# A STUDY OF PROBLEMS FACED BY HEARING IMPAIRED STUDENTS IN LEARNING SCIENCE

**A THESIS SUBMITTED TO THE UNIVERSITY OF MANAGEMENT AND TECHNOLOGY IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS IN ARTS OF SPECIAL EDUCATION**

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**Amber Malik.**

**A study of problems faced by hearing impaired students in learning science**


## Abstract

The researcher intended to investigate the problems faced by hearing impaired children in learning science. The population of the study was the hearing impaired students of grade 8th and their science teachers. The researcher collected data from three different schools of Lahore, one is from private sector and the other two are from government sector.

The primary purpose of the study is to sort out problems faced by hearing impaired children in science classroom and for this purpose silent observation were made. Researcher consciously attended these science lectures as a silent observer and on the basis of these observations the researcher had made a structured interview with the assistance of the experts.

The objectives of the study are to investigate problems faced by hearing impaired children in science learning. Perception of the hearing impaired student's teachers towards science learning and the factors that are affecting their learning.

After that researcher had qualitatively analyzed data with the assistance of experts and made recommendations.

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# CHAPTER 1

# A STUDY OF PROBLEMS FACED BY HEARING IMPAIRED STUDENTS IN LEARNING SCIENCE

## INTRODUCTION

During the last few decades numerous changes have taken place in the educational systems of special need students in Pakistan. The reason behind these evolutionary changes was the commitment of the professionals who had an urge to go side by side with other professionals working in other parts of the world in providing services to students with special needs.

Teaching the special needs children in separate class rooms and separate environment suiting there needs was a key factor in special education. According to Olukotun, (2004), the term segregation was used for teaching the special students separately from those who are non-disabled.

This method of educating special students caused behavioral problems and discriminative attitude in such students so a method called inclusion was introduced, in this, students with special needs were taught with their non-disabled counterparts in the same environment. According to a collaborative study, conducted by Johnson, Haszi, Gordo and Hull in 1989, it was found that students taught in segregation had more post school adjustments problem in the society and their fields than those who were taught in non-segregated environment.

Later in 2007, Lindsay also emphasized on the method of inclusion for special education. According to him the inclusion is the main stay of education for students with special needs and their participation in the community, culture, social life and curricula of the schools for normal students should be encouraged and all types of segregation should be avoided as these created problems in adjustments of such

students later on. In June 1994, government and civil representatives gathered in Spain to emphasize all the schools and educational facilities to serve all the students regardless of their special needs for education, this again hammered the point of inclusion for the students of special needs. Later the same was announced at the statement as an agenda point, asking government to prioritize the inclusive education system and adopt it as a law or policy, and without any discrimination facilities be provided to all the students regardless of their needs for education requirements in the schools for their counterparts in the country.

According to Rioxand Cabbet (2003), human capabilities are not restricted by their physical disabilities, it may change the human characteristics in the form of sensory or physical ability, but it does not restrict their capabilities. In 2002, Forman explained that inclusive education is providing education to students with special needs according to their needs in normal class rooms with their age fellows.

Inclusive schools show good performance in Pakistan. National Commission on Education in 1959 put the education of students with special needs on the government agenda for the first time. The commission emphasized on the vocational training of children and adults with mental retardation and also asked for special programs to be run for such students. Funds were also allocated for this in 1972 educational policy. The United Nations asked member countries to take active part in solving problems of persons with disabilities (UNICEF, 2003).

As far as children with hearing impairment are concerned they are facing a number of problems regarding their academic, intellectual, linguistic, social and emotional development in inclusive schools. According to Bailey Plessis (1998), most of the educationists agree that for the implementation of inclusive education money, space, planning, time and smaller number of students in a class are important factors.

The communication problems of children with hearing impairment are the main hurdles in implementing inclusive education.

According to Navin& Thousand (1987) the teachers of the inclusive education want to dominate in the classroom, both at their own ends. Secondly the students hesitate to interact with the disabled counterparts and the interaction is not satisfactory and they hurt them during games and other social activities which is not desirable in inclusive education system.

Students with hearing impairment have many problems regarding curriculum adjustment and modification. Moreover there is a problem of interpreting sign language of the teachers and certain concept are not interpreted correctly , leading to academic lack and lag of the students with hearing impairment.

The classrooms needs to be adjusted and equipped according to the needs of special needs students. Certain modifications are needed to be done to meet the requirements of these students (Alahmadi, 2001). The teaching staff must consider the special adaptations in curriculum and teaching aids to make it more suitable for the special need students. More light, elevation, seating adjustments etc may have to be made in classrooms of inclusive education to meet the requirements of such students (Schmidt, Cagran, 2008, as cited in Alqaryovti, 2010). Fuller, Healey, Bradley & Hall (2004) carried a study on the classrooms of inclusive education and came out with the results that there were problems of teacher speech, which was not converted or conveyed to special need students in proper way and this lead to inadequate discussion and interaction.

Science is a subject for those with sharp senses and extra practical skills as compared to the subjects of history, geography, literature etc. and to have a sound knowledge and understanding of any subject, one must hear, see, observe and practice

the contents of that particular subject and this phenomenon is of extreme importance in science subjects.

A great philosopher once said, “I read and I forgot, I saw and I remembered and I did it with my own hands and I know how to do it.” In order to know the science one must perform the practical procedures.

Can you imagine being deaf?

Can you imagine what it's like to say to someone, "It's Thursday," and have them think you said, "I'm thirsty."

Can you imagine not being able to use a phone?

It's hard to imagine unless you are deaf

Any disability will hinder in progressing in any field but it will affect the progress in science particularly. A deaf student might not be able to observe the daily life experiences around him as observed by a student who is sharp at hearing.

The difficulties of a deaf student start from home, when the parents are not able to interact with this child as they do it with the normal children. They need to have special knowledge of conveying things to him. If a child is deaf since birth, he is not able to develop speech normally, so special emphasis must be given to improve his speech.

The problems are added to his life, when this child is isolated by his siblings at home or co-students at school. He needs to be socialized with others instead of isolating him in order to improve his confidence and to avoid building of inferiority complex in him.

The problems faced by a deaf student in learning science are multifactorial and multidimensional. The one basic problem faced by these students is to understand the

basic principles of science, which are fundamental in learning science and to understand the other related theories in this subject.

Not just being a student and being deaf or hard at hearing creates problems to be a good student or to excel in studies, it not only disturbs the process of learning at school, it just not only has made the life of such a person difficult as a student. Everyday life has so many aspects in which being good at hearing is essential to know the facts of life, to lead a good life, to have your surrounding according to one's own needs. Being different is not bad if the difference doesn't make u in minority, because the world progresses for those in majority and the use of technology is first made available to them. Following are a few examples from daily life tasks which a deaf or hard at hearing person encounter difficulty to perform.

Just like hearing people, the Deaf like to talk with others. Depending on who the Deaf are talking with, conversation can be difficult for them. If two deaf people are signing to each other, there isn't a problem, but if a hearing person and a deaf person are trying to communicate and the hearing person doesn't know sign, or much about the Deaf community, there can be a communication problem. When the deaf person goes up to the hearing person, and starts signing to communicate the hearing person might look away in disgust because of their lack of learning about the Deaf community.

Just like hearing people, the Deaf like to watch TV , but since the Deaf have hearing impairments, it is harder for them to able to watch and enjoy TV.

Just like hearing people, the Deaf drive cars. Many hearing people think that this is a problem. They think that the inability to hear would prevent a deaf person from being a good driver.

Just like hearing people, deaf people enjoy talking on the phone. Since they have hearing impairments, however, it can be difficult or impossible with a regular telephone.

Just like hearing people, deaf people have children. When the children are babies and they cry, they may need attention. In fact they may need immediate attention. With their impaired hearing deaf people may not know that their baby is crying, especially if the child is in another room.

Just like hearing people, the Deaf need to know if something is wrong. Ifa fire ever starts in a house, the people inside need to know about it and be able to get out of the house in time. The same goes for the Deaf.

Just like hearing people, deaf people need to know when their doorbell rings. Except they might not hear and that can make it hard to know when to answer the door.

Just like hearing people, deaf people have to get up at a certain time, so alarm clocks are used to wake people up. Since the Deaf have hearing losses they have a hard time hearing the alarm clocks.

These are not the only problems faced by the person hard at hearing or deaf, his problems are further added up as he progresses in his life, once he lands into school, the problems at school starts with not enough schools for such children. Schools which are available for deaf and hard at hearing students, mostly do not have skilled staff and teachers for such students, equipment needed is not available mostly. The higher studies become more difficult as the requirements are further enhanced and the facilities are not available.

Particularly the field of science is most badly affected as science requires practical skills and for this to acquire sharp hearing adds to the skills. Science subjects

needs practical procedures, and this needs sharp senses.

The deaf or hard at hearing students need to be communicated in sign language, so in order to make them understand fully, one must have a full grip on sign language, mostly not everything and every aspect can be made clear in sign language, so the communication barrier becomes the major problem.

According to a study done by Marc Marschark, Patricia Sapere, Carol M. Convertino, Connie Mayer, Loes Wauters and Thomastine Sarchet the deaf or hard at hearing students can learn more from printed text as compared to sign language. According to them reading achievement among deaf students typically lags significantly behind hearing peers, a situation that has changed little despite decades of research. This lack of progress and recent findings indicating that deaf students face many of the same challenges in comprehending sign language as they do in comprehending text suggest that difficulties frequently observed in their learning from text may involve more than just reading. Two experiments examined college students' learning of material from science texts. Passages were presented to deaf (signing) students in print or American Sign Language and to hearing students in print or auditorially. Several measures of learning indicated that the deaf students learned as much or more from print as they did from sign language, but less than hearing students in both cases. These and other results suggest that challenges to deaf students' reading comprehension may be more complex than is generally assumed.

In order to understand and comprehend any subject, the primary requirement is the concentration, the problem with the deaf or hard at hearing students is that they lose their concentration because either they can concentrate on the sign language being communicated to them or the subject in hand. For example if a mathematics teacher is writing on the board and saying what he is writing and a translator beside

the board is communicating the same in sign language, a deaf or hard at hearing student can either look at the translator or the problem being solved at the board. Same is the case with all other science subjects.

Another problem with deaf or hard at hearing students is to observe the questions raised by the students who are good at hearing and can respond to what is being taught in the class. The deaf or hard at hearing students miss many observation during the class and are not able to participate in the discussion as the other normally hearing students do. The science subjects need more than other subjects to be proactive during the class. Being a deaf or hard at hearing makes it more difficult to observe and participate in the practical work which is mandatory in the field of science.

In Pakistan deaf students face a different phenomenon regarding subject of science. Beyond elementary level students of hearing impairment do not get the opportunity to learn and explore science concepts and experiments like their regular peers while cognitively they should be provided with same learning opportunities.

The researcher main interest was to investigate the learning problems, environmental factors that is used for teaching of science and teachers perceptions regarding the students of hearing impaired.

## Purpose of the Research

The purpose of this phenomenological study is to explore and understand through the obtaining of information from teachers of science subject of hearing impaired in segregated setting. The overall aim of this study was to pin point those problems which are discouraging students with hearing impaired from learning of science at secondary level, needs and graph will be identify and recommendations will be made to overcome the problems faced by hearing impaired students in

learning of science.

## Framing the Study

The nature of this study is qualitative. The researcher designed structured interviews and classroom observations to get insight of the problem to be investigated.

The subject of the study, science teachers and students with hearing impairment studding science, were directly approached to highlight the problems faced in learning science.

The insight of this study would be helpful to overcome the problems faced by hearing impaired students in the learning of science and will provide a roadmap of instructional strategies for science teaching.

Furthermore the future roadmap would be equally effective for teachers of science of hearing impaired to provide a rich environment where hearing impaired students can learn and participate effectively to enhance their learning of science.

## Objectives of the Study

Following were the objectives of the study:

1. To investigate the learning problems faced by students with hearing impairment in science classroom?
2. Know the perceptions of science teachers of hearing impaired regarding learning of science?
3. Find out the factors affecting learning of science among children with hearing impairment

## Questions of the Study

To meet the objectives of the study, following questions were formulated:

1. What are the learning problems faced by students with hearing impairment in

science classroom?

2. What are the perceptions of science teachers of hearing impaired regarding learning of science?
3. What are the impacts of teacher's perception on teaching and learning of deaf students in science classrooms?
4. How the teacher qualification and experience affect the science learning of students with hearing impairment?
5. How instructional methodology and instruction combined with material resources impacts students learning and participation in science classrooms?
6. What are the implications of curriculum adaptations and assessment on the learning of science of students with hearing impairment?

## Qualitative Research Strategy

### 1. Role of the researcher

The researcher developed a plan to observe deaf students from three different special education institution of Lahore city of Punjab province during their science classes. The researcher attained a written permission from these institutions head to observe the classes and to interview the teachers of these classes.

### 2. Participants

The participants of the study included the researcher, the students of 8th grade who are deaf and hard of hearing, their teacher and above all the main source of guidance and inspiration was the supervisor of the researcher.

### 3. Sample

Sample was selected from three different institutions. The factor of randomization is compromised to some extent due to lack of resources. Data was collected from two governments and one private sector special education school and

also the teachers of these schools who were teaching science to grade 8 students.

## 4. Data Collection Procedure

The data collection procedure was through silent observation during the science classes and also a structured open ended interview to the science teacher of these classes. The researcher records the interview and after that writes in the form of hand written notes. Additional sub question was also used as needed.

## 5. Ethical Consideration

The researcher has an obligation to respect the rights, needs, values, and desires of the participants. The reputation and position of the participants are visible, especially since the findings of the study could be shared with other people and organizations.