

Special subject teachers need more support to mitigate respiratory viral spread in schools: insights from interviews during COVID-19

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Abstract

This commentary describes the real-world challenges special subject teachers faced while implementing coronavirus disease-2019 (COVID-19) mitigation strategies recommended by the Centers for Disease Control and Prevention (CDC) in Kindergarten- 5th grade classrooms in a school district in Pima County, Arizona, during the 2021 to 2022 academic year and argues for better support for special subject teachers. While teachers in all classroom types experienced challenges, special subject teachers (eg, special education, physical education, and English as a Second Language [ESL]) faced additional barriers to implementing recommended CDC COVID-19 guidelines. In special education classrooms, the constant need for close physical assistance made social distancing from students impossible. Additionally, mask mandates posed choking and saliva-related safety concerns for students, making it difficult for teachers to enforce the mandate. For ESL teachers, implementing the mask mandate meant losing out on using visemes and visual cues, which are an integral part of ESL instruction. In physical education, rigorous disinfection routines between students led to the rapid degradation of gym equipment and heightened concerns about chemical exposure. We reflect on the challenges and modifications these teachers faced, highlighting classroom-specific examples and illustrative quotes from key informant interviews. Future policies and guidance that better support the health of teachers and effective infection control across various classroom environments will benefit from educator collaboration and input.

Keywords school health, biological hazard, educators, intervention

Introduction

The coronavirus disease-2019 (COVID-19) pandemic highlighted longstanding stressors on schools, especially for school health staff and teachers (Wilson et al. 2023). Teachers in Kindergarten-12th (K-12) grade schools became frontline workers, implementing mitigation strategies that had been issued by the Centers for Disease Control and Prevention (CDC) to help curb the spread

of the disease (Wilson et al. 2022; Rose et al. 2025). Despite the reported effectiveness of the issued guidance for transmission mitigation (Zimmerman and Benjamin 2023), the guidance was generally broad and needed to be adapted for specific schools and classroom settings (Phelps et al. 2022; Sherby et al. 2022).

While challenges for general education teachers have been captured (Gillani et al. 2022; Pampati et al. 2023),

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those for special subjects' teachers are not as thoroughly documented in the literature. A previous paper by [Wilson et al. \(2022\)](#) discussed the barriers to implementing mitigation strategies in Kindergarten- 5th grade (K-5) settings and mainly focused on the experiences of general education teachers. This commentary examines the potential challenges of non-general education teachers (eg, special education, physical education, and English as a Second Language [ESL]) in implementing recommended CDC COVID-19 guidelines by exploring the experiences of a small set of special subject teachers in a school district in Pima County, Arizona, during the 2021 to 2022 school year. These educators dealt with conflicting policy requirements and work pressures as their school district maintained a mask mandate even when masks were banned at the state level ([Wilson et al. 2022](#)).

According to the National Center for Education Statistics, in the fall of the 2021 to 2022 academic year, 5.3 million students (10.6%) in K-12 public schools were enrolled in ESL programs, with many of these students (12.3%–15%) in K-5 schools. The states with the largest proportions of ESL students were Texas (20.2%), California (18.9%), and New Mexico (18.8%) ([National Center for Education Statistics 2025](#)). Additionally, 7.2 million students received special education services in 2021 to 2022, increasing to 7.5 million in 2022 to 2023 ([National Center for Education Statistics 2025](#)). These statistics show a cross-section of the many students in U.S elementary schools who are enrolled in special subject courses, yet the challenges faced by their teachers in implementing COVID-19 mitigation strategies remain under-documented.

Although the COVID-19 pandemic has ended, both teachers and their students continue to be at risk of respiratory viral infections, with occasional reports of COVID-19 variant cases. A recent study by [De Arcos-Jiménez et al. \(2025\)](#) highlights how the COVID-19 pandemic has resulted in changes in seasonal respiratory viral burden and spread, and has resulted in reduced predictability of respiratory viral spread. With increased efforts to curb respiratory viral transmission in built environments, their findings support the relevance of our insights, which have implications for strategies to address other respiratory viral diseases and protect worker health.

Balancing infection control and student needs in special education classrooms

In special education classrooms, teachers faced difficulties in implementing COVID-19 guidance due to the close-contact nature of the methods of instruction for students.

The requirements of the COVID-19 guidance conflicted with the nature of teaching methods as well as the physical needs of their students.

Teachers described being unable to physically distance due to student needs (eg, diaper changes, cleaning of wheelchairs and adaptive equipment). Additionally, despite the respiratory protection masks offered, they created significant communication barriers, especially for nonverbal/lip-reading students. Teachers were also concerned about students ingesting hand sanitizer and masks posing as choking hazards. The special education teacher shared how this impacted her teaching experience:

My kids, since they're nonverbal, they mostly focus on our facial expressions and looking at our mouths when we're trying to say words or sounds or other—like just to see us, they're not used to not being able to see us. I had one kiddo this year, who, because we're still in masks—he's a newer kiddo and he reached out, he grabbed my mask, and he ripped it off because he wanted to see us.

Her experience can be likened to that of many other special education teachers who had to deal with disrupting the positive connections they had formed with their students, which required close contact and visual stimulation ([Aspelin et al. 2021](#)).

To minimize levels of exposure, teachers/caregivers were each assigned one student. With a washer and dryer in their classrooms, they were able to launder soiled materials to minimize their and students' exposures to droplets deposited on clothing. Additionally, teachers maintained close communication with school nurses, constantly watching out for possible COVID-19 symptoms. This helped prevent the spread of COVID-19 among their students, many of whom they also described as having other comorbidities and protected them from the virus as well. Attempts made by caregivers to use mask alternatives like face shields proved impractical, and further safety concerns were raised by parents who expressed worry about masks potentially collecting saliva and serving as a nidus of infection or choking their children.

Adapting physical education to COVID-19 protocols

Physical Education teachers faced the unique challenge of balancing interactive teaching with social distancing and infection prevention, while preserving the structure of their teaching equipment. Teachers were given chemical sprays for sanitizing equipment and the gym surroundings

constantly. These strong chemicals not only destroyed the gym equipment but were also potentially aerosolized, increasing their risk for occupational asthma and other respiratory illnesses (Clausen et al. 2020). The physical education teacher described the cleaning routine:

But it was a very harsh cleaning chemical, and they gave us misters and everything to spray. So we would spray every single surface, had to spray all the bleachers, the floor, everything. And it did a lot of damage to our equipment.

Teachers also had to constantly remind students to hydrate during class activities. While mask use was important for reducing the transmission of the virus, some students complained of difficulty or discomfort breathing during physical activities.

In response to these challenges, physical education teachers introduced quick symptom screening tools and were strict regarding the completion of the screening tool daily before practice. They gave more breaks to ensure adequate hydration, used simplified tutorials for on-line learning and invested in additional equipment to replace damaged supplies.

Communication challenges in ESL settings

The biggest challenges for ESL instructors were the effects of mask use on language instruction and the limited resources for students from non-English-speaking families during online or hybrid learning. The use of masks made it difficult for ESL learners to see the mouth movements of teachers, which affected proper pronunciation and articulation of sounds and words (Abdallah and Gadir 2024; Kitikanan and Leung 2024). This created barriers for effective language instruction and even affected the proper implementation of mask use as a mitigation strategy. Reflecting on those challenges, the ESL teacher shared:

This little child speaks a completely different language at home than she does at school. We can't—even if I have a translator working with this parent, doing the skill folder isn't going to make sense to do it at home.

Teachers resorted to using mirrors and exaggerated gestures to compensate for the loss of visual cues. For some students, especially those in non-English speaking homes or with limited digital access, remote learning worsened these challenges by disrupting the in-person classroom support their teachers provided in demonstrating the

physical mechanics of sound production and word synthesis, such as tongue and mouth positioning. Mask use created physical barriers for visual and auditory feedback that are important for ESL teaching and learning (Abdallah and Gadir 2024).

At the peak of the pandemic, there was also a heightened sense of job insecurity among ESL teachers due to a shift in the importance of learning the English Language, adding to their psychological stress (Hartshorn and McMurry 2020). These experiences emphasize the need to design infection prevention and pandemic preparedness guidance and resources that take into consideration language instruction for students. More tailored public health and educational policies are needed to ensure that language learning remains accessible and that educators in multilingual settings receive adequate support during future health emergencies.

Recommendations for action

Specialized educational settings required fundamental modifications to basic mitigation strategies to achieve the same level of protection from the COVID-19 virus as those in general classrooms. This is particularly important for non-general classroom settings, ensuring that the health of staff is prioritized just as much as that of the students. It should be borne in mind that the health and safety of teachers have a direct impact on the health of the students, who are more vulnerable to infection transmission (Ochili et al. 2025). Healthy teachers will be able to better implement disease mitigation strategies and reduce the pathogen load in the school environment, safeguarding the health of young students.

Considering the unique challenges and experiences teachers face in their different classroom environments while creating tailored guidance can improve implementation outcomes, limit pathogen spread, and promote safer learning. Collaboration among policymakers, public health experts, certified industrial hygienists, and other occupational health experts, educators, and school health staff is important for developing guidance that reflects real classroom needs, such as ventilation, cleaning protocols, and communication barriers.

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Conflicts of interest

The authors have no conflicts of interest to disclose.

Data availability

No data were used in this study.

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