

Evaluation of the 'Sound Assurance Protocol' as a predictor of the efficacy of
sound field amplification systems within the classroom environment.

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ABSTRACT

The aim of this small scale research project was to establish whether the 'Sound Assurance Protocol' for measuring signal to noise ratios within a classroom could be used effectively during commissioning of new sound field amplification systems. Sound field amplification systems are used in schools to improve auditory access of the teacher's voice and instruction for the pupils. Good acoustic conditions are essential, in the classroom, for successful language and learning to take place, because hearing is a first order learning sense and, therefore, hearing and listening are the cornerstones of language development, literacy and subsequent learning for all children (Flexer 2004).

The 'Sound Assurance Protocol' was applied experimentally to two classrooms, fitted with sound field amplification systems, within a special school. Data were recorded and analysed to obtain signal to noise ratio measures at five different locations within each classroom. Data were obtained when the classrooms were empty and calibrated token signal and noise components were also recorded with the classroom occupied and the class in session. The experiences of the teachers and pupils, using the sound field amplification systems, were then canvassed using administered questionnaires, in order to assess their attitudes and opinions surrounding the sound field amplification systems' use.

The results suggest that the 'Sound Assurance Protocol' was robust in measuring the signal to noise ratios. Having set the output of the sound field amplification systems for speech to 65 dB(A) in the centre of each classroom, the target of providing signal to noise ratios of +15 dB, or better, was achieved all positions in both classrooms whilst pupils and teachers were in session. The administered questionnaires provided positive feedback from both the pupils, and their teachers, regarding the use of the sound field amplification systems within their classrooms. These results indicate that the use of the sound field amplification systems made listening and learning easier and more comfortable for both pupils and teachers. The 'Sound Assurance Protocol', therefore, appears to be an effective tool in demonstrating the potential for using sound field amplification systems within schools.