

Digitalization and beyond: the effects of Covid-19 on post-pandemic educational policy and delivery in Europe

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Abstract

Education has been extremely affected by the coronavirus disease crisis, with almost all countries temporarily closing their schools in 2020. After the first stage of the pandemic, in which national governments focused on guaranteeing the academic year's continuity, key international organizations emphasized the need to adopt structural policy reforms to face the challenges posed by the crisis. Based on international and European countries' policy documents, this paper analyzes long-term responses articulated in the education sector. The analysis has allowed us to identify three preponderant areas of response: the digitalization of the educational system, educational inequalities, and teachers' development. The agendas and policy instruments that international organizations have so far pushed for in relation to each of these areas do not differ substantially from the agendas and instruments they promoted in the pre-pandemic era. It is still early to assess the deepness of the transformations in course, but in most cases, prevailing responses represent the intensification of change processes initiated before the pandemic. Nonetheless, the type and intensity of country responses vary among the European Union member states. Although the pandemic represents a common thread, countries have experienced the crisis differently according to the characteristics of their educational systems and the main problems the crisis has revealed.

Keywords: education; Covid-19; crisis; policy change; policy responses

Introduction

In March 2020, the coronavirus disease (Covid-19) pandemic disrupted education delivery worldwide. Since the worldwide institutionalization of modern education systems, there has not been an event with such a disruptive global capacity. During the first stage of the crisis, governments articulated emergency policy responses to the pandemic related to continuing students' education during the lockdown and later reopening schools with safety. Numerous international organizations (IOs) and policy entrepreneurs were quick to acknowledge the health crisis as a political opportunity to gain international legitimacy and influence public policy agendas (Debre & Dijkstra, 2021). More recently, countries have started to articulate longer-term education policy strategies and responses. Nonetheless, the focus, scale, and nature of these responses have not been analyzed yet. To what extent national

responses to the Covid-19 crisis can trigger substantive and durable policy changes in the educational domain, or even transform education delivery as we know it, is also open to scrutiny. The pandemic has generated the conditions of a natural experiment (see [Capano et al., 2020](#)) that can be explored from a policy change and comparative education perspective. This paper aims to address this challenge by analyzing the policy effects that the pandemic has brought about in the education sector.

Specifically, the objective of this paper is twofold. Firstly, it analyzes long-term education policy responses to the crisis, generated by the Covid-19 pandemic in the European context, as well as the types and patterns of policy change from which these responses have been derived. Secondly, the paper analyzes how and to what extent policy responses vary among countries. With this dual objective, the paper examines how factors of a different nature, namely the way the crisis has been problematized in the education sector, the discourse and proposals of IOs, and the institutional characteristics of national education systems, have mediated and influenced policy responses at country level. Despite the global nature of the pandemic and the global dimension of the education policy debates triggered, we expect that national responses will vary substantially.

The evidence presented is based on the thematic analysis (cf. [Hall & Steiner, 2020](#)) of policy documents from two main sources: firstly, documents elaborated by the main IOs (namely, Organization for Economic Cooperation and Development [OECD] and European Commission and European Council)¹ during and after the first wave of the pandemic and, secondly, the national recovery plans submitted by European Union (EU) member states and elaborated upon in the context of the Next Generation EU funding scheme. The latter were conceived as a proxy and a comparable data source with the longer-term policy preferences and intentions of the member states of the EU.² Specifically, the findings are based on an analysis of the recovery plans submitted by Belgium, Cyprus, Denmark, France, Germany, Greece, Ireland, Italy, Malta, Portugal, and Spain. The thematic analysis has focused on identifying how the impact of the pandemic on the education sector has been problematized, which policy areas have been prioritized to address the challenges posed by the pandemic, and which long-term policy responses have been proposed. While the unit of analysis of the paper is that of national governments, the review of IOs' policy documents provides relevant information since we assume that the way these institutions have problematized the crisis and proposed related policy solutions contributes to frame national policy responses.

The paper is organized as follows. The first section presents the theoretical and conceptual framework, which focuses on the dimension and nature of education policy change in the context of crises. The second section summarizes the impact of the Covid-19 pandemic in educational systems worldwide and reflects on the potential role of national education systems' characteristics in mediating countries' responses to the common external challenges posed by the crisis. The third section presents the main results; it examines on the one hand how IOs have problematized the effects of the pandemic in the education sector and articulated related policy recommendations and evaluates, on the other hand, the long-term policy responses proposed by different European governments. We conduct this analysis in relation to the three main areas of policy intervention identified: digitalization, inequalities, and teachers. Finally, we conclude by elaborating on how the responses of IOs and countries to the pandemic, in relation to education, have been influenced by previous policy agendas and the institutional characteristics of national education systems as well as by the type of policy debates and shortages that the pandemic has evidenced in the educational sector.

Crises and policy change in education

The role of crises in altering policy preferences and fostering processes of policy change is well-documented in academic literature. Significant crises are indeed moments of disequilibrium that disrupt typical operating procedures and ways of thinking, which ultimately produce different forms of policy change ([Hay, 2002](#)). However, it is still unclear as to what type of policy change a crisis, such as that generated by Covid-19, may be able to trigger in the educational sector.

¹ The World Bank is also one of the most influential IOs in the education sector, and it has been very active in producing research and recommendations on education during the pandemic. However, World Bank's policy documents have been excluded from the analysis because they mainly refer to southern countries and do not apply so well to the European focus of this paper.

² National recovery plans were retrieved from European Commission (nd). Only national plans available in English, French, Portuguese, or Spanish were analyzed.

From lower to higher intensity, types of policy change can be classified as the absence of meaningful change, incremental change, and radical/“path-departing” change (see [Béland & Powell, 2016](#)). The radical or path-departing change is conventionally understood as a form of paradigm change, in which change happens at the level of policy goals and/or implies profound institutional transformations that are difficult to undo. In contrast, incremental change is usually related to changes or innovations related to the adoption of new policy instruments; however, the overall goals of the policy remain constant. An even more moderate—or less meaningful—type of change consists of altering the regulation or calibration of existing instruments, without replacing these instruments or the goals they aim to achieve ([Béland & Powell, 2016](#)). Policy change can also differ according to the patterns it follows. [Mahoney and Thelen \(2009\)](#) propose four modes of institutional change from this perspective, namely (a) displacement: this occurs when the introduction of new instruments and rules results in the substitution of previous ones; (b) layering: in this case, governments adopt new rules/instruments in addition to those in existence; (c) drift: existing rules/instruments have a different impact due to changes in the environment; and (d) conversion: existing instruments/rules are intentionally deployed and enacted differently.

On occasions, crisis operates as a critical juncture that establishes new directions for policy and long-standing policy transformations accordingly ([Mahoney, 2000](#)). Nonetheless, numerous studies have also found that “most crises are followed either by policy continuity or incremental change, and do not serve as critical junctures or lead to trajectory altering policy shifts” (Hogan et al., in this special issue). One of the factors that tend to modulate the intensity of the changes provoked by crises is whether the origin of the crisis is exogenous or endogenous to the policy sector in question. In relation to the educational sector, exogenous crises can be generated by, for instance, a financial breakdown, a profound political conflict, a natural catastrophe, or a global epidemic. These types of crises can alter educational policy by changing the conditions in which education is delivered and by generating new educational problems. In the context of an exogenous crisis, education can also be affected by the very fact of being portrayed as a key solution to the crisis in question. For instance, within the management of economic crises, education is often conceived as a key element in addressing the social problems, such as unemployment, poverty, or social inequalities, that these crises generate ([Smeyers & Depaepe, 2008](#); [Troöhler, 2017](#)). It is often assumed that external shocks are more conducive to drastic or paradigm change, but they can also promote incremental change by encouraging the adoption of new policy instruments and tools. For instance, in the context of economic crises, the so-called “educationalization of social problems” may provoke changes of a more cumulative nature, including curricular changes, so as to adapt the educational offer to the skills required by the labor market or to adopt new scholarships schemes, favoring social mobility through education ([Valiente et al., 2020](#)).

Meanwhile, in education, endogenous crises can be triggered by, among other factors, demand-side dissatisfaction with the existing educational offer, inappropriate teachers’ working conditions, or unfavorable performance in international evaluations. The changes that endogenous factors trigger are more typically incremental and, as such, tend to manifest in the adoption of new policy instruments or the calibration of those already in existence ([Béland & Powell, 2016](#)). For instance, the so-called “learning crisis,” that the OECD Programme of International Students Assessment (PISA) has made evident in numerous countries, has often provoked the adoption of stricter quality assurance mechanisms and accountability policies to make educational systems more effective ([Fischman et al., 2019](#)). Nonetheless, endogenous crises can also result in profound structural reforms. Several authors have shown that incremental changes produced endogenously, despite its apparent small scale, can end up deriving in a process of gradual paradigm change ([Capano, 2003](#); [Howlett & Cashore, 2007](#)).

Importantly, the crisis generated by the Covid-19 pandemic brings elements of the two described scenarios together. On the one hand, this is clearly a crisis of an extra-educational origin that has created profound health, social, and economic problems, which education can assist in addressing. On the other hand, the Covid-19 crisis has also evidenced the limitations of current educational systems in providing quality education under changing conditions and has contributed to making existing educational issues in the educational offer more visible.

Covid-19 thus constituted a strong and multidimensional shock with sufficient destabilization and disruptive capacity to evolve into some form of paradigmatic and path-departing policy change. During times of profound crises, such as those being described, policymakers are more open to external advice and more inclined to transform education systems—among other institutions—more markedly

([Phillips & Ochs, 2003](#)). Crises open windows of political opportunity to all sorts of policy entrepreneurs, including IOs, business representatives, and social activists operating across a range of scales. These and other actors tend to organize themselves in coalitions to promote and advance their preferred policy solutions (Hogan et al., in this special issue). Those IOs with sufficient resources and political legitimacy can play a key role in generating some of the necessary conditions for policy change, such as creating a climate of opinion that is more receptive to new ideas or raising awareness regarding the need of reform. As regards education, this is the case of the OECD, which has been very proactive in education policy debates during the pandemic and in the post-pandemic period. This IO has openly conceived the crisis as an opportunity for educational change; it regards the pandemic as a moment of variation that can help governments advance new policy reform ideas as well as pending educational reforms (see [OECD, 2020a](#)).

Nonetheless, the outcome of external pressures for change is contingent on dynamics of competition—and even conflict—between differing views and between actors operating through different scales of governance. In fact, in education, structural reforms tend to be particularly challenging given the different and usually conflicting “interests, beliefs, motivations and fears of the people who are involved in education, parents and teachers included” ([OECD, 2020a](#), p. 3). As an example, education privatization reforms, despite having been promoted by powerful actors for decades, have not prospered in many contexts, due to the divergent interests of the multiple actors involved in the reform processes that prevail in most educational settings. Even among education reform advocates, different interests, views, and motivations co-exist, making it difficult for ambitious reforms to advance ([Verger et al., 2016](#)). The presence of veto players in the sector, or the so-called asset specificity—i.e., the fact that the knowledge and expectations of key actors in the sector are tied to specific institutional arrangements—are also important obstacles to change ([Pierson, 2004](#)). Overall, paradigm change in education is challenging, given the path-dependent nature of educational institutions, the large size and economic relevance of the sector within public administration (in terms of budget, infrastructure, manpower, etc.), and the many policy actors that need to be coordinated to provoke educational change. However, the [OECD \(2020a\)](#) also acknowledges that the pandemic might represent an opportunity to align the preferences of a broad range of educational stakeholders that are usually difficult to coordinate.

Finally, it is important to bear in mind that external pressures and/or exogenous shocks are not sufficient to determine policy change. As we highlight in the next section, the institutional characteristics of national education systems strategically mediate external pressures in the production of policy change.

National education systems facing the pandemic: variation in policy responses

The immediate impact of Covid-19 on the education sector

Education has been one of the sectors more directly impacted by the pandemic worldwide. Indeed, at the beginning of the crisis, most countries closed schools and adopted remote learning as an alternative. According to United Nations Educational, Scientific, and Cultural Organization (UNESCO) data, 197 countries temporarily closed their schools at some point between February and June 2020 ([UNESCO, 2021](#)). School closures meant that, by late April, around 85% of students from primary to tertiary education were out of school worldwide ([World Bank, 2020](#)). Furthermore, the evolution of the pandemic, with its ups and downs, triggered temporary or partial school closures in numerous countries throughout the remainder of 2020 and the first half of 2021. [Figure 1](#) shows the number of days schools were closed or were partially open between the global spread of the pandemic (in March 2020) and the end of June 2021 in each OECD country. On average, schools were closed for 18.4% of the days during this period, primarily between March and June 2020.

Closing schools meant significant disruption for all education systems, particularly in primary and secondary education. In the short term, national education systems had to deal with the different challenges posed by the global health crisis. The expansion of online teaching and learning became the most accepted policy solution, which attempted to guarantee the academic year's continuity. Almost all OECD education systems used online platforms (e.g., online educational content, virtual lessons, and online support) during school closures ([Schleicher, 2020](#)). However, the effectiveness of education continuity strategies varied significantly between social groups, and many education systems faced significant difficulties in terms of reaching socially disadvantaged students during school closures.

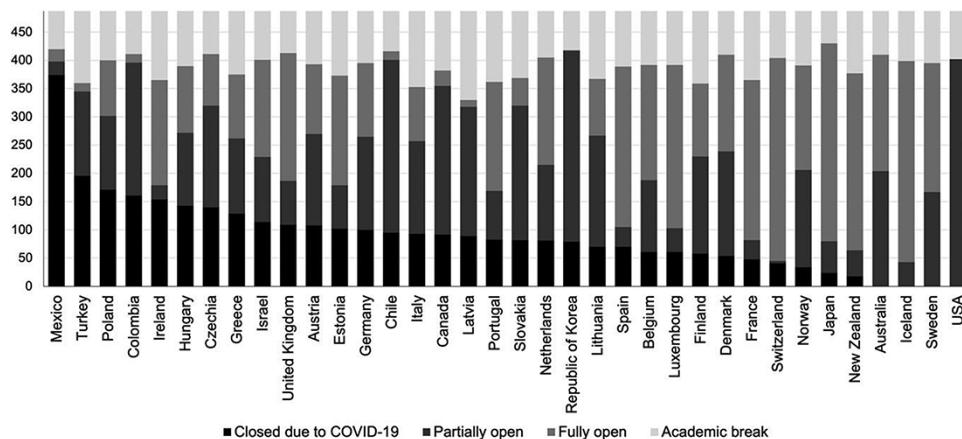


Figure 1. Status of the schools between the 1st of March 2020 and 30th of June 2021 (number of days).

Source: Own elaboration based on UNESCO Institute of Statistics.

In the aftermath of the pandemic's first wave, educational authorities' main policy priority was the design and implementation of plans for reopening schools. The main challenge of the reopening plans was to balance the need to reopen schools, the potential adverse health effects, and the financial and human resources available (Reimers & Schleicher, 2020). In some countries, such as the UK, Spain, or Chile, reopening plans were faced with severe resistance from families' organizations, teacher unions, and public opinion more broadly. The second main policy priority for most education systems has been addressing or tackling the long-term effects of the pandemic, especially regarding educational inequalities (OECD, 2021). In this regard, certain countries have developed catch-up programs to compensate for the loss of learning experienced by socially disadvantaged students (i.e., by allocating additional resources or implementing compensatory interventions).

The Covid-19 crisis has also supposed an additional public educational expenditure in almost all industrialized countries (OECD, 2021). National education budgets have increased across the EU territory, although the additional funding dedicated to education varies significantly among countries. While in certain countries such as the Netherlands and Portugal the average spending per student has increased by 32.2% and 13.5%, respectively, in the French-speaking community of Belgium, Romania, and Slovakia, new resources have resulted in an increase below 1% (De Witte & Smet, 2021).³ While these new resources have contributed additional funding to the education sector during the first few months of the pandemic in a number of countries, it is still not clear to what extent this will mean a more structural change in terms of public expenditure in education. Finally, in several educational systems, the pandemic has fostered debates regarding the limits and potential of learning platforms and online teaching, the need to revisit the role of exams and external evaluations, and/or how to develop effective policies to address new forms of educational inequality.

Long-term policy responses: different conditions in which to deal with the crisis

To make sense of the scale and depth of the changes provoked by the pandemic within the education sector, we need to consider contextual and institutional variables. Indeed, we cannot expect that the long-term education policy responses to the Covid-19 crisis are homogeneous internationally but rather that they may vary substantially country by country. Several factors may trigger this variation. Although countries, within the context of a global crisis, face similar external pressures, they can experience them differently or interpret the problems that these pressures imply in different terms. Countries will also be inclined to respond to external shocks differently according to their institutional capacities and habitual modes of state intervention (Hay, 2004).

It is well established that the institutional characteristics of national education systems intervene critically in how external pressures are managed (see, for instance, Busemeyer & Vossiek, 2016). Thus,

³ The study does not include the Next Generation funds in its analysis.

in the context of a crisis with a global reach, such as that triggered by Covid-19, it is reasonable to expect that characteristics, such as the previous level of digitalization of the system or the level of social inequalities in education, which vary country by country, will strategically mediate the type of policy strategies articulated by countries to recover from the crisis. In fact, the aforementioned factors could have higher explanatory power in processes of policy change than more usually analyzed factors in policy variation studies, such as governmental ideology or administrative regimes (see [Capano et al., 2020](#)).

Considering the role of institutional contexts is essential, given that national education systems in Europe vary significantly in several aspects. In the European context, beyond the differences in how education systems are organized (e.g., the length of compulsory education, tracking between academic and vocational education, access to education, etc.), it is possible to observe important variations regarding structural conditions and system characteristics. The effectiveness of education systems is one of these. The different editions of the PISA evaluation show how countries achieve very different levels of academic performance. While countries, such as Finland and Estonia, are frequently situated at the top of the PISA ranking, Greece, Italy, or Spain tend to perform below the OECD average. European education systems also present important differences in terms of equity. For example, Nordic countries (Finland, Norway, and Sweden) have higher levels of social inclusion in education, whereas countries such as Belgium or Spain have high levels of social segregation. Similar differences can be observed in the level of digitalization, teachers' digital skills, class-size ratios, or economic resources dedicated to education ([OECD, 2019](#)). Other performance indicators that are frequently considered relevant in the European education debate also show important cross-country variation. These include, for example, early school leaving, which is around three times higher in Spain (16%) or Italy (13.1%) than in countries such as Ireland (5%) or Poland (5.4%) ([Eurostat, 2020](#)), and the percentage of the adult population who have achieved only basic education, which is much higher in Southern Europe than in the rest of the EU.

International and national responses to the Covid-19 crisis

The analysis of both national recovery plans and the IOs' thematic reports allows us to identify the three main areas of policy response to the Covid-19 crisis in the education sector: (a) digitalization of education systems, (b) tackling educational inequalities and the performance gap, and (c) teachers' development. [Table 1](#) summarizes, for each of the countries analyzed, the responses included in the national recovery plans for each of the three areas identified.

This section examines why and how educational systems have been problematized in relation to each of these areas, which policy options have been selected by IOs, and whether and how European countries have included these in their recovery strategies.

The digitalization of education systems

School closures forced Ministries of Education, educators, and IOs to seek alternative modes of education delivery to ensure learning continuity. In OECD countries, the closure of schools resulted in a sudden shift to remote forms of education delivery, including online teaching and learning ([Taglietti et al., 2021](#)). The unprecedented use of technology has revealed the shortcomings of educational systems regarding the availability and adequacy of digital infrastructure, while at the same time, it has exposed major digital divides among students and teachers, and across schools and countries, leading to an increased focus on educational digitization policies.

The rapid shift to the digital sphere during school closure periods highlighted major differences in access to digital technologies, depending on countries' level of income, but also with regard to the different social groups within countries. The stark digital divide added to and amplified the social divide, increasing inequality and directly impacting the distribution of learning losses among social groups during school closures ([Bozkurt & Sharma, 2020](#)). The sudden shift to online teaching, without careful prior preparation, also affected both the impact on learning and teachers' and students' perceptions of online education, with educators and students having to familiarize themselves with new types of technologies in record time and having to deal with uncertainties regarding Internet access or connectivity ([Bozkurt & Sharma, 2020](#)). However, it should be noted that, as researchers in the online learning field have emphasized, the move to online teaching should be understood as "emergency remote teaching," not comparable with effective online education ([Hodges et al., 2020](#)).

Table 1. Policy responses included in the national recovery plans.

Country	Digitalization of education	Performance gap and educational inequalities	Teachers' working conditions and well-being
Belgium	<ul style="list-style-type: none"> • Technological resourcing of schools (hardware devices, software, and infrastructure) • Development of digital skills/competences for teachers and students 	<ul style="list-style-type: none"> • Personalized education and targeted compensatory policies 	<ul style="list-style-type: none"> • Teachers' training and development on digital skills
Cyprus	<ul style="list-style-type: none"> • Technological resourcing of schools (hardware devices, software, and infrastructure) • Development of digital skills/competences for teachers and students 	<ul style="list-style-type: none"> • Expansion of early childhood services 	<ul style="list-style-type: none"> • Teacher and school evaluation system
Denmark			
France	<ul style="list-style-type: none"> • Technological resourcing of schools (hardware, software, and infrastructure) • Development of digital skills/competences for teachers and students 		<ul style="list-style-type: none"> • Teachers' training and development on digital skills
Germany	<ul style="list-style-type: none"> • Technological resourcing of schools (hardware, software, and infrastructure) • Development of digital skills/competences for teachers and students • Provision of digital devices for teachers and students 	<ul style="list-style-type: none"> • Expansion of early childhood services 	<ul style="list-style-type: none"> • Teachers' training and development on digital skills • Teachers' access to mobile digital devices
Greece	<ul style="list-style-type: none"> • Technological resourcing of schools (hardware, software, and infrastructure) • Development of digital skills/competences for teachers and students 	<ul style="list-style-type: none"> • Expansion of early childhood services 	<ul style="list-style-type: none"> • Teachers' training and development on digital skills
Ireland	<ul style="list-style-type: none"> • Technological resourcing of schools (hardware devices, software, and infrastructure) • Development of digital skills/competences for teachers and students 		
Italy	<ul style="list-style-type: none"> • Technological resourcing of schools (hardware, software, and infrastructure) • Development of digital skills/competences for teachers and students 	<ul style="list-style-type: none"> • Expansion of early childhood services • Personalized education and targeted compensatory policies 	<ul style="list-style-type: none"> • Teachers' training and development on digital skills • Teachers' training on STEM skills and pedagogic innovation • Career progression system linked to professional development
Malta		<ul style="list-style-type: none"> • Improvement and strength of VET 	

(continued)

Table 1. (Continued)

Country	Digitalization of education	Performance gap and educational inequalities	Teachers' working conditions and well-being
Portugal	<ul style="list-style-type: none"> • Technological resourcing of schools (hardware, software, and infrastructure) • Development of digital skills/competences for teachers and students • Provision of digital devices for students 	<ul style="list-style-type: none"> • Improvement and strength of vocational education and training 	<ul style="list-style-type: none"> • Teachers' training and development on digital skills • Teachers' access to mobile digital devices
Spain	<ul style="list-style-type: none"> • Technological resourcing of schools (hardware, software, and infrastructure) • Development of digital skills/competences—teachers and students • Provision of digital devices for students 	<ul style="list-style-type: none"> • Expansion of early childhood services • Personalized education and targeted compensatory policies • Improvement and strength of vocational education and training 	<ul style="list-style-type: none"> • Teachers' training and development on digital skills

Source: Own elaboration based on the analysis of countries' recovery plans.

While gradual moves into the digital sphere have already been taking place in many education systems worldwide over the last few years, the Covid-19 crisis has accelerated this digitalization process. Despite various challenges, Covid-19 crisis has presented an opportunity for Ed-Tech companies and products to penetrate new geographical areas (Williamson & Hogan, 2020). During school closures, several Ed-Tech companies offered educational institutions, teachers, and students free access to some digital support for the continuity of education, gaining millions of new users along the way (Grek & Landri, 2021). Moreover, institutions negotiated emergency contracts with most of these companies to acquire infrastructure, online platforms, and other solutions.

Given these factors, the current context is leading to a reconsideration of investments and policies in digital technologies and online learning. While most of the policies being implemented (i.e., technological resourcing of schools and investments in workforce capabilities) have been around for several years (Selwyn, 2018), what is new in this regard is the consensus and speed with which they are being adopted, due to the new circumstances.

For some IOs (i.e., the European Commission, the World Bank, and the OECD), the Covid-19 pandemic has marked a turning point that must be seized as an opportunity to push for the digitization of education systems. IOs expect governments to undertake ambitious reforms to digitalize schools, often emphasizing the idea that the current structure of education systems has been proven inadequate for an increasingly digitalized world. In addition, IOs have also emphasized the development of students' digital skills as a key strategy to cope with the post-Covid world and mitigate the economic impact of the pandemic. Although IOs were advocating digital education policies before the Covid-19 crisis, the novelty of the post-Covid-19 scenario is the level of consensus and emphasis placed on digitalization policies as a priority strategy for improving education systems. Even with different approaches, both the European Commission and the OECD have prioritized digitization-related policies when making recommendations to Ministries of Education on how to address the return to normality and recover from the pandemic.

In particular, the OECD considers that the pandemic, while representing a major stress test for education systems, has provided an opportunity to "break down old barriers" and "open up" schools and education systems to the outside world, including the introduction of digital technologies and a greater involvement of private technology actors in educational affairs. The OECD depicts digital technologies as being capable of providing personalized learning, finding new responses to students' learning needs and making education systems more relevant to the modern world. Thus, digital learning tools need to be introduced in education systems "to provide students with more agency and autonomy over their

learning" (OECD, 2020b, p. 3). The discourse of the OECD on digital technologies in education connects at certain levels with a narrative of education systems as "being broken" and "fixable" with technology that has a long history in education (Selwyn, 2016), often being sponsored by Ed-Tech corporations (Ball et al., 2017) and which has been strengthened by the Covid-19 crisis.

Drawing from PISA data, the OECD has highlighted that most education systems are not yet ready to offer most students opportunities to learn online, often referring to the availability and adequacy of infrastructure in schools and digital divides as the two main challenges that need to be addressed by policymakers. To overcome these challenges, the OECD openly advocates increased public-private partnerships and greater participation of technology companies to advance the digitalization of education systems. It is the view of the OECD that governments can play a key role in investing in education innovation and research, "opening up" education systems to create an "innovation-friendly climate" where "transformative ideas" from outside can bloom. To support this argument, the organization draws comparisons with the public health sector, where private companies have greater participation and larger budgets for research and innovation.

In the wake of the pandemic, the European institutions have also centered a large proportion of their education policy recommendations on aspects related to the digitization of education systems. For the European Commission, the digitization of education systems is one of the pillars on which member states must rely when designing recovery plans. To support states in developing digitization plans, the European Commission has launched the Digital Education Action Plan 2021–2027, which outlines policy priorities and corresponding actions for the digitization of education systems in EU countries. The plan covers two main areas: the deployment of digital technologies (i.e., devices, apps, platforms, and software) to improve and extend education and training and the development of digital skills among teachers and students to be better prepared for the post-Covid-19 world scenario (European Commission, 2021).

The EU member states have taken up the priorities outlined by the European Commission for education systems in their national recovery plans. After the outbreak of the pandemic, most European countries have focused their long-term education policies on the development of digital infrastructure—hardware, software, platforms, etc.—in schools. Most of the countries analyzed (with the exception of Denmark) have implemented programs to provide schools with ultra-wideband connections, devices, and other additional equipment. In addition, some are developing actions, aimed at developing educational digital content (Portugal) or even national learning platforms (Germany). Alongside policies aimed at deploying digital infrastructure, EU member states are also opting for policy reforms to upgrade digital skills. Within this area, much of the investment is directed toward teacher training and vocational education, linked with digital occupations as a strategy to both reduce educational inequalities and achieve a more competitive economy. While it is true that there has been little investment to date in programs aimed at developing the digital skills of students outside vocational education and training, it is to be expected that such policies could be developed via changes in the curriculum, following the EU framework of Digital Competences, as is, indeed, happening in countries already engaged in the process of curriculum reform (Spain).

EU countries' actions and policies, for the long term, build on long-established models of digital policy in education (Selwyn, 2018), consisting of investments related to schools' technological resourcing, accompanied by policy commitments to build workforce capacity in the form of technology-related teacher education and professional development initiatives. The discourse on why these policies should be prioritized bears a clear resemblance to the rationale behind the national education ICT plans of the 1990s and early 2000s, seeking to increase the use of technology in schools, so as to achieve future success in the global knowledge economy as well as to increase equity in schools (Zhao et al., 2006).

Overall, the Covid-19 pandemic has served as a catalyst to accelerate preexisting digitization policies in education systems. The visibility of the shortcomings of education systems in terms of digital infrastructure during the Covid-19 crisis, the enthusiastic identification by IOs and policymakers of ICT as a policy tool to modernize education systems and address broader socioeconomic problems, and the interests of a growing Ed-Tech industry, with strong agenda-setting capacity, have worked together to align the interests of different stakeholders to favor this acceleration.

Performance gap and educational inequalities

During the first wave of the pandemic, school closures significantly widened the performance gap between socially advantaged and disadvantaged students. This learning gap increased mainly because socially disadvantaged students faced greater barriers to learning than their peers from more affluent backgrounds (Blainey et al., 2020; Engzell et al., 2020). Learning losses especially affected students whose mothers had a low education level of education and were recipients of social benefits (Maldonado & De Witte, 2020).

The differences in time spent on learning activities among social groups during school closures were remarkable and became the main factor in understanding the exacerbation of educational inequalities during the pandemic. In the UK context, Andrew et al. (2020) demonstrate that while before school closures, the primary students' learning time (in school and out of school) was not associated with family income, during school closures, family earnings were positively correlated with the time children dedicated to learning. Other studies conducted in the UK, Spain, and the Netherlands found that socially disadvantaged students were less likely to take online classes or spent less time on schoolwork at home during the school closures (Bayrakdar & Guveli, 2020; Bol, 2020; Bonal & González, 2020). The public/private divide also played an important role during school closures. Private schools were more likely to provide online resources to their students than public schools, particularly online classes and chats with teachers (Andrew et al., 2020; Bonal & González, 2020).

The impact of school closures on the performance gap and educational inequalities has been pointed by the OECD and UNESCO as one of the main challenges in the post-pandemic period for most education systems (OECD, 2021; UNESCO, 2021). Despite educational inequalities not being a new phenomenon, IOs warn that the pandemic has significantly affected and increased educational inequalities. The performance gap between socially advantaged and disadvantaged students has been framed as one of the main challenges for the education system in the aftermath of the Covid-19 crisis. IOs have also problematized the exacerbation of educational inequalities regarding their long-term effects on dropouts or early school leaving (European Council, 2020; OECD, 2021, 2020a). Beyond the direct effects of Covid-19 on education, the economic and social crisis resulting from the pandemic is also expected to increase child and youth poverty rates in many countries, decisively affecting education inequalities (OECD, 2021). Nevertheless, the OECD emphasizes that the exacerbation of educational inequalities, due to the pandemic, must trigger responses among national education systems not only to attempt to compensate for the learning losses experienced during the crisis, but also to formulate initiatives fostering a path change regarding structural inequalities among social groups:

This means that returning to the status quo is not an option: education systems have the dual task of recovering learning losses and inequalities exacerbated by the emergency response to the COVID-19 crisis while driving education into a better normal where all students are able to thrive, irrespective of their circumstances (OECD, 2020a, p. 57).

EU institutions have also embraced a similar approach by pointing out that the "COVID-19 pandemic has highlighted even more starkly the importance of equity and inclusion in education and training" (European Council, 2021, p. 5). For the EU, the situation created by the pandemic is considered as an opportunity to address educational inequalities as a pending policy problem rather than a phenomenon specifically related to the Covid-19 crisis. The policy documents of European institutions reflect a particular concern regarding the long-term effects of the pandemic in terms of dropouts and early school leaving (European Council, 2020). European Commission guidelines for member states focus on structural reforms and investments to address these long-term effects rather than compensatory interventions to tackle the most direct and short-term impact of school closures on the performance gap or other forms of educational inequalities. Both the OECD and the EU highlight that the pandemic has not only increased the political relevance of educational inequalities in relation to the effects of school closures, but it has also been an opportunity to reinforce their centrality in the education agenda.

In line with the compensatory approach, advocated by certain IOs, different countries have implemented or announced catch-up programs, targeted at those students more affected by the performance losses during the pandemic. This is the case in England, where the adoption of the Catch-up Premium was announced in June 2020, a funding scheme of £650 million to support the "education recovery" (DfE, 2021) of students from disadvantaged backgrounds. A similar initiative has been adopted in the

Netherlands, where the government has provided schools with additional funding (244 million €) to implement catch-up programs between 2020 and 2021. In other countries, such as Portugal, Chile, and France, additional resources have been provided for schools and national guidelines formulated to develop compensatory interventions, focused on those students more affected by the pandemic (OECD, 2021).

However, the long-term policy responses of most countries include partial reforms or new investments in already existing programs or educational interventions. Indeed, this can be, at least, partially explained by the fact that European institutions are not necessarily advocating new approaches to address education inequalities but are considering the crisis as an agenda-setting driver. In the case of EU countries, concerns regarding education inequalities in the recovery plans, presented to the European Commission, have crystallized in three main initiatives: (a) increasing the access of vulnerable social groups to early childhood educational services, (b) promoting personalized education and compensatory policies for disadvantaged students, and (c) reforming vocational education. Again, these policy solutions or responses do not represent a novel or innovative approach to pro-equity policies in the context of European education but emphasize the policy prerogatives that have characterized pro-equity European strategies over the past few decades.

The first area of intervention is early childhood education. Investments in this area are presented in many national strategic plans as a means of improving social inclusion and reducing educational inequalities. Countries such as Cyprus, Germany, Italy, Greece, and Spain have included investments in early childhood education and care programs. Initiatives in this area aim to expand access to these education services and/or reduce regional disparities. The need for investments in early childhood education is framed as essential in increasing the educational opportunities of disadvantaged children in their future educational trajectory but also in terms of promoting social equity by providing women with more opportunities to participate in the labor market. Such a discourse combines the educational and the family-oriented conciliation nature of these services.

The second area of investment and reform, included in EU countries recovery plans, has been oriented to develop personalized education and compensatory policies targeted at disadvantaged students. In this area, countries have proposed a diversity of interventions, investments, and reforms. For example, the French community of Belgium plans to develop an anti-dropout policy that would support the profiles of students at risk or programs of personalized support for students of disadvantaged backgrounds in compulsory education, as a means of reducing early school leaving. Similar reforms have been proposed by Italy and Spain, mainly on the basis of allocating additional economic and educational resources to those schools with higher concentrations of vulnerable students. Contrary to the catch-up programs adopted by other countries, these interventions are presented as policy solutions to address structural educational inequalities, rather than solely tackling the increased performance gap experienced during the pandemic.

Finally, the third equity-related area of intervention is vocational education and training (VET). In this regard, three of the European countries with higher rates of early school leaving and youth unemployment, such as Spain, Portugal, and Malta, have included investments and reforms in their national systems of VET, as part of the measures to address the effects of the pandemic on the education trajectory of socially disadvantaged students. The policy responses consist of strengthening and improving vocational education as a means of reducing early school leaving and providing educational opportunities to most socially disadvantaged youths.

Despite the centrality acquired by educational inequalities in the international and national diagnosis of the main challenges of the pandemic, long-term national responses mainly follow conventional policy approaches to structural educational inequalities and do not necessarily adopt new solutions better suited to revert the direct effects of the pandemic. Overall, the crisis has contributed to placing educational inequalities on international and national policy agendas, but this has not translated into new policy approaches to address this issue. Two main factors can explain why the crisis is not conducive to a paradigm change in the area of policies oriented to tackle educational inequalities. Firstly, IO's proposals in this area are not innovative, and do not necessarily imply the adoption of new policy instruments, but additional resources to increase the effectiveness of existing ones. Secondly, the crisis has not led to new forms of educational inequalities but has exacerbated the already existing differences between social groups in the education sector. For this reason, policy actors have not felt the need to alter their policy solutions toolkit but to invest more intensively in existing solutions.

Teachers' working conditions and well-being

Teaching was a profession severely affected by the conditions generated by the pandemic, especially from a psychological well-being perspective (Mari et al., 2021). Teachers' welfare was affected by school closures, as well as the rapid and obligatory remote teaching (Allen et al., 2020; MacIntyre et al., 2020). Online teaching was particularly stressful and frustrating for teachers with inadequate digital skills (Alves et al., 2021) and teachers with negative attitudes toward online education and ICT (Košir et al., 2020). Female teachers with caretaking responsibilities for children also faced more challenges when balancing their professional duties with personal life (Kraft & Simon, 2020).

Educational research has paid particular attention to the way in which the socioeconomic characteristics of students have affected teachers' work and well-being during the pandemic (Zancajo, 2021). Teachers based in disadvantaged schools have faced numerous difficulties when attempting to reach their students and deliver education to them properly, as these are students with restricted access to digital devices at home and with insufficient family support. Consequently, this has been a significant cause of distress for these teachers (Hamilton et al., 2020). Teachers in disadvantaged schools have also been concerned with the decreasing quality of the work delivered by students since the lockdown (Montacute & Cullinane, 2021). Nonetheless, teachers working in an institutional environment that encouraged autonomy and creativity coped better with the new situation (Anderson et al., 2020). Teaching online was also easier for teachers with clearer guidelines regarding the level of content they were expected to cover (Blundell et al., 2020). In most contexts, the pandemic shifted the usual priorities of schools and teachers from performative obligations and outcomes-based management to more basic concerns regarding educational access and delivery and students' well-being (Lepp et al., 2021; Netolicky, 2020).

The post-pandemic teachers' policy has multiple dimensions and may be examined from different perspectives. Nonetheless, the most relevant IOs in the European education policy space have approached teachers' policy mainly from the perspective of teachers' in-service training. Both the OECD and the European institutions consider that the pandemic has highlighted the need to update teacher training in many countries and acquire new types of skills among teachers, including digital skills. IOs have also conceived teachers' development as a key element in promoting the so-called educational systems' resilience.

The OECD emphasizes that teachers' in-service training should focus on strengthening the resilience of teachers to enable them to "thrive in changing contexts" (OECD, 2020a, p. 41). According to this IO, in-service teachers' training in periods of crisis needs to focus on reinforcing attitudes such as "learning to learn," adaptability, and collaborative work to find appropriate solutions to emerging problems, rather than instrumental skills alone. The idea here is to encourage teachers to use their autonomy to lead future responses to potential crises which, similar to the Covid-19 pandemic, could disrupt conventional teaching and learning processes. In the documents produced by the OECD, it is mentioned that educators should also acquire the necessary skills to give emotional support to students. According to this IO, the crisis has revealed that teacher training and selection processes do not pay sufficient attention to the affective and motivational competencies of the candidates (OECD, 2020c).

The OECD also considers that governments should bring digital education resources closer to teachers, especially in the post-pandemic era. Nonetheless, given that in most countries digital education is a very fragmented field with numerous providers, resources, and initiatives, the OECD recommends that, rather than generating new resources for schools, governments should organize and systematize existing resources:

putting central guidance in place to help teachers navigate resources and building professional communities of practice to foster horizontal collaboration that can be a constant source of support, adapting to the needs of the changing context (OECD, 2020a, p.51).

The OECD has a sophisticated discourse on teachers' career development, established after decades of international data gathering and research initiatives. Over the last decade, it has advocated policies that support teachers' well-being, collaboration, professional autonomy, and effective in-service learning adapted to educators' needs and contexts. The pandemic has given arguments to the OECD to reinforce this approach to teachers' policy. Nonetheless, many of the recommendations of the OECD in

relation to teachers are difficult to translate into policy (beyond teacher in-service training and recruitment strategies) and rather focus on the attitudinal aspects of the teaching profession and how to organize the relationship between teachers and between teachers and students on a more micro level. The class-size theme, which is a source of concern for teachers in many countries, is also discussed in the documents analyzed; however, this is primarily related to social distancing and the reopening of schools, rather than a long-term policy response to the crisis generated by Covid-19.

European institutions have published several documents and communications on how to move toward the so-called European Education Area in the middle of the pandemic ([European Council, 2021](#); [European Commission, 2020](#)), including an entire strategy on digital education ([European Commission, 2021](#)). In these documents, the EU makes constant references to the Covid-19 crisis as an opportunity for change. In the case of teachers-related policies, teachers' in-service training becomes the most obvious line of action of the EU, mainly in relation to the promotion of digital skills. The EU is also concerned with teacher shortages in numerous countries, particularly as the pandemic has accentuated this problem. It plans to promote a series of initiatives to make the teaching career more appealing and socially valued within member countries, but it has not yet detailed what these initiatives will entail. The EU also emphasizes that teachers' mobility and exchanges between teachers within the European territory can be sources of pedagogic innovation and professional development.

The national recovery plans submitted to the EU do not emphasize teachers' related policies. Teachers are basically mentioned as part of school digitalization strategies and in relation to the necessary training they should undergo to upskill to more digitalized learning environments. This emphasis on teacher training and the acquisition of digital skills is constant in all the countries with an education component in the recovery plan. This policy option tends to be justified with OECD data regarding the poor levels of digitalization in the educational system (Belgium and Germany) or the poor country performance in international large-scale assessments such as PISA (Italy). Several countries also plan to invest in teachers, affording them better access to personal and mobile digital devices (Portugal and Germany). The exception is Denmark, which omits education digitalization and teachers' digital skills in its post-Covid-19 recovery strategy.

Italy is the only country analyzed that emphasizes investing in teacher-training areas other than digital skills. In the Italian recovery plan, teachers' in-service training, more than an isolated intervention, is conceived as part of a broader "career progression system related to the professional development and continuous enhancement of teachers" ([Italian Council of Ministers, 2021](#), p. 113). This country also highlights the importance of teacher training to improve students' performance in "basic skills" and science, technology, engineering, and mathematics (STEM) subjects and promotes pedagogic innovation. Cyprus' national recovery plan includes the reform of its teacher evaluation system. It contemplates the distribution of incentives for teachers to improve their skills, allocating more responsibilities to schools in evaluating teachers' work and their contribution to improving educational quality. This reform is framed as a necessary upgrade of the teachers' evaluation system in force, which dates back to 1976, but is also a necessary device aimed at improving teachers' digital skills that can facilitate the transition of the education system in the digital era.

IOs advocate teacher training on digital skills, but they are also concerned with building a more resilient and attractive teaching profession in the post-pandemic. Beyond insufficient digital skills, these organizations consider that some of the main problems teachers face are related to working in institutional environments that do not stimulate autonomy, networking, and collaborative work. Teachers and school autonomy have been advocated by IOs, such as the OECD, for decades, but in the context of the pandemic, these aspects have acquired new meanings. One of the most important omissions in the discourse of IOs on post-pandemic teachers' policy is related to the additional support that teachers working in disadvantaged contexts need. This absence contrasts with the high level of research into how much teachers' welfare and their sense of effectiveness and response capacity during the pandemic has been shaped by socioeconomic conditions. Nonetheless, this omission is even more evident in the national recovery plans. Digitalization almost monopolizes the focus of attention on education policy in these plans. In terms of teacher development, the vast majority of European countries, with a published plan, will use the European funds to develop digital skills among their teaching workforces. To a great extent, the policy change enforced in the teaching area (i.e., upgrading the digital skills of teachers) is more instrumental than final. This is the case as governments wish to ensure that the

expected benefits of considerable public investments in the digitalization of schools through teacher-training initiatives will not be blocked by the insufficient knowledge and/or little disposition of teachers in enacting digital education properly.

Discussion and conclusions

In this paper, we have identified long-term education policy responses to the Covid-19 pandemic in EU countries from a policy change and comparative perspective. The policy processes analyzed have a multi-scalar dimension. The identified policy responses have been intensively theorized, strategized, and debated by and within IOs, have been crystallized in concrete policy plans adapted to and adopted at country level, and will be executed and monitored mainly through supra-national funds and fora.

In the educational sector, policy responses to the Covid-19 crisis have been mainly articulated around three policy areas: the digitalization of the educational system, tackling educational inequalities, and the promotion of teachers' development. The fact that, during the pandemic, numerous problems emerged in each of these three areas generated stress and frustration in one of the most challenging conjunctures that national education systems have experienced over the past decades globally. Nonetheless, the predominant long-term policy responses to the Covid-19 crisis, identified so far, do not represent novel policy approaches or path-departing change. The policy recommendations, instruments, and strategies to promote digitalization, teacher development, and the distribution of educational opportunities are framed and justified in very similar terms to those discussed for decades in educational fora, particularly in the EU context. To date, the crisis seems to have contributed more to redefining policy priorities than introducing new issues in educational agendas. To date, the crisis has not triggered substantive policy innovations but a renewed focus (and additional public resources) on online teaching, digital technologies, addressing teacher-training deficits and the distribution of educational opportunities through early childhood education or vocational training. Thus, in the education sector, the Covid-19 crisis, more than a driver of path change, is a path accelerator contributing to strengthening policy instruments and solutions that were already on the agenda. However, it is unclear how sustainable some of these new measures will be in time. For instance, the additional budget lines to address educational inequalities may disappear from educational budgets once it is considered that the emergency has been overcome.

Among the identified policy trends, education digitalization stands out. Digitalization almost monopolizes the focus of attention of education policy in the national recovery plans of EU countries. Most European countries' recovery plans will mainly focus on developing digital skills and infrastructures. In these plans, digitalization is expected to contribute to the support of conventional educational delivery in formal education rather than representing a departure from previous forms of schooling. The type of change that digitalization brings about is more incremental than paradigmatic; it operates following a pattern of layering that does not imply the displacement of previous forms of delivery.

The emphasis on digitalization in both international and national discourses is related to the fact that the education debate during the pandemic was very much conditioned and affected by the limits of remote and online education. The lockdown experience and the resulting e-learning experiment, which many teachers, students, and families, but also policymakers, regarded as traumatic, could have over-dimensioned the importance that online education and digitalization should have in the post-Covid-19 era. Thus, such an important focus on digitalization may not constitute a sufficient response to the most immediate needs of schools and teachers in a post-pandemic scenario. Once educational institutions are back to business as usual, we should consider the possibility that the digitizing trend will deflate and that education technologies become rather ancillary in the day-to-day life of schools. Nonetheless, it is still early to assess whether the identified responses in the domain of digitalization will mean a paradigm change of educational delivery and pedagogy in the long run or will instead become one more of the many instruments available within the educational toolkit and, accordingly, another factor of educational diversification (with, for instance, some schools in the same system more digitalized than others). The following years will determine whether and in which educational settings the Covid-19 crisis may represent a path-departing change in educational delivery and the role of technology therein. The establishment of coalitions between IOs, the education technology industry, and national governments will be key in understanding the path and depth of these potential transformations.

Finally, in the national recovery plans, we have found fewer between-countries variation than initially expected, although this could be due to the blueprint format of the recovery plan scheme (many

countries seem to have followed the guidelines strictly to secure funding). Nonetheless, from the analysis of the plans, it becomes obvious that countries have experienced the crisis differently according to the weaknesses and strengths of their educational systems. For instance, Denmark's lack of emphasis on digitalization and digital skills upgrading corresponds to the fact that this country already has a highly digitized educational system. For their part, Southern European countries will invest further in addressing their poorly digitized systems but also their deep social problems in education—problems which the pandemic has only made more evident and even accentuated. In the area of educational inequalities, countries' responses seem more associated with the educational challenges countries already faced before the crisis. It is no coincidence that Southern European countries, such as Portugal, Italy, Spain, Greece, or Malta, propose to dedicate a significant proportion of EU funding to strengthening early childhood services and vocational education as a means of addressing educational inequalities, early school leaving, or dropouts. These patterns are indicative of the importance of education systems' characteristics in understanding variation among countries' responses.

Our findings confirm that education systems are complex, multilayered, and resilient institutions that are more conducive to incremental change than groundbreaking transformations. The pandemic has accelerated previously initiated transformations (such as digitalization) and evidenced the importance of addressing problems that have been on the educational agenda for a long period, such as tackling educational inequalities and the professionalization of teachers' work. Future research could focus on the policy dynamics and transformations that ongoing changes may trigger. An important line of inquiry will consist of analyzing whether the incremental changes that we have identified in the first stage of the crisis management can derive into path-departing change or even into a new paradigm of educational delivery, in which digital forms of education play a more central role. Given the limited capacity of recovery plans to capture everything in terms of countries' policy responses to the pandemic, future research should contemplate other data sources, including interviews with government and IO officials, among other key informants. Future research could also consider how the educational components of the recovery strategies are being deployed and enacted in a smaller sample of countries, from policy formulation to implementation at classroom level.

Conflict of interest

None declared.

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