

# Provision of distance learning for deaf children in Pakistan

**Paul Lynch** and **Emmanouela Terlektsi** summarise their work commissioned through EDTECH by the Foreign, Commonwealth and Development Office (Pakistan) to explore the provision of distance learning to deaf children in Pakistan and to develop guidelines and guidance

The Covid-19 pandemic has forced school closures and created an urgent need to provide distance learning to children based at home. However, the provision of alternative learning approaches has been more difficult in low and middle- income countries because of variable levels of access to technology and the Internet. Thus, children with special educational needs including deaf children have been particularly placed at a disadvantage as a result of the pandemic. Given the urgency of the situation and the paucity of evidenced based practice and guidance on distance learning for deaf children, we were commissioned by the EDTECH Hub to produce guidance and recommendations on how to support distance learning for deaf children in Pakistan for the Foreign, Commonwealth and Development Office, Pakistan. The topic brief was aimed at identifying learning and teaching strategies as well as ways to support the wellbeing of those children by drawing on research evidence from other countries and teacher professional experiences.

Evidence was gathered in three distinct ways:

- A desk- based review of evidence incorporating 37

peer-reviewed research studies meeting the inclusion and exclusion criteria out of a total of 1,708 resources (between 1999–2020)

- Questionnaires completed by: the British Association of Teachers of the Deaf, qualified teachers of the deaf from four peripatetic services, four hearing resource bases and one School for the Deaf in England.
- A consultation with key partner organisations (NGOs and Disabled Persons Organisations): USAID, British Association of Teachers of the Deaf, and Family Educational Services Foundation in Pakistan

## Deaf children in Pakistan

Approximately 1.2 out of every 1,000 Pakistani children have moderate to profound, congenital, bilateral hearing loss (Mactaggart et al., 2013). However, these figures are not officially confirmed. In Pakistan, deaf children communicate using Indo-Pakistani Sign Language (IPSL) and Pakistan Sign Language (PSL). Similar to spoken languages, both IPSL and PSL have a variety of dialects in different regions of the country. While many common

## BATOD membership: developing professional world partners in deaf education

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The BATOD magazine frequently features articles about deaf education from across the world. Thus, our special overseas members can share with and learn from UK and other worldwide professional peers in deaf and deaf related education.

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words are shared, some will be region-specific.

There is lack of evidence on the educational provisions for deaf children in Pakistan. Deaf children in Pakistan are educated using: hearing aids, audio-system voice therapy, speech-therapy training, sign language, finger-spelling, lip-reading and total communication. Deaf children are mainly educated in state segregated educational schools, although a small proportion are educated in private schools for the deaf. Steps are being taken into the inclusion of deaf children into mainstream classes in Pakistan.

Based on a survey by the Family Educational Services Foundation (FESF) in Pakistan, only 20 per cent of deaf families have access to the internet, therefore resulting in 80 per cent not being able to access digital online resources. In an attempt to respond to the growing need for online learning for deaf children in Pakistan, FESF has negotiated a number of measures. For instance, they have set up a lending agreement for the loaning of laptops between families and schools.

### Hardware and equipment for distance learning

Despite the fact that our desk-based review did not identify any sources for types of hardware and equipment needed for distance learning of deaf children, evidence from the questionnaires and from the consultation with the FESF revealed that access to technology (eg, laptops, phones, web-cameras, and headphones to TVs) is appropriate for the effective delivery of distance education to deaf children. Having appropriate equipment to access the spoken language of recorded materials and synchronous teaching is crucial.

In cases where families do not have access to laptops, phones and other devices, the schools can loan equipment to the families. THE FESF in Pakistan has been providing hardware, such as laptops, to families: "Less than 20 per cent have access to the Internet, poor families. FESF provides low cost devices — low cost (\$200) refurbished laptop or tablet." (Director of FESF)

### Platforms for distance learning

As explored via the questionnaires, educators in the UK said they commonly use Google classroom to provide online classrooms. Google classroom is a free web service that allows teachers and students to share materials and make announcements. Most importantly it also allows students to interact with the materials and each other. They have the ability to comment on assignments and announcements, as well as to email each other using the classroom interface.

Other popular free access platforms are Purple Mash and Seesaw. Purple Mash 10 provides free learning content for multiple subjects delivered in a fun and engaging way. It also provides a platform for remote learning. Some teachers also use other tools for synchronous teaching which allow students to interact with their peers. This includes Zoom, WhatsApp and Facebook classrooms. However, issues of safeguarding in relation to the use of the above platforms were raised.

### Accessibility of distance learning by deaf children

Given the heterogeneity of the deaf population we need

to take into consideration that the designed materials need to meet the needs of individual children. The National Deaf Children's Society (NDCS) guidelines make clear that online provision needs to be differentiated using a learner-centred approach.

In order for the online materials to be accessible sign language interpretations should be provided where needed. In addition, the use of subtitles and captions is absolutely crucial. The accuracy of the captions provided is also really crucial to ensure effective communication for deaf children. Whilst it is recognised that manual captioning is a time consuming process, educators have to balance the timely delivery of the materials and the accuracy of the captions, judging this on an individual basis.

Apart from ensuring that all visuals are captioned and signed, the use of language in the online materials is really important. Given that deaf children may face difficulties in literacy skills, it is really important to design online materials and deliver distance teaching that is of the appropriate language level of the children. Written language, therefore, has to be intelligible — the message has to be clear, relevant, coherent, cohesive and usable, in that it is effective and appropriate for conveying the message (McKeown & McKeown, 2019).

### Evaluation of outcomes for deaf children

The evaluation and monitoring of students' learning is high on the agenda of all educators. However, our review of the evidence did not identify any studies on the effectiveness of distance learning on learning outcomes of deaf children. However, the professionals' replies to the questionnaires highlighted parental support and collaboration as one of the key factors contributing to the evaluation of the effectiveness of online learning. On the one hand, teachers need to ensure that parents feel supported when distance learning is delivered and on the other hand parents need to ensure that they provide feedback to teachers on children's progress and engagement with the materials.

Monitoring and evaluation of distance learning for deaf children has to be developed in order to explore:

- the appropriateness of the materials;
- the extent to which the materials meet the objectives
- how the resources are used and
- the difference that the materials are making to students' progress and learning

### Recommendations and guidelines on the delivery of distance education to deaf children in Pakistan

Based on the findings (as presented above) of the desk-based review, the completed questions and the consultation with the various organisations, a number of recommendations for students with limited or no access to hardware, software, internet, two sets of recommendations were produced. These were based on the time line that the recommendations can be delivered: i) immediate (one to 3 months to short term (one to six months and ii) medium (six months to one year) to long (one to two years).

<b>Immediate to short term</b>			
Recommendations for delivering distance education to families with no or limited access to hardware, software and the internet in the immediate to short term.			
Thematic area	Recommendations	Examples of how to implement the recommendations	Timeline
1. Content development	Content developers should ensure that the background of the videos are clear and that the speaker is facing the camera	Keep clear backgrounds, avoid extraneous noise. For easier access to lip patterns, teacher has to be at the front of the class, facing the camera, standing still (ie not moving around the classroom), with good lighting, and displaying their hands clearly.	Immediate
2. Cognitive load	Content designers should ensure online modules / activities are short to avoid cognitive overload and fatigue. Teachers should ensure students are allocated an appropriate amount of material to engage with while away from school — not too much to overload or not enough.	Ensure that work is sent steadily so that students don't feel overwhelmed. The slots should be short — 30–40 minutes maximum. Set a timer on the device to remind children of when to stop.	Immediate
3. Material provision	Schools provide hard copies of tasks / activities / sign-language booklets including visual images and are easy to follow. Schools should provide hard copies of how to care and maintain equipment (eg maintenance of assisted listening devices etc.) to students and families.	Teachers of the deaf sign video short lessons (20 mins), transfer to external hard-drive or USBs and prepare activity worksheets for 2-3 weeks home-schooling. Schools transport packs of work to the home in print or on a USB (or external hard drive) to be uploaded to a child's laptop or device. Completed tasks (eg worksheets) are sent back to the teachers for marking and feedback either via phone or by sending back the activities with comments the following month.	Immediate
4. Language, captioning	Teachers should use plain, intelligible and usable language to address the literacy difficulties of deaf children.	Language used in distance teaching of deaf students should be simplified to the understanding of deaf students. Use of mental imagery to support vocabulary acquisition of deaf children can be effective. eg cartoons, images and subtitles.	Immediate
	Content designers should incorporate captioning in combination with embedded videos of sign language interpreters to enhance accessibility to materials.	Provide all audio in a visual way using text, subtitles, pictures, and sign language videos.	Short term
5. Testing different digital solutions	The Government should encourage schools to test out different digital learning solutions to help them understand how technology can be used to foster deeper student learning.	School heads provide checklists for teachers to complete when visiting children's homes. Note what works well and what doesn't work well in relation to new learning, accessibility or if students struggling to use the technology need quick sign-language demonstrations.	Short to medium term
6. Evaluating distance learning	The Government should evaluate distance learning implementation	Continuous provision of help and support in e-mail from 8:30 to 3 pm daily. Adding parents to google classroom. Continuously update and copy parents into emails of support (language modification, visuals, key words). <a href="https://www.oecd.org/dac/evaluation/dacriteriaforeevelopmentassistance.htm">https://www.oecd.org/dac/evaluation/dacriteriaforeevelopmentassistance.htm</a>	Short term

**Medium to long term**

Recommendations for delivering distance education to families with no or limited access to hardware, software and the internet in the medium to long term.

Thematic area	Recommendations	Examples of how to implement the recommendations	Timeline
1. Partnerships	The Government should partner with alternative education providers who have already developed educational platforms. This might include NGOs, CSOs, and private companies.	Ensure adequate online content for deaf children on TV, free online learning repositories or through more mainstream learning platforms (Facebook, Google Classrooms).  Consider accessibility issues, cultural appropriateness and gender stereotyping when reviewing suitable materials.  Request content providers if learning materials can be modified to contain captions and signing in PSL.  Some organisations of the deaf have already made their resources and services freely available to some schools to expand countries.	Medium to long term
2. Hardware and equipment	Schools ensure hardware and equipment lent to families are appropriate for the audiological characteristics and communication needs of the child.	Teachers test and provide at least one hardware device (smart phone, tablet) for children to access signed learning materials from their schools or agreed content provider. Based on a child's individual needs – provide microphones for access to sound or streaming from Mini Mic and Roger pen which goes into the headphone socket.	Medium–long term
3. Device provision	The federal Ministry of Education should work with relevant actors within both federal and provincial governments to create agreements with hardware suppliers to procure cheap laptops or tablets to children with disabilities with an agreement to return them when schools reopen	Set up new agreements with existing school suppliers to provide low-cost devices (eg one laptop–one child scheme), with at least 2 USB ports for additional plug-in devices (headsets, speakers, etc).  Set up a toll free hot-line for families to call if experiencing technical problems.	Short–medium term
4. Accessibility	Content designers should ensure materials follow accessibility guidelines (ie WCAG W3C Guidelines).	The developed materials should be child friendly, age appropriate, non-gender biased	Short–medium term

To conclude, this summary article presents the key aspects of the topic brief on how to deliver distance education for deaf children in Pakistan. It is important to re-iterate that not all alternative arrangements and distance learning materials are suitable for all deaf learners. Literacy levels and personal learning needs should be taken into consideration when planning to introduce distance learning. Most importantly, distance learning of deaf children should be monitored and evaluated both by educators and parents to ensure that the learning outcomes are achieved and that the best possible learning support is provided.

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