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Every



Child

counts

Case Study

Talk 4 Number

How would Talk 4 Number, a maths intervention programme, impact on the progress of hearing impaired students?

Talk 4 Number is an effective teaching assistant-led programme for small groups of students who need support to learn the vocabulary of number and calculation and to talk confidently about their mathematics. Although it is designed for teaching children with hearing, this case study demonstrates that the principles, resources and content of the programme are highly adaptable to meet the needs of a range of learners.

Headleys Northern Counties School requested training in this programme and although it is usually teaching assistant-led, in this school a teacher was delivering the programme. The school itself provides unique and specialist provision for children and young people with special needs and disabilities, for example children who have a hearing or visual impairment, autistic spectrum disorder or those with profound and multiple learning disabilities.

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The students who completed the Talk 4 Number programme were all hearing impaired with additional needs. Five students in total completed the programme, four boys and one girl. They all communicated using British Sign Language (BSL) during the sessions.

	Age	Languages			Special needs/ disability
		1 st	2 nd	3 rd	
Student A	12 years	English	BSL		Profound hearing loss
Student B	14 years	BSL	EAL	English	Severe bilateral hearing loss
Student C	14 years	BSL	English		Profound hearing loss
Student D	14 years	BSL	English		Profound hearing loss and cerebral palsy
Student E	15 years	BSL	English		Profound sensori-neural hearing loss and cerebral palsy

Approach Taken

All five students completed the Sandwell Early Numeracy test prior to participating in the Talk 4 Number programme. From the results which demonstrated the numerical age of all students, it was evident that they all would be ideal candidates for the programme. The teacher realised from the onset that aspects of the programme would need to be adapted to meet the individual needs of the students. Within the introductory sessions of the programme, the students are invited to make hand puppets for use throughout the programme. Obviously, this was problematic for learners who need to communicate using

sign language so the teacher adapted this session to make 'stick puppets' instead.



Each student chose a favourite character or person. These puppets could then be stuck into blu-tak in a vertical position or they could lie on the desk next to the students.

Although the sessions are 30 minutes long, the teacher needed to extend each session to an hour because she firstly had to teach the 'signs' for the words and vocabulary before she could actually begin to deliver the programme. All students were encouraged to talk as well as use BSL. Repetition and over-learning also contributed to the extension of each session.

The Talk 4 Number pack contains a number of innovative and engaging resources such as Word Wheels, Speech Bubbles and stimulating posters to support the development of technical mathematical vocabulary. The teacher adapted these resources to be used on the SMART board throughout her teaching. The students participated well when they were asked to come out to either write on the board or to explain their thinking. An additional teacher was present within the session and this was essential as one teacher held resources whilst the other teacher signed simultaneously. Also both teachers discussed signing of words throughout. As part of the introductory sessions for example, Kim's game, the students are required to close their eyes. The teacher needed to ensure instructions were



given **before** the students did this then each teacher would quickly tap each student on the shoulder to open their eyes or the teacher banged on the desk and when the students felt the vibration, they would open their eyes.

Encouraging the students to concentrate was sometimes a challenge due to their possible tiredness of focusing on the board, signing and talking simultaneously. Again this was beneficial having two teachers to keep the students on task and to provide extra support.

Successful outcomes

From participating in the Talk 4 Number programme, the students learned new vocabulary and signs with which they could use and demonstrate in all future maths lessons. The teacher adapted each session as and when it was needed to meet the needs of the learners. For example, focusing on one aspect of maths such as subtraction and ensuring all students fully understood what was being taught before moving on. The SMART board supported the students well in that it was visual and large and they could all interact with it. The Words Wheels were shown and discussed in depth including the sign language.

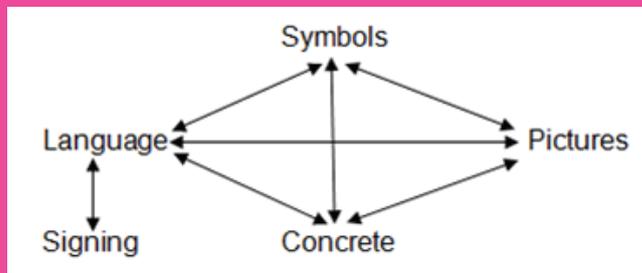
The programme was delivered in May and was completed in July and the results for all students are below:

	Entry results SENT (May 2017)	Exit results SENT KS2/ KS3 (July 2017)	Progress
Student A	8 years 6 months	9 years 7 months	+13 months
Student B	6 years 5 months	7 years 8 months	+15 months
Student C	7 years 2 months	8 years 2 months	+13 months
Student D	7 years 3 months	7 Years 7 months	+4 months
Student E	7 years 2 months	8 years 3 months	+13 months

'...the teachers suggested that the students' signing skills have been developed. Additionally, there has been a positive impact on maths development and language development...'

Evaluation

From the results and feedback from the teachers, it is clearly evident that the Talk 4 Number intervention programme has a positive impact on the progress of hearing impaired students. The teachers identified a development in the overall communication skills of the students. Consideration was given to the structure of the lessons and resources provided within the programme and the teachers felt this enabled the students to be taught in a holistic way. For instance, making a wide range of connections:



From this way of teaching, the teachers suggested that the students' signing skills have been developed. Additionally, there has been a positive impact on maths development and language development which are both integral and important.

Next steps

After discussion both teachers agreed that:

- it was necessary to standardise some signs throughout the school so there was consistency within all classrooms
- filter Talk 4 Number approaches into whole school teaching of maths.

