

An evaluation of the effectiveness of soundfield systems in
improving speech perception in different acoustic environments.

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ABSTRACT

Listening forms a highly significant part of the education process for children, but in many classrooms the acoustic environment is poor and listening conditions are difficult. This small scale research project aims to investigate whether it is more effective to install a sound field system or to provide a better acoustic environment in order to improve the listening conditions. The effectiveness of sound field systems in rooms with poor or better acoustics is also evaluated.

The research consisted of a mixed mode study with a sample size of twelve children. The research methods included an observational survey; a structured questionnaire and a semi-structured interview. Data were gathered by testing the speech perception capability (using AB wordlists) of Year Six children, who also completed a questionnaire. The class teacher was also interviewed.

Although the sample size was small, the results suggest that speech perception improved if classroom acoustic conditions were good, or if a sound field system was used. Furthermore, a greater overall improvement in speech perception occurred if acoustic conditions were improved, than if a sound field system was employed without any improvement in acoustic conditions. These results suggest that the use of a sound field system in good acoustic conditions results in the optimum levels of speech perception for children in a classroom setting.

This small scale project may offer some direction for future, larger-scale research, in order to provide both clarification and direction in terms of the best use of available technology and classroom architecture to improve the listening environment for all children.