ORIGINAL MANUSCRIPT

British Journal of
Educational Technology

■BERA

Translational research in action: The use of technology to disseminate information to parents during the COVID-19 pandemic

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Abstract

This paper addresses the research problem of how to reach, engage and support parents in home-educating young children during the first national COVID-19 lockdown in England (March–June 2020), which was addressed through using technology. An internet-mediated research (IMR) approach is used to investigate the effectiveness of using technology and translational research as strategies for disseminating a rapidly produced digital guide, for promoting play-based learning at home, to parents. Lockdown with the closure of early years provision led to parents finding themselves isolated at home with young children. Early years educators were managing a unique set of circumstances where communication with families, including those 'harder-to-reach' was contextually problematic. Qualitative data using IMR captured online interactions by unobtrusive and obtrusive methods; unsolicited emails and social media comments and questionnaire responses. Conventional content analysis identified emerging themes of access, availability, reliability and readability. Analysis showed a combination of factors impacted on the speed and scale of sharing and downloading the digital guide.

First, being digitally ready as platforms were already used by early years educators and Local Authorities. Second, the professional drive of Local Authorities and early years educators to support families during the crisis and third, the availability of an easily accessible online resource seen as valuable in improving play-based learning at home.

KEYWORDS
digital media, early education, internet-mediated research, parental engagement, translational research

Practitioner notes

What is already known about this topic?

- There are high levels of digital readiness in the United Kingdom.
- Technology is one method used by early years settings to communicate with parents.
- Parental engagement is challenging.

What this paper adds?

- A translational research strategy (to share research-informed-knowledge with stakeholders) and internet-mediated research (to gather data from stakeholders) combine effectively for use within the early years sector to disseminate research knowledge to parents and support home learning environments.
- The high levels of technology readiness of early years educators and parents in England provides opportunities for disseminating information and improving home learning environments.
- Accessing and sharing documents online may involve parents but is insufficient to engage.

Implications for practice and/or policy

- Early years settings need to be more proactive in engaging with parents online.
- Technology provides opportunities to develop interaction and the sharing of information with parents.
- Digital media should be used as additional communication strategies and should not replace the fundamental importance of face-to-face-interaction.

INTRODUCTION

A compelling research-base highlights the significant impact parents have on a child's educational achievement (DfE, 2020a; NICHD, 2002; Roulstone et al., 2011). Consequently, parent-partnership working is part of everyday practice for early years educators (DfE, 2017, 2020a). Advancements in digital technology for engaging parents in their child's education have opened up a range of possibilities (Noguerón-Liu, 2017; Pluye et al., 2017). Social

media commonly permeates the daily life for many families in England and information is shared with scale and speed. With access to research-informed knowledge, there is greater potential for parents to develop involvement in their children's education from an early age. This paper explores the dissemination of a digital guide specifically designed to support families in the unique situation forced upon them by the Government requirement to 'Stay at Home' during the COVID-19 national lockdown of spring 2020. High technology readiness levels (World Economic Forum, 2016), nationally and of individual citizens, enabled the digital parents' guide to be sourced and accessed quickly and easily, over 40,000 times in the 3 weeks following its launch. The scale of the response was unexpected and happening at a time of global crisis, with families in England under imposed lockdown, creating a unique set of circumstances to explore and research.

CONTEXT: THE DIGITAL GUIDE https://www.skipforeyeducators.co.uk/booklet/covid19_familybooklet.pdf

The pandemic that imposed home isolation for families and young children, inspired the rapid creation of a digital 'Parent's Guide to Promoting Early Learning and Development at Home' (Laxton, 2020). A HEI (higher education institute) and two NGOs (MESH (Mapping Educational Specialist Knowhow) and the VSO (Voluntary Services Overseas)), wrote the guide building on prior collaboration to promote playful learning within Rohingya refugee camps in Bangladesh (Laxton et al., 2020). In this case, an online early years MESHGuide (a mapped repository of early years research and practice), was written by Laxton and Leask (2017) and disseminated in stages to empower community volunteers to lead play sessions with 1,500 young children in tented homes. A 'family booklet' containing play-based education guidance evolved from this process.

Recognising how technology supported early years provision in a hard-to-reach community led to the concept of a digital guide to support families in England. Appropriation and adaptation of the Bangladesh experience drew on the same crisis response and empirical research-base, concerning the use of technology to share knowledge and pedagogical play-based approaches to support early years learning and development; translational research. The concept of the guide was to use digital technology to increase parental understanding of child development, explain how children learn through play and share ideas and tips that would encourage families to engage in rich, playful learning experiences with their children. The guide follows the principles and content of England's Early Years Foundation Stage framework (DfE, 2017). A clear and concise overview of the importance of play introduces the booklet followed by advice and guidance for each of the seven areas of learning. The digital guide advocates learning through playful strategies and rejects the view that children only learn when they are formally taught. The United Nations Convention on the Rights of the Child (UNCRC, 2013) records a child's right to play, noting that it is 'central to children's spontaneous drive for development, and that it performs a significant role in the development of the brain, particularly in the early years' (UNCRC, 2013, comment 17).

The digital guide focuses on play at home, recognising the value research consistently places upon play (Bottrill, 2018; Brock et al., 2014), the significance of the home learning environment (NCB, 2018; Sylva & Jelley, 2019) and the importance of parental engagement (Des Forges & Abouchaar, 2003; Goodhall & Vorhaus, 2011). Following unsolicited feedback on the digital guide, a simpler digital poster format was created to increase the number of families able to access and engage with the information. The posters were published on 6 May 2020. The concept was to simplify the format using infographics that enabled information to be shared in stages and prevent families feeling overwhelmed.

TRANSLATIONAL RESEARCH

Translational research is a term used to describe the movement of available research knowledge into professional use (La Velle, 2015). Whilst translational research is traditionally and most commonly used within the health sector to improve professional practice (Younie & Leask, 2013), this paper demonstrates its potential using technology within the field of early years education. Translational research was used to encourage the real-world implementation of play-based learning experiences in the home. The digital guide was research-informed and translated knowledge into simple practical strategies and ideas for parents to use in the home. Figure 1 shows the translational research dissemination process undertaken from research to family life activity; technology is used at each stage. The end point of educational research should improve the outcomes for children in varied educational contexts, in this case whilst learning at home in England during the COVID-19 pandemic. Mitchell (2016) argues that research outcomes are often shared only with other researchers and not with the audience who work with children. Procter (2015) advocates that teachers want to know about research but find this challenging due to the practicalities and complexities of life. Translational research, therefore, seeks to negate this issue by stipulating that collaboration, in this case with EYEs and parents, is a priority (Mitchell, 2016). Younie and Leask (2013) argue that digital tools can provide access to research and thereby inform evidence-based practice and enable closer working relationships between researchers and practitioners to form multiple collaborative partnerships.

Dissemination strategy

A website was swiftly developed to provide a platform where the digital guide could be instantly downloaded enabling mass connectivity with one click of a web address. In order to
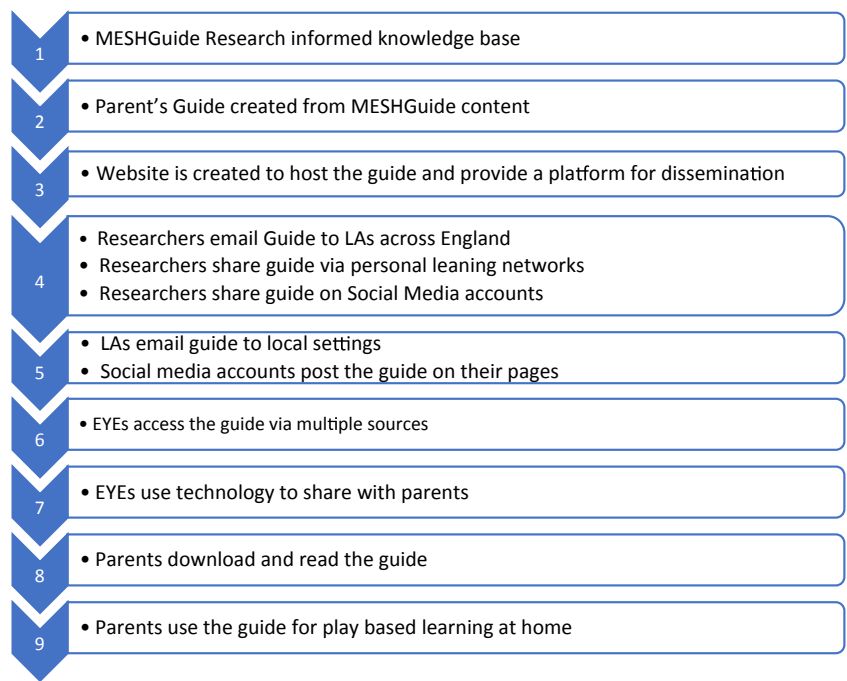

1 • MESHGuide Research informed knowledge base

2 • Parent's Guide created from MESHGuide content

3 • Website is created to host the guide and provide a platform for dissemination

4 • Researchers email Guide to LAs across England
• Researchers share guide via personal leaning networks
• Researchers share guide on Social Media accounts

5 • LAs email guide to local settings
• Social media accounts post the guide on their pages

6 • EYEs access the guide via multiple sources

7 • EYEs use technology to share with parents

8 • Parents download and read the guide

9 • Parents use the guide for play based learning at home

FIGURE 1 The translational research process

maximise reach to parents, the digital guide was shared in various ways. First, the guide was launched through the University website and gained media attention via local online press papers. A rationale for the guide and corresponding weblink were then shared through a variety of digital platforms, targeted simultaneously to reach a wide and relevant demographic: 49 Local Authority Children's Services across the country via email, use of researcher personal learning networks (Trust, 2012) (University early years network of students & local EYEs, Professional Facebook groups, other early years contacts eg, researchers, teachers and consultants) and Facebook pages of popular relevant organisations eg, Early Education, Keeping Early Years Unique and Education Endowment Foundation.

CONTEXT: DIGITAL CULTURE IN EARLY EDUCATION

That technology permeates the everyday lives of most children and families in England is uncontested. The United Kingdom is currently ranked eighth in the global Networked Readiness Index (World Economic Forum, 2016) and is consequently well-placed to use digital technologies to promote home education. In recent years, relevant literature has focused on how technology is integrated into setting practice to promote learning and digital capital and a lack training, skills and knowledge development for EYEs (early years educators) (Daniels et al., 2020; Marsh et al., 2017). This paper argues that EYEs need to have digital skills and confidence in order to effectively communicate with parents and promote learning at home during the lockdown.

Digital technologies have been commonly used to engage families within the early years sector eg, email, social media, websites and online learning journals (Willis & Exley, 2018). This shows a level of EYE digital competence and confidence. Goodhall and Vorhaus (2011) explains how technology can increase parental engagement (PE); it is convenient, flexible and efficient in enabling up-to-date information to be shared and accessed with ease. Barnes et al. (2016) agree that technology contributes to effective PE; exploring pre-school settings in the United States, they found technology was used in conjunction with other strategies, although it could not replace the importance of face-to-face communication. The technology-based communications found to be most efficient were texts and social media posts; they were accessible and meaningful. Additionally, Thompson (2015) focused research on SMART phones and found email less effective in establishing two-way communication than text and social media.

The advent of COVID-19 has required EYEs to use technology to support parents and children at home. With over 50 million UK users, 61% within the 18–44 age range, Facebook has a ready audience of parents ready to receive information (Tankovska, 2021). Technology was used to maintain communication and settings reported using websites, apps and social media to engage parents by sharing home learning guidance and child development information (Crew, 2020; Ofsted, 2020). Early years providers felt that communicating in this way was effective and shared their intention to continue this practice (Ofsted, 2020). Some went further expressing a belief that digital communication had increased capacity to provide support for families (Crew, 2020). There was a significant need to offer support during the pandemic; 65% of parents with young children at home reported feeling stressed, worried or overwhelmed (Pascal et al., 2020). In the absence of physical contact, technology provided a vital bridge between homes and early years providers.

PARENTAL ENGAGEMENT IN EARLY CHILDHOOD

In England the notion of professional early years educators working with parents has evolved over recent decades (DCSF, 2008; DfEE, 2000). There is a growing evidence-base

and realisation by Governments, educators and families that parents can make a vital, positive difference to their child's education (DfE, 2020a; NICHD, 2002; Roulstone et al., 2011; Sylva et al., 2004). There is a causal and linear relationship between PE and educational outcomes; as PE increases so do education outcomes (Des Forges & Abouchaar, 2003). As a result, ensuring that parents are given the opportunity to be involved in their child's education is an expectation of professionals working within the early years sector.

The role of parents as powerful influencers on early educational outcomes was acknowledged in 2000 with the seminal introduction of the first early years curriculum guidance (QCA, 2000). This document recognised parents as 'first and most enduring educators' for the first time (p. 9). Today, parent partnership forms a key part of the Early Years Foundation Stage (EYFS) framework. It is embedded within its principles, both in the statutory framework and non-statutory guidance (DCSF, 2008; DfE, 2017). The recently updated 'Development Matters' document recognises a societal change in attitude, emphasising the key role of parents: 'The help that parents give their children at home has a very significant impact on their learning' (DfE, 2020a, p. 8).

IMPACT OF PE

The early years are crucial to child development and early intervention is vital to optimise chances of success (Allen, 2011). Sylva et al. (2004) found that it is what parents do with their children in the home learning environment, rather than who parents are, that has the biggest impact on child development. Engaging in a range of playful activities provides protective factors and reduces incidence of special educational need (Sylva et al., 2004). Furthermore, when families participate in specific language or numeracy-based learning programmes, academic outcomes for their children improve and PE sustains through schooling (Goodhall & Vorhaus, 2011). PE has the potential to broaden playful learning experiences and impact positively on the achievement gap. Children are unlikely to achieve as well as their counterparts without PE. In short, the impact of the home learning environment and parental attitudes matter (NLT, 2011; Sylva et al., 2004).

ENGAGING HARD-TO-REACH FAMILIES

Hard-to-reach families are complex to define due to each family's unique set of circumstances but commonly cited groups include low-income, minority ethnic, single and working parents (Campbell, 2011; Watt, 2016). In England, the Children's Commissioner reported that two million families under five are currently living in poverty (Longfield, 2020). Such families have varied and complex needs and it is understandable that a child's education may not always be a priority. Deforges and Abouchaar (2003) found parental involvement to be strongly influenced by socio-economics; lower income families are less likely to be as involved.

PE can increase children's academic outcomes and so provides an opportunity for social mobility (Goodman & Gregg, 2010; HMGovernment, 2011; The Sutton Trust, 2012). Goldthorpe (2004, p. 17) states; 'in all modern societies the most important factor mediating intergenerational mobility is individuals' educational attainment'. PE strengthens parenting capacity of the most vulnerable and can prevent abuse (Ward & Brown, 2014). Grant (2011) reminds us that hard-to-reach families are not a homogenous group and a variety of strategies are needed to engage different families. Technology to this end can form a strategy for engaging hard-to-reach families. However, access to digital technologies lacks parity and inequity requires navigating and addressing.

THE DIGITAL DIVIDE

There are many factors that lead to digital exclusion including accessibility to suitable electronic devices and the internet, lack of necessary skills and lack of personal motivation (Lloyds Bank, 2020). These are barriers for both for EYEs and parents. In April 2020, it was essential to enable regular and convenient communication with parents locked down at home with their children. Digital inequalities placed some families at an immediate disadvantage as emergency remote learning throughout the phases of education was organised; 22% of the UK population do not have the skills to use the internet for everyday life, with low-income groups 40% less likely to have foundation digital skills than those more privileged and 4/10 benefit claimants have very low digital engagement (Lloyds Bank, 2020). These factors demonstrate the current existence of barriers that impact on the ability of EYEs to communicate effectively with all parents. More positively, there is a suggestion that as SMART phones become more accessible to all, technological engagement is reaching across socio-economic groups from high to low (Swindle et al., 2014). Growth in smartphone use may be expanding but in the UK people in lower socio-economic groups remain less likely to own one (Honeyman et al., 2020).

Socio-economic status, therefore, has a significant impact on online education for many children during lockdown. The BBC reported the digital divide was 'locking children out of education' (BBC, 2021) and the Government pledged to provide laptops and internet access to disadvantaged children in some year groups in recognition of the need (DfE, 2020b). In reality the Government failed to deliver; roll out was slow and insufficient and many children had inadequate digital access (Ferguson & Savage, 2020). In 2021, 19% of parents claimed they did not have sufficient suitable devices and 35% were from families with the lowest incomes (Montacute & Cullinane, 2021).

METHODOLOGICAL APPROACH: INTERNET-MEDIATED RESEARCH

An internet-mediated research (IMR) approach was developed as this most appropriately fitted the requirements of the investigation. See Figure 2 to illustrate the research process from inception through to analysis.

The digital guide was downloaded over ×40,000 times in the 3-week period following publication in April 2020. The research design was developed in response to the unexpected scale of stakeholder engagement, see Figure 2. The accessing of the guide, which occurred at a time of global crisis had created a unique set of circumstances to investigate. An IMR approach was used to explore this phenomenon and use the web as a 'potential source of rich data in qualitative social science research' (Hewson, 2014, p. 424). In the past internet research has been criticised for potential bias in population sample, the suggestion being that more affluent, professional males are the largest group within the internet population (Hewson et al., 2002). Although the digital divide is undisputed, the 40,000+ downloads of the guide and unsolicited responses negates the argument; 98% of EYEs are women (Bartlett, 2015) and furthermore, evidence exists of a growth in user diversity and size (Fielding et al., 2016). IMR has been shown to increase recruitment of harder to access populations and specialist groups (Hewson, 2016; UKRIO, 2016).

IMR was used to recruit participants and source qualitative data to investigate the effectiveness of digital technology and translational research as strategies for disseminating the digital guide. Qualitative data using IMR captured online interactions in two ways; unobtrusive and obtrusive. First unobtrusive; email and social media served as a conduit for spontaneous and unsolicited feedback. Approximately 50 email replies were received and numerous social media comments across multiple postings provided social interactions.
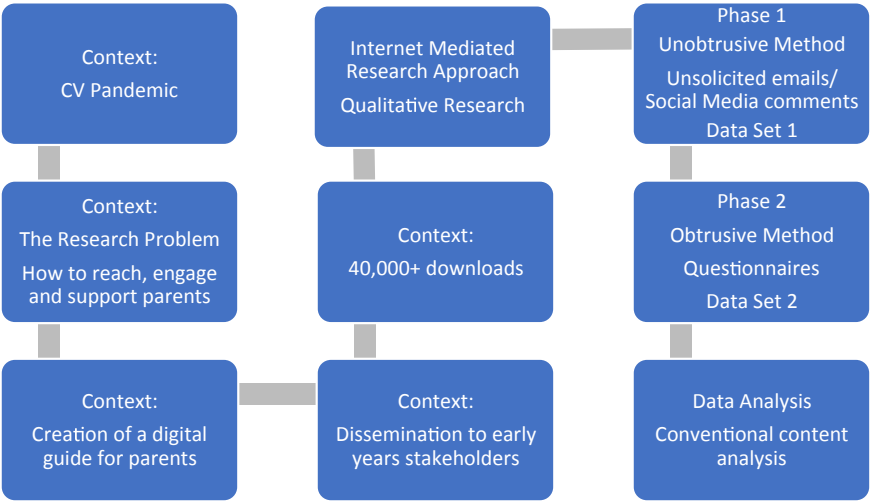
FIGURE 2 Research design process

There are complex ethical issues surrounding use of unsolicited feedback, particularly from social media comments and extant methods were used. Extant methods reviewed social media reactions and comments without influence or direct contact with individuals (Salmons, 2017). Some argue that where posts are in the public domain, without password or membership, consent is unnecessary whilst another perspective and one that was adhered to in this IMR approach, is that informed consent should always be sought (Fielding et al., 2016). The importance of informed consent when using internet data is arguably even greater due to traceability; internet searches can be used to locate social media comments and potentially locate participants. Therefore, anonymity cannot be assured (Fielding et al., 2016; UKRIO, 2016). Informed consent was gained retrospectively from all those whose comments were used in the study following guidelines (BERA, 2018; UKRIO, 2016).

Second obtrusive; participants were selected via purposive sampling from the 50 spontaneous email responses to provide more detailed feedback about the guide and its dissemination via a questionnaire. This elicited method probed individuals who were directly contacted (Salmons, 2017). A range of stakeholders, LAs, EYEs and parents, were targeted. Targeting those who had made unsolicited contact increased the possibility of being predisposed to complete a questionnaire and avoided poor response rates in replying to emails (Michaelidou & Dibb, 2006). To ensure that participants were not deterred, the questionnaire was short and avoided complex statements. Thirteen volunteer participants completed and returned the questionnaire (Table 1).

Whilst it is acknowledged that the sample is relatively small, it is reflective of the range of stakeholders in the sector. Furthermore, the research was conducted in a short-time frame during a national pandemic and thus represents the realities of collecting data in pressured and complex situations. The data received and presented below were rich in nature which allowed critical analysis (Lincoln & Guba, 1985).

DATA ANALYSIS

The qualitative research technique of conventional content analysis (CCA) was used at two key phases. As an approach commonly used to explore a new phenomenon, CCA was appropriate for the study but also significant; 'in conventional content analysis coding

TABLE 1 Questionnaire respondents

Participant	No of respondents
Early years educators	2
School teachers	2
Parents	3
Local education authorities advisors	6

TABLE 2 Document downloads between 15 April and 16 July 2020 in order of popularity

Document	No. of downloads
The original guide	47,655
The full poster guide	7,338
Play & Learning introductory poster	776
Literacy poster	598
Personal, Social & Emotional poster	454
Communication & Language poster	397
Physical poster	371
Mathematics poster	336
Understanding the World poster	297
Expressive Arts & Design	312

categories are derived directly from the text data' (Hsieh & Shannon, 2005). At phase one, the technique was highly suited to understand patterns and concepts arising from text data in the unsolicited emails and social media comments without bias from researcher pre-conceived theories. CCA is inductive and categories evolved from text analysis. Coding and categories arising at phase one informed questionnaires to probe in specific areas and these were analysed at phase two. CCA at phase one and two led findings and discussion to focus on the categories of availability and access, reliability and readability.

FINDINGS AND DISCUSSION

Availability and access

Downloads reached in excess of 40,000 in the 3-week period following publication in April 2020. By February 2021, the total download figure for all publications was 73,827, and downloads continue at approximately 2000 per month. Table 2 shows the download numbers for the guide and posters between April and July 2020.

Evidence of international access was demonstrated through a VSO COVID-19 global webinar in May 2020 with representatives from over 20 countries. Two countries are known to have responded positively via the social networking service 'Yammer'. A VSO volunteer reported: 'I posted a link to the posters you produced on Yammer yesterday and have received positive feedback replies from Uganda and Ethiopia'. Uganda, Ethiopia and Rwanda are known to have shared the document with educators in local offices. Two mental health organisations based in Canada shared the resource on their Facebook pages, one noted that the post was reached by 3,113 Facebook accounts.

The number of downloads within a 3-week period demonstrates high technology readiness levels in England (World Economic Forum, 2016). The figures are testament to how

digital technologies can disseminate research knowledge quickly and efficiently and how ready citizens in England are to source and receive digital media. Digitalising the guide and creating a website to allow one click access was effective in providing a translational research platform for the resource. Although individuals could not be traced through the downloads, it is known from feedback that early years stakeholders including mothers of low socio-economic status did access the guide.

The dissemination strategy of emailing LAs working at a regional level who communicate with EY settings at a community level proved effective in making the guide accessible. 23/49 LAs sent spontaneous replies to the email sharing the guide showing gratitude for the resource and the intention to disseminate the document further. Typical responses were:

> Many thanks, it's such an all-encompassing guide, we will certainly share it with our early years providers and with schools.
>
> (South East Region LA)

> … a useful booklet for practitioners and when Covid is over/ not the main focus it could be adapted and used to give to parents as part of the admission arrangements or through parent events. It could also be used for staff training and development. In the meantime, it is just right for the current situation. I will send it to all schools and settings later today.
>
> (West Midlands LA)

> We have shared it through our Early Years Facebook, Twitter, in our EYFS Newsletters, on our website and recently across the whole [region] in an EYFS Blog.
>
> (South West Region LA)

LAs provided information on how the guide was shared across multiple digital channels (Table 3).

The knowledge of family need and the professional drive to support families led EYEs to share the guide in different ways to meet the needs of their families. All EYEs disseminated the guide as a whole, more than once, via various digital platforms including social media (Facebook and Twitter), online learning journals, email and websites.

The closed Facebook group 'Keeping Early Years Unique' posted a link to the guide on 25 April. Three hundred and forty-eight members 'liked' the post but more poignant were the instant unsolicited comments offering thanks, praising the resource and most relevantly tagging colleagues and expressing intentions to share with parents and other organisations via digital networks. There were 267 comments with commonalities as examples below show:

> What a great document. I've passed it on to my nursery manager to share with parents. It does cover a lot of information but it is possible to dip and find certain bits without having to read the whole thing.

TABLE 3 How documents were shared by LAs across multiple platforms

LA emails to settings	LA EY Facebook pages	LA bulletins/ newsletters to EY settings	Colleagues (across LA departments and other LAs)	LA websites on EY pages	LA EY Twitter accounts	LA EY Blogs
13	7	7	6	6	5	2

> This is a phenomenal toolkit for parents and carers. Thank you.

> Thank you so much. I feel like this is written really well to give parents an understanding of the 'why' behind the kind of activities we've been suggesting as well as giving extra ideas.

Social media played a significant role in disseminating the guide. LA staff and EYEs had the necessary knowledge and skills to access and share the resource and they were confident that parents would in turn access the resource through digital media. One questionnaire respondent mentioned parents were using smart phones to access advice and information (Barnes et al., 2016; Thompson, 2015).

Following feedback from EYEs that the length of the guide was a barrier for some parents, a poster version was created to overcome the issue. The feedback enabled adaptations to improve the accessibility and usefulness of the product. The number of poster downloads (Table 2) shows these documents did not gain traction in the same way as the original guide. Although they continue to be accessed at a lower but steady pace. It could be that by this time more resources were becoming available online or that EYEs had become more confident at sharing their own ideas or adapting the original guide.

Reliability and validity

The speed of response and rate of uptake appears to indicate the usefulness of the resources at such a challenging time. The rapidity with which the pandemic swept gave no time to prepare for the change in early years provision. LAs and EYEs could not be expected to be armed to manage such a crisis situation with the immediacy required. The vision to disseminate research knowledge via technology was based on previous international experience working with the VSO and Rohingya refugees (Laxton et al., 2020). This provided confidence that the guide could translate into English home environments to support parents teaching their young children; instant translational research in action. The guide provided a meaningful and concrete resource that was easily accessible online to promote playful learning and add value to children's experiences. Analysis revealed that the timing of the guide was key to its widespread uptake. Written and published, within a month of the national lockdown, specifically to support parents in home learning during the COVID-19 pandemic, the guide offered a resource not only unique to the circumstances but that was endorsed as a reliable product.

As shown LAs and EYEs were eager to make the guide available to colleagues, early years settings and parents. Downloads figures, emails, social media feedback and questionnaire responses all confirm the guide was valued in terms of content, presentation and appropriateness for families. Being developed by a University education department and endorsed by international partners (MESH and VSO) provided quality assurance and this is likely to have impacted on confidence in disseminating the guide. One EYE participant provider explained how the guide legitimised the ideas they were already suggesting to parents:

> It is a great resource for families at home at the moment and it backs up the play-based ideas that as a nursery we are offering them. I know some families will be concerned that their pre-schooler should be learning more systematically like completing phonics and maths worksheets and it's a bit of an up-hill battle trying to let parents know that the ideas we have sent out really are the kind of ones that children under 5 should be participating in! Your booklet backed up our approach and had some great examples of great practice.

Readability

LAs and EYEs expressed appreciation for an appropriately written clear guide for parents that could provide meaningful communication and support. EYEs recognised a further use for the guide in relation to professional development for staff. About 50% of responses from EYEs and one LA mentioned sharing the guide with colleagues as well as parents.

EYEs knew their families well, were attuned to their needs and wanted to provide support for all. EYEs were alert to the fact that the length and format of the guide was unsuitable for some harder to reach families who would be unlikely to download or use the guide. EYEs were also concerned and sensitive about putting additional pressure on families who could be struggling at home already:

> I hoped we were helping without putting a burden on parents thinking they had to TEACH their children. Many of our EAL parents don't appreciate the 'power of play'.

> I firstly thought it was quite a lot to share, and that this may put some parents off from reading it. I then picked certain activities to use and added a download link so they could view the whole document if they wished.

The guide was read and advice used by parents and as one EYE explained, the digital guide promoted parent confidence:

> One parent was brilliant at sharing what they had done and said that they helped them to know they were 'doing things right'.

EYE feedback related to the length and value of the digital guide was reinforced by parents:

> It's so beautifully written and set out in a way that I can easily read the information…The only thing I would say is perhaps it's a lot to take in in one sitting. I would personally like it drip fed to me weekly. (Parent from SE region)

3/4 EYEs explained how they overcame issues related to the length of the digital guide. They used ideas, suggestions and specific pages to post on Facebook groups, mention in phone calls and in home learning packs delivered to targeted homes during lockdown. This showed how EYEs were able to adapt useful information and engage parents in their children's learning.

The feedback was valid, listened to and rapidly acted on enabling co-creation of a simple to read, poster version of the guide that was published within 3 weeks of the original (Lombardo & Cabiddu, 2017; Mitchell, 2016). The posters were available as a full set or as individual areas of learning aimed to enable more families from diverse backgrounds to access the content of the guide. Table 2 shows that out of the seven areas of learning posters, the personal, social and emotional poster was the second most frequently downloaded. This highlights the awareness of EYEs in relation to offering support in this area.

Once digitally published, participant parents were given a weblink to the digital posters and feedback from all three was more positive:

> A lovely accessible format with the different coloured slides…The document doesn't inspire parental guilt…The learning objective column is totally useful as a neat summary of why. If we know the why we could maybe even tweak the activities to suit us or adapt them after doing them once…I like all the helpful tips

around activities to do that don't require hours of effort to set up and clean up afterwards. (Mother of three under-fives)

…I showed it to my partner who has no clue and he really liked the learning column…It's not a normal situation for parents to find themselves in…I understand what the activity is teaching rather than just not knowing. It's also easy and simple to understand! (Parent of two under five who works in a nursery)

'I think it helps. I don't know what I should really be doing so this shows me why to do it'. (Single mother of child accessing 2-year-old entitlement provision)

The digital posters enabled parents to better understand the learning potential from given ideas and activities. They realised that learning through play did not mean a significant amount of preparation and that whilst messy play has a place in the information, play is much broader; interactions and what adults do to engage is of primary importance (Sylva et al., 2004). Two participants reported understanding the 'why' of the learning experience and the third 'what the activity is teaching'. The guide was created to show how children learn through play and these quotes demonstrate that this was clear and understood. Although a small sample of parents, the findings suggest that if the digital posters had been published first, the impact may have been greater on the understanding and use of ideas of parents.

CONCLUSION

The pandemic provided an insight into previously unseen working practices with local authorities and early years educators forced to work in partnership with early years settings and parents solely using digital technology. The study concurs with research from the World Economic Forum (2016), online systems and platforms in England were available, the early years sector appeared digitally ready to manage the crisis. It was these systems, the timely creation and publication of the digital guide, the role of LAs as gatekeepers and the digital skill and motivation of EYEs that enabled the translational research process to be effective in terms of sharing the guide with parents.

Various stakeholders utilised a variety of digital technology platforms to disseminate the digital guide. Some parents accessed the guide directly from source with others taking a more indirect route via local authorities and EYEs. This route proved valuable to practitioners who also furthered their own knowledge and understanding of early education. There is a clear opportunity for the early years sector to refine and use translational research to access research knowledge to improve setting practice and influence home learning environments. Practitioners and parent feedback was the stimulus for the digital poster development. If the digital posters had been created and shared initially, it would be logical to assume these would have gained traction as the original digital guide did. Had this occurred the impact is likely to have been greater. EYEs could have introduced the posters over a number of weeks encouraging a steady interest and growth in understanding of the value of play and how young children learn through playful encounters with responsive adults.

There are challenges to engaging with diverse families. The number of downloads and the dissemination of the guide by professionals would suggest high levels of parental involvement but data collection was unable to show how many parents actually downloaded the guide, who those parents were or how effectively they used the guide at home. This is an important desired outcome that requires further investigation.

There seems to be a combination of factors that impacted on the speed and scale of sharing and downloading the digital guide. First, being digitally ready; platforms such as email

social media were already used by EYEs and LAs. Second, the professional drive of LAs and EYEs to support families during a crisis situation and finally the availability of an easily accessible online resource seen as valuable in improving play-based learning at home.

ETHICS STATEMENT

This study was reviewed and approved by the Institute of Education Health and Social Sciences at the University of Chichester.

DATA AVAILABILITY STATEMENT

The data that supports the findings of the study are available from the corresponding author, Debra Laxton, upon reasonable request.

CONFLICT OF INTEREST

There are no conflict of interest to declare.

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