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Assessing Learning for Students with Special Educational Needs and Disabilities in Times of Disruption

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ABSTRACT

During COVID-19 lockdowns, teachers worldwide had to quickly adapt to emergency remote teaching, impacting their instruction and assessment practices. This transition resulted in increased perceived workloads for teachers. Through a moderated mediation model using data from 3675 Portuguese teachers, this study found that the relationship between teachers' adaptation to remote teaching and their perceived workloads was mediated by instruction and assessment. Moreover, changing assessment methodologies, as proposed in an emergency assessment policy, moderated this relationship. However, for special education teachers, these changes did not moderate the relationship, suggesting that their challenges extended beyond assessment adjustments. These findings emphasize the unique difficulties faced by special education teachers and the importance of avoiding a one-size-fits-all assessment policy in future disruptive events.

Introduction

Worldwide, in March 2020, the implementation of Emergency Remote Teaching (ERT) due to the COVID-19 pandemic imposed significant limitations on instruction and learning processes, with major implications for classroom assessment (e.g., Cipriano, 2025; Cooper et al., 2022; NAE, 2021; Panadero et al., 2022; Rodrigues et al., 2022; Sandvik et al., 2023; Seabra et al., 2021; Wise et al., 2022) and teachers' working conditions (CNE, 2021a; Flores et al., 2020; OECD, 2020b, 2021). In Portugal, the disruptions were so severe that, in April 2020, the Portuguese government issued Decree-Law No. 14-G/2020 – a temporary emergency policy for assessment of learning – aimed at helping schools and teachers overcome the restrictions of ERT in assessment. Decree-Law No. 14-G/2020 introduced exceptional changes to assessment, representing a substantial departure from pre-pandemic practices: External examinations in basic education were canceled, and national examinations in secondary education were limited to subjects required for access to higher education, significantly reshaping the work of teachers and schools (Cipriano & Martins, 2025, 2026). All school-based assessments shifted to remote modalities. Where needed and possible, teachers were required to change their typical assessment practices, collecting evidence of learning through online participation, digital submissions, and intermittent synchronous interactions – processes often constrained by unequal access to technology and reduced student engagement (Flores et al., 2020, 2021; Seabra et al., 2021).

Based on a secondary database collected immediately after the first ERT period in July 2020, the first objective of this study is to investigate whether the enactment of Decree-Law No. 14-G/2020 alleviated the challenges Portuguese teachers faced in their classroom assessment practices during the first COVID-19 lockdown. To this end, using a moderated mediation model (Hayes, 2022), we examined whether instruction and assessment mediated the relationship between teachers' adaptation

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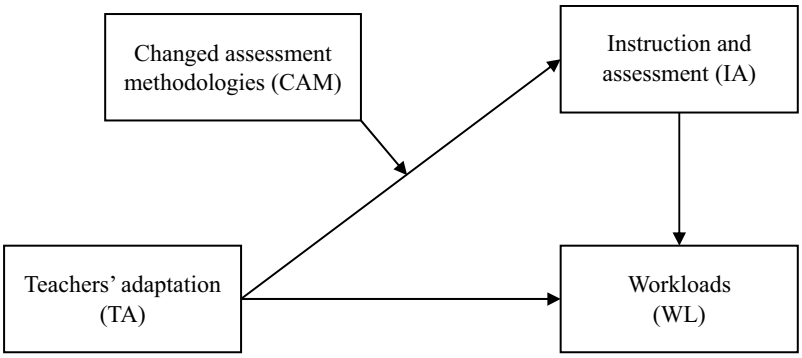


Figure 1. Conceptual model for moderated mediation.

and perceived workloads during this period. Additionally, we tested whether changes in assessment methodologies moderated the relationship between teachers' adaptation to ERT and instruction and assessment, as shown in Figure 1.

Research indicates that Special Educational Needs and Disabilities (SEND) teachers should adapt learning targets, instructional strategies, and assessment methods to accommodate the individual needs of each student (e.g., Alves et al., 2020; Brookhart, 2013; Lingard, 2007; Xu, 2013). Concerning the practices of SEND teachers during the first COVID-19 lockdown, some studies indicate that special education services generally continued to be delivered. However, SEND professionals reported lower levels of self-efficacy in their roles (Womack & Monteiro, 2022), and SEND teachers described tensions around accountability and grading (Schuck & Lambert, 2020). Therefore, a second objective of this study is to examine whether the enactment of Decree-Law No. 14-G/2020 also mitigated the difficulties SEND teachers faced in conducting their assessments. Focusing on the subsample of SEND teachers and using the same moderated mediation model depicted in Figure 1, we examined whether instruction and assessment also mediated the relationship between SEND teachers' adaptation and perceived workloads during this period. Additionally, we analyzed whether changes in assessment methodologies moderated the relationship between SEND teachers' adaptation to ERT and instruction and assessment.

Literature review

Contextual considerations regarding classroom assessment policy in Portugal

Teachers require a robust set of knowledge, skills, and dispositions to design, administer, interpret, and use assessments effectively within both the classroom context and the wider school system, enabling them to support student learning and make informed instructional decisions grounded in educational standards (DeLuca et al., 2016; Popham, 2011; Xu & Brown, 2016). As a result, classroom assessment is often conceptualized as a process through which teachers gather and use information about student learning to teach more effectively and respond to students' learning needs (Pastore & Andrade, 2019). A growing body of research has also demonstrated that meaningful classroom assessment is deeply interconnected with curriculum, instruction, and learning processes (Black & Wiliam, 1998, 2018; Fernandes, 2011; Lingard, 2007).

Reflecting these very same principles about classroom assessment and links with curriculum, instruction, and learning processes, in Portugal, Decree-Law No. 55/2018 (from 2018) establishes the curriculum for basic and secondary education, along with the guiding principles for the assessment of learning considering the Students' Profile by the End of Compulsory Schooling (see PASEO, 2017). This educational policy mandates that formative assessment should prevail in classrooms at all levels of compulsory education, making assessment an integral part of the teaching and learning process.

The primary goal of classroom assessment is to refine teaching approaches and enhance student learning. To achieve this, assessment should be a continuous process of pedagogical intervention, where learning objectives, expected performances, and assessment procedures are clearly defined (Decree-Law No. 55/2018).

For SEND students, assessment is particularly challenging due to the heterogeneous nature of the student population. Conceptually, assessment in special education can be framed at the intersection of criterion-referenced assessment, mastery learning, and progress monitoring (Salvia et al., 2010). To this end, learning targets are often individualized while remaining aligned with the general education curriculum and instruction. It is important that these learning goals be concrete and well-documented. Thus, the general education teacher and SEND teacher should collect formative assessment data to evaluate and monitor the student's progress, adjusting the learning goals when necessary (Alves et al., 2020; Brookhart, 2013; Lingard, 2007; Wennergren, 2011; Xu, 2013).

In line with the literature and UNESCO's commitment (UNESCO, 2009) to decrease and eradicate exclusion within and from education, the Portuguese government, also in 2018, approved the Decree-Law No. 54/2018. This legislation sets out the principles and norms designed to ensure inclusion, framing it as a process that responds to the diversity of pupils' needs. It also outlines measures to support learning and inclusion, as well as specific resources to be deployed to address the educational needs of each child and young person throughout their school path.

Regarding SEND teachers, Decree-Law No. 54/2018 states that, within their area of expertise, SEND teachers should support other teachers, collaboratively and taking joint responsibility, in designing pedagogical differentiation strategies, providing learning reinforcement, and identifying multiple means of motivation, representation, and expression, in line with the principles of Universal Design for Learning (see, e.g., CAST, 2024). Moreover, schools must ensure that all pupils have the right to participate in assessment processes. To do so, teachers should adjust their internal assessment processes to their students' needs. It should also be noted that these adaptations to internal assessment processes are a school responsibility, with the obligation to make the results of students' assessment public (Decree-Law No. 54/2018).

Teachers' adaptation to ERT and perceived workloads

During the COVID-19 lockdowns, teachers' adaptation to distance teaching and teleworking from home required the realization of several new tasks to be performed by students and teachers (CNE, 2021a; Flores et al., 2020; OECD, 2020b, 2021). These new tasks at home led to teachers experiencing an increased workload during ERT (CNE, 2021a; Klusmann et al., 2023), resulting in various consequences for their health, including depression, anxiety, stress, and burnout (Jerrim et al., 2024; Lizana et al., 2021). These effects were also associated with difficulties in managing family and professional roles, in creating optimal conditions for teaching, learning, and assessment, and in handling technical aspects related to software and technology use (Flores et al., 2023). Hence, we defined the following research hypothesis (Figure 1):

Hypothesis 1: Teacher's adaptation (TA) is positively related to workloads (WL).

Instruction and assessment during ERT (the mediator)

The shift to distance teaching during the COVID-19 pandemic imposed significant constraints on teachers' practices, with consequent impacts on students' learning (e.g., Cipriano, 2025; CNE, 2021a, 2021b; Esteves et al., 2021; Flores et al., 2020; Ikeda & Echazarra, 2021; OECD, 2020b, 2021), including educational practices and support for students and families with special needs (Simó-Pinatella et al., 2022). In Portugal, school closures due to the COVID-19 pandemic transitioned approximately 1.5 million students and 163 thousand teachers from face-to-face instruction to distance teaching

(source: DGEEC, 2020). Although this represented an important initial response to the pandemic, distance teaching during this period was largely an unplanned, improvised, and temporary solution. Furthermore, it was not implemented by professionals equipped with the necessary digital and pedagogical competencies for effective distance teaching (CNE, 2021a; OECD, 2020b). Thus, this form of teaching – Emergency Remote Teaching (ERT) – should not be confused with online learning or other forms of intentional distance teaching and learning (Hodges et al., 2020). In addition to the constraints that an unprepared ERT context imposed on teachers' practices, ERT also intensified social inequalities among students (Martins, 2020), including those with special educational needs and disabilities (Couper-Kenney & Riddell, 2021). As students had access to a wide variety of educational solutions, when they had a solution at all, social inequalities impacted students' learning, performance, and assessments.

Before the abrupt shift to ERT, instructional practices in Portugal were grounded in face-to-face interaction, relying on established routines and in-person mentoring in schools. With the closure of all schools, teachers were required to redesign instruction almost overnight, moving from classroom-based pedagogies to digital formats without prior preparation (CNE, 2021a). Early responses focused on maintaining continuity and ensuring students' connection to school, largely through synchronous sessions using Google Meet, Microsoft Teams, Skype, or Zoom, as well as the distribution of materials via e-mail or Moodle platforms. As additional measures for students without reliable internet or devices, access included the provision of paper-based materials with the support of local authorities, and the broadcasting of the TV program *Estudo em Casa* [Studying at Home] (Flores et al., 2020, 2021; Seabra et al., 2021).

In this context, teaching and learning activities took place through both synchronous and asynchronous formats, with synchronous sessions supporting interaction and clarification of content, while asynchronous activities were mainly used for task completion. Most teacher – student contact focused on the distribution and monitoring of tasks and administrative matters (Flores et al., 2021). Teachers often had to rely on their own devices to provide instruction, while inequalities in access to technology and reliable internet limited the reach and effectiveness of distance teaching (Seabra et al., 2021). Over time, students' engagement decreased, exacerbating gaps in learning opportunities and outcomes. Teachers also faced substantially increased workloads, as they were required to adapt instructional materials and pedagogical strategies in real time to meet students' diverse needs (CNE, 2021a; Flores et al., 2020, 2021; Seabra et al., 2021).

Despite this massive disruption, as in face-to-face classrooms, instructional practices and assessment processes appeared to remain deeply intertwined: instructional decisions during ERT shaped how student learning was monitored and evaluated, while assessment practices simultaneously informed and constrained instructional design and enactment. However, the ERT impact on assessments is particularly worrying when assessments are used for summative and grading purposes. When decisions about students' educational pathways depend on assessment results, as in grade transition or in access to higher education, concerns about the fairness of assessments emerge. As the American National Academy of Education (NAE, 2021) points out, an equitable assessment system should be fair, accurate, and valid. In a highly disruptive context, where the fairness, reliability, and validity of assessments were questioned, the use of assessment results for accountability purposes became controversial (NAE, 2021; Nisbet & Shaw, 2022).

Although the core of Decree-Law No. 54/2018 and Decree-Law No. 55/2018 primarily promote formative assessment practices in the Portuguese educational system, summative assessments continue to play a significant role. In light of the limitations of ERT and its effects on students' learning and assessment processes, the Portuguese government approved, in April 2020, a set of exceptional and temporary measures establishing an alternative assessment framework for internal assessment, national low-stakes assessments, and basic and secondary education examinations for the conclusion of the 2019/2020 school year (see Decree-Law No. 14-G/2020).

It should be noted that Decree-Law No. 14-G/2020 was written with clear concerns regarding summative assessments, grading, and the certification of students' learning. To address the

challenges posed by ERT and the lockdown, the Portuguese Ministry of Education granted schools and teachers greater autonomy to adapt their classroom assessment methods, criteria, and instruments to students' needs and the circumstances. In addition, all national low-stakes assessment tests in grades 2, 5, and 8 were canceled. Examinations for the completion of basic education (grade 9) and secondary education (grades 11 and 12) were also canceled, with secondary education examinations taking place only for students who required them for access to higher education. Consequently, grading and learning certification at all levels of compulsory education relied solely on internal assessment, which had a direct impact on teachers' grading practices (Cipriano & Martins, 2025) and schools functioning (Cipriano & Martins, 2026). This quick response to an evolving and changing context, and the shift from summative large-scale assessments to formative teacher-constructed assessments, can be defined as emergency assessment (Cooper et al., 2022).

In a context as disruptive for instruction as ERT, teachers' conceptions and practices regarding assessment were also challenged by a completely new paradigm. Panadero et al. (2022) showed that, in Spain, the sudden transition to ERT affected teachers' assessment practices, as they were required to modify their assessment instruments, standards, and expectations of students. As a result, teachers became more flexible in their evaluation strategies, lowering assessment criteria and standards; and adjusting grading procedures (Panadero et al., 2022). In line with findings from Spain, research by the *Conselho Nacional de Educação* [The Portuguese National Education Council] (CNE) indicates that the ERT in Portugal prompted teachers to reconsider their assessment methods, instruments, criteria, objects, and trust. In this CNE study, approximately 82% of participating teachers reported that assessing learning was difficult or very difficult (CNE, 2021a). Similarly, Cooper et al. (2022) note that, in Canada, as well as in Portugal, the pandemic increased teachers' responsibility for using classroom assessment as the primary source of information about student growth and achievement. This shift has tied assessments more closely to students' learning contexts and experiences; positioning teachers as central agents in the assessment process (Cooper et al., 2022). Consequently, it is believed that part of the difficulties felt by teachers regarding their own adaptation to ERT are related to instruction and assessment, with an increased workload to adjust their instruction and assessment objects, methods, instruments, and criteria. Based on these considerations, we hypothesized that: (Figure 1):

Hypothesis 2: Instruction and assessment (IA) mediate the relationship between teachers' adaptation (TA) and workloads (WL).

Changing assessment methodologies during ERT (the moderator)

The implementation of Decree-Law No. 14-G/2020 established a new legal framework that enabled teachers to adapt their assessment practices to the demands of ERT. According to CNE's study (2021a), 81% of Portuguese teachers who participated in their survey, reported having modified their assessment methodologies to adapt themselves to ERT. To adjust their instruction and assessment practices to ERT, teachers redefined the objects to be assessed, assessment criteria, assessment instruments, and assessment purposes (CNE, 2021a). Moreover, Rodrigues et al. (2022) found that Portuguese teachers diversified their assessment instruments during ERT, increasingly moving away from traditional written tests compared to pre-pandemic practices. Consequently, it is to be expected that having changed assessment methodologies (CAM) moderates the relationship between teachers' adaptation (TA) and instruction and assessment (IA), in the sense that the relationship is stronger for teachers who did not change their assessment methodologies during ERT. This leads to the following hypothesis (Figure 1):

Hypothesis 3: Having changed assessment methodologies (CAM) moderates the relationship between teachers' adaptation (TA) and instruction and assessment (IA), such that the relationship is stronger among teachers who did not change their assessment methodologies.

Taken together, the above-mentioned predictions suggest that the mediating role of instruction and assessment (IA) in the relationship between teachers' adaptation (TA) and workloads (WL) depends on the level of changed assessment methodologies (CAM). On this basis, we propose the following hypothesis (Figure 1):

Hypothesis 4: The indirect effect of teachers' adaptation (TA) on workloads (WL), via instruction and assessment (IA), is moderated by changed assessment methodologies (CAM).

Assessment in special education during ERT

According to Hopkins et al. (2024), there is little evidence detailing the scope of the COVID-19 pandemic's impact on students with disabilities, although it is known that the pandemic caused delays in special education identifications, which could have long-term negative effects on students' academic and health outcomes. Thus, students with disabilities were at particularly high risk of poor outcomes due to the resulting educational disruption (Hopkins et al., 2024). SEND students and their caregivers also reported that the COVID-19 pandemic had a negative impact on their educational performance, particularly in speech and language development, learning, and academic achievement (Pittas & Papanastasiou, 2023).

During ERT, despite the continued delivery of special education services, SEND professionals experienced lower levels of school connectedness and self-efficacy in their roles compared to a typical school year (Womack & Monteiro, 2022). Additionally, Schuck and Lambert (2020) highlighted a tension among SEND teachers regarding accountability, grading, and attendance. While they recognized the importance of accountability and feedback for students, SEND teachers struggled with how to provide it effectively.

The literature emphasizes that inclusive assessment practices should focus on each learner's individual progress, needs, and strengths, supporting learning rather than labeling or excluding students (IBE-UNESCO [IBE], 2017). Accordingly, assessments should be adapted to the type and severity of each student's disability and their specific needs (Xu, 2013). Salvia et al. (2010) further detail how criterion-referenced, and achievement-standards-referenced interpretations coexist with norm-referenced information, and how universal design and accommodations uphold technical adequacy, ensuring that grades reflect the construct of interest rather than disability-related barriers. Yet while research shows that learners with diverse needs often follow different learning pathways, less is known about the range of assessment practices used to support and measure their learning (Bourke & Mentis, 2014).

Siegel and Allinder (2005) observed that SEND teachers' assessment practices tend to vary depending on the type and severity of a disability, aligning with recommended practices for students with moderate to severe disabilities. Note, however, that teachers' own conceptions and beliefs about assessment purposes and practices often take precedence over official recommendations and legislation on assessment and grading (Cipriano & Martins, 2021). Concerning special education, as Kyttälä et al. (2023) show, the diverse backgrounds of special needs teachers can also strongly shape their assessment conceptions and self-efficacy. Furthermore, although most previous adaptations to SEND students' assessments have met the needs of inclusion programs, SEND teachers often disregard the recommendation to grade students based on achievement (Brookhart, 2013). Thus, on the one hand, grades should be reflective of students' achievement, on the other, most SEND teachers place most emphasis on students' improvement than on students' achievement (McLeskey & Waldron, 2002). This highlights a recurring paradigm in education, where policies, teachers' beliefs about assessment,

and classroom practices interact, shaping how assessment is enacted in practice (Cipriano & Martins, 2025). Assessment practices in special education can hinder inclusive education if it reinforces low expectations of a child's learning or does not provide meaningful insight into how the child can be effectively supported (Lebeer et al., 2011). Ultimately, SEND teachers' choices about the assessment practices they employ reflect their views on teaching, assessment, and learning (Bourke & Mentis, 2014).

Given the challenges of assessing the diverse needs of SEND students, the tendency to focus on monitoring progress, and the lack of evidence detailing the scope of the COVID-19 pandemic's impact on SEND students' assessments, we conducted a complementary analysis applying the model shown in Figure 1 exclusively to the subgroup of SEND teachers. This approach allows us to explore the relationships between their adaptation to ERT, perceived workloads, instructional and assessment practices, and the use of changing assessment methodologies, thereby addressing a significant gap in research within this field.

Method

Database

The database created by CNE to support the study "*Educação em tempo de Pandemia: Problemas, respostas e desafios das escolas*" [Education in pandemic times: problems, responses, and challenges of schools] (CNE, 2021a) was used to test the model. CNE's study aimed to understand how the closure of schools affected teachers, students, and families (CNE, 2021a, p. 15), through a questionnaire applied during the month of July 2020, after the first ERT experience (CNE, 2021a, p. 52). The questionnaire was addressed to teachers with coordination functions at schools. Teachers with coordination functions are educators who assume intermediate leadership responsibilities, particularly as subject-area department coordinators, acting as a link between school leadership and the work of their departmental colleagues. It is estimated that the 4338 valid answers correspond to a 29% rate of teachers with coordinating functions at a national level (CNE, 2021a, p. 54). This study, conducted by CNE, is available on its website, along with the questionnaire and main statistics collected through the questionnaire.

It is important to note that our research hypotheses were not formulated or analyzed in the CNE study. Thus, this paper provides new insights derived from their data, which was analyzed under a research confidentiality agreement. Secondary data analysis, as conducted in the present study, has increasingly been recognized as a valuable research approach. It allows researchers to maximize the utility of existing high-quality datasets, explore additional questions not addressed in the original study, and generate new evidence without additional data collection (Bryman, 2012, pp. 311–312), while maintaining and ensuring all conditions of security and data protection with regard to institutional microdata rules. Using this database, collected in 2020 immediately after the first COVID-19 lockdown, also offers a unique opportunity to investigate teachers' experiences and assessment practices in a temporally grounded context, capturing the immediate effects of the abrupt transition to remote teaching. As a consequence, this approach enables rigorous hypothesis testing using data that reflect teachers' real-time adaptation, providing insights that are both timely and highly relevant for understanding educational responses to disruptive events.

Procedures

A teachers' questionnaire on the study conducted by CNE, was applied online, preceded by a pretest, in July 2020. Its dissemination was done through an e-mail sent to all school principals at a national level, including the autonomous regions of Azores and Madeira. The questionnaire was then forwarded by school principals to teachers with coordination functions at their schools. All responses were anonymous, making it impossible to link a teacher to another teacher or school (CNE, 2021a).

Although the sample was obtained through a non-probabilistic sampling process, it is important to note that it exhibited no discernible pattern or predictability (Stopher, 2012).

Participants

Preschool teachers with coordination functions at schools also participated in the CNE survey. It is important to note that, in Portugal, preschool education, which serves children aged 3 to 5, is not part of the compulsory schooling system. Furthermore, Portuguese preschools follow specific guidelines regarding instruction, curriculum, and assessment. As a consequence, for the purposes of this study on assessment practices in compulsory education, preschool teachers who participated in the questionnaire were excluded from the CNE database, resulting in a final sample of 3675 teachers. It should also be noted that coordination functions are restricted to permanent members of the teaching staff. For this reason, only a small number of young teachers, under 40 years old, perform this type of functions at schools, which explains the age bias in the sample (χ^2 (2, $N = 3675$) = 655.10, $p < .001$). Accordingly, Table 1 shows that coordination functions are mostly performed by mid-career teachers, where 70.9% are above 50 years old, with a mean of 53.2 years old ($SD = 6.7$ years old). Regarding sex, the sample fits the population (χ^2 (1, $N = 3675$) = 1.48, $p = .224$). Women teachers in the sample were prevalent (76.3%), as they are in the teaching population.

Regarding SEND teachers, in Portugal there are four recruitment groups related to Special Educational Needs and Disabilities. These include teachers of Portuguese Sign Language (recruitment group 360) and three specialized education groups: one supporting children and youth with severe cognitive or motor impairments, personality or behavioral disorders, multiple disabilities, and early childhood intervention (recruitment group 910); another supporting students who are deaf or have severe communication, language, or speech difficulties (recruitment group 920); and a third supporting students who are blind or have low vision (recruitment group 930). These special education teachers work with students from preschool through 12th grade. Students with learning disabilities are primarily supported by general education teachers and by teachers from recruitment group 910. In the present sample, there are 274 teachers from these four recruitment groups, defining the sub-sample of SEND teachers.

Measures

Teachers' adaptation

As mentioned before, teachers' adaptation to ERT implied the realization of several new tasks to be performed by students and teachers (E.g., CNE, 2021a; Flores et al., 2020; OECD, 2020b, 2021). To measure this dimension of Teachers' Adaptation (TA) to ERT, three items were considered, relating to the question *As a coordinator teacher, indicate the level of difficulty for the following aspects of distance teaching*: a) *Adjust the number of tasks to students* b) *Adjust the complexity of tasks to students* c) *Plan weekly/fortnight tasks*. All three items were answered on a four-point scale, with 1 indicating *very easy*,

Table 1. Teachers from compulsory school by sex and age.

	Sample		Population	
	n	%	N	%
Sex				
Female	2803	76.3	91,466	75.5
Male	872	23.7	29,660	24.5
Age				
<39 years old	80	2.2	1,496	11.9
Between 40 and 49 years old	989	26.9	44,355	36.6
≥50 years old	2606	70.9	62,375	51.5

Note. $N = 3,675$.
Sources: CNE teachers' survey, 2020; DGEEC, 2021.

2 *easy*, 3 *difficult*, and 4 *very difficult*. The TA measure demonstrated very good reliability (WLA' α = 0.79, Kline, 2016). A total score was computed as the mean of all items (equally weighted), with higher scores indicating greater difficulty in teachers' adaptation.

Workloads

Teachers had an induced feeling of an increased workload during ERT (CNE, 2021a; Klusmann et al., 2023) due to intensification and extensification of work efforts of home-based teleworking (Palumbo, 2020). Workloads (WL) was measured based on eight items referring to the question *Regarding the volume of work required by remote teaching, how do you classify the following tasks?*. All items were answered on a four-point scale ranging from 1 to 4, with 1 indicating *less*, 2 *the same*, 3 *more*, and 4 *much more*. The scale showed adequate reliability (α = 0.79, Kline, 2016). Item responses were averaged to obtain a single composite score, with all items equally weighted, with higher scores indicating higher level of workload.

Instruction and assessment

Classroom assessment is strongly linked to the curriculum, instruction and learning processes (Black & Wiliam, 1998, 2018; Fernandes, 2011; Lingard, 2007). To measure instruction and assessment (IA) considering these dimensions, five items were used. Respondents were asked to indicate the degree of difficulty associated with the following aspects: a) *Comply the syllabus*, b) *Diversify teaching methodologies*, c) *Promote autonomous learning*, d) *Provide feedback to tasks*, and e) *Assess learning*. All items were answered on a four-point scale, with 1 indicating *very easy*, 2 *easy*, 3 *difficult*, and 4 *very difficult*. As the IA Cronbach's alpha was 0.68, the mean inter-item correlation was also examined. Reliability was considered adequate, as the obtained value (0.30) fell within the recommended range 0.15 to 0.50 (Clark & Watson, 1995). An exploratory factor analysis further supported the internal consistency of the measure, with all five items loading on a single factor (loadings ranging from .50 to .69). This result suggest a consistent association among curriculum, instruction, assessment, and learning processes, even within a disruptive ERT context. Therefore, a single composite score was computed as the mean of all five items responses (equally weighted), with higher scores indicating greater level of difficulty on Instruction and Assessment.

Changes on assessment methodologies

Changes in assessment methodologies were measured using the question: *While schools were closed, did you change assessment methodologies?* Responses (Yes/No) were recoded as a dummy variable – Changed Assessment Methodologies (CAM) – with 1 = changed and 0 = not changed.

Data analysis

Descriptive statistics (mean and standard deviation) and correlations among the study variables were calculated. A mediation analysis was conducted to test hypothesis 2. Mediation analysis examines the indirect pathways through which an antecedent variable (*X*) influences a consequent variable (*Y*) via one or more mediator variables (*M*). Hypothesis 3 was tested using a moderation analysis, which assesses whether the relationship between a predictor variable *(X)* and an outcome variable *(Y)* varies as a function of a moderator variable (*W*). Finally, a moderated mediation analysis was performed to test Hypothesis 4. This conditional process analysis examines whether the mediating effect of *X* on *Y* through *M* depends on the level of the moderator variable (W), as illustrated in Figure 1. To analyze both the full sample and the SEND teacher's sub-sample, the PROCESS macro (Hayes, 2022) was used. This macro includes all the necessary statistical procedures to test moderation, mediation and moderated mediation. To assess the indirect effect and the conditional indirect effect, bootstrap estimation was employed using 5,000 resamples, and 95% confidence intervals were calculated. In addition, to interpret the moderation effect, interaction terms were plotted at −1 and +1 SD from the mean of the moderator Changed Assessment Methodologies (CAM) (Aiken & West, 1991).

Due to age-related bias between the sample and population, age was included as a control variable in the mediation and moderated mediation models. As the results were comparable, only the models without age as a covariate were reported.

The items used to measure Teachers' Adaptation (TA), Workloads (WL), and Instruction and Assessment (IA)showed very low levels of missing data, ranging from 0.1% to 2.9%. Missing data were examined to assess whether the Missing Completely at Random (MCAR) assumption was met. Little's MCAR test was non-significant (χ^2 (15) = 11.97, p = .681), indicating no significant difference between cases with missing data and complete data, thus no patterns exist in the missing data. These results support the MCAR assumption. Given the large sample size and the very low proportion of missing data, listwise deletion was applied, as under these conditions, this method is unlikely to produce biased estimates or reduce statistical power (Cheng et al., 2021). Listwise deletion yielded a sample of N = 3,675. Composite scores for each measure were therefore computed using only complete cases, with observations containing any missing values excluded from the analyses.

Results

Preliminary analyses

Descriptive statistics were used to analyze the model variables – changed assessment methodologies (CAM), teachers' adaptation (TA), instruction and assessment (IA), and workloads (WL) (Table 2).

Hypotheses testing considering all curricular areas

Hypothesis 1, which predicted a positive relationship between teacher's adaptation (TA) and workloads (WL), was supported (B = 0.19, t = 13.72, p < .001). Hypothesis 2 proposed that instruction and assessment (IA) mediate the relationship between teachers' adaptation (TA) and workloads (WL). The 95% confidence interval for the indirect effect of teachers' adaptation (TA) on workloads (WL) through instruction and assessment (IA) did not include 0 (B = 0.08, 95% CI [0.06, 0.09], Table 3), indicating a significant indirect effect. Thus Hypothesis 2 was supported, with instruction and assessment (IA) partially explaining the relationship between teachers' adaptation and workloads.

Hypothesis 3 predicted that having changed assessment methodologies (CAM) moderates the relationship between teachers' adaptation (TA) and instruction and assessment (IA), and the relationship is stronger among teachers who did not change their assessment methodologies. The interaction effect between teachers' adaptation (TA) and having changed assessment methodologies (CAM) was negative and significant (B = −0.09, t = −2.73, p = .006, Table 4).

The relationship between teachers' adaptation (TA) and instruction and assessment (IA) was positive and significant when the assessment methodologies had not changed (B = 0.47, t = 16.19, p < .001, Figure 2). This relationship was also positive and significant but weaker for changed assessment methodologies (B = 0.38, t = 27.81, p < .001, Figure 2).

Table 2. Descriptive statistics, reliabilities, and study variables correlations.

	Mean	*SD*	1	2	3	4
1. Changed assessment methodologies (CAM)[a]	0.83[b]	—				
2. Teachers' adaptation (TA)	2.45	0.53	0.03	(0.79)		
3. Instruction and assessment (IA)	2.77	0.46	0.08*	0.47*	(0.68)	
4. Workloads (WL)	3.42	0.46	0.10*	0.22*	0.24*	(0.79)

Note. N = 3,675. Cronbach's alpha is reported in parentheses.
[a] 0 = No change assessment methodologies, 1 = Change assessment methodologies.
[b] Proportion of category 1 was reported.
*p < .001.
Source: CNE teachers' survey, 2020. Own calculations.

Table 3. Results for mediation considering all curricular areas.

					R^2
Model 1: mediator variable in the model	Outcome: Instruction and Assessment (IA)				
	Coeff.	SE	*t*	*p*	.22
Teachers' adaptation (TA)	0.40	0.01	32.10	<.001	
Model 2: outcome variable in the model	Outcome: Workload (WL)				
	Coeff.	SE	*t*	*p*	.07
Teachers' adaptation (TA)	0.12	0.02	7.64	<.001	
Instruction and assessment (IA)	0.18	0.02	9.94	<.001	
	Indirect effect (via Instruction and assessment)				
	Bootstrapping 95% CI				
	Effect	SE	LL	UL	
Indirect effect of Teachers adaptation on workloads via Instruction and Assessment	0.07	0.01	0.06	0.09	

Note. $N = 3{,}675$. Unstandardized regression coefficients are reported. Bootstrap analyses were conducted using 5,000 samples. CI – Confidence Interval. LL – Lower Limit. UL – Upper Limit.
Source: CNE teachers' survey, 2020. Own calculations.

Table 4. Results for moderated mediation considering all curricular areas.

					R^2
Model 1: mediator variable in the model	Outcome: Instruction and Assessment (IA)				
	Coeff.	SE	*t*	*p*	.22
Teachers' adaptation (TA)	0.47	0.02	169.16	<.001	
Changed assessment methodologies (CAM)	0.07	0.02	4.18	<.001	
TA x CAM	−0.09	0.03	−2.73	.006	
Model 2: outcome variable in the model	Outcome: Workload (WL)				
	Coeff.	SE	*t*	*p*	.07
Teachers' adaptation (TA)	0.12	0.02	7.64	<.001	
Instruction and assessment (IA)	0.18	0.02	9.94	<.001	
	Conditional indirect effect (via Instruction and assessment)				
	Bootstrap 95% CI				
	Effect	SE	LL	UL	
No change assessment methodologies (0)	0.08	0.01	0.07	0.10	
Change assessment methodologies (1)	0.07	0.01	0.05	0.08	
Index of moderated mediation	−0.02	0.01	−0.03	−0.01	

Note. $N = 3{,}675$. Unstandardized regression coefficients are reported. Bootstrap analyses were conducted using 5,000 samples. CI – Confidence Interval. LL – Lower Limit. UL – Upper Limit.
Source: CNE teachers' survey, 2020. Own calculations.

Hypothesis 4 predicted that the indirect effect of teachers' adaptation (TA) on workloads (WL), via instruction and assessment (IA), is moderated by changed assessment methodologies (CAM). The results showed that the indirect effect was significantly moderated by changed assessment methodologies (CAM) ($B = -0.02$, 95% CI [−0.03, −0.01]). For those who had not changed their assessment methodologies, teachers' adaptation (TA) had a significant indirect effect on workloads (WL), through instruction and assessment (IA) ($B = 0.08$, 95% CI [0.07, 0.10]). For those who had changed their assessment methodologies, the indirect effect was weaker (IA) ($B = 0.07$, 95% CI [0.05, 0.08]).

Complementary analysis: SEND teachers

The same hypotheses were tested in the sub-sample for the special education curricular area. Hypothesis 1, concerning the positive relationship between SEND teacher's adaptation (TA) and workloads (WL) was supported ($B = 0.19$, $t = 3.94$, $p = .001$). In addition, SEND Teachers' adaptation (TA) had a significant effect on workloads (WL) mediated by instruction and assessment (IA), as the

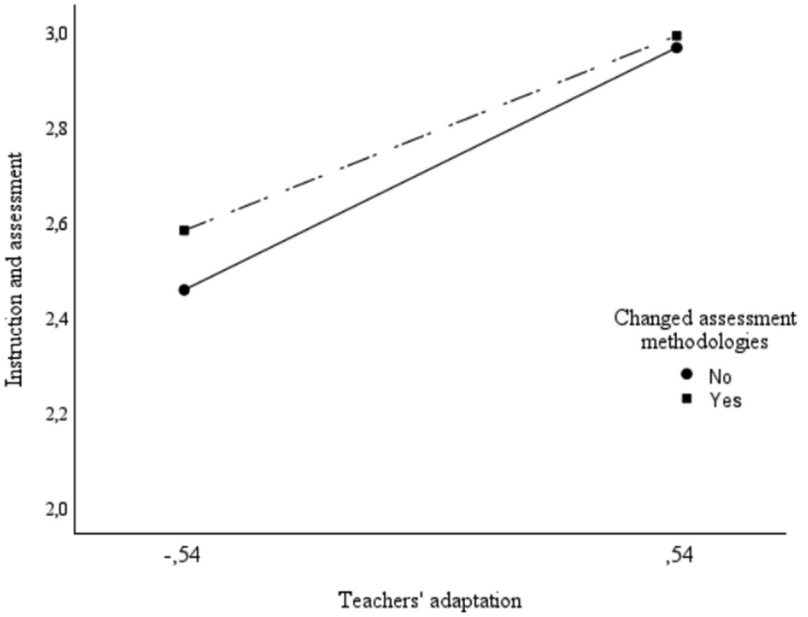


Figure 2. Moderation effect of changed assessment methodologies in the relation between teachers' adaptation and instruction and assessment. Source: CNE teachers' survey, 2020. Own calculations.

Table 5. Results for mediation for special education curricular area.

					R^2
Model 1: mediator variable in the model	Outcome: Instruction and Assessment (IA)				
	Coeff.	SE	*t*	*p*	.27
Teachers' adaptation (TA)	0.41	0.04	9.75	<.001	
Model 2: outcome variable in the model	Outcome: Workload (WL)				
	Coeff.	SE	*t*	*p*	.09
Teachers' adaptation (TA)	0.08	0.06	1.34	.182	
Instruction and assessment (IA)	0.25	0.08	3.25	.001	
	Indirect effect (via Instruction and assessment) Bootstrapping 95% CI				
	Effect	SE	LL	UL	
Indirect effect of Teachers adaptation on workloads via Instruction and Assessment	0.10	0.03	0.04	0.17	

Notes. $N = 253$. Unstandardized regression coefficients are reported. Bootstrap analyses were conducted using 5,000 samples. CI – Confidence Interval. LL – Lower Limit. UL – Upper Limit.
Source: CNE teachers' survey, 2020. Own calculations.

confidence interval for the indirect effect did not include 0 ($B = 0.10$, 95% CI [0.04, 0.17], Table 5), thus supporting hypothesis 2.

Consequently, instruction and assessment (IA) explain the process by which SEND teachers' adaptation (TA) affects workloads (WL). However, since changing assessment methodologies (CAM) was not a significant moderator (Table 6), hypotheses 3 and 4 were not supported.

Discussion

Emergency policies, by definition, are designed to respond to emergency contexts. As Boin and Hart (2003) point out, this can only be achieved if leaders flexibly adapt the policy-making structures and *modus operandi* of public organizations to high-pressure crisis environments. In Portugal, since the

Table 6. Results for moderated mediation for only special education area.

					R^2
Model 1: mediator variable in the model	Outcome: Instruction and Assessment (IA)				
	Coeff.	SE	*t*	*p*	.27
Teachers' adaptation (TA)	0.42	0.04	5.71	<.001	
Changed assessment methodologies (CAM)	0.06	0.05	1.24	.216	
TA x CAM	−0.03	0.09	−0.28	.780	
Model 2: outcome variable in the model	Outcome: Workload (WL)				
	Coeff.	SE	*t*	*p*	.09
Teachers' adaptation (TA)	0.09	0.06	1.40	.165	
Instruction and assessment (IA)	0.27	0.08	3.44	.001	
	Conditional indirect effect (via Instruction and assessment)				
			Bootstrap 95% CI		
	Effect	SE	LL	UL	
No change assessment methodologies (0)	0.11	0.04	0.05	0.19	
Change assessment methodologies (1)	0.11	0.03	0.05	0.17	
Index of moderated mediation	−0.01	0.03	−0.06	0.05	

Note. $N = 253$. Unstandardized regression coefficients are reported. Bootstrap analyses were conducted using 5,000 samples. CI – Confidence Interval. LL – Lower Limit. UL – Upper Limit.
Source: CNE teachers' survey, 2020. Own calculations.

approval of the Education Act in 1986 – which defines the functioning of the Portuguese education system after the 1974 Revolution – it had never been necessary to implement emergency policies in education on such a scale, or to adapt the *modus operandi* of schools and teachers to such a disruptive context. As a result, the country was unprepared, and no contingency plan existed for such a scenario, leading to significant criticism about the fairness of the measures taken to assess students' learning during disruptive events.

Within the COVID-19 pandemic crisis, the *modus operandi* of schools was redefined in the rapidly evolving context. Such adjustments in the functioning of schools implied the realization of new tasks to be performed remotely by teachers. Consequently, as predicted in Hypothesis 1, this research showed a relationship between teachers' adaptation to the emergency context and their perceived workloads, both in the sample and the SEND teachers' subsample. This finding aligns with other studies that indicate working from home increases workload perception (CNE, 2021a; Klusmann et al., 2023; Palumbo, 2020). Note that as the survey was answered by teachers with coordination functions, their responses reflect not only their individual perspectives as teachers but also their observations of other teachers within their department.

As Cooper et al. (2022) stated, the pandemic has placed additional responsibility on teachers' assessments as a primary source of information about student development and achievement. With the sudden transition to ERT, and in the context of a different pedagogical relationship, as predicted in Hypothesis 2, teachers' adaptation and perceived workloads during ERT was mediated by instruction and assessment, both in the overall sample and in the SEND teachers' sub-sample. Furthermore, this adaptation to the emergency context has highlighted the challenges teachers faced in balancing instruction, assessment, and increased administrative demands, further exacerbating their perceived workloads (Flores et al., 2020, 2023).

When all curricular departments were considered, changing assessment methodologies, as legally proposed by Decree-Law No. 14-G/2020, moderated the relationship between teachers' own adaptation to ERT and instruction and assessment. Thus, the mediating role of instruction and assessment in the relationship between teachers' adaptation and workloads depended on the level of changes in assessment methodologies, as predicted in Hypothesis 3 and Hypothesis 4. This means that this emergency legal framework was an important policy in helping teachers better adapt to this new exceptional context. However, when considering SEND teachers only, it was shown that changing assessment methodologies proposed by Decree-Law No. 14-G/2020 did not moderate the relationship between SEND teachers' adaptation to ERT and instruction and assessment, as it did when all

curricular areas were considered. The implication is that this legal framework, regarding changes in the assessment of learning during the pandemic, had no significant effect for SEND teachers. It also means that difficulties felt by SEND teachers in their own adaptation went beyond changes in assessment methodologies.

We have to consider that, given the nature of SEND teachers' work and the individualized approach to assessment in special education (Xu, 2013), it might not be surprising that changes in assessment function differently for this group. Moreover, previous adjustments in assessment to each student individual contexts (as provided for in Decree-Law No. 54/2018; and underlined in Xu, 2013) and the emphasis that SEND teachers tend to put into improvement over achievement (Brookhart, 2013; McLeskey & Waldron, 2002) might justify why the relation between SEND teachers' adaptation and instruction and assessment is not moderated by changing assessment methodologies. Still, other studies show that SEND teachers indeed had lower levels of school connectedness and self-efficacy, with tensions around accountability, grading, and attendance (Schuck & Lambert, 2020; Womack & Monteiro, 2022). The findings of our study appear to align with this pattern, further emphasizing the unique difficulties faced by SEND teachers (Hopkins et al., 2024).

We believe that this study contributes to an important reflection about the need to constantly consider learning contexts in classroom assessment (Brown, 2022; Cooper et al., 2022), whether these contexts stem from student characteristics or from structural conditions for teaching and learning, as the COVID-19 pandemic highlights the importance of understanding and documenting these processes and contexts of learning, as well as the need to account for them in the design and interpretation of assessments (NAE, 2021). For future disruptive events, different contexts, both the nature of the event itself and the diversity of educational settings for SEND students, demand tailored solutions. Policies for future disruptive events should therefore avoid a one-size-fits-all approach, taking into account these diverse needs, and provide specific guidelines for teachers working with SEND students (Yakut, 2021).

Limitations and future work

This study presents a number of limitations. From a methodological perspective, it relies on secondary data collected during the final phase of the first COVID-19 lockdown, which provides valuable contextual relevance but also imposes constraints. Since the dataset was originally designed for different purposes, key variables in the models – Teachers' Adaptation (TA), Instruction and Assessment (IA), and Workloads (WL) – were operationalized as composite measures derived from Likert-scale items. Although these indicators captured meaningful variation in teachers' perceptions and experiences during the lockdown, they may not fully reflect the complexity of instructional and assessment practices, particularly among SEND teachers. Nonetheless, the use of empirically grounded data from a critical moment in the pandemic constitutes a notable strength, enabling the examination of theoretically relevant relationships within a highly specific context. Future research could replicate these analyses in other countries using comparable datasets gathered during similar stages of the pandemic, helping to assess the robustness and generalizability of the findings across educational systems.

Note too that Changes in Assessment Methodologies (CAM) is a binary variable in the tested models. As explained, teachers were asked whether they had made changes to assessment methodologies, responding either *yes* or *no*. Those who answered *yes* were then asked to specify the types of changes in an open-ended question. An initial attempt was made to code and categorize these responses to capture more detailed information. However, the content analysis revealed substantial heterogeneity and ambiguity, making systematic categorization for statistical analysis difficult and risking overinterpretation. Furthermore, because a large majority of teachers (83.0%) reported making changes, the CAM variable provides limited discrimination across the sample, constraining its informativeness. Despite these limitations, CAM was retained as a binary variable, as the other option

available in the dataset (qualitative open-ended responses) proved unreliable, making this the only viable way to measure the impact of changes in assessment methodologies.

Additionally, note that student age/grade level and type of disability are highly relevant factors that may influence teacher workload, instructional practices, and assessment, particularly in emergency contexts. Younger students or those with more complex needs often require highly guided, hands-on learning experiences, which may have been difficult to implement under remote or disrupted conditions. However, as this study is based on a secondary analysis of an existing dataset, the available data do not allow for a systematic breakdown by student age/grade level or type of disability, as SEND teachers typically work with students from preschool through 12th grade. Consequently, these variables could not be explicitly analyzed in the results.

All of these limitations are acknowledged and highlighted as important areas for future research, as more detailed data and probabilistic samples on special education teachers' assessment practices during disruptive events would enable more accurate policy recommendations and planning for potential future emergencies.

Conclusion

The social disruption caused by the COVID-19 pandemic in education systems has sparked intense discussion about their ability to adapt to different contexts and their capacity to recognize problems and create solutions in times of adversity (OECD, 2020a). However, it is important to emphasize once again that, under the pressure of disruptive events, it is not easy to determine what must change and what should remain the same. Consequently, leaders must have a clear understanding of what is worth preserving in their society, policy field, or organization during an emergency (Boin & Hart, 2003).

Regarding assessment policy, the shift to ERT revealed that challenges faced by SEND teachers extended far beyond adapting assessment methods. To ensure inclusive and equitable assessment during future disruptions, policies must be developed in advance, with contingency plans that address the specific needs of SEND students (Yakut, 2021). This includes rethinking classroom assessment during disruptive events to maintain access and participation for all learners. Note that teachers and schools will never be fully prepared to face unforeseen challenges in teaching and assessment, which can adversely affect students precisely when they most need their teachers' support. Fostering a deeper understanding of responsive pedagogy would help better prepare educators for situations in which the traditional classroom setting suddenly disappears. A responsive pedagogy puts student agency at the forefront when planning for the future (Sandvik et al., 2023).

As Panadero et al. (2022) highlight, there is an ongoing need to enhance teachers' assessment literacy; but for SEND teachers, this must be paired with support that acknowledges the additional complexities of inclusive assessment. Future training programs should address not only assessment strategies for disruptive events but also the sensitive demands placed on SEND teachers, which can negatively affect their health and well-being (Lizana et al., 2021). Ongoing professional development should also include training in digital assessment tools tailored for diverse learners, along with time management strategies to help manage increased workloads.

This study provide new insights into teachers' assessment practices during the pandemic, with a particular focus on SEND teachers. Unlike much of the existing research, which has been predominantly descriptive of practices during the COVID-19 context, the present study was hypothesis-driven, with research hypotheses derived from the literature and tested using empirical data. This innovative approach not only allows to examine associations previously suggested in literature but also provides evidence on the relationships between teachers' adaptation to emergency remote teaching, instructional practices, assessment approaches, and perceived workload. The findings offer context-specific and policy-relevant insights, particularly regarding the unique experiences and challenges faced by SEND teachers. By examining literature-informed hypotheses, the study contributes to a deeper understanding of assessment adaptation in disruptive contexts and informs future emergency policy and teacher support measures.

To prepare for future disruptive contexts – such as increasing geopolitical instability, potential conflicts, or climate-related crises – further investigation into assessment policies for disruptive events is needed to develop measures and mechanisms that genuinely ensure inclusion and access to education for all students, including those with SEND, safeguarding their full right to participate in assessment processes during emergency situations, like the COVID-19 lockdowns.

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Guidelines for Preschool Education trough http://www.dge.mec.pt/ocepe/sites/default/files/Orientacoes_Curriculares.pdf

Legislation

Decree-Law no. 14-G/2020 published on the 13 of April 2020
Decree-Law no. 54/2018 published on the 06 of July 2018
Decree-Law no. 55/2018 published on the 06 of July 2018