

Turn on Sound: An Odyssey of Sound Field Amplification

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On December 19, 1988, I visited the Putnam County Schools. The seat of Putnam County Schools is in the small town of Ottawa, Ohio, about 50 miles southwest of Toledo. Putnam County is rather isolated, very rural, limited in resources, and is made up of nine local districts. Putnam County also has 47 sound field units in place and operating, and is acquiring more each year! How did they do that? What do they know that most school districts do not know? Why are principals willing to use building funds and State Flow-through funds to obtain units? Why are teachers begging for units in their classrooms and refusing to “share” units once they have one of their own? Why are parents insisting that their children have amplified classrooms? The obvious, simple answer is, as expressed by Larry Bracken, Putnam County Superintendent, “If kids hear better, they do better in school!” In fact, Mr. Bracken stated, “I feel that the promotion and use of sound field equipment is the single most innovative project for children with which have been associated!”

Putnam County does not have an Educational Audiologist; the County received consultation from the Wood County audiologist, Deatra Popplewel. The Putnam County sound field amplification project has been spearheaded by Jan Osborn (Director of Special Education), Linda Graves (Elementary Curriculum Coordinator), and Daniel VonderEmbse (one of three County School psychologists). Due to a constant and disturbing growth in student referrals for special services, especially for Learning Disabilities Placement, these directors of special services felt that alternative prevention/intervention options needed to be investigated. Their first step was to explore the link between hearing loss, specifically mild-moderate fluctuating hearing loss associated with otitis media, and the need for special services.

The county office purchased a sound room to screen hearing, because they agreed with the literature that a 15 dB hearing loss can be educationally significant. That is, even though a 15dB hearing loss would not label children as “hearing handicapped”, a 15dB hearing loss could put children “at risk” for educational difficulties. They found, in the primary grades, that when a 15dB criterion was used, 43% of the students failed the hearing screening on any given day! Even more astounding, approximately 75% of the primary-level children in the first LD class tested, failed the hearing screening. Because classroom instruction is auditory-verbal in nature, with information being presented through speech, the fact that about one-half of the class is not hearing clearly, is detrimental to instruction!

This hearing loss information was presented to school principals along with the suggestion that amplified classroom could directly address the problem of hearing. In addition, the County wanted to do a three year study of amplification effects on achievement. Seventeen sound field units were obtained that first year, growing to 47 by the third year of implementation.

A great deal of data has been obtained and is in the process of being analyzed through the university of Toledo; and will hopefully be published soon in administration journals.

The following is a summary of the findings:

- 1) 1) Hearing loss statistics have been stable over the three years studies. That is, about 43% of primary-level students continue to fail a 15dB hearing screening and/or immittance screening on any given day.

- 2) 2) Even though the overall County pupil count has gradually increased during the three years studied, the number of students receiving special services has decreased from 945 prior to amplified classrooms, to 850 children in 1988. Think about what the decrease means in terms of money needed to provide special services to even a single child!
- 3) 3) Using the IOWA TBS to evaluate achievement in amplified as compared to un-amplified classrooms, the following was noted: The amplified Kindergarten classes showed the most dramatic results with significantly higher scores on listening, language, and word analysis. The amplified first grade classes showed superior performance on word analysis and vocabulary. The amplified second grade classrooms showed better scores on math concepts and computation, and amplified third grade classrooms showed superiority on math computation and concepts and reading.
- 4) 4) Formal classroom observations in amplified and un-amplified classrooms showed that students in amplified classrooms had better student production and on-task behaviors. Kindergarten teachers in amplified classrooms tended to talk more evenly, with less repetition and less rephrasing.
- 5) 5) Principals have noticed fewer teacher absences due to fatigue and laryngitis.
- 6) 6) The FM microphone has been incorporated into instructional activities, and teacher report that children use better voicing, longer utterances and display more confidence when using the microphone.

In my opinion, Putnam County has done all the right things for the right reasons. The project is motivated and directed by very dedicated and caring professionals in the County Office. The equipment has been carefully selected and maintained. Principals and teachers have received in-services and support; equipment has not simply been installed and forgotten. Questions and/or difficulties receive immediate attention.

Putnam County has shown us that it is worthwhile and operational to install and use numerous sound field units; and I applaud their efforts. Putnam County had “discovered” what we, as audiologists, have been saying for years: **Hearing Matters!**