

“Performance Variation in Children with Hearing Impairment on A Test of Basic Concepts”

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Abstract

The term 'Basic Concepts' involves the child's ability to make relational judgments either among objects, people or situations or in reference to a standard. In general these are the concepts of time, space, direction, colour, quantity, smell, taste, etc.

These concepts are not only essential for making comparisons but are also important as 'building blocks' for forming additional more complex concepts. An understanding of basic concepts is necessary for the young child to deal with the demands of everybody living and to build upon in later learning. In other words, basic concepts help the child to understand and later describe the relationship between and among objects, locations of objects and persons, characteristics of objects (dimensions, positions, movements, quantity and presence) and sequences of events.

The aim of the present research study is to critically explore about the development of basic concepts among students having normal hearing and students having hearing impairment. It also further explores to study the impact of deafness in the development of basic concepts and the impact of students who are studying in different settings such as Inclusive and special school set up.

Keywords: *Basic Concepts, Special and Inclusive Education, Hearing Impairment, Degree of Hearing loss*

INTRODUCTION:

"Cognition is an individual's thought, Knowledge, Interpretation, Understandings or ideas about himself and his environment."Hillgard (1975)

Stott (1975) described that cognition as the capacity of a person to understand and function effectively in relation to the external environment. In a broader sense, it could be said that the cognition involves all the mental processes that results in knowing and building knowledge and concepts. Concepts help in developing an immediate understanding of new objects or ideas as one can relate them to a general class of similar objects and ideas with which the person is familiar. Without the ability to form the concepts it is almost impossible for any person to think. Concept has been defined in many ways.

Anglin (1977) defines concept as the mental structures which enable one to make classification. It can be defined as the relationship between, or the properties shared by the objects or ideas in a given group. It is mental structure

used to categorized things that share characteristics.

Zintz (1970) says that 'concepts are personalized meanings held by an individual.' Woodruff (1961) believes that concepts are mental images of life accumulated from personal experiences from life itself.

More recently Coon (1995) defined concepts as an idea that represents a class of objects or events. These are powerful tools because they allow us to think more abstractly, free from distracting details. Burning and Roning (1995) felt that concepts are the structures by which meaningful categories are represented mentally. Particular objects or events are grouped together on the basis of perceived similarities. Those that fit in the category are exemplified of instances of the concept. Those that do not are the non-examples. The similar features across examples of a concept are called 'attributes'. Features that are essential for defining concepts are called 'defining attributes'.

Concepts play vital role in an individual's life by manipulating his/her mental information in activities like reasoning, making decisions, solving problems language comprehension and communicating information to others, without which it virtually becomes impossible for one conceptualize. Johnson Liard and Wason (1977) gave emphasis on the development of concepts because without it each object or event would become unique and thinking and generalization would be impossible. In Sokal's(1977) view, concepts allow economy in memory. By grouping objects together into a concept, one can remember the attributes of a concept rather than each individual event or object.

According to Bruner ,Good now and Austin(1956)concepts reduce the necessity of constant learning. They further add that, by concepts one knows how to react to an object and how to relate classes of objects and events.

Development of Basic Concepts:

The knowledge about concepts acquisition comes from the fields of cognitive development and language acquisition. Many researchers have contributed to the understanding of cognitions among them are Burner (1962), Flavell (1963), Guilford(1967),Hunt(1961),SigalandHooper(1968)Vygotsky(1934,1962), Gagne (1967) and Klausmeier (1971).

Piaget's (1896-1980) work has motivated much of the work of these researchers. Piaget (op.cit.) turned all his energies towards studying the evaluation of children's thinking. His works from the universities of Paris and Geneva gave impetus for world-wide research on important factors influencing concept development. His particular line of thinking focused of how people think (thought process) instead of, on what they think (content) Piaget's greatest strength lies in his description of how a person inherited capacities interact with his environment to produce an intellectually functioning child and adult. He emphasized that the young child does not pursued the word in the same way as does the adult, but goes through a sequential order of developmental stages in solving problems.

The factors which influence the children's concept development are intelligence type of experience opportunities of learning personality, sex and the conditions of sense organs. Because the sense organs are the channels through which sensory experiences pass to the brain, the conditions of the sense organs affect concept development. Unlike hearing babies, deaf infants rely on their visual channel to grasp information that surrounds them. They try to extract meaning from facial expressions, verbal clues, gestures and those activities that occur within their environment.

Formal Assessment:

There are several tests which are available to assess the child at pre-school level, but only few of these have specific assessment of basic concepts as their major focus. Other tests focus on the pre-school and early school years and either specifically or along with other skills & objectives, includes the assessment of some basic concepts measured individually or in combination with other concepts. One of them is Boehm test of basic concepts (revised) (1971). The Boehm's test of basic concepts- Revised (Boehm-R) is designed to assess children's mastery of the basic concepts that are both fundamental to understanding verbal instruction and essential for early school achievement.

The purpose of Boehm's test of basic concepts is to identify:

- ◆ Individual children whose overall level of concept mastery is low and who therefore may need special attention and

- ◆ Individual concepts with which large number of children in a class may be unfamiliar.

Review of Literature:

Researcher has utilized the Boehm's test of basic concepts for the assessment of special population including the blind, the educable mentally retarded, the learning disabled and also with the hearing impaired children.

Dickie (1980) compared the performance of severe and profound hearing impaired children, who were educated with the aural/oral (A/O) approach and total communication approach (TC) using Boehm's test of basic concepts. Results of this study indicated that the TC group performed significantly better than the A/O group, where age was not a significant variable. The difference showed that, there are receptive language differences between hearing impaired children taught with A/O approach as compared to those taught with TC approach.

Basic concepts understanding among hearing impaired children has also been studied by Davis (1974). He compared the Boehm's test of basic concepts performance of young hearing impaired children of normal intelligence to that of normal hearing children and found that the hearing impaired children fell increasingly behind their normal age peers. The degree of hearing loss was a significant factor in performance; the greater the hearing loss the greater the difficulty on Boehm's test of basic concepts. There was no consistent pattern of errors found, errors occurred across all types of concepts.

The concepts that were found to be most difficult for the normal hearing children. However, the ability of the hearing impaired children on basic concepts could possibly differ further, based on the type of school they attended i.e.,- regular school for the hearing children (Inclusive) or the special school for the hearing impaired children (segregated).

Aims and objectives of the study:

The objectives of the present study was to assess the performance variations between the normal hearing children and hearing impaired children attending different educational set-ups (Inclusive & Special) on the test of basic concepts.

Brief Methodology

Subjects ranging in age from 6-12 years were selected for this study, of which 100 subjects were normal hearing children studying in regular school, rest of the 100 subjects were hearing impaired. Out of them 50 H.I. subjects were studying in regular schools for the normal hearing (Inclusive) and 50 hearing impaired subjects were studying in special schools for hearing impaired (Special).

The study was carried out in the following stages:

1. Construction of test material.
2. Data collection on normal hearing and hearing impaired children.
3. Scoring and analysis of the data.

Data collection on normal hearing and hearing impaired children

Selection of Subjects: A total sample of 200 children among which 100 were from various schools including Inclusive & Special School for the hearing impaired and 100 from students having normal hearing were selected for this study.

Scoring & Analysis of the Data:

The test consisted of 50 basic relational concepts which are in the form of pictorial items/plates. For each correct response a score of '1' was awarded, while for incorrect response no score was given. For each correct response the maximum score given. Maximum obtainable score was 50. After scoring was completed for all the subjects, obtained scores were entered in the computer using dBase package and analyzed using SPSS/PC package for statistical significance using 't' test and 'ANOVA'. The obtained raw scores of the 200 subjects were computed and statistically analyzed group wise i.e. Group-A: Normal hearing subjects: Group-

B: Hearing impaired (Inclusive) and Group-C: Hearing impaired (Special).

The data was further analyzed statistically to study the difference in performance of the subjects according to their age, within the group & between the groups and also on the degree of hearing loss and further with respect to gender. The obtained data was further subjected to statistical analysis in order to study performance variation if any with respect to the type of school the hearing impaired children attended.

To further substantiate whether the performance of hearing impaired children who studied in integrated and segregated schools differed significantly or not, a two way analysis of variance 2X2 design (Green segregated) and the degree of hearing loss (severe or profound). The between subject factors were type of school and the degree of hearing loss.

Result and Findings:

- 1) The performance of normal hearing children was found to be better than that of the hearing impaired children on the test of basic concepts in Hindi, irrespective of the type school they attended.
- 2) The performance of hearing impaired children attending regular school (Inclusive) performed better than the hearing impaired children attending special school on the test of basic concepts.
- 3) The performance of both normal hearing and hearing impaired children on the test of basic concepts in Hindi, improves with increase in age.

CONCLUSION:

- 1) The test of basic concepts in Hindi, developed through the study was found to be highly reliable and therefore, can be very useful in identifying mastery or overall level of individuals (normal hearing or hearing impaired children) on concepts.
- 2) Thus, through this test, it is possible to identify those children having low concept skills and plan for special programmes to overcome the same in Hindi medium schools.
- 3) The test could also serve as a useful clinical tool to assess special children.
- 4) The findings of the study also clearly indicated that integrated school set-up is beneficial to hearing impaired children, with respect to their concept development and in turn on language skills. Therefore, it is beneficial to undertake assessment of basic concepts at an early age and plan accordingly, the type of school for the hearing impaired as well as special remedial programmes for the hearing impaired as well as other children.

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