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REPORT CARD



HAVE YOU HEARD ABOUT HEARING INCLUSION?

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Currently, there is global concern about inclusion. The idea is that differences should be welcomed and that everybody should feel an integral part of all social, academic, and professional activities. In this newsletter we want to think of inclusion as a real possibility. Our topic will be “hearing inclusion”, have you heard of it?

At first, when the term “hearing inclusion” is mentioned, our first thoughts turn to patients with some type of hearing impairment – individuals who don’t have an intact auditory system and who may have suffered hearing loss in childhood, when the communication process was just beginning. Such individuals may have the following difficulties:

- a) Compromised audibility;**
- b) Impairment in speech perception;**
- c) Reduced vocabulary;**
- d) Impaired speech perception in noisy environments.**

There is also another group of individuals, those with auditory processing disorders, who could also benefit from improved auditory environments. This type of individual has difficulty in perceiving sounds due to malfunction in neural processing somewhere in the Central Nervous System. Such malfunction can affect:

- a) sound location,**
- b) sound lateralization,**
- c) auditory discrimination,**
- d) recognition of auditory patterns,**
- e) temporal aspects of hearing,**
- f) auditory performance in the presence of competing acoustic signals.**





But are these people the only ones that really need to be considered when considering auditory inclusion? Definitely not! Auditory inclusion should be a concept applicable to everyone.

As well as thinking about individuals who present some kind of impairment in the processing of auditory information, we need to take special care with the acoustics of environments in which the development of language, speech, and learning take place. For example, it is not uncommon to observe poor acoustic conditions in schools, and here the sound environment can make a big difference to educational outcomes.

In several countries, classrooms have been built with inadequate or low quality acoustic materials. Poor acoustic insulation means that high levels of noise

can be generated. It is known that high noise levels can cause various harmful effects such as:

- a) Increased blood pressure,
- b) Change in sleep,
- c) Chemical changes in the brain,
- d) Increased heart rate,
- e) Learning difficulty,
- f) Inattention,
- g) Difficulty in memorization,
- h) Change in cognitive development,
- i) Change in psychomotor development,
- j) Difficulties in reading,
- k) Psychological disorders,
- l) Anxiety,
- m) Low interaction with colleagues,
- n) Difficulty in self-regulation,
- o) Difficulty in learning foreign languages,
- p) Mood change.

There are many problems that can arise from being in a noisy environment, and these negative effects can be seen in both students and teachers. Thus, students may have major limitations in their ability to learn, while teachers may have difficulty transmitting knowledge to their students. This creates a vicious cycle that impairs educational development. Auditory inclusion must form part of the educational background of every teacher and student. There need to be a change in educational systems with a focus on improving auditory inclusion, making people aware that a noisy environment

can negatively affect education quality and the lives of everyone involved. However, there is an alternative!

Our role is to raise awareness of the benefits of making changes in school structures so that every student has the best opportunity to develop skills in all areas. At the same time, teachers should be assured that they work in an environment most conducive to learning, where noise is no longer a complicating factor. To do so, it is important that:



- Parents, guardians, and teachers must daily provide an environment rich in auditory information;
- The listening environment of schools must be carefully prepared so that everyone has access to the best possible speech perception;
- Environments should allow conversations to be understandable to everyone. The focus should be on subjects which arouse interest and create discussion;
- Provide visual support alongside auditory information;
- When a person answers a question inappropriately, check with them about what they thought they heard;
- Educational professionals must continuously monitor the level of noise within the classroom;
- The recommended signal-to-noise ratio for educational environments is +15 dB to +30 dB;
- Schools should be designed with a focus on proper sound insulation;
- Schools should assess the need for auditory resources that help in listening, such as the provision of properly positioned loudspeakers in classrooms;
- Schools should investigate the need for the use of microphones by teachers – these will mean less auditory effort on the part of students and less vocal effort on the part of teachers;
- Frequent testing of heating and ventilation systems in schools which may contribute to increased noise levels;

- Individuals with learning difficulties or special needs are likely to be more susceptible to noise, which will further impact the quality of learning;
- Parents and educational professionals must work together to ensure there is an aurally healthy environment, ensuring auditory inclusion.

Changes in schools will only be carried out if we all understand how detrimental noise can be to the learning process. Each educational establishment will have its own unique factors, and these must be individually addressed with specific solutions for each type of noise problem. However, the entire basis of communication derives from the premise that hearing – and in particular listening and comprehending – is primary to the development of speaking, reading, and writing. And so auditory inclusion should be a primary concern, allowing every human being to achieve their highest level of learning.

In other words, the classroom must be an environment conducive to learning, promoting the fruitful exchange of information between teachers and students. Changes will only occur if parents, schools, and teachers all understand that

HEARING INCLUSION IS FOR EVERYONE!

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