

9 Formative research adaptations and innovations

Case studies in developing global early learning video content during COVID-19

Kim Foulds, Samera Zaidi, Belynda Agu, Rehnuma Akhter, Carolina Casas, Ayobisi Osuntusa, Mari Payne, Apurba Shikder and Sukhna Sawhney

Introduction

Decades of research show that mass media can support children’s learning across a variety of educational outcomes (Cole & Lee, 2016; Mares & Pan, 2013; Borzekowski, 2018; Borzekowski et al., 2019; Kennedy et al., 2021; Anderson et al., 2000). With the closure of schools and other learning centers due to COVID-19, mass media played a critical role in supporting children and their families (Yoshikawa et al., 2020).

In an effort to optimize the impact of media on children’s healthy development, research has been at the heart of Sesame Workshop, the non-profit behind *Sesame Street*, and its international co-productions (Cole & Lee, 2016; Fisch & Truglio, 2000). Sesame Workshop uses formative research to assess its content, from broadcast television to community outreach initiatives. Formative research at Sesame Workshop focuses on rapid, small-scale research studies with the target audience to test creative and educational concepts prior to production that yield findings and recommendations to inform the structure, tone, and educational messaging of educational content. Sesame Workshop aims to engage young children and caregivers as partners, eliciting their critical feedback on how appealing, engaging, and relevant Sesame’s content is, and how comprehensible its educational messages are. As Sesame Workshop has expanded its scope to support the needs of children around the world, formative research continues to be the grounding force in creating culturally relevant educational media content (Foulds & Bucuvalas, 2019; Kohn et al., 2021; Foulds et al., 2021).

Before the pandemic, in-person data collection was a core component of the formative research process. In-person data collection can include observations of children’s viewing behaviors, assessment of their comprehension of educational messages, and perceptions of their caregivers. Formative research sessions are organized in groups with approximately four or five caregivers and their children aged three to eight. First, families watch a video segment as a group while a research team observes the children’s viewing behaviors, taking note of

engagement and participation behaviors. Participation behaviors include, but are not limited to, talking to the characters, singing, dancing, and/or pointing to the screen. Following the viewing, each caregiver-child dyad is interviewed by the observing enumerator. The child is first asked a series of questions to assess the content's appeal as well as the child's comprehension of the educational message. Then, the caregiver is asked questions on the appeal, relevance, and appropriateness of the content.

COVID-19 related safety protocols and movement restrictions posed significant barriers to traditional formative research methods. As a result, Sesame Workshop developed new approaches, which included remote and in-person approaches, for conducting formative research with young children. This chapter highlights these adaptations to Sesame Workshop's traditional formative methods in Latin America (Brazil, Colombia, and Mexico), the Middle East (Jordan and Lebanon), South Asia (Bangladesh and India), and Africa (Nigeria and South Africa). It uses lessons from the creation of Watch, Play, Learn (WPL) videos, a series of early learning videos designed to support children affected by displacement and other crises. Each country team made decisions on how to approach the challenge of COVID-19 and other emergency risks in their countries. These examples provide early childhood media content creators and researchers with multiple approaches to conducting research with young children and share initial lessons on remote data collection which may be especially relevant in emergency settings. The chapter also reflects on the decision-making process of each country team as they made decisions on what and how to adapt the formative research approach. Key takeaways from this chapter will highlight that even in the midst of access disruptions, innovative research designs, grounded in community realities, are possible for young children in humanitarian and low-resource contexts.

Overview of Watch, Play, Learn (WPL) videos

In 2018, Sesame Workshop, BRAC, and the International Rescue Committee (IRC) were awarded a USD 100 million grant from the LEGO Foundation to bring early childhood care and education to displaced Rohingya children living in Cox's Bazar and children living in the Syrian response region. The Play to Learn initiative embeds learning through play in direct services as well as print and video content, which are offered across a variety of spaces frequented by children and families (community centers, social protection programs, health clinics, among others).

A foundational element of Play to Learn is the creation of the WPL videos, a set of engaging, modular, universal early learning videos designed to reach young children with playful early learning content, with particular attention to the unique experiences of children affected by conflict and crisis. WPL is a set of 140 five-minute animated videos segments designed for children aged three to eight. Using playful learning, WPL videos promote skills in the four curricular domains of math; science; social-emotional learning; and child protection,

health, and safety (Bhatia et al., 2022). From 2019–2021, WPL media content was developed using the same formative research approach used as part of the larger creative process required to create locally produced Sesame Street content at scale in over thirty countries worldwide (Cole & Lee, 2016; Mares & Pan, 2013). The videos are designed to bring playful early learning to children everywhere, with particular attention to the unique needs and experiences of children affected by crises such as conflict or displacement. At the same time, the WPL video content was designed to be used worldwide in future crises, meaning that the content must be relevant to a global audience.

When creating global content, however, familiarity and relatability are challenging tasks in that the content must appeal to a global audience, while also feeling relevant, so that children see themselves in the content. To identify content to meet these potentially competing needs required a series of global formative studies across diverse geographic, ethnic, and linguistic contexts.

Given that, the following research questions guided formative research design considerations:

- What elements of the format do children and parents find most appealing?
- What elements of the format do children and parents find least appealing?
- What educational messages show the greatest relevance and comprehension?
- What are the characteristics of educational messages that are most relevant and comprehensible?
- What, if any, are the emergent global patterns supporting appeal, relevance, and comprehension for each format?

To answer these questions, the production team created animated storyboards (or animatics)¹ of scripts in development for each WPL content area. The research team typically uses those animatics with children and their parents/caregivers to help answer the above research questions. Findings and actionable recommendations are then provided to the production and education teams for content refinement to reinforce content appeal, relevance, and comprehensibility. Based on this process, using the animatics provided by the production team, the New York-based Sesame team drafted a core set of qualitative instruments so that the same type of information would be collected across the different geographies. Sesame country teams reviewed those instruments, revised them for cultural relevance, and translated them into the appropriate languages: Arabic, Bangla, Hausa, Hindi, isiZulu, Kanuri, Rohingya, Portuguese, Sesotho, and Spanish. Some of the instruments were used for remote data collection while others were used for in-person data collection, as will be detailed in the following sections. Each country team led two rounds of formative research. Each round of research takes between five to seven weeks to complete. The first round of formative research, conducted from November 2020–January 2021, tested one science script and one health safety script. The second round, conducted from February 2021–May 2021, tested one math script and one social-emotional learning script.

Global adaptations to formative research methods in response to COVID-19

Because the production of WPL scripts began in 2020, all formative plans had to consider the effects of COVID-19 when designing their respective studies. All of the countries listed above experienced lockdowns and school closures beginning in February–March 2020, with waves of reopening and lockdowns in line with surges in infection rates. This chapter shares specific research adaptations made for each location based on local COVID-19 restrictions and how families with young children, including displaced families, access technology. For example, the section on Latin America explores how teams in Brazil, Colombia, and Mexico implemented both in-person and remote data collection methods to reach Venezuelan migrants and host community nationals in testing WPL video content. In the Middle East, given high rates of mobile phone access and use, the research teams relied on Zoom to conduct interviews with displaced Syrian families as well as Jordanian and Lebanese host community nationals. The section covering South Asia provides insight into how research teams in Bangladesh and India adapted in-person data collection methods to reach Bangladeshi host community nationals, Rohingya refugees, and Indian migrants and host community nationals. In the last section covering sub-Saharan Africa, research teams in Nigeria and South Africa share how they relied on a range of in-person data collection methods to collect feedback from internally displaced families in Nigeria and South African nationals.

These case studies illustrate how Sesame Workshop teams determined study designs and methodologies (both in-person and remote) in the face of rapidly changing/evolving safety protocols and restrictions.

Latin America

Brazil

In spring 2021, during the formative research planning phases, COVID-19 indicators in Brazil began to improve, so the research team planned to hold in-person focus group discussions (FGDs) in open-air spaces to minimize potential risks. The situation, however, worsened suddenly in the State of Roraima, which borders Venezuela and is considered Brazil's most geographically isolated state. The team considered remote data collection since nearly two-thirds of Venezuelan migrants and two-thirds of Brazilian nationals own mobile phones (Barberia et al., 2022; R4V, 2019). However, Venezuelan migrants, in particular, encountered barriers to usage due to connectivity challenges and limited digital literacy.

As a result, the research methodology was adjusted to individual interviews with children and their families in their homes, following strict COVID-19 protocols such as social distancing and masking. The research team implemented an in-person data collection method where two researchers met with each family individually ($n = 60$ dyads). One researcher led the technical

facilitation, which included setting up the video segments for viewing and completing the research instrument on Google Forms. The other researcher observed child participants as they watched the videos and conducted the child assessment and caregiver interview.

At-home testing allowed researchers to observe children's viewing in a familiar environment under more natural conditions. This environment also facilitated children's comfort and confidence, making them more likely to have spontaneous reactions and answers, particularly relative to a more formal, unfamiliar group testing space. This led to richer information about children's reactions and engagement with the video content. Additionally, parents were more available to participate and provide more detailed and more insightful opinions.

One challenge in this method – and formative research more broadly – was specific to the dose. Sesame Workshop's formative research typically allows for a single viewing of the video to mimic the child's experience watching it on television. However, when content is available on-demand through digital devices, it is likely that in practice a child would watch more than once. To remain faithful to traditional formative research design and produce comparable data, the researchers played each segment only once, but recognized the potential misalignment with actual practice.

Colombia

From January to March 2021, formative research planning focused on recruiting Venezuelan migrant families and Colombian host community nationals living in Bogotá. At the time, the local government of Bogotá ordered selective confinement measures that applied to specific boroughs (*localidades*) based on infection rates. During this period, all government-run educational services in the country were operating remotely and in-person gatherings were strongly discouraged.

Based on these circumstances, as well as high connectivity rates among Colombians and Venezuelan migrants in Colombia, the research team explored a combination of digital content distribution methods supported by phone interviews with families. For Colombians, by the end of 2020, 67% had access to a smartphone, with an average of more phones than people (Meloan & Castells, 2021; R4V, 2019). Access to mobile devices and the internet is also high for Venezuelan migrants in Colombia, though the high cost of data poses a significant barrier to use (Dweck et al., 2021). Partnering with grassroots organizations serving the target communities, the research team contacted participants ($n = 58$ dyads), shared WPL video content via WhatsApp to prompt viewing, and followed the viewing up with a phone interview with the caregiver, who communicated both child and caregiver responses. Enumerators entered responses into a Google form during each interview.

In addition to minimizing the risk of exposure to COVID-19, remote data collection resulted in greater comfort levels among children and richer responses from adults. However, there were several challenges to this approach. One major challenge was the duration of the data collection sessions, which was

particularly challenging given the unpredictable schedules of respondents, especially Venezuelan migrant families who often rely on informal employment with variable work hours. Another challenge was accessing information from caregivers, for whom any type of written communication represented a barrier to participation. As a result, the research team collected data via recorded audio or voice notes, which sometimes presented issues around data quality, because it was difficult to ask clarifying follow-up questions. The final challenge was that the research team did not observe children directly and caregiver reporting on child engagement was difficult to systematize and may have been inconsistent across participants.

Mexico

As in Brazil and Colombia, formative research in Mexico was planned for January and March 2021. However, in January, most Mexican states were at a high alert level due to a dramatic rise in COVID-19 cases, and by March 2021, while some states had transitioned to medium risk, non-essential activities were recommended to be carried out remotely. Under these conditions, the research team focused on remote data collection to test WPL content. Access to a mobile phone is high in Mexico, with nearly 70% of the population owning a phone in 2020. Within that population, 90% reported owning a smartphone (Government of Mexico, 2021).

The research team partnered with Save the Children Mexico, which already worked with refugee and migrant populations. During the first formative research study, the research team provided participants ($n = 13$ dyads) with a USD10 phone recharge to cover participants' data use during testing. The Sesame research team led a training session with Save the Children Mexico's facilitators via Zoom, where they viewed the WPL videos, and the Sesame team briefed the Save the Children team on how to conduct the interviews with caregivers via phone and collect data using Google Forms.

For the second phase of testing, families living in Save the Children's shelters were the target audience. Since many of these families do not own a mobile phone, Sesame trained Save the Children facilitators to conduct in-person interviews with 30 caregiver-child dyads, following all required health protocols such as social distance and masking.

Remote data collection during the first phase of research in Mexico allowed for greater flexibility to schedule interviews based on respondents' availability, compared to the challenges of scheduling in-person data collection. Using Google Forms made it easy to automatically upload data into Microsoft Excel, helping to reduce the time needed for data entry and analysis.

However, remote data collection approaches also presented challenges. In the first phase, some families experienced connectivity issues that interrupted the flow of the interviews, increasing their length and affecting the rapport with child-participants. In some instances, researchers also noticed caregivers guiding the children towards the 'correct' answer, possibly a result of caregiver

participation in the interview process. Additionally, since the videos were sent before the phone interview, the research team was not able to control the number of times families viewed them. A few families mentioned viewing the videos more than once, possibly influencing the findings. For the second phase, although Sesame Workshop trained Save the Children's facilitators, COVID-19 protocols prevented the Sesame team from providing in-person support to the data collection process.

Middle East

Jordan and Lebanon

Given the multiple waves of restrictions and surges in infection rates, combined with high rates of smartphone ownership, the research teams in Jordan and Lebanon shifted to remote data collection for the formative research. Data from 2019 showed 70% of Syrian refugees in Jordan owned a smartphone (Ammourah & Carlisle, 2019) and mobile phone ownership among Syrian refugees appeared to be even higher in Lebanon. Data from 2018 shows nearly 90% of Syrian refugees in Lebanon owned a mobile phone, with the majority owning a smartphone – a proportion which has also likely increased since publication (Göransson, 2018).

Working with research partner Radius Global Solutions, Sesame Workshop recruited 20 caregiver-child dyads in Jordan and 20 caregiver-child dyads in Lebanon. Within each country, displaced Syrians represented half of the sample and Jordanian or Lebanese nationals represented the other half. For each session, rather than in-person focus groups, the research team led in-depth interviews (IDIs) with caregiver-child dyads via Zoom with a household owned tablet or mobile phone. The sessions were 30 minutes long. Each dyad watched the first video segment, and then the child answered a short series of questions to assess the video's appeal and child's comprehension of the educational message. This was then repeated with the second video segment. The session ended with a short caregiver interview to collect insight on the caregivers' point of view of the video's relevance, appropriateness, and appeal. All participating households were given a stipend to cover data costs for watching the videos.

There were several benefits to this approach. Most importantly, participants remained safe from exposure to COVID-19. In addition, children watched the segments in a natural setting – at home, with a caregiver, or on a portable device. Another benefit included caregivers not feeling pressured to ensure their children were behaving appropriately. Often, when doing in-person testing with caregivers and children, researchers let parents know that their children can do whatever they like during the viewing, except hitting, hurting, or otherwise bothering anyone else. Despite this guidance, parents often prompt their children to sit still and watch the video. In remote sessions, parents were less inclined to correct these behaviors, given the familiar environment and more natural structure of the session.

Despite these benefits, there were also several challenges. Since device ownership was a requirement for participation, families who did not own devices were excluded from the sample. Another challenge was related to the level of effort required to meet the sample minimum. When conducting in-person focus groups for formative research, the group setting allows for a larger sample of caregiver-child dyads to participate (typically five or six pairs per session) in a shorter period compared to IDIs. Conducting IDIs requires more time for data collection. Offsetting these additional data collection costs, however, is the requirement for fewer interviewers. Whereas in-person focus groups typically require 5–6 interviewers per session, for each dyad, remote IDIs only require one moderator.

South Asia

Bangladesh

REFUGEE HOST COMMUNITIES

In Bangladesh, only 54% of Bangladeshis own a mobile phone and unreliable internet infrastructure in Cox's Bazar made remote data collection non-viable (Okeleke, 2021). To address these contextual factors, the research team designed a study using one-on-one interviews with host community respondents in their homes. The Dhaka-based Sesame research team trained enumerators living in Cox's Bazar via Zoom. Before the main training, enumerators participated in a one-day virtual training to ensure they were familiar with the Zoom platform prior to the research training. Enumerators then traveled to individual homes to conduct the testing sessions with caregivers and children ($n = 40$ dyads).

There were several important benefits to this approach. Conducting remote training for enumerators eliminated the need for them to travel long distances, encounter unpredictable delays, and have potential exposure to COVID-19. The online training sessions were effective in preparing enumerators for safe and reliable in-person data collection during COVID-19, and included appropriate measures to ensure the health and safety of participating families.

Several challenges emerged as well, many reflective of the COVID-19 realities in Bangladesh at the time as well as the ongoing infrastructure limitations. Originally planned for April 2021, the second phase of formative testing was delayed to mid-May 2021 as authorities banned most non-essential activities. For remote enumerator training, only a few enumerators were already familiar with Zoom. Many enumerators also had unstable internet, which made it challenging to provide video examples of how to observe and document facial expressions of children.

Challenges in data collection included respondent hesitation to participate due to COVID-19, collecting observational data and building rapport with masked children while social distancing, and higher than average transportation costs because of COVID-19. While precautions were in place, a risk that was

not possible to fully mitigate was the risk of contracting COVID-19 for researchers and participating families.

ROHINGYA REFUGEES

For Rohingya refugees living in refugee camps in Cox's Bazar, COVID-19-related restrictions compounded the population's already limited access to infrastructure and technology. Estimates suggest that 70% of households owned a phone, but not a smartphone (3G and 4G mobile services restored at Rohingya camps 2021). Access to electricity was another major challenge, with only 52% of Rohingya households reporting access to power, and only 22% of those households having electricity for more than four hours per day (Kamal & Dow, 2020).

Considering the context, Sesame Workshop experimented with several adaptations to formative research. In the summer of 2020, it was impossible to conduct formative research in Cox's Bazar because of government restrictions on conducting research. Instead, Sesame Workshop collaborated with the Burmese Rohingya Community of Wisconsin (BRCW),² which serves the Rohingya community living in Milwaukee, Wisconsin. For each family, BRCW leaders visited members' homes, showed videos, and conducted post-viewing interviews with children and caregivers using simplified instruments to facilitate untrained research leads in conducting interviews.

Once government restrictions in Cox's Bazar eased, the research team implemented formative testing through in-person focus groups, each with five caregiver-child dyads ($n = 50$ dyads). Participants first viewed the content and then each dyad was interviewed individually, with the child interviewed first on content appeal and comprehension of the educational messages, followed by the caregiver interview to assess appeal and relevance. The sessions lasted 45–60 minutes. To ensure safety, masks were provided and were mandated for parts of the session. During the sessions, participants removed masks for the team to observe children's reactions during the viewing, which did raise the risk of COVID-19 infection.

The research methods used in Cox's Bazar were most like Sesame's traditional formative methods, which rely on in-person child observations and interviews. The challenges in conducting these studies were around movement restrictions and health and safety concerns. Due to government hiring limitations, the research team was not allowed to hire Rohingya enumerators. Enumerators from the Chittagong host community who were proficient in Rohingya were hired and trained for data collection. In addition, because of government approval requirements to enter the camps, government regulations required the research team to apply three weeks in advance of the testing dates, and they were granted access only on those specific dates. As noted previously, while in-person data collection included the implementation of health and safety precautions, the risk of infection was never fully mitigated, particularly given the off-on nature of mask-wearing among the researchers and participants.

India

COVID-19 precautions in India were among the most restrictive of any country in the world. Schools were closed from March 2020 until early 2022. Due to limited access to digital devices, only 20% of school-age children in India benefited from remote learning (Krishnan, 2021). Despite these restrictions, Sesame Workshop was still able to engage in in-person interaction with caregivers and children in early 2021. The research team tested the WPL videos in three regions of Delhi in northern India: Seelampur, Faridabad, and Madanpur Khadar. Each round of testing and research included 30 caregiver-child dyads from low-income host and migrant families. The sample included ten families per region, with an equal number of host and migrant families purposefully selected. During testing, the researcher showed one video to the child and caregiver, collecting observational data on engagement. After viewing the first video, the researcher interviewed the child about the segment. This process was repeated in the second video. Following the second child interview, the research interviewed the caregiver. The order of the videos was counterbalanced to avoid bias.

Being able to conduct formative research in families' homes was a benefit to the process, as it simulated a more natural viewing environment. Helping children to feel comfortable in a familiar environment with their families reduced their stranger and/or testing anxiety, as the enumerator was able to build face-to-face rapport. Another benefit was that the research team could bring devices for families to use for viewing, which allowed them to reach families that otherwise would not have been able to participate. Yet another noteworthy advantage of in-person data collection was that researchers were able to limit caregiver interference in aiding children with answers to questions, while also providing supportive and motivating comfort and encouragement to children during interviews.

There were a number of challenges to this design. With in-person data collection as the best available approach, there remained a risk to researchers and respondents to COVID infection. Given families' understandable anxiety around participating, coupled with certain areas sealed off as in the 'red-zone' of high infection rates, recruitment required more time and resources than originally planned to recruit the full sample. In addition, while COVID-19 protocols were followed, including wearing masks and maintaining social distancing, this made it difficult to observe children's facial expressions and likely led to some loss of data, not being able to hear children's comments while viewing.

Sub-Saharan Africa

Nigeria

Mobile phone access among internally displaced persons (IDPs) in north-east Nigeria is limited, with only 61% of households owning at least one mobile phone (World Food Programme, 2017). To address this gap in access, the

Sesame research team focused on in-person data collection within the existing movement restrictions of early 2021 in two IDP camps in Abuja.

The team implemented two approaches at both sites, recruiting from Kanuri and Hausa language speaking communities. At the Kanuri language site, the parent/caregiver sat behind their children as they watched the videos, while at the Hausa language site, the parent/caregiver sat beside their children. Children watched the video segment with other children. After viewing, a researcher interviewed individual caregiver-child dyads, first interviewing the child, and then their caregiver. Each session included 30 caregiver-child dyads, 15 Hausa-speaking dyads and 15 Kanuri-speaking dyads.

To ensure proper safety protocols could be implemented for both participants and researchers, data collection took place on Saturday mornings to allow for more time and flexibility. Though COVID-19 restrictions had been relaxed in Nigeria at the time of testing, the research team implemented several data collection adaptations and safety measures to minimize potential COVID-19 exposure. Participants remained six feet apart, and both participants and enumerators wore face shields. At that time, enumerators provided face shields and sanitizer for all participants. The face shields enabled researchers to see the participants' facial expressions, engagement, and participation.

Interviewing caregiver-child dyads was a new methodology for researchers in Nigeria and seemed to have several positive influences. Most parents and caregivers from northeastern Nigeria have limited social interaction with their children due to cultural and religious norms, lack of education, and social limitations. This lack of interaction with their children is often further exacerbated by extreme hardships faced by families in this area. The structure of the research session – in which researchers were seeking insight from children – represented an uncommon opportunity, where norms around children's engagement are often limited to being seen (e.g., playing with other children) and not really heard (e.g., having a one-on-one conversation with an adult). Watching the videos dubbed in their languages with their parents and then being interviewed together appeared to have provided an opportunity for caregiver-child bonding. During data collection, researchers observed a growing connection between parent and child, as caregivers showed support and encouragement for their child when they were answering questions, demonstrating signs of an evolving relationship. Researchers observed that parents were excited and encouraged children to speak. And while parents understood that there were no right or wrong answers to the interview questions, researchers noted that the parents were rooting for their children when they were answering questions. In addition, given COVID-19 precautions, parents enjoyed the opportunity to assist their children as they washed their hands before the session and applied hand sanitizer throughout the session.

Although most of the observations during formative testing were positive, particularly in the context of caregiver-child interactions, researchers still experienced some challenges. Due to restrictions on indoor gatherings, researchers had to modify the approach from focus group discussions (which

did not allow for adequate social distancing) to one-on-one interviews with caregivers, which increased the time and, thus resources, needed for testing. Another challenge was that children were required to wear protective face shields during the episode viewing and since this was new for them, they would often touch or readjust them, making it challenging to document their engagement during the eyes-on-screen observation. It was not common for children ages 3–6 years to wear face shields, so children in the sample frequently played with and adjusted their shields, making it challenging at times to note their viewing behaviors.

South Africa

Despite high rates of mobile phone ownership generally in South Africa, there are significant disparities in ownership, distinguished largely by socio-economic status. Many families, therefore, face significant access barriers (Silver et al., 2019). Given this, the team focused on in-person data collection to test WPL content. The research team conducted two in-person trainings with enumerators at the Sesame Workshop South Africa offices, adhering to strict COVID-19 protocols. After the training sessions, researchers conducted in-person focus group discussions for formative testing with English-, Sesotho-, and IsiZulu-speaking families. The sample included 120 caregiver-child dyads, 40 dyads per language. All participants viewed the content together and then participated in child- and caregiver-specific focus group discussions.

The first phase of formative testing was conducted in December 2020 during lockdown alert Level 1, which allowed public gatherings but required strict adherence to COVID-19 protocols. This protocol included mandatory mask-wearing, social distancing, and regular hand washing or sanitation.

The second phase, conducted in March 2021, was during an adjusted lockdown alert Level 1, which allowed a maximum capacity of 50 people for indoor gatherings. During both phases, to ensure the safety of the research team and the participants, the research team divided them into smaller groups to adhere to social distancing protocols and restrictions for indoor gatherings ($n = 120$ dyads).

The benefits of conducting formative research using focus-group discussions versus remote implementation included having a geographically diverse sample, reduced time spent as the entire formative testing was done over two days, encouraging greater parent and child involvement, observing higher response rates, and collecting high-quality data by a research team trained specifically on Sesame Workshop's formative research methodology.

Under normal circumstances, the challenges of conducting in-person focus group discussions are minimal. During COVID-19, researchers encountered challenges in conducting formative research because of the new health restrictions. Due to the face mask requirement, researchers found the primary challenge was observing masked children's facial expressions which resulted in a loss of some data.

Reflections and recommendations on adapting research methods

COVID-19, coupled with related movement restrictions and safety protocols around the world, has provided an important opportunity to reflect on and adapt formative research methods. In line with the Sesame Workshop model, child-centered formative research remains a foundational component of the content creation process. The pandemic, however, has highlighted the need to evolve formative research methods to better reflect the contexts in which participants live. Assessments of participants' access to different communication channels are critical to inform what study methods are feasible. Where communities are highly connected to mobile services, leveraging digital methods to test content provides more natural conditions for how families consume content. When target communities are not connected to mobile technology, research teams adapted in-person testing to use either group or individual testing sessions, applying safety protocols when possible.

Sesame's experience of being able to gain valuable insights from children on formative assessment can inform the debate about whether direct child assessments with young children should only take place through in-person data collection. While there is emerging evidence on the potential for remote early childhood development (ECD) interventions to bring about positive impacts (Hernández-Agramonte et al., 2022; Angrist et al., 2020), there is little existing guidance on conducting remote research with children. The findings in this chapter provide social science researchers with initial lessons learned on the possibilities for remote data collection with children.

These lessons can inform the design and implementation of research, especially in settings affected by a crisis where there is often an assumption that front-end research, like the methods described here, is not possible or viable within the context (Foulds et al., 2021). The consequence of these assumptions may be that there is little to no investment in research to inform content development and to ensure that it reflects the communities it is designed to represent and serve. The examples provided here demonstrate the multitude of ways that formative research methods can and need to adapt to changing circumstances to reach the most vulnerable. Ensuring that research approaches are contextually relevant and consider implications on data quality, findings are likely to be well-positioned to benefit target populations.

Notes

- 1 An animatic is an animated storyboard, essentially a slideshow of images depicting movement. To create an animatic, storyboard images are cut together to make a rough draft animation, usually with sound effects or music, giving filmmakers an idea of what the final animation will look like. For more on the production process, please see Cole and Lee (2016).
- 2 More information on BRCW is available here: <https://burma-care.com/>.

References

- Ammourah, M. & Carlisle, L. (2019). *The digital lives of refugees: what's next?* United Nations Refugee Agency (UNHCR). <https://www.unhcr.org/jo/12182-the-digital-life-s-of-refugees-whats-next.html>.
- Anderson, D. R., Huston, A. C., Schmitt, K. L., Linebarger, D. L., & Wright, J. C. (2001). Early childhood television viewing and adolescent behavior: The recontact study. *Monographs of the Society for Research in Child Development*, 66(1), 1–147. <https://pubmed.ncbi.nlm.nih.gov/11326591/>.
- Angrist, N., Bergman, P., Brewster, C., & Matsheng, M. (2020). Stemming Learning Loss During the Pandemic: A Rapid Randomized Trial of a Low-Tech Intervention in Botswana. *SSRN Electronic Journal*.
- Barberia, L., Bastos, L., & Moraes de Sousa, T. (2022). School reopening and COVID-19 in Brazil. *The Lancet Regional Health Americas*, 5(100146), 1–2.
- Bhatia, N., Rodríguez García, D.M., & Sexton, S. (2022). Watch, Play, Learn: Educational media and the future of early learning. Global Partnership for Education. <https://www.globalpartnership.org/blog/watch-play-learn-educational-media-and-future-early-learning>.
- Borzekowski, D. (2018). A quasi-experiment examining the impact of educational cartoons on Tanzanian children. *Journal of Applied Developmental Psychology*, 54(1), 53–59.
- Borzekowski, D., Singpurwalla, D., Mehrotra, D., & Howard, D. (2019). The impact of Galli Galli Sim Sim on Indian preschoolers. *Journal of Applied Developmental Psychology*, 64(1), 1–9.
- Cole, C., & Lee, J. (2016). *The Sesame Effect: The Global Impact of the Longest Street in the World*. Routledge.
- Dweck, T., Messenger, C., & Hand, A. (2021, September 30). Frontier Insights Colombia: Understanding Children's Digital Access. <https://dai-global-digital.com/frontier-insights-colombia-understanding-childrens-digital-access.html>.
- Fisch, S., & Truglio, R. (2000). *G Is for Growing: Thirty Years of Research on Children and Sesame Street*. Routledge.
- Foulds, K., & Bucuvalas, A. (2019). Playing Every Day on Sesame Street: Global Learnings from a Play-Based Pilot Intervention in India, Mexico, and South Africa. *American Journal of Play*, 12(1), 17–36.
- Foulds, K., Khan, N., Subramanian, S., & Haque, A. (2021). Implementing a Humanitarian Needs Assessment Framework for Early Childhood Development: Informing Intervention Design for Displaced Rohingya Communities in Bangladesh. *Journal on Education in Emergencies*, 7(1), 112–132.
- Göransson, M. (2018). Apping and resilience: Policy Brief How smartphones help Syrian refugees in Lebanon negotiate the precarity of displacement. Clingendael. Netherlands Institute for International Relations. https://www.clingendael.org/sites/default/files/2018-07/PB_Mobile_phones_July_2018.pdf.
- Government of Mexico. (2021, June 23). Encuesta Nacional sobre Disponibilidad y Uso de Tecnologías de la Información en los Hogares (ENDUTIH) 2020. <https://www.gob.mx/sct/articulos/encuesta-nacional-sobre-disponibilidad-y-uso-de-tecnologias-de-la-informacion-en-los-hogares-endutih-2020>.
- Hernández-Agramonte, J., Namen, O., Näslund-Hadley, E., & Biehl, M. (2022). *Closing early childhood development gaps in times of COVID-19: experimental evidence on parental networks and SMS messages*. Inter-American Development Bank.
- Kamal, M., & Dow, J. (2020). *Distance Learning Needs Assessment: Cox's Bazar, Bangladesh*. International Rescue Committee.

- Kennedy, J. & Hupert, N. (2021). Using Digital Media to Support Early Learning. George Lucas Educational Foundation. Edutopia. <https://www.edutopia.org/article/using-digital-media-support-early-learning/>.
- Kohn, S., Foulds, K., Cole, C., Matthews, M., & Hussein, L. (2021). Using a Participatory Approach to Create SEL Programming: The Case of Ahlan Simsim. *Journal on Education in Emergencies*, 7(2), 289–310.
- Krishnan, M. (2021, December 27). COVID in India: School closures, digital divide affect millions. DW News.
- Mares, M.-L., & Pan, Z. (2013). Effects of Sesame Street: A meta-analysis of children's learning in 15 countries. *Journal of Applied Developmental Psychology*, 140–151.
- Meloan, M., & Castells, P. (2021). *Country overview: Colombia*. GsMA.
- Okeleke, K. (2021). *Achieving mobile-enabled digital inclusion in Bangladesh*. GsMA.
- R4V. (2019). Regional Information and Communication Needs Assessment: Understanding the information and communication needs of refugees and migrants in the Venezuela Situation. Panama City: Regional Interagency Coordination Platform for Refugees and Migrants from Venezuela.
- Silver, L., Vogels, E., Mordecai, M., Cha, J., Rasmussen, R., & Rainie, L. (2019). *Mobile Divides in Emerging Economies*. Pew Research Center.
- World Food Programme. (2017). Emergency Food Security Assessment (EFSA) in Borno, Yobe and Adamawa States. Abuja: WFP.
- Yoshikawa, H., Wuermler, A., Britto, P., Dreyer, B., Leckman, J., Lye, S., Ponguta, L. A., Richter, L., & Stein, A. (2020). Effects of the Global Coronavirus Disease-2019 Pandemic on Early Childhood Development: Short- and Long-Term Risks and Mitigating Program and Policy Actions. *Journal of Pediatrics*, 223, 188–193. doi:10.1016/j.jpeds.2020.05.020.