What teaching strategies are used by Teachers of the Deaf and mainstream teachers to support deaf children’s (KS1 and KS2) access to the science curriculum?

A Data Management Plan created using DMPonline

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Project abstract:
The majority of deaf children in the UK are now educated in mainstream settings. However, their lack of incidental language and their delayed development of understanding of the world way before they enter school, compromises their academic process. The EYFS figures of 2019 on deaf children’s good level of development were 40% compared to 77% for children with no identified SEN. Regarding science, research indicates lack of understanding of the world and lower achievement for deaf pupils compared to their hearing peers. Nevertheless, often, access to science is not considered by teachers. There is a solid body of literature suggesting various methods and strategies to use in a science class environment –both mainstream and inclusive-, but there is a lack of research examining the methods actually used in science classrooms and the adaptations taking place to make the science lessons accessible to primary deaf pupils. This research aims to find out which strategies trainee teachers of the deaf, qualified ToDs and mainstream teachers use to make science accessible to primary deaf children (aged 5-11) in mainstream schools. The strategies that will occur form the data will be considered alongside research-proposed strategies to showcase if and to what extend actual practice in the science classrooms coincide with the optimal practice recommended by research. An interview, which is broken in two parts, has been designed for this study. A mixed-methods approach was used because both quantitative and qualitative methods were needed to address the content and the procedures of both parts. It is hypothesised that either there is not going to be found any relation between teachers’ actual practice and the research-proposed science effective strategies or that a certain number of mainstream, trainee or/and qualified teachers of the deaf, use a certain number or all of the strategies identified as effective by the research.

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What teaching strategies are used by Teachers of the Deaf and mainstream teachers to support deaf children’s (KS1 and KS2) access to the science curriculum?

Manchester Data Management Outline

- Ethics
  - No - only institution involved
  - Acquire new data

- This is a mixed method study with interview design. The interview is broken into 2 parts.
  - An interview has been designed for teachers who teach science to primary deaf pupils.
  - For the first part of the interview, quantitative methods will be used to demonstrate the number of teachers taking part in the study, the number of those who actually teach science to primary deaf pupils as well as the number of different strategies they use to support deaf pupils’ science understanding.
  - Descriptive statistics are deemed appropriate to comment on the quantitative data due to the small sample.
  - For the second part of the study, the questions will focus on accessible science strategies that teachers use for deaf pupils.
  - Qualitative methods and specifically, interpretative phenomenological analysis (IPA) will be used to analyse the participants’ answers on the second part of the interview. This method is considered more appropriate to cross-examine participants’ experience for patterns to be identified and analysed.
  - Separate interviews (lasting 20 minutes) with trainee teachers of the deaf, qualified ToDs and mainstream teachers will be held in privately on one-to-one basis
  - Research of accessible science strategies has been carried out.
  - Participants for the interview can be mainstream teachers, teachers of the deaf or trainee teachers of the deaf who work with KS1 and/or KS2 deaf students.
  - The number of teachers who will take part in the study will be 10.
  - Participants will be sent by email the participant information sheets and the consent forms 10 days before the starting date of data collection.
  - As soon as the participant information sheets and the consent forms will be collected, the participants will be contacted to arrange a time for the interview to take place.
  - The interviews will be completed over Zoom.
  - During the interview, the participants will be asked to answer questions about specific strategies they use to make science accessible to their deaf students.
  - The interviews will be audio-recorded in line with the University protocols. The audio files will be deleted from the service (Zoom) as soon as possible and will be stored on an encrypted device.
  - The transcribed data will be saved on my P-drive in the University of Manchester network.
  - It is anticipated that the time taken to administer and gather information from the interviews will be 2 months.

- P Drive (postgraduate researchers and students only)
  - < 1 TB
  - No
  - 5 - 10 years
  - Pseudonymised personal data
  - Personal information, including signed consent forms
  - Audio and/or video recordings

The only personal information that is going to be asked is participants' email addresses, their Zoom account details and their names. However, at the point of the transcription, all names and identifiable features will be anonymised. Each participant will be given a unique participant number which will replace their name. In case participants disclose any sensitive data during the interview, these will be removed at the point of the transcription.

- The interviews will be audio-recorded in line with the University protocols. The audio files will be deleted from the service (Zoom) as soon as possible following the completion of the data collection.
  - The audio files will be stored on an encrypted device.
  - The transcribed data will be saved on my P-drive in the University of Manchester network.
  - All names and identifiable features will be anonymised. Each participant will be given a unique participant number which will replace their name.

- Not applicable
  - No
Project details

This study aims to investigate teaching strategies that Teachers of the Deaf, mainstream teachers and Trainee teachers of the deaf use to make science accessible to primary deaf pupils (aged 5 to 11). Teachers’ methods will be considered in relation to strategies identified as effective from the research to find out where the actual practice in science classrooms coincide with evidence-based effective strategies for science understanding.

Information will be kept in accordance with the University’s Retention Schedule, Zoom privacy policy and Research Data Management Plan.

Responsibilities and Resources

I will be responsible for data management in my capacity as principal investigator. There are no other investigators on the project.

The cost implications for the study are shown on the table below.

<table>
<thead>
<tr>
<th>Study resources</th>
<th>Full time Equivalent</th>
<th>Full Economic costing</th>
<th>Recoverable income</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Staff</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Researcher assistant</td>
<td>0.1</td>
<td>£40,864 pa</td>
<td>£4,086 pa</td>
</tr>
<tr>
<td>Supervisor</td>
<td>0.1</td>
<td>£60,000 pa</td>
<td>£6,000 pa</td>
</tr>
<tr>
<td>Cover teacher</td>
<td>0.05</td>
<td>£39,000 pa</td>
<td>£1,950 pa</td>
</tr>
<tr>
<td>Transcriber</td>
<td>0.1</td>
<td>£35,250 pa</td>
<td>£3,525 pa</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>£15,561</td>
</tr>
</tbody>
</table>

Data Collection

This is a mixed-methods study, so both quantitative and qualitative data will be collected. The quantitative data will be used to demonstrate the number of teachers taking part in the study, the teachers who actually teach science to primary deaf pupils as well as the number of different strategies they use to support deaf pupils’ science understanding in order to identify the different sets of strategies used by specific numbers of teachers. The qualitative data are going to derive from participants answers’ regarding the accessible science strategies they use for their primary deaf pupils and the steps they take to implement these strategies. Qualitative data will be collected to help the researcher cross-examine the teachers’ accounts for patterns regarding the strategies they use (e.g. mostly or least used strategies) to be identified and analysed.

The researcher will email/call participants directly and will provide sufficient information to enable informed consent. The researcher will maintain the anonymity and confidentiality of responders and non-responders. The participant information sheet and the consent form will be emailed to the participants 10 days before the starting date of the data collection. As soon as the participant information sheets and the consent forms will be collected, the participants will be contacted to arrange a time for the interview to take place. The interviews will be completed over Zoom. During the interview, the participants will be asked to answer questions about specific strategies they use to make science accessible to their deaf students. The interviews will be audio-recorded in line with the University protocols and the audio files will be stored on an encrypted device. The audio files will be deleted from the service (Zoom) as soon as possible and will be stored on an encrypted device. The transcribed data will be stored on my P-drive in the University of Manchester network. It is anticipated that the time taken to administer and gather information from the interviews will be 2 months.
Documentation and Metadata

All data are saved and stored in Word Document format. Future users will need to meet the following essential criteria in order to access and exploit the data:
1. An advanced and critical understanding of the uses of qualitative and quantitative research methodologies and methods in the field of education and the social sciences more broadly.
2. A good understanding of the policies and practices governing mainstream education (e.g. knowledge of the National Curriculum).
3. An advanced ability to appreciate and appropriately handle interview data, in-depth commentary on current conditions in the field of deaf education and implications for the improvement of the actual practice of the deaf education.

Ethics and Legal Compliance

This is a low risk study with mainstream teachers and trainee Teachers of the Deaf and qualified Teachers of the Deaf.
• Participants will be advised that they should not identify individuals by name.
• They will also be advised not to name settings or services to ensure that there is anonymity.
• If any participant does disclose personal information, name individuals, services or settings then this will be removed by the researcher at the point of transcription.

I will own the copyright and IPR of all existing and future data whilst I am a student.

Storage and backup

The documentary and interview data will be stored on my P-drive in the University of Manchester network.

The interview data will be saved and protected onto the university's P-drive. Each participant will be given a unique participant number which will replace their name. If any participant does disclose personal information, name individuals, services or settings, then this will be removed by the researcher at the point of transcription. The transcriptions will not contain neither personal information nor any identifiable details about the interviewees. All names and identifiable features will be anonymised.

Selection and Preservation

The interview data should be retained, shared and preserved. The uses of these data include validating my research findings, brainstorming for new research projects/publications, providing an interview dataset for researchers interested in research on science accessible strategies for deaf pupils aged 5-11 years old.

The long-term plan will focus on constructing an archive for the project. The digital archive will be organised into different sections pertaining to each type of data (documentary and interview), and it will feature both general information regarding the history of the generation, analysis and interpretation of the data and more specific suggestions regarding how the actual practice in deaf education could be enhanced.

Data Sharing

The outcomes of this research will be written up for my MSc dissertation. The results may also be published in an academic journal or associate magazine (BATOD).
There are no restrictions required on data sharing.