AUDIO ENHANCEMENT IMPRESSES STUDENTS AND TEACHERS

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In the 2010-11 school year, Newton County Schools (19,100 students in metro-Atlanta) embarked upon a large pilot project that focused on audio enhancement of classroom instruction. It wasn't our "first choice" in school improvement tools as we're deep into Marzano's research-based instructional strategies, building student background knowledge, and professional learning communities. But, it was an aspect of our "fourth" and "final" strategy calling for the integration of technology in our classrooms. (For us, "less is more." Four strategies are sufficient for any teacher to master.)

Technology Integration

While our school system has made substantial investments in whiteboards, i-pads, laptops, student response systems, and other mobile devices, audio enhancement was something we were initially very skeptical about. However, the proof is in the pudding so to speak. Among the research findings that resulted in our trial use of audio enhancement were these "key" ones:

- The use of a wireless microphone worn by the teacher and loudspeakers placed appropriately in the room reduced student fatigue, increased on-task student behavior, improved classroom management and decreased teacher vocal fatigue. So said University of Pittsburgh Medical Center researcher Catherine Palmer in 1999.

- In a 1996 study conducted in the Dubuque Public Schools (IA), it was found that elementary students showed an average 17% increase in their overall on-task behavior when the teacher's voice was amplified.
- More contemporary studies have shown increased student achievement especially for elementary and middle school students across core subject areas for both "at-risk" and accelerated students, students who are dyslexic and learners of English as a second language when audio-enhanced classrooms were compared to those without sound enhancement.

Newton County Pilot

Installing 50 audio enhancement units in total in January of 2011, we placed 18 units (teacher mic, student mic, amplifier, and speakers) in elementary classrooms, 33 in middle school classrooms, and 5 in high school classrooms. Formal training in how to use these units and on-site assistance were a part of the pilot. We concentrated on classrooms tested by Georgia assessments—3rd, 5th, 8th, and high school English/language arts and mathematics.

Evaluation of Pilot

In April of 2011, 24 teachers and 2,762 students responded to a district survey—completed anonymously—regarding their exposure to an audio-enhanced classroom.

Of our students, 90% responded that "it is easier to hear my teacher when he/she uses the audio sound system." 85% responded yes when asked if "my teacher's voice is loud and clear with the sound system." 76% responded yes when asked if the sound system helped them listen better. 88% responded yes to the question, "When my teacher is writing on the

board [with back turned], I can hear him/her with the sound system?" Finally, when asked if they "liked having my teacher use the sound system in our classroom," 78% responded yes.

Of our teachers, 90% responded yes to the question, "Do students *focus* on instruction well?" Prior to audio-enhancement, only 21% said yes. 95% said that students "*understand* instruction better" using audio-enhancement compared to only 22% who thought so prior to audio-enhancement. 88% responded yes when asked, "Do students follow directions well?" Only 21% thought so prior to audio-enhancement. When asked "Do students stay on task more often with few reminders using audio-enhancement," 96% responded yes. Prior to audio-enhancement, only 23% of teachers felt students stayed on task with few reminders.

As noted, our pilot also included the use of student-held microphones. When teachers were asked, "Do students have a good understanding of answers/comments by peers," 83% said yes. Prior to using student mics, only 30% said yes. When asked, "Are students more engaged in classroom discussions," 83% of our teachers said yes. Prior to audio-enhancement, a mere 8% said yes.

Finally, the survey asked teachers "Do students have good attention during whole class instruction?" 82% percent said yes. Prior to audio-enhancement, only 16% said yes. Especially important for teachers who teach students who are hard of hearing, dyslexic, or who are English as second language learners, is whether or not students "understand similar words or sounds." 96% of our teachers responded yes when using audio-enhancement. Prior to using audio-enhancement only 21% of our teachers thought so.

Connecting Research to Experience

As you can see from the survey results, we have been able to connect our own experience in Newton County with the research findings that induced us to "pilot" audio-enhancement in the first place.

Based on our survey results, the 2,762 students exposed to audio-enhanced classrooms were more on task due to better classroom management, more likely to "hear" teachers better, more focused on instruction, followed directions better, and most importantly, "understood" instruction better.

Since the Pilot

Given our survey results, the school system has decided to equip all new classrooms in the future with audio-enhancement. Additionally, we plan to retrofit current classrooms with audio-enhancement as funds become available.

No longer skeptical as to the instructional value of audio-enhancement classrooms, our school system now better understands its value to student learning and teacher efficacy. See www.audioenhancement.com.

SIDEBAR

7 STEPS TO IMPLEMENTATION

Prior to making a final decision about implementing audio-enhancement systems in our classrooms, Newton County School System took the following steps to ensure the success of this initiative:

1. Made sure the initiative was aligned with our strategic framework for school improvement. Technology integration was one of our four pillars.
2. Arranged for a funding source that could be used if a subsequent pilot project was successful and if Newton County decided to go forward with this initiative. Once Newton County's pilot project proved these audio-enhancement products were effective and enhanced student learning, the identified funding source was used to pay for these pilot project audio-enhancement units.
3. Developed a large-scale "no-obligation" pilot project to evaluate the efficacy of these products. This pilot included an evaluation instrument to see if Newton County's results matched the results from other large-scale studies.
4. Assigned a technician to be the audio-enhancement expert in order to support these pilot teachers and to troubleshoot any problems that occurred. This technician did a follow-up with the pilot teachers to make sure they were using the audio-enhancement products properly and effectively. He was responsible for responding immediately to any issues in these pilot classrooms in order to ensure the success of the pilot project.

5. Introduced, early in the process, these audio-enhancement products to the principals to let them “see for themselves” the effectiveness of these products in order to get leadership buy-in.
6. Committed to installing an audio-enhancement system in every new classroom which was built, following the pilot’s success, and in every current classroom as funding becomes available.
7. Used two funding sources for this audio-enhancement initiative: Title 1 and Capital Projects.