Learning Styles and Academic Achievement of Children with and Without Hearing Impairment in Primary Inclusive Classrooms in Mumbai

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Abstract

The present study was conducted to know the preferred learning styles and the association between learning styles and academic achievement of children with and without hearing impairment who attended inclusive classrooms in Mumbai. The sample consists of 30 primary school children with and without hearing impairment. The age at time of study of the selected group was 6 years to 9 years. (Mean age =7.5 years). A tool ‘Learning Style Response Sheet’ LSRS was developed by the authors and opinions indicated by the teachers and parents of selected group about learning style were evaluated. For the analysis, Cramer’s ‘V’- a non parametric test was used. The result showed no association between hearing status and the preferred learning styles of students but it revealed a strong association between preferred learning styles and the levels of academic achievements since the obtain value of ‘V’ was one which indicates a perfect association.

Key words: Preferred learning style, academic achievement, hearing impairment, inclusive classroom

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Introduction

Classroom teachers and educators are aware that each student learns differently and also that learning can be complimented by identifying each student learning style and teaching to his or her learning style. Usually teachers are the first to notice and identify problems or situations which need to be addressed to improve student learning. In most countries, especially the developed ones, student’s performance in public examinations or standard tests are perceived as the indicators of ‘Good’ and effective schools (Jha, 2002). A pressure has been placed on teachers to create optimum conditions for students to learn effectively and thereby increase students’ grades on academic achievement test. It is known that teaching through a students’ learning style will improve scores (Dunn & Dunn, 1992). During their formal education, most students in a specific classroom are taught in the same style – the style most attuned to that teacher.

Learning Styles

Though children follow a predictable patterns in their growth and development, but then that is the only thing in which they are same. They differ from each other in many ways, which includes their motivation, temperament, likes and dislikes including the learning styles. It is believed that all children/ learners are capable of using different modes of learning, but not always and not with the same degree of acceptability (Gardner, 1993). Some are stronger in some areas than others, where as some take in and process information in different ways i.e. by seeing and hearing, reflecting and acting, analyzing and visualizing. The term “learning styles” refers to the concept that individuals differ in regard to what mode of instruction or study is most effective for them. Thus, it is widely accepted as “a pattern of behavior that humans use for new learning” and also a way to help to improve learning performances. Ellis (1985), described a learning style as ‘the more or less consistent way in which a person perceives, conceptualizes, organizes and recalls information.’ According to Dunn and Dunn Model (1990), learning style is a biological and developmental set of personal characteristics that makes the identical instruction effective for some students and ineffective for others. A number of learning style models can be found in the research on this subject. These falls into general categories such as information processing, personality patterns and social interactions (Conner, 2004). Some of the most popular learning-style schemes include the Dunn and Dunn learning-styles model (Dunn, 1990), Kolb’s (1984, 1985) Learning Styles Inventory, and Honey and Mumford’s (1992) Learning Styles Questionnaire. Gardner gave the concept of multiple intelligence which is commonly viewed as model of Learning Styles. Accordingly, the types of Learning Styles can be identified as –

- **Visual Learners** who prefers to learn through seeing. They need to see teachers’ body language and facial expressions to fully understand the content of the lesson. During a lecture or a classroom discussion, visual learners often prefer to take detailed notes to absorb the information.

- **Auditory learners** who prefers to learn through listening. They learn best through verbal lectures, discussions, talking things through and listening through what others have to say.
• Kinesthetic / Tactile Learners are those who learn through moving, doing and touching. They learn best through hands on approach, activity exploring the physical world around them. They may find it hard to sit still for long periods and may become distracted by their needs for activities and explorations.

Rationale and Need of the Study

Worldwide education of special children has undergone a tremendous change. Inclusion in education is now a generally accepted philosophy. In India, with the advancement in technology and support from various legislations, declarations and policies like Persons with Disabilities Act (1995), Biwako Millennium Framework (2002), National Policy for Persons with Disabilities (2006) and recently the RTE (2009), ‘Inclusive Education’ is gaining momentum as a movement. For this to succeed, the teachers, schools and various systems needs to change to ‘better accommodate’ the diverse needs of their pupils. This is the only key to include ‘all’. It also means identifying and removing any barriers within and around the school that hinders learning and participation. (Gathoo, 2006) Learning in classrooms may experience a barrier of conflict between ‘Learning Styles’ of children and ‘Teaching Styles’ of teachers. According to Kolb (1976), children will reject the learning environment which is at variance to their style of learning. Mathews (1991), argues that while mismatching is appropriate for developmental reasons, students have more positive attitudes towards school and achieve more knowledge and skills when taught, counselled or advised through their nature or primary style rather than the style that is secondary or undeveloped.’ It is thus, important for the classroom teachers to identify the ‘Learning Styles’ of their children.

In the present scenario, the teachers in inclusive school have to understand ‘all’ children, i.e. they need to know the learning styles of children with and without disability too. Secondly, parents are considered as equal partners in education. So, it is imperative that parents’ and teachers’ perception about their child’s learning styles should be in congruence, so that both follow the same style to help the child in the academic achievement. In the background of early intervention and technological advancements like cochlear implant, it would also be worthwhile to see the impact of these on the learning styles of children with hearing impairment in inclusive classrooms.

Objectives of the Study

• To study the most preferred learning styles of children with hearing impairment in inclusive classrooms

• To study the most preferred learning styles of children without hearing impairment in inclusive classrooms

• To study the preferred learning styles of high grade achievers, average grade achievers and low grade achievers of children with hearing impairment in inclusive classrooms

• To study the preferred learning styles of high grade achievers, average grade achievers and low grade achievers of children without hearing impairment in inclusive classrooms
To compare the learning styles of children with and without hearing impairment in inclusive classrooms

To study the association between the learning styles and academic achievement of children with hearing impairment (CWHI) in inclusive classrooms

To study the association between the learning styles and academic achievement of children without hearing impairment in inclusive classrooms

Research design: The present study was a descriptive – survey research.

Sampling technique: The sampling technique used for the selection was purposive. Inclusive schools of Mumbai were the sites study from where the sample was drawn.

Sample size: Parents and teachers of 15 each of primary school children with and without hearing impairment formed the participants of the study. 3 Groups were formed; Group A comprising of fifteen inclusive school primary teachers who are teaching the students with and without hearing impairment in inclusive classrooms. Group B comprising of fifteen parents of children with hearing impairment studying in primary level in inclusive classrooms & Group C comprising of fifteen parents of children without hearing impairment studying in primary level in inclusive classrooms in Mumbai.

Tool: The researcher developed a ‘Learning Style Response Sheet’ (LSRS) in consultation with the experts in the field of Special Education and was validated by 12 judges. The tool comprised of 20 statements having three options each. The distributions of items were seven pertaining to situation, seven items of task and six items of subjects (two each for language, math and environmental science). The response sheet given was common for all three groups namely A, B and C.

Collection of data & Analysis: Inclusive schools were contacted for permission & the schedule for data collection was finalized. Based on the schedule, the response sheet was given to all the 3 Groups personally and explained. For comparing the academic achievement of children with and without hearing impairment and to study the association between learning styles and academic achievement, the first term mark sheets of all the selected thirty children with and without hearing impairment were noted from the school records. A non parametric ‘Cramer’s V’ test was used to analyze the data to see if there is any significant association between the hearing loss and preferred learning style and also to see any association between learning styles and the academic achievement among the children with and without hearing impairment in inclusive classrooms.

Results and Discussions

1. In order to study the most preferred learning style of children with and without hearing impairment, identified by their respective inclusive school teachers (Group-A) and parents (Group-B) were taken into consideration.
The parents and teachers of children with hearing impairment found that 60% of their children with hearing impairment preferred auditory, 7% of children with hearing impairment preferred ‘visual’ and 33% of children with hearing impairment preferred a combination of ‘auditory-visual-kinesthetic’ and ‘visual-kinesthetic’ as their learning style. None of the children showed ‘kinesthetic’ as their preferred learning style. The ‘auditory’ mode of learning could have been preferred as in the present study out of the total sample of children with hearing impairment, nine were early intervened; six were using cochlear implant and had attended an Auditory-Verbal approach prior to getting enrolled in regular schools. Auditory-Verbal approach promotes use of listening as primary mode. Secondly, it may be noted that early stimulation of the auditory nerve and a systematic Auditory-Verbal approach helps the children to develop the skills in listening.

According to Estabrooks (2004), individuals with all degrees of hearing impairment deserve an opportunity to develop the ability to listen and to use verbal communication with their family and community.

2. In case of children without hearing impairment, 80% of the total preferred ‘auditory’ as their learning style, and approximately 7% each of the remaining children without hearing impairment preferred ‘auditory-visual’, ‘auditory–kinesthetic’ and ‘auditory- visual- kinesthetic’ as their preferred learning style. It is the effect of ‘nurture’ (because both parents and teachers use auraloral predominantly) the other possible reason is that the ‘Typical learners’ have been reported to be poor lip-readers as compared to children with hearing impairment. This means by nature, hearing people are proactively ‘auditory’ learners.

3. The preferred learning styles of children with hearing impairment of different achievement levels, those who scored above 60% of marks in the first term examination were considered as high
grade achievers and those who scored between 46%-60% were considered as average achievers and those who scored below 46% were considered as low grade achievers.

i) The result showed that amongst the high-grade achievers, children with hearing impairment preferred ‘auditory’ and a combination of ‘auditory- visual - kinesthetic’ as their learning styles. ii) The average-grade achievers preferred a combination of ‘auditory- visual - kinesthetic’ and a combination of ‘visual - kinesthetic’ as their learning styles.

iii) Similarly ‘visual’ is the preferred learning style of the low-grade achievers. The result showed that most of the children with hearing impairment preferred ‘auditory’ mode for learning. Their teacher in inclusive schools also follows the oral approach. According to Brown (1994), ‘students learn more effectively when they learn through their own initiatives. When their learning styles are matched with appropriate approaches in teaching, then their motivation, performance and achievement will increase and be enhanced.’ For the remaining children, their preferred learning style was not matched to the environment around and so the students’ achievement may have affected as the result shows that low achievers preferred ‘visual’ as their learning style.

4. The preferred learning styles of children without hearing impairment of different achievement levels,

i) The high-grade achievers preferred ‘auditory and a combination of ‘auditory- visual -kinesthetic’ as their learning styles.

ii) The average-grade achiever preferred a combination of ‘auditory- kinesthetic’ as the learning style. According to Kolb (1976), children will reject the learning environment which is at variance to their style of learning. Brown (1994), states that- ‘learners learn more effectively when they learn through their own initiatives. When their learning styles are matched with appropriate approaches in teaching, then their motivation, performances, and achievements will increase and enhanced.’

5. In order to compare the learning styles of children with and without hearing impairment in inclusive classrooms non-parametric test of ‘Cramer’s V’ was used to examine the association between two categorical variables when there is more than a 2 X 2 contingency. Generally Cramer’s V ranges from -1 to 1, with 0 indicating no relationship and -1 or 1 indicating a perfect relationship.

<table>
<thead>
<tr>
<th>Hearing Status</th>
<th>Learning Style</th>
<th>‘V’</th>
<th>‘P’</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing Impaired</td>
<td>Auditory</td>
<td>Visual</td>
<td>Auditory + Visual</td>
<td>Visual + Kinesthetic</td>
</tr>
<tr>
<td>Hearing</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
The obtained value of ‘V’ was 0.456 and the corresponding ‘p’ value was 0.285, which is greater than the significance level of 0.05. This shows no significant association between the learning styles and hearing status of children in inclusive classrooms.

6. The obtained value of Cramer’s V was 0.884. The corresponding ‘p’ value is 0.001. Since the obtained value of ‘p’ is less than the significance level of 0.05 but was above zero and closer to one, a strong association between learning styles and levels of achievement of children with hearing impairment was found in the present study. Results obtained by the research conducted by Summerfield (2004), found that children with implants demonstrated superior academic achievement relative to children with hearing aids.

7. To study the association between the learning styles and levels of academic achievement of children without hearing impairment, non-parametric test ‘Cramer’s V’ was used. The obtained value of Cramer’s ‘V’ was 1.000. The corresponding ‘p’ value is 0.000 was less than the significance level of 0.05, indicates a significant association between the learning styles and levels of academic achievement of children without hearing impairment in inclusive classrooms. Learning styles are based on multiple intelligence. According to Gardner (1983), there are various multiple intelligences and children prefer learning style according to their dominant intelligence. Thus it is the type of intelligence, which affects a style of learning. Dunn, Deckinger, Withers and Katzenstein (1990), found that teaching students based on their diagnosed learning styles did significantly increase their achievement levels.

**Educational implications**

Every individual child is unique and thus, prefers different ways of learning. They come from different families having different experiences and knowledge. Knowing once preferred learning style, not only help the child to learn faster and easily but also makes learning life-long, more effective and enjoyable which in turn improves academic achievement.

**Conclusion**

The results showed that there is no significant association between the learning styles and hearing status of children in inclusive classrooms. In other words, ‘Auditory’ is the most preferred learning style of children with and without hearing impairment in inclusive classrooms irrespective of their sensory impairment. The findings demonstrate that there is a significant association between the learning styles and levels of academic achievement of children with and without hearing impairment in inclusive classrooms. It was found that children with and without hearing impairment at high grade achievers showed ‘Auditory’ and a combination of ‘Auditory-Visual-Kinesthetic’ as their preferred learning style. Thus, the study intends to highlight that when a teacher teaches to their students according to their learning preferences, it not only increases academic achievement but also attitudes towards learning.

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