respond anonymously via a link. It is possible that those who elected to complete this survey had experiences that systematically differed from those who did not complete the survey. Since much of the participant recruitment took place over social media networks, it is also possible that teachers who interact with these platforms differ in some way from those who do not engage with social media. The sample that we obtained was also predominantly white and female. Future survey iterations should strive to obtain a more diverse sample. Finally, the full model tested in this study predicted about 27 percent of the variance, indicating that factors that were not included in this study are influencing teachers' decisions to remain in the classroom. Future studies should also include longitudinal work aimed at better understanding the impact that the COVID-19 pandemic has had on the teacher labour market. Additional qualitative research would also be important to conduct to further unpack why teachers were choosing to stay in the profession. As important as it is to understand what causes teachers to leave the profession, it is equally important to understand what causes teachers to remain dedicated to their professional work.

## Conclusion

Overall, this study provided important insight into the factors that motivated teachers to stay in the profession during the COVID-19 pandemic. Our findings demonstrate that though teaching became more challenging during the pandemic, the context created by the pandemic did not necessarily result in teacher attrition. Rather, the pandemic amplified many of the challenges that already existed prior to the pandemic, such as a lack of teacher autonomy, demands for improvement, or poor compensation. Likewise, the pandemic amplified the factors that keep teachers in the profession, such as administrative support, autonomy, and time to complete their professional work (e.g., Marshall et al., 2023). The added finding that student access to resources was an important factor may have come about in the context of the pandemic, but it is expected that it will continue to be an important factor as the demand for access to digital resources increases in schools. As we navigate the national teacher shortage, it is important for school leaders and policymakers to understand these factors that not only make the teaching profession attractive but will also keep effective teachers in the field.

## Acknowledgements

This article was presented at the 2022 American Educational Research Association annual meeting. We would like to thank our discussant, Divya Varier (George Mason University), for her thoughtful comments and feedback on our work. We would also like to thank Tim Pressley (Christopher Newport University) for his feedback. This is an improved article because of their insights.

## References

- Bartlett, L. (2022). Specifying hybrid models of teachers' work during COVID-19. *Educational Researcher*, 51(2), 15–155. doi:10.3102/0013189X211069399
- Besag, J. (1977). Efficiency for pseudolikelihood estimation for simple Gaussian fields. *Biometrika*, 64(3), 616–618. doi:10.1093/biomet/64.3.616
- Billingsley, B., & Bettini, E. (2019). Special education teacher attrition and retention: A review of the literature. *Review of Educational Research*, 89(5), 697–744. doi:10.3102/0034654319862495
- Borman, G.D., & Maritz-Dowling, N. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research*, 78(3), 367–409. doi:10.3102/0034654308321455
- Bourne, R.A. (2021). *Economics in one virus: An introduction to economic reasoning through COVID-19*. Washington, DC: Cato Institute.
- Boyd, D., Grossman, P., Ing, M., Lankford, H., Loeb, S., & Wyckoff, J. (2011). The influence of school administrators on teacher retention decisions. *American Educational Research Journal*, 48(2), 303–333. doi:10.3102/0002831210380788
- Carver-Thomas, D., & Darling-Hammond, L. (2019). The trouble with teacher turnover: How teacher attrition affects students and schools. *Education Policy Analysis Archives*, 27(36). doi:10.14507/epaa.27.3699
- Darlington, R.B., & Hayes, A.F. (2017). *Regression analysis and linear models: Concepts, applications, and implementation*. New York, NY: The Guilford Press.
- Feng, L., & Sass, T.R. (2017). Teacher quality and teacher mobility. *Education Finance and Policy*, 12(3), 396–418. doi:10.1162/EDFP\_a\_00214
- Friedman, I. (2000). Burnout in teachers: Shattered dreams of impeccable professional performance. *Journal of Clinical Psychology*, 56(5), 595–606.

- Fuller, E., Pendola, A., & Young, M.D. (2018). *Policy brief 2018-2: The role of principals in reducing teacher turnover and the shortage of teachers*. University Council for Educational Administration. URL: <https://eric.ed.gov/?id=ED580347> [January 5, 2019].
- Fuller, E., & Pendola, A. (2020). *K-12 teacher supply, demand, and shortages in Pennsylvania*. Harrisburg, PA: Center for Rural Pennsylvania. URL: <https://www.rural.palegislature.us/documents/reports/PA-Teacher-Supply-Demand-Shortages-2020.pdf> [June 20, 2023].
- Glazer, J. (2020). The schools teachers choose. *Phi Delta Kappan*, 102(3), 14–17. doi:10.1177/0031721720970694
- Goldring, R., Taie, S., Riddles, M., & Owens, C. (2014). *Teacher attrition and mobility: Results from the 2012-13 teacher follow-up survey* (NCES 2014-077). Washington, DC: National Center for Education Statistics.
- Gray, L., & Taie, S. (2015). *Public school teacher attrition and mobility in the first five years: Results from the first through fifth waves of the 2007-08 Beginning Teacher Longitudinal Study* (NCES 2015-337). Washington, DC: National Center for Education Statistics. URL: <https://nces.ed.gov/pubs2015/2015337.pdf> [June 20, 2023].
- Gross, B., & DeArmond, M. (2010). *Parallel patterns: Teacher attrition in charter vs. district schools*. Seattle, WA: Center for Reinventing Public Education. URL: [http://www.crpe.org/sites/default/files/pub\\_ics\\_Attrition\\_Sep10\\_0.pdf](http://www.crpe.org/sites/default/files/pub_ics_Attrition_Sep10_0.pdf) [June 20, 2023].
- Hanushek, E.A. (2016). What matters for student achievement. *Education Next*, 16(2), 18–26. URL: <http://educationnext.org/what-matters-for-student-achievement> [June 20, 2023].
- Holmes, B., Parker, D., & Gibson, J. (2019). Rethinking teacher retention in hard-to-staff schools. *Contemporary Issues in Education Research*, 12(1), 27–33.
- Hosmer, D.W., Lemeshow, S., & Sturdivant, R.X. (2013). *Applied logistic regression* (3<sup>rd</sup> ed.). New York, NY: John Wiley & Sons.
- Ingersoll, R., Merrill, L., & May, H. (2014). *What are the effects of teacher education and preparation on beginning teacher attrition?* Philadelphia, PA: Consortium on Policy Research in Education. URL: [https://repository.upenn.edu/cpre\\_researchreports/78](https://repository.upenn.edu/cpre_researchreports/78) [June 20, 2023].
- Kersaint, G., Lewis, J., Potter, R., & Meisels, G. (2007). Why teachers leave: Factors that influence retention and resignation. *Teaching and Teacher Education*, 23(6), 775–794. doi:10.1016/j.tate.2005.12.004
- Krosnick, J. A., & Presser, S. (2010). Question and questionnaire design. In P.V. Marsden & J.D. Wright (Eds.), *Handbook of survey research* (2<sup>nd</sup> ed.) (pp. 263–313). New York, NY: Emerald.
- la Velle, L., Newman, S., Montgomery, C., & Hyatt, D. (2020). Initial teacher education in England and the COVID-19 pandemic: Challenges and opportunities. *Journal of Education for Teaching*, 46(6), 595–608. doi:10.1080/02607476.2020.1803051
- Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teacher sorting and the plight of urban schools: A descriptive analysis. *Teaching and Teacher Education*, 77(1), 37–62. doi:10.3102/01623737024001037
- Love, S.M., & Marshall, D.T. (2022). Teacher experiences during COVID-19. In D.T. Marshall (Ed.), *COVID-19 and the classroom: How teachers navigated the great disruption* (pp. 21–65). Lanham, MD: Lexington Books.
- Maranto, R., & Shuls, J.V. (2013). How do we get them on the farm? Efforts to improve rural teacher recruitment and retention in Arkansas. *The Rural Educator*, 34(1), 1–9. doi:10.35608/ruraled.v34i1.406
- Maranto, R., Queiroz e Melo, R., & Glenn, C. (2020). Introduction to a special section on COVID-19 and schooling in the U.S.: Disruption, continuity, quality, and equity. *Journal of School Choice*, 14(4), 527–533. doi:10.1080/15582159.2020.1836800
- Maranto, R.A., Glenn, C., & Queiroz e Melo, R. (2022). International differences in school responses to COVID-19. In D.T. Marshall (Ed.), *COVID-19 and the classroom: How teachers navigated the great disruption* (pp. 165–181). Lanham, MD: Lexington Books.
- Marshall, D.T. (2017). Equity and access in charter schools: Identifying issues and solutions. *Education Policy Analysis Archives*, 25(83), 1–18. doi:10.14507/epaa.25.2745
- Marshall, D.T., Shannon, D.M., & Love, S.M. (2020a). How teachers experienced the COVID-19 transition to remote instruction. *Phi Delta Kappan*, 102(3), 46–50. doi:10.1177/0031721720970702



- Marshall, D.T., Varier, D., Hope, S.T., & Abrams, L.M. (2020b). The role of mentor-resident match in a teacher residency program: A comparison of three cases. *Journal of Research in Education*, 29(2), 88–117.
- Marshall, D.T., & Bradley-Dorsey, M. (2020). Reopening America's schools: A descriptive look at how states and large school districts are navigating fall 2020. *Journal of School Choice*, 14(4), 534–566. doi:10.1080/15582159.2020.1822731
- Marshall, D.T. (Ed.). (2022). *COVID-19 and the classroom: How teachers navigated the great disruption*. Lanham, MD: Lexington Books.
- Marshall, D.T., & Neugebauer, N.M. (2022). How charter school leaders navigated COVID-19. In D.T. Marshall (Ed.), *COVID-19 and the classroom: How schools navigated the great disruption* (pp. 107–122). Lanham, MD: Lexington Books.
- Marshall, D.T., Shannon, D.M., Love, S.M., & Norris, L. (in press). Teacher sense of efficacy and capturing the initial transition to remote instruction. *Journal of Education*. doi: 10.1177/00220574221138078
- Marshall, D.T., Love, S.M., Neugebauer, N.M., & Smith, N.E. (2023). How additional professional time benefitted teachers during COVID-19. In S.M. McCarther & D.M. Davis (Eds.), *Breakthrough: From pandemic panic to promising practice* (pp. 61–73). Charlotte, NC: Information Age Publishing.
- Manfuso, L. G. (2020, March 19). *From emergency remote teaching to rigorous online learning*. EdTech. URL: <https://edtechmagazine.com/higher/article/2020/05/emergency-remote-teaching-rigorous-online-learning-perfcon> [June 20, 2023].
- Papay, J.P., Bacher-Hicks, A., Page, L.C., & Marinell, W.H. (2017). The challenge of teacher retention in urban schools: Evidence of variation from a cross-site analysis. *Educational Researcher*, 46(8), 434–448. doi:10.3102/0013189X17735812
- Perrachione, B.A., Rossier, V.J., & Petersen, G.J. (2008). Why do they stay? Elementary teachers' perceptions of job satisfaction and retention. *The Professional Educator*, 32(2), 1–17.
- Plash, S., & Piotrowski, C. (2001). Retention issues: A study of Alabama special education teachers. *Education*, 127(1), 125–128.
- Powell, C., Scott, L.A., Oyefuga, E., Dayton, M., Pickover, G., & Hicks, M.A.C. (2022). COVID-19 and the special education teacher workforce. In D.T. Marshall (Ed.), *COVID-19 and the classroom: How schools navigated the great disruption* (pp. 263–278). Lanham, MD: Lexington Books.
- Pressley, T., & Ha, C. (2021). Teaching during a pandemic: United States teachers' self-efficacy during COVID-19. *Teaching and Teacher Education*, 106, 103465. doi:10.1016/j.tate.2021.103465
- Pressley, T. (2021a). Returning to teaching during COVID-19: An empirical study on elementary teachers' self-efficacy. *Psychology in the Schools*, 58, 1611–1623. doi:10.1002/pits.22528
- Pressley, T. (2021b). Elementary hybrid and virtual teacher stress during COVID-19. *Journal of Research in Education*, 30(3), 97–116.
- Pressley, T. (2021c). Factors contributing to teacher burnout during COVID-19. *Educational Researcher*, 50(5), 325–327. doi:10.3102/0013189X211004138
- Return to Learn Tracker. (2021). *Change in instructional status*. American Enterprise Institute and College Crisis Institute. URL: [https://www.returntolearntracker.net/instructional\\_status/](https://www.returntolearntracker.net/instructional_status/) [June 20, 2023].
- Scallon, A.M., Bristol, T.J., & Esboldt, J. (2021). Teachers' perceptions of principal leadership practices that influence teacher turnover. *Journal of Research on Leadership Education*, 1–23. doi:10.1177/19427751211034214
- Scheopner, A.J. (2010). Irreconcilable differences: Teacher attrition in public and catholic schools. *Educational Research Review*, 5, 261–277. doi:10.1016/j.edurev.2010.03.001
- Skaalvik, E.M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and Teacher Education*, 27, 1029–1038. doi:10.1016/j.tate.2011.04.001
- Skaalvik, E.M., & Skaalvik, S. (2014). Teacher self-efficacy and perceived autonomy: Relations with teacher engagement, job satisfaction, and emotional exhaustion. *Psychological Reports; Employment Psychology & Marketing*, 114(1), 68–77. doi:10.2466/14.02.PRO.114k14w0



- Tabachnick, B.G., & Fidell, L.S. (2013). *Using multivariate statistics* (6<sup>th</sup> ed.). Boston, MA: Pearson.
- Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783–805. doi:10.1016/S0742-051X(01)00036-1
- Vanourek, G. (2020). *Schooling Covid-19: Lessons from leading charter networks from their transition to remote learning*. Thomas B. Fordham Institute. URL: <https://fordhaminstitute.org/national/research/schooling-covid-19-lessons-leading-charter-networks-their-transition-remote> [June 20, 2023].
- Veldman, I., van Tartwijk, J., Brekelmans, M., & Wubbels, T. (2013). Job satisfaction and teacher-student relationships across the teaching career: Four case studies. *Teaching and Teacher Education*, 32(1), 55–65. doi:10.1016/j.tate.2013.01.005
- Virginia Department of Education. (2021). *2021 Virginia school survey of climate and working conditions: State technical report*. URL: <https://www.doe.virginia.gov/home/showpublisheddocument/1944/637947645718930000> [June 20, 2023].
- Wilson, T.J., & Alexander, M. (2021). HyFlex course delivery: Addressing the change in course modality brought on by the pandemic. *Journal of the International Society for Teacher Education*, 25(2), 41–58. doi:10.26522/jiste.v25i2.3668
- Zamarro, G., Camp, A., Fuchsman, D., & McGee, J.B. (2022). Understanding how COVID-19 has changed teachers' chances of remaining in the classroom. University of Arkansas Working Paper Series (EDRE Working Paper 2022-01). Fayetteville, AR: University of Arkansas. URL: <https://scholarworks.uark.edu/edrepub/127> [June 20, 2023].

## APPENDIX A

### ***Job Satisfaction Scale (Skaalvik & Skaalvik, 2011; 2014)***

To what extent do you agree with the following statements?

*Participants respond on a six-point scale:*

(1) strongly disagree; (2) disagree; (3) somewhat disagree; (4) somewhat agree;  
(5) agree; (6) strongly agree.

1. I enjoy working as a teacher.
2. I look forward to going to work every day.
3. Working as a teacher is extremely rewarding.
4. When I get up in the morning I look forward to going to work.

## APPENDIX B

### ***Teacher Sense of Efficacy – Student Engagement Subscale (Short Version; Tschannen-Moran & Hoy, 2001)***

Please respond to each of the questions by considering the combination of your *current* (emphasis in original) ability, resources, and opportunity to do each of the following in your present position.

*Participants respond on a seven-point scale:*

(1) None at all; (4) Some degree; (7) A great deal.

1. How much can you do to calm a student who is disruptive or noisy?
2. How much can you do to help your students value learning?
3. How much can you do to get students to believe they can do well in school work?
4. How much can you assist families in helping their children do well in school?

## APPENDIX C

### ***Teacher Sense of Efficacy – Classroom Management Subscale (Short Version; Tschannen-Moran & Hoy, 2001)***

Please respond to each of the questions by considering the combination of your *current* (emphasis in original) ability, resources, and opportunity to do each of the following in your present position.

*Participants respond on a seven-point scale:*

(1) None at all; (4) Some degree; (7) A great deal.

1. How much can you do to control disruptive behavior in the classroom?
2. How much can you do to calm a student who is disruptive or noisy?
3. How much can you do to get children to follow classroom rules?
4. How well can you establish a classroom management system with each group of students?

## APPENDIX D

### ***Friedman Burnout Questionnaire (Friedman, 2000)***

To what extent do you agree with the following statements?

*Participants respond on a six-point scale:*

*(1) strongly disagree; (2) disagree; (3) somewhat disagree; (4) somewhat agree;  
(5) agree; (6) strongly agree.*

1. I feel that teaching is a physical burden on me.
2. I feel worn out after teaching.
3. I feel that my students do not make enough effort at school.
4. I feel that I do not fulfill myself in teaching.
5. I feel that it is not important for my students to prove themselves as “good students.”
6. I feel “finished” at the end of a day’s work.
7. I feel that in another profession, not in teaching, I would have been better able to employ my capabilities.
8. I feel that teaching is too tiring for me.
9. Given the choice, I would choose to start a career in teaching again.
10. I feel that as a teacher I do not advance sufficiently.
11. I feel that my students are not keen on learning.
12. I feel that teaching wears me out.
13. I would have liked to have much better students than I have today.
14. I feel that my expectations of teaching are not fulfilled.

## APPENDIX E

### ***Teacher Leadership and Autonomy Scale (Virginia Department of Education, 2021)***

To what extent do you agree with the following statements?

*Participants respond on a six-point scale:*

*(1) strongly disagree; (2) disagree; (3) somewhat disagree; (4) somewhat agree;  
(5) agree; (6) strongly agree.*

1. I am trusted to make sound professional decisions about instruction.
2. I contribute to decisions about educational issues at my school.
3. I am free to be creative in my teaching approach.
4. I control how I use my scheduled class time.
5. I set the grading and student assessment practices in my classroom.
6. My role as an educator is respected under current policies.
7. Current policies are improving our educational system.
8. My scheduled work day includes sufficient planning time.
9. My scheduled work day includes sufficient instructional time to meet the needs of my students.

## APPENDIX F

### ***Student Access to Resources Scale***

To what extent would you agree with the following statements:

My students have access to ...

*Participants respond on a six-point scale:*

*(1) strongly disagree; (2) disagree; (3) somewhat disagree; (4) somewhat agree;  
(5) agree; (6) strongly agree.*

1. A webcam for video conferencing
2. Connectivity software (e.g., Zoom, Google Classroom, Skype, etc.)
3. Productivity software (e.g., word processing, presentation software, etc.)
4. Cloud storage access (e.g., Dropbox, Onedrive, Box, etc.)
5. Email access
6. Reliable internet access