

# Lessons from learner home engagement prior to and during Covid-19 – are parents and guardians prepared for future crises?

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**Abstract:** Parents and guardians were supporting their children’s learning prior to Covid-19, but evidence has indicated that many were not prepared for what happened and what was required of them during the Covid-19 period. Uses of digital technologies to ensure continuity of learning was frequently and rapidly used and developed, and pertinent literature often indicated the challenges that parents and guardians found in supporting their children through uses of these media. In moving from the previous practices to those needed in the Covid-19 pandemic time, this paper asks why parents and guardians were not prepared: what features were missing, and how might parents and guardians be better supported during periods of future crisis?

**Keywords:** Home learning, Parent and guardian support, Digital technology support for home learning, Covid-19 preparation, Learning in crises, Remote emergency learning

## 1. Introduction

The International Federation for Information Processing (IFIP) Technical Committee 3 (TC3) on Computing in Education ran its 2022 World Conference (WCCE) in Hiroshima, Japan, hosted by the Information Processing Society of Japan (IPSJ). The title of the conference was “Towards a collaborative society through creative learning”. Whilst the time of this conference was beyond the period of the major Covid-19 pandemic lockdowns, nevertheless, collaboration had been recognized as a key need both during and after this period; collaborative endeavor between those in educational institutions and those in home situations was an absolute requirement to ensure the continuity of education in as seamless a way as possible, using digital technologies to achieve this.

For learners of school age, the Covid-19 pandemic period led to dramatic changes for very many teachers, learners, policy makers, educational advisors, and, particularly, for parents and guardians (for example, see [1, 2, 3]). Whilst parents and guardians had, prior to the pandemic, supported their children and their learning at home, the shift to home and remote emergency learning, using digital technologies in major ways, created a number of shifts that some parents and guardians found challenging [4], that some could accommodate [5], and that some recognized they could benefit from [6].

A wide range of literature has provided evidence that has reported and recorded the forms of changes that occurred during that time (for example, [7, 8]). However, the preparedness of parents and guardians, particularly in their abilities to use digital technologies to support learners, has not been explored to the same extent, and yet is likely to be important if parents and guardians and those supporting them are to adequately cope with any similar crises that emerge in the future.

This paper will explore a background prior to the Covid-19 pandemic, identifying how parents and guardians during that previous time supported and worked with teachers, schools, and their children through the uses of digital technologies. From this background, factors will be identified that show where there was preparedness, and where there was a likely lack of preparedness. These factors will allow a framework to be developed, to allow parents and guardians and those supporting them to identify what is needed if they are to cope successfully with home and emergency remote learning using digital technologies in the future.

## 2. A conceptual background

Before the Covid-19 pandemic lockdown, most formal learning took place at school. By contrast, during the lockdown, most learning took place at home, often through the uses of digital technologies [9]. What difference did this make to parents or guardians?

To identify the factors that are important in shifting from a home learning support situation when schools are fully operating, to a home learning situation where remote emergency learning is involved and using digital technologies, a theoretical framework that considers educational roles in these two different situations, and the factors that relate in each of these situations, will be employed.

A teacher supports learners in different and important ways. Teachers adopt (at least) five different roles in a school when children are engaged in learning [10]. They operate as:

- A teacher - when specific subject or topic content is being covered.
- A tutor - when supporting small groups working on specific activities.
- A facilitator - when monitoring and asking questions about how activities are going and how to address any problems they might encounter.
- A guide - when taking a group around an external site such as a nature area or a museum.
- A counsellor – when supporting children socially or emotionally.

At home, what role or roles could a parent or guardian take that would help their child or children to continue their learning? Would the parent or guardian also offer a role as:

- A teacher – covering specific subject or topic content to help the child or children with their learning?
- A tutor – supporting a child or children in working with others, perhaps in a small group, for a specific activity?
- A facilitator – helping to monitor and ask questions of a child or children about how an activity is going, or offering ideas of where a child or children might find answers to their questions?
- A guide – taking a child or children around an external (or online) site such as a nature area or a museum, perhaps to connect to specific subject topics they might cover?
- A counsellor – if a child needs social or emotional support, or needs to be reassured or positively encouraged?

As the focus of this paper is concerned with the shifts in support actions and roles that parents and guardians were involved in when moving to a crisis situation (Covid-19 lockdown in this case), this categorization of roles will be used as the conceptual framework. Whilst it can be argued that an alternative theoretical framework might be used, for example, to consider technological, pedagogical, social, emotional, and content needs (for example, using an extended form based on [11]), the role-based framework will be used to encapsulate those factors, as this is felt likely to be more supportive of the approaches taken by parents and guardians. In this respect, parents and guardians are shifting from one set of supportive roles when home learning is supporting school-based learning, to one where emergency remote learning is providing a more major basis for learning outcomes.

### 3. Review of appropriate literature

Before reflecting on the preparedness of parents and guardians pre-Covid, the literature discussed in this section of the paper will illustrate that the Covid-19 pandemic dramatically altered a previously well-accepted scenario of defined and distinct teacher roles. The alterations that were brought about in the five-part model outlined in the previous section (teacher, tutor, facilitator, guide, and counsellor) were responsible in no small way for the challenges (and sometimes unsurmountable difficulties) that were faced by teachers, learners, and parents and guardians in accommodating the changes needed during the Covid-19 pandemic.

What is clear from data collected worldwide during the Covid-19 pandemic, such as that by UNESCO, is that location-based shifts and adaptations were large-scale and were worldwide, and affected parents, whether they were prepared or not for the shifts that arose. UNESCO [12] reported how countries had responded to the pandemic, stating that some 150 countries had fully closed their schools by April 2020, about 10 countries had partially closed their schools, while schools in another 10 remained fully open. UNICEF reported the extent of closure days, and stated that between March 2020 and February 2021, schools had been “fully closed for an average of 95 instruction days globally, which represents approximately half the time intended for classroom instruction” (p.2) [13]. UNICEF went further, stating that “214 million students from pre-primary to upper secondary education in 23 countries have missed at least three-quarters of classroom instruction time”, and of these “168 million in 14 countries missed almost all classroom instruction time due to school closures” (p.2) [13]. UNICEF indicated that digital technologies had been often relied upon to support a continuation of education provision, stating that: “More than 90 per cent of ministries of education enacted some form of policy to provide digital and broadcast remote learning” (p.1) [14]. They also indicated the reliance being placed on parental and guardian home provision, stating that whilst “most students (about 70 per cent) have assets at home that would allow them to learn remotely via digital or broadcast classes... at least 31 per cent of schoolchildren worldwide cannot be reached by remote learning programs, mainly due to a lack of necessary household assets or policies geared toward their needs” (p.1) [14]. A pattern of digital access was recognized in reports as often being localized. For example, across Latin America, it was reported that: “Among the online distance learning modalities, the use of virtual, asynchronous learning platforms in 18 countries is noteworthy, while only 4 countries offer live classes (Bahamas, Costa Rica, Ecuador and Panama)” (p.3) [15].

Evidence from reports, research studies and related experiences indicated that the teaching medium had changed during that time, from a vastly predominant face-to-face medium to an online medium [16]. Sometimes, this shift required change from access and use of a synchronous medium to that of an asynchronous medium or even to a mixed synchronous and asynchronous medium. Certainly, the adoption of virtual learning environments and remote learning environments such as Microsoft (MS) Teams, Google Classroom and Zoom was shown in the findings of research and reports (for example, <https://www.businessofapps.com/data/>). Evidence widely showed that uses of these forms of digital technologies shifted

during this period of change [17]. However, lengths of sessions and pace of working were often found to be factors that affected (positively or negatively) a continuing engagement of young people in remote or online learning. Remote learning activities were often kept to 20-30-minute sessions, or 1 hour at a maximum. Breaks between remote online sessions were often ensured, and the spreading out of sessions across the day was often adopted [18].

Using digital technologies, teaching modes were consequently adapted wherever possible. Sometimes, remote teaching was the online mode undertaken [19], whilst in other cases a blended mode with some lessons face-to-face and other lessons online was adopted, and in yet others hybrid teaching with some young people in class with others outside class and online connected to the lesson at the same time was also in place [20]. Flipped learning was a pedagogical approach that had been discussed in research studies prior to the Covid-19 pandemic [21], and some teachers took this teaching mode on board during the pandemic [22], specifically to enable young people to initially work on topics remotely through pre-recorded video or audio, or sometimes through synchronous video or audio. Following this, learners then had chance to discuss, reflect on and collaborate through the online medium. Collaboration could be enabled using MS Teams, Google Meet or Zoom, as teachers could develop activities using breakout rooms [23]. Additionally, joint and shared writing and presentation through using, for example, Google Docs, was also encouraged in some cases. Forms of assessment and moderation also shifted when adopting an online medium [24]. In some cases, the online medium enabled alternative forms of assessment to be offered (such as online quizzes), and in other cases written work was uploaded and marked online, with feedback given in audio or video format. Approaches varied and forms adopted were different in different specific contexts.

In parallel to the teaching medium being shifted, the learning medium for young people also changed. From a face-to-face medium, the shift often moved to that of a screen [25]. Whilst a screen for some may have been quite large, for others it would have been much smaller, perhaps the size of a smartphone screen [26]. The means for learners to communicate might also have shifted, from direct face-to-face to keyboard-entered communication or to distant synchronous communication via video conference [27]. Access and availability were factors that affected young people's engagement with activities [28]. Without access to a large screen, to a large keyboard, or to assistive technologies that some young people would all have in a school environment [29], a lack of accessibility often reduced engagement and led to lower levels of achievement and output.

The learning mode also shifted, becoming more (and sometimes entirely) online [26]. The shifts may have been very rapid, from face-to-face to entirely asynchronous and online, or sometimes to a hybrid mode. While some studies and anecdotal reports suggest that some learners coped well and were seen to benefit enormously, it was found that others did not cope well and found engagement with learning difficult [30].

Subsequent changes to the learners' learning environments were also of significance. The learning environment in classrooms, with its associated interactions, routines and procedures, might well have changed beyond recognition for young people. Some young people during the lockdown period worked in a small bedroom, others on a comfortable patio, while others shared a table to work around. The width of such environments has been reported by young people [31].

The support that accompanied that environment may also have changed fundamentally. Procedures and routines in classrooms and schools may well have been replaced with different alternatives accessible in homes [32]. Coupled with this shift, forms of monitoring might have shifted also, with reports of some parents and guardians working positively with their children but with other reports of parents and guardians being over-bearing or over-anxious [33].

Parental and guardian roles were asked to be shifted during the Covid-19 pandemic, and the forms of support and responsibilities that parents and guardians needed to take on board were not always either welcomed or understood by either teachers or young people [34]. Whether parents and guardians should take the role of teacher, tutor, facilitator, guide, or counsellor was not always clear. Whether teachers should have continued to support socially and emotionally through periods of remote teaching and learning, as well as supporting cognitively, was also not necessarily discussed or clarified.

## 4. A conceptual model

Using the delineation of support roles outlined in the conceptual framework section (Section 2) and aligning these with specific approaches that teachers undertake, along with the factors that needed to be considered when parents and guardians were asked to support their children in home learning environments (discussed in Section 3), a model can be derived that will allow a review of preparedness to be assessed.

The model defines the roles and the factors to assess preparedness, shown in Table 1.

**Table 1:** Model to assess factors of preparedness for home learning support by parents and guardians.

Role	Preparedness factors
Teacher	Subject or content support. Knowing how the teacher(s) will interact with the learners. Knowing how to gain support from teachers or others.
Tutor	Supporting small group working or with others. Moving to online communication. Supporting engagement with specific applications.
Facilitator	Having technology to access learning. Having synchronous online facilities available. Having accessibility through monitors, keyboards and other technology peripherals. How to address problems with an activity. Where to find answers to queries. How to set up positive routines and procedures. Having adequate space to work. How to facilitate everyone's access in the home.
Guide	Visiting other associated sites or resources.
Counsellor	Monitoring engagement across sessions. Monitoring breaks between learning activities. Supporting socially. Supporting emotionally. Offering reassurance. Giving positive encouragement. How to respond to disengagement with learning.

The model shown in Table 1 will be used to assess the preparedness of parents and guardians for supporting their children in remote home learning situations. Section 5 provides a description of the background of the evidence used (how parents and guardians were engaged with teachers in schools prior to the Covid-19 pandemic, arising from schools in a single nation), Section 6 outlines the methodology to be used, and Section 6 provides the evidence as case study descriptions of how parents engaged with schools and home learning prior to the pandemic.

## 5. The study context

This paper explores the preparedness of parents and guardians pre-Covid-19 within a single country context – Northern Ireland. It is important to recognize that each country is likely to provide a set of features and factors that will affect and influence preparedness in potentially quite different ways. Understanding the context, therefore, should be explored as an integral initial step.

Northern Ireland is a relatively small nation; it covers just over 14,000 km<sup>2</sup> with over 1,000 schools. The presence of creative industries, using digital technologies in activities such as filming, are well known and recognized in Northern Ireland. For schools, there is provision of a single complete across-nation managed networking infrastructure service, which also provides levels of hardware and software. Parents and guardians, therefore, are aware that digital technologies are used in schools, and that they are used in a range of ways. As a country with recognized well-developed digital technology access, it could be expected that the analysis of preparedness might indicate a high level of preparedness compared to other countries where the integration of digital technologies was less established.

## 6. Methodology and methods

This section of the paper reports findings from a multiple case study, that gathered evidence of how parents and guardians used digital technologies to engage with schools and with their child's or children's learning. There are six case study descriptions, three from primary schools, and three from secondary schools. In each case, observations of classroom interactions and interviews with school principals and teachers were conducted. These descriptions have been used previously to support other research, but they are presented in this paper as published items for the first time.

The evidence gathered is shown in the following section and sub-sections, with relevant points highlighted in each case. The cases gathered evidence from schools in different catchment areas, where learners came in some cases from less socio-economically advantaged backgrounds and in other cases from more socio-economically advantaged backgrounds. Similarly, some of the schools were located in rural areas whereas others were in urban areas.

In the Conclusions section (Section 7), from these case studies, how parents were acting in their learning support roles is drawn out from the details provided. These pre-Covid-19 support roles are then compared with the Covid-19 support roles that are identified from the literature.

## 7. Findings and discussion

### 7.1 Primary school case 1

The level of free school meals in this primary school is about 60% (well above the national average, and an indicator of socio-economic disadvantage). The learners speak some 24 different first languages.

There is ongoing communication with parents and carers about school events and activities. Different digital technologies are used for different purposes, with a range used to support parental interaction and engagement. For example, Twitter and Facebook are updated daily to communicate school events to parents. Documents are sent to parents online, via MailChimp; in this form, parents who are not familiar with English as a first language can use software to translate the documents into their native language.

Parents are regularly sent images as examples of their children's positive behavior, and how their children are engaged in learning. Parents have access to the Seesaw application (app), where teachers upload examples of the work of the learners, highlighting their achievements, and illustrating their activities. The school uses Seesaw across all classes. When new material has been posted, alerts are sent to parents via their mobiles. Teachers report that parents respond very positively – that they are keen and proud to see how their children are involved and achieving. Even parents who have not engaged with school previously have been found to access Seesaw – they do not ignore pictures of their own children and are proud when they hear the teacher or principal saying something positive about their children on Seesaw.

Parents are made aware of any care or welfare issues and are involved in early discussions. To support social and psychological issues that the learners may face, the school has developed use of the CPOMS app. This online system gathers details that are submitted, from a range of different teachers or support staff. Teachers are encouraged to use the system when they note anything that might indicate a social or psychological issue that a child is experiencing. The system enables details from different teachers and support staff to be collated into a collected record, so that the principal has an overview and can see when different staff are identifying indicators of possible issues. If a potential issue is identified, it allows very early intervention – the principal can call a parent or carer to open up a discussion. If appropriate, advice can be offered, about social support, for example.

### 7.2 Primary school case 2

This primary school takes children with a wide range of social, emotional, and psychological needs. As an indication of the challenges the school faced, it was found that learners might even have difficulty in 'sitting still'. Learning by Questions (LbQ), a digital learning system, had been used in school since October 2017, and was found to offer a positive stimulus for those who found it difficult to work with paper and pen. For others, it was recognized that they could move forward using LbQ without needing to redo the things they might already know. In all cases, it was found that LbQ could provide learners with instant success.

Learning by Questions (LbQ1) was used about three times a week in one class and was also used once a week for homework. For homework, the system marked the questions. In one class, all the children said that they liked using LbQ in class, but two said they did not like using it at home (in one case, because a father monitored use very closely).

It was found that uses of LbQ increased parental awareness of and engagement in homework activities using digital technologies. In a Primary 6 class (aged 10-11-years), LbQ was used in literacy lessons, such as those on grammar. Each Wednesday, they used LbQ for homework – which they could access on a home tablet, personal computer, laptop, or mobile telephone. Learners in the class said that they enjoyed using LbQ, as it offered a break from other forms of activity, they got to use technology and learn at the same time, and they did not forget their homework. In terms of learning, they said that they liked LbQ because it offered tips for getting things right, they gained 'good' practice, learned from mistakes, gained instant marks, enjoyed problem-solving, different forms of questions, and gained help with different needs.

### 7.3 Primary school case 3

In this rural primary school, learners were encouraged to write for an audience; one learner in particular lacked self-confidence to the extent of not wanting to attend school. The teacher faced the challenge of supporting the learning needs of all the learners, and of this one learner in particular.

The teacher set up a writing activity, so that children could use the school's digital area, which housed a managed personal

computer (PC) and a suite of 12 PCs that children could use. The teacher told the children they would be involved in creating stories that would be submitted to News Desk (an online news service for schools). They had to collaborate in groups to research facts for an article to be submitted to News Desk, so that one or more stories might be selected and shown to a much wider audience of learners, teachers and parents across schools in Northern Ireland. This fact-finding was largely done with parental support as digital homework. One boy did this by using details relating to his father's work. The story that was chosen for the front page of the website was the story that had been created by this boy, who had low confidence in schoolwork generally and literacy lessons in particular. His confidence was seen to grow during this activity, as his story was widely recognized.

## 7.4 Secondary school case 1

This post-primary school traditionally held parents' nights for each year group, where student achievement was discussed. The school felt that parental engagement could be higher, and they wanted to find a way to address this. Use of the SIMS Parent app was considered as a possible way forward, so that parents would have access to progress reports much more often than they would through attending parents' nights.

Direct communications to parents about learning attainment and achievement had positive effects on teachers and parents. No printed reports went out to parents. Of all the parents and carers, initially only 2-3% did not sign up for use of the system, which reduced to less than 1% within six months; indeed, most parents indicated that they were content to use the system, and their familiarity with social media reassured them that they could access it. The school reported regularly using this system to parents, both about the learners' academic progress, and their behaviors. Parents had an 'on-time' picture of what was happening and had details of minor behavioral incidents that they would not have had previously. This enabled them to have more regular involvement through an ongoing record, which was quite different from the infrequent record that they would have had through an occasional parents' night.

Overall, the SIMS Parent app system was found to save teacher time; previously, telephone calls took longer, whereas this system handled records more efficiently. It was also found to change the nature of discussion on parents' nights. Broader conversations were found to be happening, with less challenging discussions arising, because there were fewer surprises when details were regularly reviewed by parents.

It was found, however, that parental responses to and uses of the system did need to be managed; understanding of the details provided and expectations for responses needed to be appropriately set. For example, to avoid rapid telephone responses from parents, all messages were sent out at 6.00pm. The reception staff were made aware when this happened, so that they could accommodate a possibly greater incoming telephone response the following morning. Similarly, briefing parents on the meaning of behavior reports was particularly important, so that they understood that the issues might be minor, and not major, ones; this was vital, as such reports were not sent out previously for parents' nights. The wording of messages was also found to be important, as system-generated terms could create major concerns for some parents; the terms 'under-achievement' and 'behavioral issue', for example, were avoided, as these tended to generate negative responses or concerns from parents.

## 7.5 Secondary school case 2

In this post-primary school, the level of free school meals was about 50%, about a third of the learners had English as an additional language, and there were a high number with specific needs. The school provided a wide range of subject courses including horticulture, and supported students through a 'Breakfast Club' and initiatives such as 'Aiming Higher'. Teachers used Google Drive and Google Classroom, and the latter was used to support students who were out of school for extended periods. Teachers also used Google Drive to upload videos of lessons that they had run, so these were accessible to the young people at home.

The school used data systems to identify those learners who might be 'under-achieving', and those that appeared to be on the borderline of more successful achievement. The school used the SIMS Parent app, particularly with Year 10 groups (aged 15-16-years), where some learners were fast-tracked to take General Certificate of Secondary Education (GCSE) examinations.

Communicating with parents about school events was found to lead to higher engagement. Learners new to the school were invited to Saturday events, and there were regular opportunities set up for them to be specifically supported in terms of cultural and linguistic engagement. Parents were supported by the school in terms of developing English for speakers of other languages; Google Translate was used in this context wherever appropriate. Parents were also provided with support on how to use the SIMS Parent app, and how they could receive messages through that system that could be translated. For those with any ongoing difficulties with using the SIMS Parent app, the school ran 'surgeries'.

Direct communications to parents about attendance, learning engagement, and attainments led to more informed discussions. The school used the SIMS Parent app to send out more official attendance and achievement reports but used other systems to send out notes about after-school clubs, events, meetings, community events, web-site links, reminders to parents, and emergency communications. Some general details were put onto the school website. Subject departments send

out Twitter messages every day, which were subject-specific and indicated work that the learners needed to do. Facebook was used to send out messages about events, while the Show My Homework app allowed parents and carers to see what the learners had done for homework, but it also allowed them to easily access their own homework. As teachers and parents could monitor homework using this app, this digital technology was found to help to address issues that the school faced with homework completion, but it was also found to save time for the learner and the teacher.

Parents were found to engage with the school increasingly; they knew that they could either telephone or come into the school. Parents reported to the school that they felt informed about what was happening in the school and with the young people. Parents reported their appreciation of access to Facebook messages, which highlighted what their children were doing at school, and how they were achieving.

## 7.6 Secondary school case 3

This post-primary school noticed a decline in parental engagement from Year 10 (aged 15-16-years) onwards and wanted to address this issue by encouraging parents to engage more. The school had some 28% of students on free school meals, about 10% were newcomers to the area, and over 20% had a statement of specific need.

Communicating with parents about school events and activities was found to enhance parental engagement. The school and departments used Twitter and Facebook, to send out messages about events, for example. The website had become a more secondary facility in the school. From the digital technologies used, the school found that there were frequent communications to and from parents. Communication was often regular and ongoing. Having used digital technologies increasingly, the school found that parents tended to use email to communicate more, and that this was a route that maintained their engagement.

Direct communications to parents about learning engagement, attainment and achievement had positive effects for all. The school used the SIMS Parent app widely. Previously, reports were sent out on paper four times a year. Time to do this and cost of paper were two reasons why the school decided to change to using the SIMS Parent app. Attendance reports were sent weekly, but achievement reports were the primary reports sent out to parents. Behavior reports were initially 'turned off', so that parents could become accustomed to using the system gradually and could be informed about certain types of reports in advance of receiving them. The 'traffic lights' system was also disabled, as it was found that parents tended to focus on the lights, not reading and interpreting the reports in a more holistic way. Advantages of using the SIMS Parent app were recognized, in that it provided 24/7 access, all reports across the seven years of school were easily accessible, and family links could be easily made even where two learners in the same family attended two different schools. Drop-in sessions were provided for parents if they needed support in using the SIMS Parent app. It was also found that parents generally accepted the system and were not requesting reports in hard copy format.

## 8. Conclusions

Overall, from the six case study descriptions in Section 7, the forms of interactions that happened pre-Covid-19 tended to be either:

- direct communication – letting parents and guardians know what was happening in the school.
- video snippets – showing parents activities in a classroom where their child might be involved.
- audio recordings – providing a child's presentation of their learning through an audio recording that could be translated at home.
- online resource activities – involving parents in specific learning activities at home, with guidance on how to be involved.
- online homework – providing parents with details of homework and how they might be involved.
- online discussions – discussing points that parents would raise, perhaps via email.

Using the model presented in Table 1, and the evidence of how parents and guardians supported their children prior to the pandemic (detailed in Section 7), it is possible to identify those preparedness factors likely to be present and those not. These are shown in Table 2, where factors unlikely to be present are shown in italic, those that would vary from one context to another in standard font, and those likely to be present are shown in bold.

**Table 2:** Model of assessed preparedness factors to ensure home learning support by parents and guardians.

<b>Role</b>	<b>Preparedness factors</b>
Teacher	<p><i>Subject or content support (parents and guardians would be unlikely to cover the width of subjects and contents involved).</i></p> <p>Knowing how the teacher(s) would interact with the learners (some teacher(s) would be likely to provide these details).</p> <p>Knowing how to gain support from teachers or others (some teacher(s) would be likely to state this).</p>
Tutor	<p><i>Supporting small group working or working with others (parents and guardians would be unlikely to have been involved in this prior to the pandemic).</i></p> <p><i>Moving to online communication (it is unlikely that this was widespread for learning supported by parents and guardians to any extent).</i></p> <p>Supporting engagement with specific applications (some parents and guardians would have engaged with some school-based applications).</p>
Facilitator	<p>Having technology to access learning (possibly this would not have been present for all within the home).</p> <p>Having synchronous online facilities available (this would seem less likely for those in remote areas).</p> <p>Having accessibility through monitors, keyboards and other technology peripherals (parents and guardians would be unlikely to be prepared to have these devices for all learners).</p> <p><i>How to address problems with an activity.</i></p> <p>Where to find answers to queries (would appear to be unlikely for all parents and guardians).</p> <p><i>How to set up positive routines and procedures.</i></p> <p>Having adequate space to work (would seem unlikely to be possible for all home situations).</p> <p><i>How to facilitate everyone's access in the home.</i></p>
Guide	<p>Visiting other associated sites or resources (for some, but it would seem unlikely for all).</p>
Counsellor	<p><i>Monitoring engagement across sessions.</i></p> <p><i>Monitoring breaks between learning activities.</i></p> <p>Supporting socially (for some, but not likely for all).</p> <p>Supporting emotionally (for some, but not likely for all).</p> <p>Offering reassurance (for some, but not likely for all).</p> <p>Giving positive encouragement (for some, but not likely for all).</p> <p>How to respond to disengagement with learning (for some, but not likely for all).</p>

This analysis, using this model and these data, even though the data come from school and home situations where uses of digital technologies were well developed, suggests that there were no certain areas where all parents and guardians would have been fully prepared to support home remote learning. Variability in terms of preparedness would have been very likely, so some parents and guardians would have needed more support than others in taking forward this shift in roles.

Given the extent of variation, and the low levels of factors that would have enabled home remote learning to be supported effectively, it seems important that parents and guardians (and those that can support and engage with them) should be aware of how to prepare for the future, if the sorts of crisis circumstances arise again. The evidence from this analysis suggests that schools also need to be prepared to support their parents and guardians in the future if changes in roles are needed (and evidence from existing research indicates that time will need to be provided if this is to be achieved successfully). Table 3 indicates recommendations for parents and guardians in this respect.



**Table 3: Recommendations to consider preparedness factors to ensure home learning support by parents and guardians.**

Role	Preparedness factors
Teacher	Check with teachers (maybe individually, but ideally through a single 'teacher spokesperson') how and when subject or content support will be provided. Ask teachers how they will interact with the children. Identify who might provide subject support, whether from teachers or others.
Tutor	Ask teachers whether they will require children to work in small groups, how often and when this might happen. Ask teachers what forms of online communication will be required, and when these will be needed. Ask teachers which specific digital technology applications will be used and how home remote use can be supported.
Facilitator	Check the forms of digital technology needed to access learning. Check whether synchronous online facilities are needed. Check whether monitors, keyboards and other technology peripherals are needed. Ask teachers how to support if there are problems with an activity. Consider where to find answers to queries that children might have. Set up positive routines and procedures that work for all, as far as possible. Check how adequate space to work can be provided. Facilitate everyone's access in the home, perhaps through a form of rotation system.
Guide	Check how to visit associated sites or resources, and whether there are specific aims and focus for these visits.
Counsellor	Monitor engagement across sessions, either in person or remotely. Monitor breaks between learning activities. Support socially. Support emotionally. Offer reassurance. Give positive encouragement. Respond to disengagement with learning, gaining support from teachers and others where possible.

Whilst many parents and guardians post-Covid-19 pandemic are more prepared, being more knowledgeable about and more understanding of how to support home remote learning than they were before the pandemic, this does not mean that their preparedness for any similar crisis can be assumed. This paper has considered preparedness for home remote learning in a single case study country context, but the limitations of the model that has been developed should be carefully considered and checked in other country or local contexts. However, the model can provide a starting point for further development, for exploring preparedness post-pandemic, both for schools and for parents and guardians, when future crises may arise.

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