

GOOD ACOUSTICS

REDUCE TEACHERS' HEART RATES BY 10 BEATS/MIN



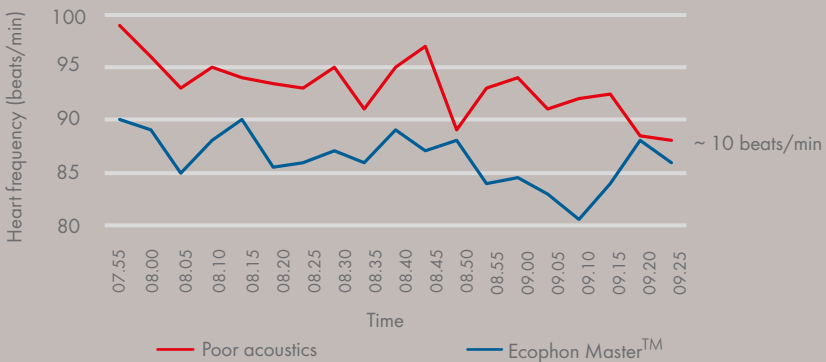
80% OF TEACHERS

ARE STRESSED BY CLASSROOM NOISE

A comprehensive German study investigated how classroom noise affected teachers and pupils. When it was realised that it made 80% of teachers feel stressed, the researchers decided to find out if these stress levels could be reduced by improving the sound environment. The impressive results show that:

- Teachers' heartrates went down by 10 beats per minute
- The sound levels were reduced dramatically: 6dB for traditional teaching and 13dB for group work

Teachers' pulse in poor and good sound environments



HOW IS THIS POSSIBLE?

If a classroom has poor acoustics, sound will be amplified as it bounces off the reflective ceiling and walls. This will create a background noise that distorts speech. Sound levels will escalate because students and teachers have to raise their voices to be heard. This environment will often feel quite stressful.

A sound-absorbing ceiling reduces the overall sound level in the classroom and reduces the background noise. This is what happened in the classrooms with good acoustics. Here, the sound level was 6dB lower for traditional teaching and 13dB lower for group work. Since the measured effect of the ceiling was a reduction of 3dB, this meant that teachers and pupils changed their behaviour when the sound environment was improved. Because they no longer needed to raise their voices to be heard, they could actually speak more quietly and still be heard perfectly. The classrooms became a more relaxed environment where everybody felt calmer, and as a result their heart rates went down.

“You buy a 3dB sound reduction and you get 10dB for free.” Dr Gerhart Tiesler

ECOPHON SOLUTION

Ecophon was involved in the study from start to finish.

The sound-absorbing ceiling used in the rooms with good acoustics was Ecophon Master™.

THE STUDY

The German study was conducted in 5 schools, 28 classes, 70 classrooms and 570 lessons. The pupils were between 5 and 11 years old and the study compared classrooms with and without acoustic ceilings.

Reference: Tiesler G, Communication Behaviour and Workload of Students and Teachers in Highly Absorbent Classrooms (2018)





Ecophon is the leading supplier of indoor acoustic solutions that improve working performance and quality of life. We believe in the difference sound can make to our everyday lives, and are passionate advocates for the importance of room acoustics to people's wellbeing – whatever the space, activity or need.

Having a sound effect on people is the principle that guides all we do. We're proud of the Swedish heritage and human approach that promise is founded on. Our uncompromising commitment to transparent sustainable practice. And, as members of the Saint-Gobain Group, to be doing our part in making the world a better home.