

Sound Reinforcement Systems in the Classroom can Significantly Improve Pupils Academic Performance

David Edis-Bates March 2009

Pupils can spend as much as 40% to 50% of their school day involved in listening to their teacher. However, as studies have indicated (Journal of the American Medical Association) 14.9% of children aged from 6 to 19 years may suffer some form of hearing loss. Similar studies have also shown that around 80% of pupils may suffer some form of occasional hearing loss during their time at school.

In a recommendation published by the UK Department of Education & Skills (DfES) "Building Bulletin '93" it states that *'All children benefit from improved speech clarity, not only those with permanent or temporary hearing loss. Academic performance has been shown to improve for all class members with improvements noted in task behaviour, attentiveness, understanding of instructions, less repetition required, better attendance and improved levels of verbal recognition. Furthermore, due to the clarity of speech from the teacher, similar improvements in learning performance are also noted in students for whom English is a second language.'*

More recently Government legislation in the UK and Europe requires that new schools in particular need to comply with a minimum standards of acoustic performance in classrooms. Effective levels of speech recognition for pupils is considered paramount and the use of sound reinforcement systems is also viewed as an ideal solution..

A typical sound reinforcement system provides the teacher with a wireless or infrared microphone (more usually a lapel or lanyard type) which links to an amplifier and loudspeaker system.

Sound reinforcement systems raise the level of the teacher's voice but are intended to be non-intrusive.

About the Author

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These systems have been in use quite extensively in the USA over the past 15 years or so and are seen as a significant opportunity to improve academic performance in the UK and in Europe.

In West Orange, N.J. USA the first grade classrooms at St. Cloud Elementary School were fitted with sound reinforcement. No other changes were made to the curriculum – only amplification of the teachers voice. Reading scores in one year went from 59% to 89%. After seeing these results, the district required sound reinforcement to be fitted in other classrooms. Some researchers state that test scores have improved and classrooms are less stressful with amplification. Students state they can now hear a softly-spoken teacher even across the room or when writing on the board.

In line with the UK DfES recommendations, systems have been developed to meet the needs of the classroom in the UK. With a choice of microphones using either radio frequency or infrared wireless transmitters, there are a variety of solutions available, with a range of benefits.

Infrared transmitters are becoming more popular as they limit the signal to the confines of one classroom, enabling many systems to be used in a single school without suffering the interference problems associated with RF wireless systems.

Systems may have integrated receivers and amplifiers or for more cost effective solutions have separate receivers that can be connected to existing classroom sound systems associated with interactive whiteboards. Speakers should be placed to provide an effective sound pressure level throughout the classroom for best effect and may be ceiling or wall mounted.

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