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INTRODUCTION
"The best possibility is when teachers use MI theory as a way of looking at kids more carefully. I couldn’t care less if the theory survives in its present form. I’m interested in whether it helps people notice differences they haven’t seen before."

--Gardner, 1995

Teachers are the most important part of any educational institute. They can strengthen and give direction to the educational endeavor of the children. It is the teacher, who can discover areas of interests and develop love for learning among children especially for early learners, as almost 90 percent of brain development takes place in first five years. Every child is unique, strong in some ways and less developed in others. Early identification of strength and weaknesses of children might help teachers to nurture individual needs of children.

1.1 Statistics of pre primary education in India

Pre primary education is backward extension of primary education. Educational reformers like Jugatrambhai Dave, Nanabhai Bhatt, Gijubhai Badheka and Tarabai Modak had made great contribution in preschool education. Maria Montessori and Annie Besant further extended it. In India, first indigenous pre-basic education was started in late thirties by Mahatma Gandhi. Until date, appreciable progress has been made in terms of pre-primary education.

Preschool years are defined as the age group of 3-6 years. As per census, 2001, in India, approximately 60 million children are in the age group of 3-6 years. ICDS and other private pre-schooling initiatives covers approximately 34 million children (not counting NGOs initiatives as the variation in expected coverage is too large from 3 to 20 million). It leaves a large segment of about 26 million in the 3-6 years population bracket unattended in pre-school activities (www.nic.in on 3rd July 2010). When it comes to the teachers, there are 23,23,286 pre primary teachers in India out of which there are 14,02,877 male and 9,20,409 are female (SES, 2006-2007).
In Maharashtra, there are total 54,636 pre-primary schools, of which government manages 29,064 schools, 17,700 are run by local bodies, 2,208 are private aided and 54,636 are private unaided pre-primary schools. There are total 1,90,779 preschool teachers of which 76,117 are male and 1,14,662 are female. The enrollment of children in pre-primary schools in Maharashtra is 70,53,049 (SES, 2006-2007).

In Mumbai, there are 493 pre-primary schools. There are 11,302 teachers employed in pre-primary and primary section (SES, 2006-2007). According to the latest government figures, only 48% of children have access to preschool facilities in Mumbai (Multi Indicator Survey, 2001, Department of Women and Child Development, MHRD and UNICEF).

The ideal Pupil Teacher Ratio (PTR) for preschool classroom is 10:1 which is not at par with the existing ratio. In India, it is 44:1 while in Maharashtra it is 37:1 (SES, 2006-2007). Due to high PTR, abilities of children are often overlooked, classrooms are not child centered but are rather teacher centered, so it becomes difficult for teachers to cater to individual needs of the children.

India is short of 1.2 million teachers. Roughly, 15% teaching posts lie vacant in schools across Maharashtra. Missing teachers are a big problem but poorly trained teachers could be an even bigger one (Saxena, 2010).

1.2 Retrospective views on Intelligence
Scientific interest in human intelligence started with the Francis Galton’s intelligence theory, which was strongly influenced by the “theory of evolution” of Charles Darwin. Galton’s belief in the adaptive value of natural ability became thereby translated into widespread conviction that general intelligence provides the single most critical psychological factor underlying success in life (Simonton, 2003). Raymond B. Cattell in 1890 further extended the concept of intelligence. Alfred Binet developed first intelligence test in 1905. Lewis Terman then revised Binet-Simon test and coined the term intelligence quotient also known as IQ in 1916. Gamut of intelligence tests and theories developed thereafter. Thurstone’s concept of primary mental abilities, Guilford’s structure-of-intellect theory, and Sternberg’s triarchic
theory of intelligence added new dimension to the concept of intelligence. They stated that intelligence is not a singular ability rather it is combination of multiple abilities.

### 1.3 Theory of Multiple Intelligences

Psychologists since decades have relied on singular form of intelligences in which intelligence was measured in isolation, without the context. Then came the era, where psychologists pluralized the notion of intelligence in which, few emphasized on capacity and few on contexts. Howard Gardner posited a theory which balanced the capacity and context i.e. theory of multiple intelligences. Gardner’s Multiple Intelligences Theory (MIT) is one such theory, which emphasize not only on traditional intelligences (linguistic & logical-mathematical) but also on the other five non-traditional intelligences (spatial, interpersonal, intrapersonal, bodily-kinesthetic, naturalistic). MIT combined the empirical findings of hundreds of studies from variety of disciplines. Although Gardner included psychometric and experimental psychology, he did not limit his base of support to just these disciplines. Rather, MI theory also encompasses cognitive and developmental psychology, differential psychology, neuroscience, anthropology, and cultural studies (Gardner and Moran, 2006). MIT works as a creative approach to develop and implement a curriculum. Investments made in early child development and learning has a positive impact on formal education by sustaining him/her in school for a longer period of time (Yadav, 2006).

MIT is gaining importance since last decade in India, but many educational reformers had followed a similar kind of educational practices since early 19th century, one of them being Maria Montessori. Vardin (2003) attempted to relate MIT with Montessori work. Vardin showed how Montessori and Gardner drew similar conclusions regarding human capacity and potential, and examined how Gardner’s eight intelligences and underlying core operations lie at the heart of the Montessori exercises and activities.

According to Gardner (1999) intelligence is a "biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture." Gardner originally identified seven
components of intelligence. Then he added an eighth intelligence to his list (Checkley, 1997), which is as follows:

1.3.1 Linguistic intelligence
It is the ability to think in words and language to express and appreciate complex meanings (Campbell & Campbell, 1999). People with this ability like to work in language rich environment as they learn through listening, reading, and writing. Authors, poets, journalists, speakers, and newscasters exhibit high degrees of linguistic intelligence.
Young children with this intelligence have good memories for names, places, events and trivia. They use expanded vocabulary to communicate and tell stories. They like word games and can imitate others language easily.

1.3.2 Logical-mathematical intelligence
It is the ability to calculate, quantify, consider propositions and hypotheses, and carry out complex mathematical operations (Campbell & Campbell, 1999). It enables to perceive relationships and connections and use abstract symbolic thought and sequential reasoning skills. Scientists, accountants, engineers, and computer programmers all demonstrate this intelligence.
Young children with this intelligence have strong problem solving and reasoning skills. They ask lot of questions in logical sequence. They enjoy number manipulation, experimenting and work in a situation with clarity. They use analogy to solve the problems.

1.3.3 Spatial intelligence
This intelligence involves the ability to think in three dimensions and use spatial reasoning, image manipulations, graphic and artistic skills, and active imagination. Children with this intelligence can easily decode graphs, charts or maps and are good navigator. Sailors, pilots, sculptures, painters, and architects exhibit this type of intelligence.
Young children with this ability need physical picture to best understand the concept. They are involved in doodling, drawing and creating new things. They prefer picture books over wordbooks and can construct three-dimensional objects from blocks and
clay. They are good at navigating self in the surroundings and like mazes and puzzles.

1.3.4 Bodily-kinesthetic intelligence
People with this intelligence have the ability to control body movement and handle objects skillfully. These learners express themselves through movement. They have good sense of balance and eye-hand co-ordination. They use their body to solve problems and learn best by direct involvement. For example, athletes, dancers, pilot, photographer, surgeons, and crafts people.
Young children with this intelligence are good at physical activities, eye-hand coordination. They move around, touch the things to learn. They use body creatively like dancing, miming and express their emotions through their body.

1.3.5 Musical intelligence
People with this intelligence possess the ability to pitch, melody, rhythm, timber, and tone. It enables one to recognize, create, reproduce and reflect on music. They immediately respond to music. Composers, conductors, musicians, and instrument makers demonstrate this intelligence.
Young children with this intelligence can remember the melodies of songs and usually speak in a rhythm while talking. They are cognizant about sounds in surroundings. They respond to the music physically by dancing, dramatizing or singing.

1.3.6 Interpersonal intelligence
It is the capacity to understand and interact effectively with others. It involves verbal and non-verbal communication. These people have an uncanny ability to sense feelings, moods, intentions, and motivations of others. They have strong leadership quality and believe in co-operative work. It is evident in successful teachers, social workers, sales person, actors and politicians.
Young children with this ability communicate well with others. They learn while working in groups. They can influence others opinion and at times are influenced. They can perceive others intentions and effectively coordinate group tasks. They share, help and can mediate the conflict between other children.
1.3.7 Intrapersonal intelligence
It refers to the ability to construct an accurate perception of self and use such knowledge in planning and directing one’s life (Campbell & Campbell, 1999). It involves the understanding and appreciation of the human conditions with which they can empower others. It is evident in theologians, psychologists, religious leaders and philosophers.
Young children with this ability can control their emotions, as they are self-motivated. They have high self-esteem and metacognitive skills. They learn better while working alone and prefer one to one interaction.

1.3.8 Naturalistic intelligence
It consists of observing patterns in nature, identifying and classifying objects including flora and fauna, and understanding natural and human made systems (Campbell & Campbell, 1999). Farmers, botanists, hunters, ecologists, and landscapers are few of the examples.
Young children with this ability are curious about the environment, as they want to know how things work. They collect and classify the things from their surroundings. They are keen observer of nature.

1.3 Classroom teaching practices
It is the type of environment provided by the teacher in the classroom, which enables learning in the children. Children in early years are receptive to the all information available in environment. A productive and relaxed atmosphere in the classroom can stimulate child’s imagination. In stimulating environment children can explore, investigate, experiment, create new things, and enrich their own experiences.

The Right of Children to Free and Compulsory Education Act, 2010, in particular, places challenge for the role and place of the schoolteacher. It emphasizes the following areas while laying down the curriculum and evaluation procedures:
- All round development of the child
- Building up child’s knowledge, potentiality and talent
- Development of physical and mental abilities to the fullest extent
• Learning through activities, discovery and exploration in a child friendly and child-centered manner
• Making the child free of fear, trauma and anxiety and helping the child to express views freely
• Comprehensive and continuous evaluation of child’s understanding of knowledge and his or her ability to apply the same. (National Curriculum Framework for Teacher Education, 2009)

To fulfill these objectives, appropriate educational practices have to be included in the classroom. In the traditional classroom, the teacher lectures while standing at the front of the classroom, writes on the board, questions students about the assigned readings or handouts, and waits as students finish written work. In comparison, in the MI classroom, the teacher continually shifts method of presentation from linguistic to spatial to musical, and so on, often combining intelligences in creative ways (Stanford, 2003). Successful teaching-learning process brings effective change into the behaviour of the learners. To make teaching successful the teacher has to resort to various methods of teaching.

Kezar (2001) pointed that MIT combines issues addressed by many different movements; it is positioned to provide one framework for faculty and administrators to absorb. Furthermore, it is a philosophy, not just a single educational technique or approach. Philosophies offer a new way of conceptualizing education and answer questions about whom to teach, what to teach, how to teach, and what type of schools need to be formed to develop this form of education. MI theory has proved as catalyst in schools because it allows individuals (particularly parents and teachers), in a non threatening way, to look more carefully at children, to examine their own assumptions about potential and achievement, to consider a variety of approaches to teaching, to try out alternative forms of assessment-in short, to begin the fundamental kind of self-transformation that is necessary if schooling is to improve significantly (Gardner, 1994).

Goodnough (2001) postulated that MIT helped the teachers make positive “pedagogical decisions”. MIT encouraged educators to change their perspective and understand students ability in a more comprehensive and thorough fashion. An
important aspect of Multiple Intelligences (MI)'s appeal appears to be that it can be blended with pedagogical practices that include cooperative learning, inquiry, the inclusion of student experiences, and multisensory teaching in the classroom. As a theory, MI holds great promise possibly because of the potential to connect with students via multiple pathways. A second but equally enticing aspect of MI is its adaptability—the ability to be applied to many disparate uses in many different ways. This flexibility lends itself well in how one interprets and decides to apply the basic tenets of MI (Yearwood, 2004).

Teachers can fine-tune their teaching skills by undergoing training through workshops or teachers' training courses. Wilford and Karas (2005) suggested workshop for early childhood educators in two parts on MI. In first part, author asked to distribute leadership instructions and a handout to the participating staff members. In other part, he asked staff members to note their most prominent learning modes or intelligences (with examples) and observations of children whose learning modes seem to differ from their own. The authors suggested the workshop participants to share the teacher handout and invite parents to discuss the implications at a parent meeting.

Fishback (1999) indicated that learning effects different parts of the brain and further that different parts of the brain store particular parts of a memory. An emphasis on the multiple intelligences may help ensure that children learn and retain information longer than other approaches. Saban (2002) stated that implementations of MIT for a year have constructive effects on all individual in teaching and learning process. Rettig (2005) discussed MIT in relation to working with young children that there are at least four ways in which early childhood educators can address the multiple intelligences and these include an emphasis on toys and playthings, lesson planning, the use of centers, and a focus on career education. Moran, Kornhaber, and Gardner (2006) recommended that the proper way to integrate multiple intelligences theory in curricula is to develop rich lesson plans and teaching methods that allow students to nurture them in their own way.
**Rational:**

Preprimary education is the base for academic success or failure in later life. Irregularity in preprimary education, high PTR in the classes, and lack of qualified teachers raising a big issue for classroom practices. Due to these irregularities, gap is widening between teaching and learning. Further, it is responsible for the stagnation and dropouts in primary education. Providing quality education at an early age has positive effect on the young child's mind. With the existing classroom practices, MIT holds great scope to reach young child's mind as it can be blended with the existing practices.

Researches have emphasized on the early identification of the intelligences but found it to be less effective than training teachers on MIT. As teachers are the actual mentors of classrooms practices, there is a need to formulate programs for them to bridge the gap between teaching and learning. MIT has been found to be catalytic to provide a broad spectrum to the learning environment. In addition, it can help to furnish teachers with the skills of identifying profiles of children and themselves.

The aim of the present study is to plan and develop training module for the teachers on MIT. It intends to provide teachers with different lenses to discover, plan, implement and assess children. Keeping in view the previous researches, present study was designed and investigated based on following objectives:

- To find out the level of knowledge and preferences of multiple intelligences among preschool teachers on
  - Linguistic intelligence
  - Logical-mathematical intelligence
  - Spatial intelligence
  - Bodily-kinesthetic intelligence
  - Musical intelligence
  - Interpersonal intelligence
  - Intrapersonal intelligence
  - Naturalistic intelligence

- To develop and implement an intervention program for the preschool teachers on multiple intelligences
Introduction

➢ To compare the level of knowledge on multiple intelligences from pre to post among preschool teachers of experimental and control group

➢ To compare the multiple intelligences of the preschool children from pre to post observation among experimental and control group

➢ To examine the level of knowledge and preferences of multiple intelligences from pre to post in experimental group of preschool teachers

➢ To find out the effect of variables on the level of knowledge and preferences of multiple intelligences in preschool teachers:
  ▪ Age
  ▪ Education qualification
  ▪ Work experience
  ▪ Marital status
  ▪ Religion

➢ To ascertain the effect of intervention programme among teachers on multiple intelligences of preschool children

➢ To explore the gender differences of preschool children’s multiple intelligences