Troubleshooting in emergency education settings: What types of strategies did schools employ during the COVID-19 pandemic and what can they tell us about schools' adaptability, values and crisis-readiness?

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Introduction

Crises, such as wars, epidemics, wildfires, earthquakes, and hurricanes, can disrupt education in major ways. When such crises occur, schools need to take immediate action[1] to prevent or mitigate any negative effects on student learning. With developments such as climate change and heightening geopolitical tension across the world increasing the frequency of crises globally (see e.g., Acevedo & Novta, 2017; Haileamlak, 2022; Senthilingam, 2017), it is crucial that schools become crisis-ready. Crisis-readiness lies partly in the ability of schools to deliver "emergency education" promptly and effectively. While originally linked to contexts impacted by armed conflict and its consequences (e.g., population displacement) (Kagawa, 2005), emergency education is currently understood as "education in situations where children lack access to their national education systems, due to man-made crises or natural disasters" (Sinclair, 2001, p. 4). Overall, it is seen as an emergency solution aimed at enabling teaching and learning to continue during a disruptive event such as a war, an earthquake, a flood or even an epidemic.

However, for emergency education to function as an effective solution, it needs to be informed by both an understanding of the educational challenges created by the disruptive event, or crisis, and an awareness of the types of strategies which could be employed to address these challenges. To support the delivery of

1 While in this study schools take action to address a crisis situation (i.e., schools as part of the solution), it should be acknowledged that sometimes schools can also play a role in the emergence of a crisis (i.e., schools as part of the problem). For example, for the dialectical relationship between formal schooling and armed conflict and the role of schooling in exacerbating inter-group hostility, see Kagawa (2005).

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emergency education, this study focused on the latter dimension, that pertaining to possible courses of action during a crisis. Specifically, it sought to explore the kinds of resources that schools may mobilise and the types of measures that they can put in place to support their students when emergencies arise.

The crisis that provided the setting for this study was the COVID-19 pandemic. The COVID-19 pandemic, declared in 2020 (World Health Organization, 2020), caused an unprecedented disruption to education worldwide. According to the OECD (2022), in 2020, "1.5 billion students in 188 countries and economies were locked out of their schools" (p. 23). To curb the spread of the virus, many governments across the world imposed lockdowns, which resulted in schools closing for certain periods of time. Apart from learning loss (see e.g., Carroll & Constantinou, 2022; Di Pietro, 2023; Newton, 2021), the school closures also caused mental health and wellbeing problems among many students (see e.g., Deng et al., 2023; Panchal et al., 2023), exacerbating the overall negative educational impact of the disruption. The adverse effects of the pandemic continued even after schools reopened. For example, student and teacher absences increased as a result of quarantine rules, with teachers and students physically present at school having to operate in a highly unnatural pedagogical setting created by the social-distancing measures in place (see e.g., Howard et al., 2021; Sharp & Skipp, 2022).

This wide range of challenges triggered a number of different responses from schools, all intended to minimise the impact of the disruption on students or support students' recovery from the consequences of the crisis. To date, there have been various research attempts to capture these responses, or strategies, albeit probably not as many as those focusing on capturing the challenges. Common strategies reported in the literature include: providing students with academic support in core subjects either on a one-to-one basis or in small groups; adapting the curriculum; restructuring the school day; and offering pastoral support to students experiencing mental health difficulties (see e.g., Achtaridou et al., 2022; Bond et al., 2021; Crossfield et al., 2023; Johnson, 2022; OECD, 2022). This study sought to build on this research. Its aim was twofold: (a) to identify and document some of the strategies employed by schools, and (b) to illuminate their nature in order to gain insight into schools' adaptability and readiness to cope with a public health crisis such as that caused by the COVID-19 pandemic.

Methodology

To investigate the strategies used by schools during the COVID-19 crisis, this qualitative study drew upon in-depth interviews with 13 teachers based in different parts of Europe. The interviews were conducted as part of a larger mixed-methods project aimed at understanding the educational impact of the pandemic. The project involved a questionnaire completed by teachers based in different parts of the world, and follow-up interviews with 13 of them (for more information about the project, see Carroll & Constantinou, 2022, 2023; Constantinou, 2023; Constantinou & Carroll, 2023). The teachers participating in the project taught in schools that worked with the Cambridge Centre for Evaluation and Monitoring.

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The interview participants were drawn from the pool of questionnaire respondents. They were purposefully selected to represent a heterogeneous group to allow a range of perspectives and experiences to be captured. As shown in Table 1, the interviewees worked in different education sectors (early years, primary, secondary), were based in different European countries, taught different subjects, and held different roles within their school. Their teaching experience ranged from six to 35 years. It is worth noting that, while both state and private schools were represented in the interview sample, the majority of the interviewees worked in the private sector.

The interviews, which aimed to provide more in-depth information about how schools from around the world experienced the COVID-19 disruption, were carried out online in June and July 2021. They were conducted in English. The choice of language did not create any communication issues, as the teachers who were not native speakers of English worked in (partly or fully) English-medium schools and were therefore fluent in English. In the interviews, which were semi-structured, the participants were invited to describe the challenges they faced during the pandemic and any strategies that they, or their schools, employed to address the implications of the crisis. Each interview lasted approximately 90 minutes. In line with the ethical guidelines for conducting educational research, written informed consent was obtained from all interviewees (see BERA, 2018).

The interview transcripts were subjected to thematic analysis (Braun & Clarke, 2021) using MAXQDA (VERBI Software, 2021). The analysis consisted of two stages. The first stage was more descriptive and focused on identifying the different micro-level strategies used by schools. The second stage, which was more interpretive, aimed to make sense of these micro-level strategies. This latter analysis stage, which was predominantly data-driven, led to the identification of a number of overarching mechanisms, or macro-level strategies, employed by schools to address the pandemic challenges. Both the micro-level and the macro-level strategies are explained and exemplified below.

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Table 1: Interview participants (N=13)

Characteristics		N
School location	UK	7
	Cyprus	1
	Italy	2
	Romania	1
	Spain	1
	Switzerland	1
Education sector	Early years	1
	Primary	2
	Secondary	10
School type	State-funded	3
	Independent	10
Gender	Female	8
	Male	5
Position in the school	Teacher with a leadership role (e.g., head of department)	8
	Teacher without a leadership role	5
Subject area*	Creative subjects (e.g., art, design and technology, music)	2
	Humanities and social sciences (e.g., English language, literature, history)	5
	Science and mathematics	3

* This category concerns only the secondary teachers (the early years and primary teachers taught all subjects).

Findings

Overall, eight macro-level strategies were identified through the analysis. As shown in Table 2, these were organised into three groups based on three criteria: (a) the type of challenge targeted (the "what"); (b) the intended function (the "why"); and (c) the type of problem-solving approach employed (the "how").

Based on the first criterion, that is, the type of challenge targeted by the micro-level strategy, three kinds of macro-level strategies were identified:

- *Safety strategies:* These encapsulate safety measures put in place to reduce the risk of infection by the virus and enable school activities to be carried out safely.
- *Learning strategies:* These involve steps taken to support students' academic development which was disrupted by the pandemic.
- *Wellbeing strategies:* These entail actions intended at supporting students' mental health and overall wellbeing which also seemed to be affected by the crisis.

Based on the second criterion, that is, the intended function of the micro-level strategy, two varieties of macro-level strategies were detected:

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- *Defence strategies:* These were aimed at providing protection against the crisis, by either averting or weakening the threat posed by it.
- *Recovery strategies:* These were employed to mend, or reverse, any harm caused by the crisis.

Finally, based on the problem-solving approach reflected in the micro-level strategy, three clusters of macro-level strategies emerged:

- *Suspension of existing structures:* Pausing activities which could no longer be carried out safely.
- *Exploitation of existing structures:* Using usual practices involving tools and resources already available in the school to combat the crisis or enable students to recover from it (e.g., incorporating more collaborative classroom tasks than usual into teaching).
- *Development of new structures:* Devising new, often creative solutions to address the challenges caused by the crisis. New structures took a variety of forms – some involved using existing tools and resources in new ways (e.g., converting a changing room into a temporary classroom), while others involved new tools or resources (e.g., face masks).

Each micro-level strategy received, overall, three attributes (through being linked, or assigned, to three macro-level strategies), one for each criterion, namely, the "what", the "why", and the "how", respectively. This enabled each micro-level strategy to be described and profiled. The micro-level strategies can be found in the following sections. For ease of presentation, they are organised into three sections based on the first criterion, that is, the type of challenge targeted (i.e., the "what"). Each section concludes with a summary table which captures the profile of each micro-level strategy.

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Table 2: The eight macro-level strategies

Macro-level strategies	
The "what" (=type of challenge targeted by the micro-level strategy)	Safety strategies
	Learning strategies
	Wellbeing strategies
The "why" (=intended function of the micro-level strategy)	Defence strategies
	Recovery strategies
The "how" (=type of problem-solving approach reflected in the micro-level strategy)	Suspension of existing structures
	Exploitation of existing structures
	Development of new structures

Safety strategies

As explained below, the safety strategies reported in the interviews took the form of a series of defence measures employed by schools when in-person instruction resumed.

Defence strategies

To protect themselves against the virus and reduce the risk of infection, schools either paused teaching and learning activities ("suspension of existing structures") or invented new solutions to allow such activities to continue ("development of new structures"). Interestingly, no evidence of attempts to draw upon existing mechanisms ("exploitation of existing structures") was detected. This is indicative of the absence of such mechanisms which is, in turn, suggestive of a lack of preparedness on the part of schools to cope with the safety challenges of such a crisis.

Examples of activities which were suspended due to being deemed unsafe after schools reopened, included singing, group art projects, and school assemblies:

> "Whereas now, [music] lessons are static, and they [students] come in and they sit at a table. And they can't sing. I can't sing to demonstrate anything." [UK]

> "Because of COVID I have not planned [art and design] group work. However, I did do a group work halfway through the year with making bridges, and they had to work in pairs to do that. It was such a pain, I had to disinfect everything all the time. Now, everybody's working on their own thing. I decided not to do another group work, just to make it easier." [Romania]

> "Normally, schools have assemblies for Year groups when you talk about different topics and the news, anything that is going on – all of these have been cancelled." [Spain]

To enable as much teaching and learning to continue as safely as possible, schools attempted to implement social distancing where feasible. Social distancing, a public health practice intended to reduce the rate of virus transmission through

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minimising close physical contact between individuals, was a governmental requirement with which schools had to comply. The social-distancing measures employed by schools took a variety of forms, ranging from implementing relatively small changes to student and teacher practices, to undertaking more radical interventions. The former included introducing new routines such as wearing a mask, disinfecting hands and surfaces, moving activities outdoors where possible, and walking in designated areas indicated by floor markings or other signs:

> "Wearing masks all the time. Because of the space, it was compulsory." [Spain]

> "You say 'OK, we're about to get out the instruments, so here's the hand sanitiser again, here's some wipes. We're all going to clean the beaters'." [UK]

> "My school is close to a big park, so in the sunny days we delivered our lessons in this park." [Italy]

> "So, in terms of distancing in the classroom, the teacher is to be two metres from the pupils. So, in the classroom we have these physical strips of tape on the ground to show the separation." [UK]

Another defence strategy employed concerned the classroom seating arrangements which some schools amended to facilitate social distancing. As reported in the interviews, students sat in rows rather than in groups, often on their own, with plastic barriers sometimes separating them from their classmates:

> "I suppose one thing is we've had the children in rows in the school, which isn't normal for primary schools. Normally, it's sitting them around in groups." [UK]

> "And when we came back, the classes were small enough that we could put a child and then a gap, and then a child and then a gap – so we had enough space to do that." [Switzerland]

> "Now we have separate desks for each student. And each desk is with sort of a cover made of plexiglass." [Italy]

In some cases, students also had to sit in an alphabetical order, a measure normally taken to help simplify contact-tracing efforts:

> "A decision that has been made in our schools is that all pupils sit in alphabetical order for the entire year, which again isn't ideal because usually you would change the seating plan at least three or four times a year." [UK]

An additional defence strategy involved operating a "bubble" system. This entailed organising students into "bubbles", that is, into smaller clusters (e.g., based on their Year group or Key Stage group). Students in each bubble remained together for most, or all, activities throughout the day (e.g., lessons, breaks), avoiding interaction with students outside of their bubble. This was intended to

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reduce the risk of virus transmission and allow teaching to be delivered in a safer way:

> "So, the classes, the Year groups, are in bubbles. So, reception is in a bubble. Year 1 is in another bubble. The bubbles are not meant to mix. So, we do not gather for anything, like an assembly, and the children do not play in the same spaces, they have their own space." [UK]

> "We had Key Stage bubbles more or less [...]. So, the bubbles ate lunch at different times and had break in different places." [Switzerland]

To enable the bubble system to operate smoothly and fulfil its mission, schools created a zone system. In some cases, this involved building new cafeterias, each catering for a different bubble:

> "We have a café on site, but they actually built two other little, mini cafés, so that there was one for Key Stage 3, one for Key Stage 4, one for Key Stage 5." [Cyprus]

In cases where class size exceeded the limit set by the government, classes were split into two. To cater for the teaching needs of the additional classes, schools devised new, creative solutions. As explained below, one school in Switzerland resorted to a form of on-site synchronous hybrid teaching: teachers taught one half of the class in person, with the other half of the class attending the lesson online from a different room in the school:

> "So, my Year 12 class is my biggest class. It has 19 students, and I had ten students in the room, and nine students in another room that were online. So, we were doing hybrid teaching within the school. [...]. So, they alternated, so Monday I saw one half, on Tuesday I saw the other half. And they were all doing that – if your class was too big, then you had to separate." [Switzerland]

Splitting classes into sub-groups created a demand for more classrooms. Some schools addressed this need through converting other school areas, such as corridors, changing rooms, assembly halls and labs, into classrooms or study areas:

> "We have been teaching everywhere. We have been teaching in the large corridor, we have been teaching in a corner there, we have created classrooms from thin air. We have been teaching in the changing rooms, yeah." [Spain]

> "We converted the main hall into a study area for the sixth formers because there was a limit [of 20 people]. We couldn't use the main hall because it would have been difficult to maintain social distance, so we had no assemblies or anything. So, they converted the main hall into a study area for the sixth formers, with socially-distanced desks." [Cyprus]

> "Sometimes we had to teach in labs." [Cyprus]

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Finally, infected students and teachers and their close school contacts were required to self-isolate at home for a period of time to prevent the spread of the virus:

> "We have, on occasion, lost parts of bubbles. So, we've never had to send an entire Year group home, but we have had big chunks of Year groups that have had to go home." [UK]

A summary of all the safety strategies identified in the study can be found in Table 3.

Table 3: The profile of safety strategies

Micro-level strategies	The "why"	The "how"
Suspended singing during music lessons.	Defence	Suspension of existing structures
Suspended group art projects.		
Suspended student assemblies.		
Introduced mask wearing.	Defence	Development of new structures
Introduced disinfection routines.		
Moved teaching outdoors (where possible).		
Introduced floor demarcation to encourage social distancing.		
Amended seating arrangements to facilitate social distancing and contact tracing.		
Operated a "bubble" system to reduce virus transmission.		
Operated a zone system.		
Split classes into two and implemented on-site synchronous hybrid teaching.		
Converted various school areas (e.g., corridors, changing rooms, assembly halls) into classrooms to facilitate social distancing.		
Required infected students and teachers and their close school contacts to self-isolate at home for a period of time.		

Learning strategies

Another type of challenge confronted by schools during the pandemic was supporting student learning. As the analysis indicated, this support took two forms: (a) reducing the risk of learning loss caused by the disruption (defence strategies), and (b) helping students to catch up on any learning they may have missed due to school closures (recovery strategies).

Defence strategies

It is worth noting that all learning-related defence strategies reported in the interviews involved developing new structures. As there did not seem to be any school structures in place which could be exploited to reduce the negative impact on student learning, new and creative solutions had to be devised.

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To minimise learning loss during lockdown, many schools around the world switched to remote teaching which, in many cases, took the form of live online lessons:

> "We were doing live lessons [online] all the way through those national lockdowns." [UK]

In cases where some students could not attend the live online lessons – either because they were unwell or because they were based in a different time zone – teachers video recorded the lessons to prevent them from falling behind:

> "When we were all remote, we had to record all of our lessons online, and so some pupils watched them on record at different times of day, depending on where [in the world] they were." [UK]

Online instruction was a novel experience for most teachers and involved a number of challenges which often undermined or complicated the process of teaching and learning. Key challenges included:

- Students were more susceptible to becoming passive and disengaged during online learning (Challenge 1).
- It was difficult for teachers to know whether, or to what extent, students were able to follow the online lesson and understand what was being taught, as they could not see them (Challenge 2).
- Some students did not have access to the necessary learning resources and materials during lockdown (Challenge 3).
- It was challenging for group work to be carried out effectively online (Challenge 4).

To support student learning as much as possible during online lessons, teachers developed various strategies. These are summarised in Tables 4 to 7. They are presented based on the type of challenge they sought to tackle and are all exemplified through relevant interview extracts.

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Table 4: Strategies developed to address Challenge 1 (=Students were more susceptible to becoming passive and disengaged during online learning)

Strategies developed to address Challenge 1	**Interview extracts (quotations)**
Calling students at random during the lesson to encourage them to be present and attentive.	If the kids don't have their cameras on, you don't know whether they're even present. I would, halfway through a lesson, start calling on random students and I would tell them I was going to do that to check that they were present. So, you had to employ whatever means you could to make sure that they were attending. [UK]
Assigning tasks that involved a physical element (e.g., writing or drawing on paper) to prevent students from becoming passive.	I would then set an open-ended task [...], say, a writing activity, and I was a great fan of the "hold it up and show me what you've done at the end", so they've got to actually have physically done something. We try to get them off screens as much as possible so they were actually writing something and drawing something, rather than just typing or accessing passively the screen. That was one of the things that we set out from early on, because we could see a danger in that, the children just becoming totally passive. [UK]
Making the lesson as enjoyable as possible for the students.	But I tried to keep as much of those fun things, the things they like. They like a little two-minute or three-minute film, or they like the opportunity to not just listen to me. [UK]
Asking students differentiated questions in the chat and encouraging them to respond to, or challenge, another student's answer.	Often a strategy I used, again for the chat, maybe I would write down a set of questions, differentiated questions, so a different question for each pupil. So, depending on their level, I'd ask them a more challenging or less challenging question, and ask them to respond in the chat, and then I would give them some time to look at each other's responses, and then quite a nice tactic was sometimes to ask each of them to respond to or challenge one other person's response. [...]. So, by asking everyone to respond in the chat, it means everyone was involved. [UK]

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Table 5: Strategies developed to address Challenge 2 (=It was difficult for teachers to know whether, or to what extent, students were able to follow the online lesson and understand what was being taught, as they could not see them)

Strategies developed to address Challenge 2	**Interview extracts (quotations)**
Reducing taught content.	We cut content when we were online. [...]. So, we took content out that we felt wasn't absolutely necessary to be taught at that particular point. [UK]
Simplifying the lesson and focusing only on key points.	If I'm fully online teaching, I'm keeping things a lot simpler. There's less room for complication. [UK] So, I tried to stick to the main points. [Italy] So, I felt that teaching became linear, you know, everything had to follow a straight line. It was hard to go off on a tangent, or if there was something that was particularly interesting that had been thrown up, it was hard to then address that, because you didn't know whether you were just talking to one student rather than having everybody on board. [UK]
Slowing down the pace of teaching.	And I think I probably am now more actively aware that sometimes it's more important to slow down and ensure that everyone is keeping up that greater quality, than just blindly running through the material and hoping that people catch up. So, I think I've simplified and slowed down and seen the value in maybe quality over quantity. [UK] I tried to be very, very slow in teaching because I get that for my students it was difficult to follow the entire lesson online. [Italy]
Communicating clearly and explicitly.	Because it's very easy to miss stuff online and it's very easy for the teacher not to see that people haven't grasped what's required, you had to be really specific in laying out what the requirements were. [...] but you had to be doubly sure when you were online that everyone knew what was coming and what was expected of them. So, explicit, clear instructions were absolutely essential. [Italy]
Taking detailed notes of ideas mentioned in the class to enable everyone to follow the lesson.	So, I found myself writing a lot of notes onto the class notebook to annotate ideas that were coming from class discussion or to type my own ideas. So, instead of perhaps my writing a couple of notes on a whiteboard, and then being able to check organically in the classroom whether pupils understood or not, I found myself writing much, much more, just to be absolutely sure that everybody was keeping up. That was also important because I did have two girls in that class who were learning through recordings. So again, I wrote everything down, everything useful to make sure that they were keeping up. [UK]

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Table 6: Strategies developed to address Challenge 3 (=Some students did not have access to the necessary learning resources and materials during lockdown)

Strategies developed to address Challenge 3	Interview extracts (quotations)
Choosing to teach topics that did not require specialised material to allow all students to participate in the lesson.	It was more to do with the fact that most students don't have more than a pencil at home, right? I would say only half of them had colour pencils and watercolours. That's why I ended up doing perspective, because I thought most people will have a pencil and a ruler, you'd think, right? I said "If you don't have a ruler, use a book." [Laughs]. This is what I'm dealing with. All my teaching this year has been just pencil and paper really. Normally, I'd be painting and I'd be making sculptures, we'd be doing all sorts of things. But I just can't do it, I can't do it when half the class doesn't have the materials. [Romania]
Providing students with a digital version of any necessary learning resources, where possible.	Most of them had the books that they needed at home, but some of them didn't, and so I literally took pictures on my phone and would send them pictures of the music so that they could do it. [UK]

Table 7: Strategies developed to address Challenge 4 (=It was challenging for group work to be carried out effectively online)

Strategies developed to address Challenge 4	Interview extracts (quotations)
Increasing group size to account for the likelihood of some students leaving the breakout room because of technical issues.	And, also, issues with connectivity. If you have a group of three, and two people lose connection, then you've got one person on their own. So really, for the breakout rooms to work, I was having to put students into groups of at least four, whereas normally I would – for me, that would be quite a big group to use. I think when you've got groups of four, you often get one person, at least, who isn't really contributing much. [Cyprus]
Designing shorter and more focused group tasks.	I have to be very careful with group work. [...]. So, if I set group work, [...], it'll be a much smaller task. You might say "Right, I'm going to get you in groups. You're going to read this, and you've got three minutes to come up with answers to this, this and this". So, they have to be quite carefully planned and focused. [Cyprus]

After schools reopened, the learning challenges remained but they manifested themselves somewhat differently. For example, due to quarantine rules, infected students, or close contacts of infected students, had to self-isolate at home and therefore miss school. To mitigate the risk of learning loss for the affected individuals, many schools implemented synchronous hybrid teaching as a defence strategy, to allow self-isolating students to continue attending lessons:

> "In our Sixth Form, we had students who were out in both Years 12 and 13 who were quarantining at home [...], and who weren't coming into the class. So, we were teaching hybrid classes where some of the students were live in person and some of the students were remote." [UK]

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Sometimes, the individuals self-isolating were the teachers. To enable student learning to continue, self-isolating teachers – where possible – delivered lessons remotely from home. In this case, a teaching assistant would be present in the classroom to support the instructional process:

> "But many times, they [teachers] were just with mild symptoms or quarantining, so they were able to deliver their lessons via Zoom. And individuals like previous students of the school or people training in universities, came to the school and looked after the pupils whilst the lesson was delivered via Zoom by the teacher." [Italy]

However, it was not only the quarantine rules that jeopardised student learning after schools reopened. In some countries, transport restrictions constituted an additional source of disruption, preventing a subset of students from physically going to school. To address this issue, some schools developed a system whereby students were divided into three groups, each taught through a different medium: one group received fully in-person teaching, another group received fully online teaching while based at home, with the third group participating in synchronous hybrid lessons. For fairness, these groups alternated to allow all students to receive the same amount of in-person instruction:

> "So, since the buses and the underground are allowed only 50 percent of their capacity, we're supposed to split our classes into smaller groups. [...]. So, I had the three ways – the hybrid, the totally online, and the classroom [in-person] activity, because the groups swap. So, maybe one week one class was entirely at school, the other one was entirely at home, and we had hybrid ones as well. And then we moved to another pattern to give all the students the same possibility of attending the same number of lessons at school." [Italy]

Recovery strategies

Unlike the defence strategies which involved schools moving beyond existing arrangements and devising new solutions to support student learning ("development of new structures"), the recovery strategies drew upon established school mechanisms and already available resources ("exploitation of existing structures"). Employed mainly after the first phase of the disruption (i.e., after the first lockdown), the recovery strategies were aimed at reversing some of the harm caused by school closures by addressing gaps in students' knowledge and skills.

In the first instance, schools sought to collect information about their students' learning needs. They did so via conventional routes such as conducting student assessment and contacting parents:

> "What we've done now that they're all back is we've tested them towards the end of the year in a more rigorous way, and I think that will inform us where they are more accurately." [Italy]

> "We have a parent survey. So, I think that'll be a useful way of getting information from parents about what they know that their children are doing." [UK]

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One strategy employed by schools to support the development of skills which had overall declined was making curriculum and pedagogy adjustments. For instance, a reception teacher incorporated more collaborative activities in her in-person lessons to help her young students to recover the social skills that they had lost during lockdown, while a secondary English teacher decided to place more emphasis on reading skills through reintroducing guided reading into her teaching:

> "And then, the main thing has been the social side, in terms of reminding children how we listen to each other. So, there's been more effort to build that up to remind everybody that we're part of a group again. So, a few more little social activities have been integrated because that's where the gap was. [...]. And so, they worked together in a group, collaboratively, on an art project. So, I've been thinking more about collaborative play, expressive arts, role-play type activities – thinking more of activities which unite children into groups again." [UK]

> "I know in the English department, I'm putting a lot more focus on reading and literacy next year, so we're bringing back library lessons. I'm looking at doing guided reading." [Cyprus]

A major focus of schools after reopening was providing support to students of lower academic ability who seemed to have been more severely affected by the disruption. This support took a variety of forms, notably a greater differentiation of teaching and provision of catch-up classes during or after school time:

> "So, for example, the lower ability [reception] children have had more practical activities within their programme. So, they've not just been writing the numbers to 10, they've been counting the teddy bears and the beads. They've been making patterns, lines, shapes. So, the lower ability have had more rich activities put into their programme to help them to deepen their understanding and improve their skills." [UK]

> "We've got intervention groups. We'll take groups who we perceive as being weak in a certain area, maybe spelling, punctuation, maybe grammar, maybe maths, whatever it might be, and we do catch-up groups." [UK]

A summary of the learning strategies can be found in Table 8.

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Table 8: The profile of learning strategies

Micro-level strategies	The "why"	The "how"
Switched to remote teaching to allow learning to continue.	Defence	Development of new structures
Video recorded online lessons for the benefit of students who could not attend them (e.g., ill students, students based in a different time zone).		
Developed various strategies to render online teaching more effective (see Tables 4 to 7).		
Implemented synchronous hybrid teaching after schools reopened to mitigate the risk of learning loss for students self-isolating at home.		
Self-isolating teachers delivered lessons remotely from home (where possible), with the support of a teaching assistant who was physically present in the classroom.		
Implemented a rotating three-mode teaching system (i.e., online, in-person, and hybrid lessons) to cope with the learning challenges posed by transport restrictions.		
Surveyed parents and administered tests to diagnose students' learning needs.	Recovery	Exploitation of existing structures
Incorporated more collaborative tasks in in-person lessons to support the recovery of students' social skills.		
Reintroduced guided reading to help strengthen students' reading skills which had overall declined during lockdown.		
Differentiated teaching to provide students of lower academic ability with tailored support.		
Provided catch-up classes during or after school time.		

Wellbeing strategies

As in the case of the learning strategies, the wellbeing strategies employed for defence purposes comprised measures which departed from established practice ("development of new structures"), with the recovery strategies drawing mainly upon existing structures ("exploitation of existing structures"). Interestingly, unlike the learning strategies, the wellbeing ones seemed to be overall fewer in number and less varied. This could reflect a greater readiness on the part of schools to provide learning support compared to mental health aid.

Defence strategies

To prevent students' mental health and overall wellbeing from declining during lockdown, schools employed various defence strategies. These focused mainly on reducing students' screen time. They included measures such as: assigning students non-computer-based tasks; compressing lesson time to allow students a short break away from their computer in between lessons; and increasing the duration of the lunchbreak to encourage students to go outdoors:

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> "I would always have something which I called 'Work for the week' which was something which would get the learners away from the computer in the knowledge that in many ways they were spending too much time in front of the screen. So, something that would get them either writing something on paper or reading something away from the computer." [Italy]

> "In the 2021 lockdown, our double lessons, which are usually one hour and 15, were compressed to be only an hour and the idea behind that was to give both students and teachers a little bit of time away from their screens between lessons." [UK]

> "They changed it so that there was a slightly longer break in the middle of the day, so there was longer for lunchtime, to try and encourage people to get outside." [UK]

Teachers also phoned parents and students regularly during lockdown to ensure that any students at risk could be identified as early as possible:

> "During the full lockdown, all pupils were phoned at least once a week, and those pupils who we were particularly worried about were called by members of school staff maybe two or three times a week." [UK]

Recovery strategies

According to the interviewees, schools had a number of mechanisms in place to support students whose mental health and wellbeing were compromised. These typically involved access to a school counsellor or other pastoral support staff, regular one-to-one meetings with teachers, and opportunities for outdoor activities:

> "We've got a school counsellor who's addressing mental health and anxiety issues and things like that. She is available to all the students, and she can be visited on a confidential basis." [Italy]

> "So, there is quite a lot of one-to-one personalised support, and I have several pupils that I meet up with regularly to talk about how everything's going." [UK]

> "This term, we've done a lot of outdoor education to try and build up their wellbeing and that side of things." [UK]

To help teachers increase their knowledge of mental health issues and therefore enable them to support students more effectively, some schools launched mental health training programmes:

> "We are having what's called 'mental first aid training', so any staff that want to volunteer for this training – it hasn't happened yet but it's happening in the future – they'll be trained in mental first aid." [Italy]

A summary of the wellbeing strategies can be found in Table 9.

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Table 9: The profile of wellbeing strategies

Micro-level strategies	The "why"	The "how"
Took various measures to reduce students' screen time (e.g., compressed lesson time to allow students a short break away from their computer in between lessons).	Defence	Development of new structures
Phoned students on a regular basis during lockdown to identify any at-risk individuals as early as possible.		
Provided access to a counsellor.	Recovery	Exploitation of existing structures
Provided affected students with regular one-to-one meetings with teachers.		
Provided more opportunities for outdoor activities.		
Launched mental health training programmes to increase teachers' knowledge of mental health issues.		Development of new structures

Discussion

This study attempted to document and understand school responses to the COVID-19 crisis. Through analysing data collected from interviews with teachers based in different parts of Europe, the study identified a number of micro- and macro-level emergency strategies employed by schools to address the challenges posed by the pandemic. As discussed below, apart from providing a useful starting point for any teachers required to deliver emergency education in the future, these strategies also offer valuable insights into schools' adaptability, values and, more importantly, their crisis-readiness. As such, they could prove informative for both educational policy and practice.

What do the strategies reveal about schools' adaptability and values?

The emergency strategies employed by schools were multifaceted: they targeted different areas (*safety*, *learning*, and *wellbeing*), served different functions (*defence* and *recovery*), and employed different problem-solving approaches (*suspension of existing structures*; *exploitation of existing structures*; and *development of new structures*). Overall, these strategies are revealing of schools' agility, adaptability and resilience. Specifically, they are demonstrative of schools' ability to navigate a fast-evolving crisis and respond promptly to challenges, both through exploiting readily available resources and innovating where necessary.

These strategies are also indicative of schools' strong commitment to supporting students in a holistic, equitable and inclusive manner. As the study has shown, schools sought to address not only students' learning needs but also their safety and wellbeing ones. In addition, they aimed to provide all students with the same, or similar, learning opportunities, where possible. For example, they video recorded online lessons to reduce learning loss for students who could not attend them live, and also implemented synchronous hybrid teaching to enable self-isolating students to continue their learning. Furthermore, they strove to provide students – who were affected by the disruption in different ways and to different degrees – with tailored support, through differentiating instruction and providing catch-up classes.

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What do the strategies reveal about schools' crisis-readiness?

More importantly, the strategies can provide useful insights into schools' preparedness to cope with a public health crisis similar to that caused by the COVID-19 pandemic. Based on the nature of the strategies employed, various observations can be made about schools' crisis-readiness. Key ones include:

- Overall, the learning strategies identified were considerably more in number and more varied relative to the wellbeing ones. This suggests that the schools participating in the study were not as well prepared to support students' mental health and wellbeing. Given that crises are becoming increasingly more common, this is an area in which the target schools (as well as other schools around the world with similar characteristics) should probably invest more resources to help them become more crisis-ready.

- The recovery strategies identified, that is, the strategies employed to mend, or reverse, the harm caused by the crisis, drew almost exclusively upon existing resources and already established structures ("exploitation of existing structures"). This suggests that the schools in this study have mechanisms in place – albeit probably more learning than wellbeing ones – to support students' recovery in the event of a future emergency.

- Unlike the recovery strategies which capitalised on existing resources and structures, the defence strategies consisted predominantly of attempts to suspend activities ("suspension of existing structures") or devise new solutions to allow the activities to continue ("development of new structures"). This suggests that there were no structures in place which the target schools could exploit or mobilise to defend themselves against the crisis. Overall, the schools seemed to be better prepared to engage in recovery (i.e., to fix the damage caused) than in defence (i.e., to prevent the damage from occurring in the first place), which probably does not represent the most efficient crisis-management approach. To render themselves more crisis-ready and able to respond effectively to another similar public health crisis in the future, the schools may need to invest in developing further their defence capabilities.

Some limitations and directions for further research

When interpreting the findings of the study, two important caveats should be borne in mind. Firstly, given the small scale of the study, the list of strategies reported in this article might not be exhaustive. Secondly, some of the strategies may not be representative of those employed in less affluent contexts, as most of the participants worked in private schools.

Finally, the educational community would benefit considerably from further research into emergency strategies. Such research could focus on capturing strategies employed in a wider range of emergency contexts (e.g., wars, earthquakes, hurricanes) both across the private and state education sectors, as well as on measuring their effectiveness. This would help to extend the present study and support efforts to compile a more comprehensive repository, or database, of emergency strategies which schools around the world can consult whenever they are confronted with a crisis.

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