

INSTRUCTIONAL AUDIO

Learning begins with listening





Three ways of listening are critical to learning in active classrooms

In fact, listening activities account for 75% of a typical school day. Younger students need to receive 90-100% of the information carried by the spoken word to get the full meaning. They just can't fill in the blanks for missing words.



1 Students
listening
to teacher
instruction

2 Teachers
listening
for real-time
feedback

3 Students
listening
to other
students



The barriers to listening are serious, and in every classroom

Even though classrooms seem like relatively small spaces, there are several barriers that prevent effective listening. Poor speech intelligibility severely impacts comprehension and students must clearly hear the teacher to get the best instruction and support at the right time.

THE COMMON BARRIERS TO LISTENING



NOISE



DISTANCE



TEACHER'S VOICE



HEARING ISSUES

Intelligibility suffers with room noise

Ambient background noise masks the soft consonant sounds, leaving “gaps” in speech. This is particularly serious for younger and ELL learners who don't yet have a deep vocabulary.

See inside back cover to learn more

Speech gets quieter over distance

As the distance to their students increases, the volume of a teacher's voice gets softer, creating unequal access to learning. In fact, students farthest from the teacher only receive about half the audio strength.

Teacher's voices are stressed

Teachers spend up to 80% of the day talking and 18% miss work each year due to voice issues. A study found that while they represent 4.2% of US work force, they make up 20% of clients in voice clinics.¹

Mild hearing loss is quite common

Approximately 30% of any K-6 population will have ear infections and fluid buildup at different times, producing mild hearing loss. Without intervention, two thirds of these children will become deficient in at least one subject before 6th grade.²



Breakdown the barriers: bring the teacher's voice to the whole class.

A whole-class instructional audio system uses a lightweight wireless microphone, allowing teachers to move freely around the class. Their voice is evenly distributed throughout the room, ensuring all students can clearly hear.

Instructional audio creates better access to learning

When students hear every word, valuable teaching time is more productive and effective for all.

15%

Increase on Stanford
Achievement Test

Collaborative of High Performance Schools, 2002

30%

Higher ELL word
recognition

Educational Audiology Monograph, 1996

92%

Fewer teacher
redirections

Improving Classroom Acoustics Studies, 1999

25%

Decrease in teacher
absenteeism

Improving Classroom Acoustics Studies, 1999

Flexible whole-class instructional audio solutions

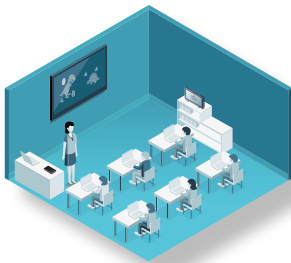
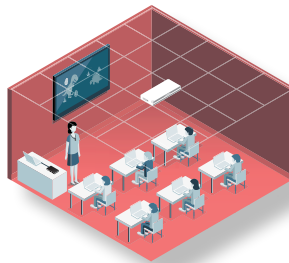


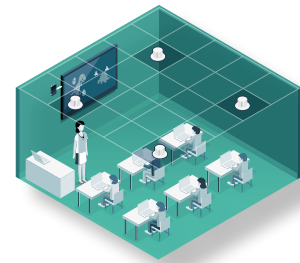
Table-Top Systems

Lightweight, portable,
no installation



Ceiling-Mounted Systems

Easy-to-install, full-range
audio for media-rich classrooms



Installed Systems

Amplifier with traditional
ceiling speakers



Lightspeed instructional audio systems deliver the best performance and versatility

Lightspeed delivers the best distribution of intelligible sound throughout the room and wireless connectivity for media sources, all with no audio dropout, and no interference with Wi-Fi networks or other technology. Systems grow with your instructional needs, supporting all types of student-centered and small group learning.



Redcat®

Table-Top System

An all-in-one solution with a flat-panel speaker to deliver highly intelligible speech, distributed evenly throughout the room. It requires no installation and is portable with the optional battery pack.



See inside back cover to learn more



Topcat®

Ceiling-Mounted System

This all-in-one design has a hybrid speaker system, combining a flat-panel and cone speaker to deliver both high speech intelligibility and full-range sound. Integrates wirelessly to multimedia without long cable runs.



DRQ SPEAKER

TCQ SPEAKER



975

Installed System

This versatile classroom amplifier connects to your multimedia and installed speakers to deliver high-quality audio. It excels in all classrooms, including open areas and large spaces, with no audio dropout or interference.



Where are the
breakthrough
moments?

Which students
are my leaders?

Teachers need
to know where
to focus their
attention

Reveal hidden
insights

Teachers need to understand what students are thinking and knowing. Who's getting it, who needs help, who needs to be challenged, what does the learning process look like?

Monitor and
reinforce

With real-time insights, teachers know when they're needed and when they're not so they can deliver the right support at the right time.



Activate the fundamentals of small group learning



Direct instruction

Address the whole class or any small group to instruct, reinforce or redirect.



Monitoring

Listen to group conversations without changing the group dynamic.



Small group sharing

Empower students to share with the class, using the Pod as a microphone.



Capturing video

Capture and share audio and video of critical teaching and learning moments.



Activate™

Student audio pods to speak and listen to small groups

Every
student
has a voice



Activate Pods

Teachers can use up to 12 audio pods for 2-way communication between the teacher and each student group.



Build an
environment
of sharing

Create and facilitate
student-centered learning
and collaboration.

Small group
collaboration
anywhere

Truly portable Activate Pods can
go anywhere in the classroom,
even out in the hallway.



Every
voice needs
to be heard

Increase student participation

Student microphones build interest and enthusiasm to share and ensure students are clearly heard by their peers.

Build confidence and presentation skills

Sharing with the whole class allows students to feel more comfortable as they develop critical communication skills.



T3
FLEXMIKE



T3
SHAREMIKE

T3 Microphones

Tap-to-Talk functionality requires no teacher assistance, making it easy for in-room and remote students to share.



It's time to build listening into the learning environment

Engage the whole class with instructional audio, gain deeper insights into group learning and increase student participation.

Design an instructional audio solution for any classroom

Start with audio for the whole class

Each whole-class option is the hub of an instructional audio system

OPTION

1 Redcat.



Table-top audio,
no installation

OPTION

2 Topcat.



Ceiling-mounted,
multimedia audio

OPTION

3 975



Installed system,
amplifier + speakers

+

Add student engagement

Gain deeper insights
and build student
participation



Activate

Interact with
small groups

A

or

B



T3 Microphones

Tap-to-talk student
microphones

Instructional audio is at the center of your connected classrooms

In addition to voice clarity, instructional audio integrates with all your classroom technology.

Connect to laptops, displays and A/V control systems to provide clear and even distribution of all audio.

Lightspeed systems send audio to assistive listening devices and interface with distance learning applications to ensure all listeners have clear audio.



Life-Safety Systems

Connect with life-safety systems to ensure building-wide communications are never missed.



Mutes instructional audio system when classroom announcements are broadcast



Mutes instructional audio system when a fire alarm is activated



Initiate alert from the teacher's Flexmike

Access Technology makes the difference



Longer wireless range, no interference, no impact to wi-fi, and scalable to your evolving technology and instruction



Simply point the microphone to pair, allowing for greater teacher mobility between rooms and simplicity of adding components



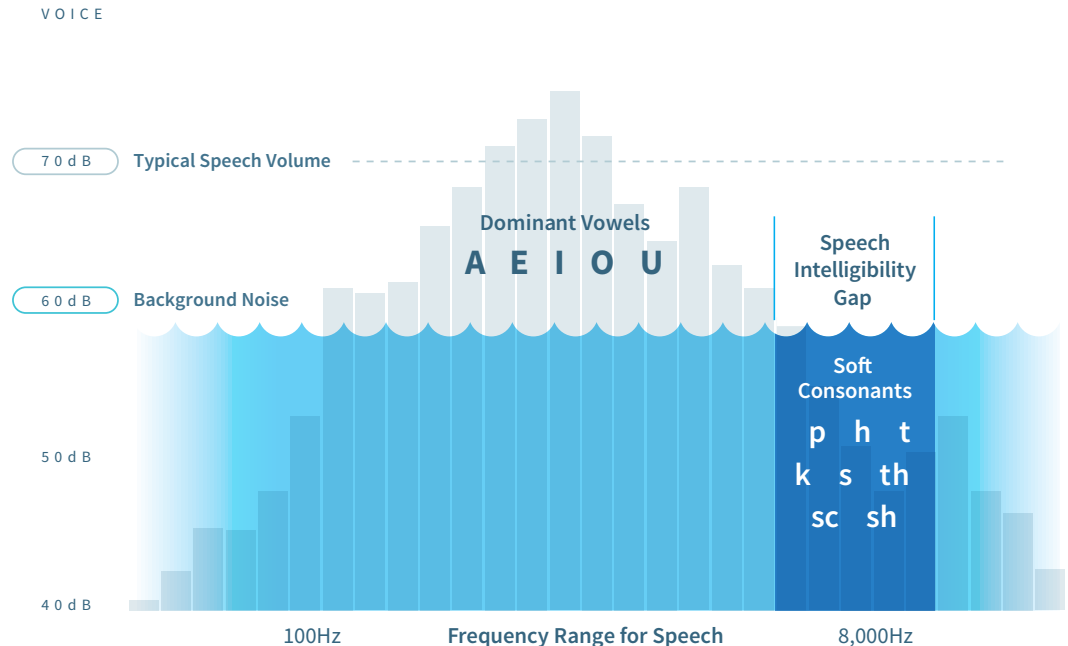
Interface with computer USB to connect students at home with the teacher and students in the live classroom

The speech intelligibility gap lives in every classroom

Teachers work hard to communicate. But physical factors such as distance and noise cause students to hear only selected parts.

In a typical classroom, the background noise is about 60 decibels. At the same time, a teacher's normal speaking voice is about 70db.

The problem occurs because soft consonants are quieter and get masked by background noise. This makes it harder to understand quickly, and leaves gaps in word recognition. This is particularly hard for younger learners, ELL, and hard of hearing individuals.

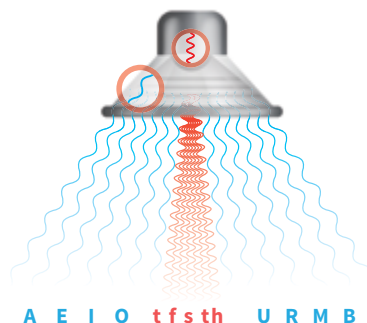


Hear the full range of a teacher's natural voice

Exciter Technology is a breakthrough in intelligible speech.

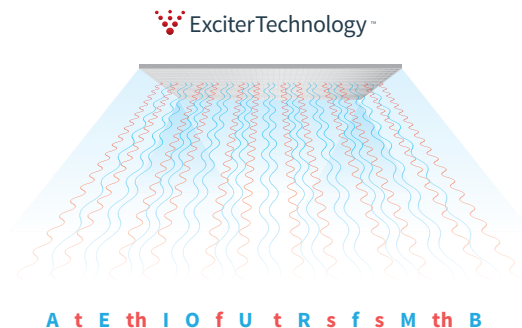
Lightspeed sound panels with Exciter Technology distribute both excellent audibility (loudness) and intelligibility (understanding what is heard) throughout the classroom.

A single flat-panel, which eliminates the wiring and installation of multi-speaker systems, fills the classroom with clear sound.



The trade off with piston-like cone speakers

Cone speakers produce a rich sound with a wide dispersion at low frequencies. However, the dispersion of high frequency soft consonant sounds (such as t, f and s) is relatively narrow. This narrow pattern is due to the cone moving very fast to produce high frequencies, which narrow to a “beam”, leaving gaps in intelligibility throughout the room.



Exciter Technology: audibility with intelligibility

When it comes to vocal frequencies, panel solutions have excellent dispersion at both low and high frequencies, producing exceptional intelligibility throughout the room without having to crank up the volume. Flat panels just don't have the same “beaming issues” traditional cone speakers present.

Dedicated to access for all

Lightspeed is on a mission to help every student hear every word.

We envision a world where every student and every teacher can listen, learn, and share their voice. We strengthen the connection between teachers and students by creating instructional audio solutions that provide equal access to learning.



800.732.8999 | lightspeed-tek.com