

# Attention and deafness

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## Introduction

### Background information

Attention is the ability to focus selectively on a chosen stimulus, sustaining that focus and shifting it at will; it is the ability to concentrate. Attention can also be defined as the means by which we actively process a limited amount of the enormous amount of information available through our senses, our stored memories, or other cognitive processes. It includes both conscious and unconscious processes<sup>1</sup>Vanselst, M. (2013) [https://www.sjsu.edu/people/mark.vanselst/courses/p135/s1/Kello\\_g\\_c3\\_fall2013.pdf](https://www.sjsu.edu/people/mark.vanselst/courses/p135/s1/Kello_g_c3_fall2013.pdf). Therefore, attention is a conscious or unconscious ability/process for making a selective focus on limited stimuli through various senses or stored memories and sustaining that focus for a certain period of time. We can also say that attention is the capacity of eliminating or ignoring information that is not important at that moment in order to concentrate on the information termed significant at that particular time.

Attention is directly associated with respect and learning ability. People who have limited ability to pay attention to others are termed disrespectful. Moreover, people with limited ability to pay attention to learning content are said to have learning challenges, Levine<sup>2</sup>Levine, M. D. (2002). Educational Care: A System for Understanding and Helping Children with Learning Problems at Home and in School. Second Edition. Cambridge, MA: Educators Publishing Services, Inc. argues that, learning and understanding what is being taught requires paying attention to teachers and classroom discussions. Learners, therefore, need the ability to pay and maintain

attention. This is why Graham<sup>3</sup>Graham J. P. (2015). Examining the Need of Attention Strategies for Academic Development in Deaf and Hard of Hearing Children. Journal of Education and Human Development Vol. 4, No. 2(1), 16-21. [http://dx.doi.org/10.15640/jehd.v4n2\\_1a2](http://dx.doi.org/10.15640/jehd.v4n2_1a2) and Lieberman<sup>4</sup>Lieberman A. M. (2015). Attention-getting skills of deaf children using American sign language in a preschool classroom. Applied psycholinguistics, 36(4), 855-873. <https://doi.org/10.1017/S0142716413000532> emphasizes that attention ability is two or three times more important for children with hearing impairment than it is for children without disabilities or impairments.

Deafness is the complete loss of the ability to hear sound waves through normal hearing mechanisms, which can either be unilateral (one ear) or bilateral (both ears). Being hard of hearing, in contrast, is the condition where a person has only partial ability to perceive sound waves through normal hearing mechanisms unless he/she uses sound amplification devices. Most deaf and hard of hearing people use sign language to communicate, but some use speech or some combination of sign language and speech (WHO). The majority of people (if not all) who are deaf or hard of hearing need to pay attention to people or sources of information so as to clearly understand messages being communicated to them. This, points to the necessity of discussing the importance of attention for children/individuals with hearing impairment.

## **The importance of attention for children with hearing impairment**

### **i. The ability to pay attention influences learning.**

Learning is most efficient when a person is paying attention. It is the first step in the learning process because we cannot understand, learn, or remember things that we did not first attend to. Thus, if a hearing-impaired student is not paying

attention, little information can be acquired or comprehended<sup>5</sup>Lieberman A. M. (2015). Attention-getting skills of deaf children using American Sign Language in a preschool classroom. *Applied psycholinguistics*, 36(4), 855–873. <https://doi.org/10.1017/S0142716413000532>.

**ii. The ability to pay attention reduces memory overload.**

Attention and working memory are crucial for everyday living and learning. Attention allows information to be taken in, while memory helps the brain make sense of the information taken in. When a student with hearing impairment fails to concentrate on the lesson or on what is being taught by the teacher, he/she allows his eyes and mind to take in a lot of information, some of which might not be necessary or important. However, once the information is taken in, it has to be worked on by the brain and stored in the memory regardless of its importance. This situation makes the brain and working memory perform tasks that are not needed. Therefore, attention skills help to reduce memory overload, as the memory and brain work on taking in only important information.

**iii. The ability to pay attention reduces eye and body fatigue.**

Children with hearing impairment use their eyes to supplement the work of their lost hearing ability; hence their eyes are their ears. They gather information from their environment by turning their head to allow their eyes to capture information. Continually turning the head and eyes from one side to another leads to body and eye fatigue. This is due to the fact that head and eye muscles get tired when they are overworked. Therefore, reducing the movement of the head and eyes reduces fatigue.

**iv. The ability to pay attention promotes effective communication and the use of sign language.**

Children with hearing impairment need attention skills to learn and acquire sign language as the language uses visual cues. When communicating, they need to pay attention to a person communicating to them so as to understand handshapes, hand movement, and location and non-manual markers that are used informing different signs. Being inattentive can lead an individual to mix up two different signs with different meanings, with the result that he/she might not get the intended meaning of the message. Also, these students need to pay attention because they depend on their eyes to receive messages. Thus, if they don't pay attention to a person communicating to them, they may lose some pieces of information, leading to misunderstanding. The ability to pay attention among many children with hearing impairment presents several challenges. Therefore, we also need to focus on these issues.

## **Reasons for inattentiveness among children with hearing impairment**

### **i. Medical reasons**

Some children with hearing impairment are not attentive when in the classroom due to other disorders that they might have, like attention deficit disorder. They may also have autism.

### **ii. Environmental reasons**

Sometimes inattentiveness in the classroom among children with hearing impairment is due to the environment around the classroom. If, for example, there is a road, market, or other area with a high movement of people, students with hearing impairment may be inattentive because they will look at what is happening outside of the classroom.

### **iii. Psychological reasons**

One of the major issues that lead to inattentiveness among

children with hearing impairment in the classroom is of a psychological nature. When these children sense that they are not valued or feel ignored by the teacher or their fellow students due to their disability/impairment, they lose interest, which results in inattentiveness. Furthermore, when a teacher does not use sign language or accommodate the learning needs of students with hearing impairment, these students will immediately lose attention due to the fact that they will not be able to follow the lesson. They do that so as to send the message to the teacher that he/she is undermining their right to education.

#### **iv. Memory overload**

When children with hearing impairment have their memory full, they fail to continue maintaining attention on what is going on in the classroom. Continued attempts to pay attention increase the burden on the brain and memory.

## **How to improve attention among children with hearing impairment**

Attention is a very complicated process. Understanding its parts may help teachers more effectively support children with hearing impairment so that they can pay better attention and learn more easily. Attention ability does not just come abruptly; it is a process involving several stages. Let's look now at each component.

### **1st step: Alertness and arousal**

Alertness is the initial step in the attention process. If we are going to do something or listen to someone, the first thing that we need is to feel alert and aroused. In other words, we need to feel like our battery is charged, like our brains have energy<sup>6</sup>Thorne G & Thomas A.(2009). What Is Attention?. Retrieved from <https://www.cdl.org/what-is-attention/>.

Therefore, so as to improve attention among children with hearing impairment, it is important to arouse their interest in what you are going to teach or in the classroom environment itself. This arousal can be achieved through pre-teaching so that the students have an approximate idea of the direction and content of the lesson; one example is pre-teaching vocabulary that will be common in the upcoming lesson. Another strategy is the use of attractive pictures, drawings, and even short video clips that summarise the whole lesson.

It is very important for the teacher to use various appropriate teaching/learning strategies that address the learning needs of various hearing-impaired children who are in the same class. When the learners' needs are addressed, they will be interested in the teacher and the subjects being taught. As a result, the students will pay attention<sup>7</sup> Pressley M, Wharton-McDonald R, Allington R, Block CC, Morrow L, Tracey D, Baker K, Brooks G, Cronin J, Nelson E, Woo D. A. (2001). Study of effective first-grade literacy instruction. Scientific Studies of Reading. 5:35–58..

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## **2nd step: Selectivity and saliency determination**

The next step in the attention process is called selectivity and saliency determination. At any moment, there are a multitude of stimuli that are potentially capable of capturing

our attention. Because it is impossible to attend to them all, we must decide which ones are the most important. According to Levine<sup>9</sup>Levine, M.D. (1990). Keeping A Head In School: A Student's Book About Learning Abilities and Learning Disorders. Cambridge, MA: Educators Publishing Service, Inc., attention is the brain's channel selector. When students are in a classroom, they may pay attention to what other students are doing, what is written on the board, the colour of their friend's new shoes, someone walking down the hall, or what their teacher is saying, etc.

Students with hearing impairment usually use visual cues to gather information; therefore, they tend to look at anything that passes before their eyes. This being the case, it might be difficult for them to disregard some events and, as a result, they may not pay attention to what is important at that time. Hence, teachers need to prepare the learning environment for hearing-impaired students. The environment should be free from visual distractions so as to minimise visual interactions that might interfere with attention. Teachers need to take away things from the classroom environment that are not needed for teaching students with hearing impairment and also need to make sure to use only materials that are related to the lesson. These strategies will help the teacher guide students to pay attention to relevant information.

### **3rd step: Distractibility**

In order to select the most important or salient stimuli we need to attend to at any given moment, we must filter out or ignore other stimuli that might distract us. Distractions may be visual, such as other people who are near us or the birds in the tree just outside the window. We may also be distracted by our own thoughts.

This particular type of distraction may take the form of daydreaming. As discussed in the previous step, teachers of

children with hearing impairment need to make sure that they remove all things that might cause visual distraction. Doing so will make it easier for the children to concentrate on important stimuli. Sometimes teachers need to direct/teach these students to ignore stimuli that are not under discussion at a particular moment during class<sup>10</sup>Barkley RA. (2000). Genetics of childhood disorders: XVII. ADHD, part I: The executive functions and ADHD. Journal of the American Academy of Child and Adolescent Psychiatry.39:1064–1068..

#### **4th step: Duration of attention**

Once we decide what we should attend to and filter out distractions, we must then attend to it for the right amount of time – not too much, not too little. Teachers need to be careful with the length of information they present to hearing-impaired children. In order to avoid the students' body and eye fatigue, they have to make sure that it does not take much time to present one topic. When students concentrate on one thing for a long time they typically lose interest, which can lead to an attention deficit.

#### **5th step: Previewing and planning**

The fifth component of attention is called previewing. Previewing can be thought of as reflection and planning. Before we act, we need to consider all of the possible actions we could perform and decide from among them which one is best for a given set of circumstances. To do this, we must consider the consequences of each possible action and eliminate those that do not lead to the desired outcome. Failing to take the time to engage in necessary planning or previewing is called impulsivity, or the inability to inhibit behaviour or regulate it by its consequences<sup>11</sup>Thorne G & Thomas A.(2009). What Is Attention?. Retrieved from <https://www.cdl.org/what-is-attention/>.

This problem raises the necessity of teachers and guardians of



hearing-impaired children to continually remind them of important issues they need to keep in mind and focus on as well as issues that they need to disregard when at school and especially when in the classroom. This strategy will help children with hearing impairment to monitor themselves and evaluate things before giving them attention.

### **6th step: Self-monitoring and self-regulation**

The sixth component of attention is called self-monitoring or self-regulation, and it is a quality-control issue. This component involves checking over a task that is in progress, assessing the progress, and making adjustments when necessary. Further, it involves reviewing a task after it has been completed and making sure that it has been done correctly. In short, self-monitoring and self-regulation entail “watching” ourselves doing something while we are doing it. This can be achieved through building a classroom culture in which lessons or events are assessed. By doing so, teachers train hearing-impaired students to conduct self-assessment.

### **References**

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