EFFICACY IN TEACHING THROUGH "MULTIPLE INTELLIGENCE" INSTRUCTIONAL STRATEGIES

By

B. TAMILSELVI * D. GEETHA **

* Associate Professor, Department of Education, Karpagam Academy of Higher Education, Coimbatore, Tamil Nadu, India.
** Research Scholar, Department of Education, Karpagam Academy of Higher Education, Coimbatore, Tamil Nadu, India.

ABSTRACT

Multiple intelligence is the theory that 'people are smart in more ways than one has immense implication for educators'. Howard Gardner proposed a new view of intelligence that is rapidly being incorporated in school curricula. In his theory of Multiple Intelligences, Gardner expanded the concept of intelligence with such areas as music, spatial relations, and interpersonal knowledge in addition to mathematical and linguistic ability. This article discusses on the intelligences, the theories based on intelligences, origin of Gardner's Theory of Multiple Intelligences and the incorporation of the theory of Multiple Intelligences into the classroom. To incorporate Multiple intelligence theory in the classroom, there is a need to specialize the process of lesson planning. This paper illustrates the need for special lesson planning, benefits of it to the teachers and learners, integrating various instructional strategies in lesson planning and its effect in the progress of the learners. This article also shows the importance of integrating MI activities in the lesson plans which aid students' learning, providing them with the optimum learning environment through their preferred learning medium and help them to achieve their fullest potential in their respective talented areas.

Keywords: Instructional Strategies, Interpersonal Knowledge, Learning Style, Lesson Plan, Multiple Intelligence.

INTRODUCTION

The Indian Education System has many stages such as the Nursery, the Primary, the Secondary, the Higher Secondary, the Graduation, and the Post Graduation. The Preprimary or the Nursery has the Lower Kindergarten and the Upper Kindergarten, where the basic reading and writing skills are developed. The teachers have to be qualified with a Bachelor's Degree in the subject and in Education for teaching up to High School and a Master's degree in the subject and Bachelor's or Master's in Education for teaching Higher Secondary classes. The role of teachers in achieving meaningful access to education is widely acknowledged and teachers have a pivotal role in the academic development of learners. The teachers in schools have a teaching plan or Year plan to cover the syllabus allotted to them in the period of an academic year. The teaching plan includes the Lesson plans and Assessment or Evaluation plans. The teachers adopt various teaching methodologies to reach the students. But they prepare the lesson plans only in the traditional way which includes: Aim, Motivation, Presentation, Resources, Follow-up and Evaluation. This method does not serve the purpose of reaching to every individual student in the class, the reason is being each individual student is unique with different learning style, with different intelligences and with different combination of intelligences. The learners understand the teaching concepts only when they are taught in the way they comprehend. Thus this article stresses on enhancing the efficacy of teaching using Multiple Intelligence Instructional Strategies.

1. Intelligence

'Intelligence' can be generally described as the ability to perceive information and retain it as knowledge for applying to itself or other instances of knowledge or information, thereby creating referable understanding. According to Mainstream Science on Intelligence (1994), Intelligence is a very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not

merely book learning, a narrow academic skill, or test-taking smarts. Rather, it reflects a broader and deeper capability for comprehending the surroundings - 'catching on', 'making sense' of things, or 'figuring out' what to do.

1.1 Theories on Intelligence

The idea that intelligence is multifaceted is not new. Around 1930, Thurstone was critical on Spearman's model of a single or general intelligence and argued that, people possessed several multiple abilities. Since then, other researchers have developed different models associated with multiple intelligences. Around 1960, a Californian psychologist, J.P. Guildford proposed a three-dimensional structure of intelligence and suggested that, there are 120 separate categories that define the intellectual capacities that make up the intelligence. The New York psychologist David Wechsler also described intelligence as a multi-faceted aggregate or global capacity and devised tests that are widely used by psychologists when assessing children. Robert Sternberg proposed a triarchic model in which the first branch is analytical intelligence, the second one is practical intelligence and the third, creative intelligence. Other writers have put forward different concepts of intelligence. For example, Tony Buzan has identified ten intelligences that include categories such as creative intelligence, personal intelligence, social intelligence and spiritual intelligence. Much more recently, the concept of emotional intelligence has become popular following the publication of Daniel Goleman's book, 'Emotional Intelligence' in 1995. Individuals differ from one another in their ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought. Although these individual differences can be substantial, they are never entirely consistent. A given person's intellectual performance will vary on different occasions, in different domains, as judged by different criteria.

2. Origin of Multiple Intelligence Theory

In 1904, the minister of public instruction in Paris asked the French psychologist Alfred Binet and a group of colleagues to develop a means of determining which primary grade students were 'at risk' for failure so these students could receive remedial attention. Out of their efforts, came the first intelligence tests, (imported to the United States several years later) intelligence testing became widespread, as did the notion that there was something called "intelligence" that could be objectively measured and reduced to a single number or 'IQ' score. Almost 80 years after, the first intelligence tests were developed by a Harvard Psychologist named Howard Gardner challenged this commonly held belief saying that, "our culture had defined intelligence too narrowly". He proposed in the book "Frames of Mind" that, the existence of at least seven basic intelligences. More recently, he has added an eighth and discussed the possibility of a ninth (Gardner, 1999). In his theory of Multiple Intelligences (MI theory), Gardner sought to broaden the scope of human potential beyond the confines of the IQ score. Gardner suggested that, intelligence has more to do with the capacity for (1) solving problems and (2) fashioning products in a context-rich and naturalistic setting.

3. Multiple Intelligence Theory

Howard Gardner's Multiple Intelligences Theory (MIT) (Gardner, 1983, 1999) is an important contribution to cognitive science and constitutes a learner-based philosophy which is "an increasingly popular approach to characterizing the ways in which learners are unique and to develop instruction to respond to this uniqueness" (Richards & Rodgers, 2001). MIT is a rationalist model that describes nine different intelligences. It has evolved in response to the need to reach a better understanding of how cognitive individual differences can be addressed and developed in the classroom. Gardner (1999) and his research associates identified the mathematical-logical, verbal-linguistic, musical-rhythmic, bodily-kinesthetic, interpersonal, intrapersonal, visual-spatial, naturalist and the existential intelligences. The following criteria have been used in MIT to identify intelligence: it entails the ability to solve problems, involves a biological proclivity, it has an identifiable neurological core operation or set of operations and it is susceptible to encoding in a symbol system which captures and conveys important forms of information (Gardner 1999b). These different intelligences reflect a pluralistic panorama of learners' individual differences; that

they are understood as personal tools of each individual possesses to make sense out of new information and to store it in such a way that, it can be easily retrieved when needed for use. The different intelligences are of neutral value; none of them is considered superior to the others. In their basic form, they are present to some extent in everyone, although a person will generally be more talented than others. Each of these frames is autonomous, changeable and trainable (Armstrong, 1999) and they interact to facilitate the solution of daily problems.

3.1 Essence of Multiple Intelligence Theory

According to Gardner, all individuals possess each of the eight intelligences to some extent, although individuals will differ in the degree of skills and in the nature of their combination. Gardner stresses that, it is the interaction between the different intelligences that is fundamental to the workings of the mind and that in the normal course of events, the intelligences actually interact with, and build upon, one another. The main messages arising from Gardner's model are set out below.

- All are born with a unique mix of all eight intelligences.
- Intelligences combine in complex ways.
- There are many ways to be intelligent within each category.
- Most people can develop each intelligence to an adequate level of competency.
- Schools tend to focus mainly on two intelligences, those associated with academic intelligence, that is, linguistic and logical/mathematical.
- The school curriculum should be better balanced in order to reflect a wider range of intelligences.

Multiple intelligences provide a wide variety of identifiable areas of knowledge and skills beyond traditional verbal and numerical to personal, social and creative. By focusing on these and other intelligences, pupils can more easily discover that they have strengths and use the resulting gains in confidence to develop those areas in which they are not so strong. Multiple intelligences can be used as a conceptual framework for organizing and reflecting on the curriculum. Teachers can use the theory of multiple intelligences to get to know each pupil's dominant strengths and areas for development. In applying theories of intelligence in the classroom, it is important that teachers do not categorize or compartmentalize the learners, but instead, recognize that pupils are strong in some aspects of intelligence and less strong in others. All young people should be provided with learning opportunities that help to nurture and develop their talents and abilities, and assessment methodologies should reflect the multiple nature of intelligence. MIT in a classroom can help teachers to give recognition to the holistic nature of learners and to address student diversity. It enables teachers to organize a variety of contexts that offer learners a variety of ways to engage in meaningful and strengthen the memory pathways; it is a teacher-friendly tool for lesson planning that can increase the learning standards and therefore create favorable motivational conditions.

3.2 Characteristics of Learners with Different MI

All Learners are intelligent to varying degrees in eight ways. Each learner has a unique profile. One may be very strong in one or two intelligences, medium in a few, and perhaps weak or empty (not yet filled) in one or two. Consequently, one may have four or five intelligences that are equally developed and two that are less developed. The important thing is to identify and build up one's strength to modify and increase the less developed intelligences in students. The following descriptions can be helpful to identify learners with basic personal characteristics, traits, behaviors, and preferences for each of the eight intelligences.

3.2.1 Learners with Verbal or Linguistic Intelligence

These are students with high verbal/linguistic intelligence words. They prefer to process information through words and language versus pictures. They may prefer oral or written methods, or excel in both. They are sensitive to the meaning, order, and sound of words; and use varied language. They are avid talkers and good speakers. They like to explain, convince, and persuade through words. They enjoy and excel at word games. They are good at listening, reading and telling stories. They enjoy rhymes, poetry and have good memory recall for names and dates.

3.2.2 Learners with Logical/Mathematical Intelligence

Students with high logical/mathematical intelligence

create order out of chaos by analyzing, grouping, and categorizing. They recognize relationships, connections, and patterns more easily than students with less logical intelligence. They are able to handle long chains of reasoning and prefer reasons for doing things. They possess good inductive and deductive reasoning. They are quick in learning equivalences, and asks a lot of 'why' and 'how' questions. They solve problems rapidly. They are good at predicting, analyzing and theorizing. They are very strong at Math problem solving skills. The students with this intelligence, enjoy board games and games with rules.

3.2.3 Learners with Musical Intelligence

Students with high musical intelligence learn best through sound, rhythm, and music. These students learn better when music is playing and through the musical metaphors. They are able to perceive pitch, tone, and rhythmic pattern. They have well developed auditory sense and discrimination. They are able to create, organize rhythmically, and compose music. They pick up easily and create melodies/rhythm fastly. They remember songs easily and are able to sing or play instruments. They are sensitive and drawn to sounds. They possess 'schemas' for hearing music; can be seen constantly humming, tapping, and singing.

3.2.4 Learners with Visual/Spatial Intelligence

Students with high visual intelligence process information best using pictures, visuals, and imagery. They have a sense of direction and an ability to think and plan in three dimensions. They are able to create complex mental images, possess active imagination. They are able to find their way mentally and physically around environment. They can see the physical world accurately and translate it into newer forms. They have the ability to see things in relationship to others and use 'mind maps' extensively. They use imagery and guided visualizations. They have preference to visual support (video), pictures, photos, charts, posters. They organize space, objects, and areas. They are good at designing and decorating.

3.2.5 Learners with Body/Kinesthetic Intelligence

Students with high kinesthetic intelligence process information through their bodies-through muscle, sensation, and movement. Their bodies are their avenue to learning and understanding any content or subject and are also their preferred form of self-expression. They possess a fine-tuned ability to use the body and handle objects (fine and gross motor). They can express emotions through bodily movement and enjoy physical movement and dance. They prefer constant movement-like to get up and move around quite often. They are committed to comfort and use body to accomplish a task. They experience a strong mind/body connection. They expand awareness through the body and experience a total physical response. They are naturally good at creative drama.

3.2.6 Learners with Interpersonal Intelligence

Students with high interpersonal intelligence process information through relatedness to others. It is in relationship to and with other people that they best understand themselves and the world. They are able to notice and discern subtleties among others, such as moods, temperaments, and feelings. They discern underlying intentions, behavior, and perspectives. They easily make friends and enjoy the company of others. They are able to get into the perspective of another. They respond to verbal and nonverbal communications-facial cues and body movements. They recognize and empathize with others' feelings. They are able to negotiate and handle conflict resolution. They work cooperatively in a group and also work well with a diverse group of people. They possess good communication skills and would love to talk and influence.

3.2.7 Learners with Intrapersonal Intelligence

Students with high intrapersonal intelligence have a strong sense of themselves, their needs. They are self reflective and in touch with themselves. They may be the non-conformist individuals who march to their own drummer. They possess well developed sense of self. They have awareness and expression of different feelings. They have self reflect and are mind power. They are able to think about thinking (metacognition). They often have day dream and enjoy self discovery. They write prose, poetry, or journal writing introspectively. They are excellent self planners and are good at goal setting. They enjoy solitude and like to think alone. They have an understanding of their own strengths and weaknesses.

3.2.8 Learners with Naturalistic Intelligence

The students with high naturalistic intelligence used to identify and organize naturally occurring patterns. These patterns can consist of fauna and flora, weather and seasons, and man-made objects. They have expertise in the recognition and classification of the numerous species - the flora and fauna. They possess knowledge and interest of an individual's environment. They are sensitive to other natural phenomena like cloud formations, mountains, etc.

3.2.9 Learners with Existential Intelligence

The students with high Existential Intelligence can be described as 'fully aware' of the cosmos - of its diversity, complexity, interconnected threads, and its wonders. Frequently, these are the children who persist in asking those "big" questions that adults cannot or will not answer. It involves an individual's ability to use collective values and intuition to understand others and the world around them. Students who excel in this intelligence typically are able to see the big picture. They seek meaningful learning. They look for connections across the curriculum. They like to synthesize ideas based on their learning. They develop a strong identity with their neighbourhood and town. They express a sense of belonging to a global community. They like to get involved in social and political causes.

3.3 Application of MI Theory in Classroom

The idea of multiple intelligences comes out of psychology. It is a theory that was developed to document the fact that human beings have very different kinds of intellectual strengths and that these strengths are very important in how kids learn, people represent things in their minds, and people use them in order to show what it is that they have understood. If all had exactly the same kind of mind and there was only one kind of intelligence, then teaching could be the same way for everybody in the classroom, and assess them in the same way and that would be fair. But once it is realized that students have very different kinds of mind, different kinds of strength – some are good in thinking spatially, some in thinking language, others are very logical, other people need to be hands on and explore actively and try things out then education, which treat everybody the same way, is actually the most unfair education. In a classroom of students with diverse intelligences, it becomes imperative for the teachers to study and identify the students with the different intelligences. Teachers when they integrate Multiple Intelligence Theory into the lesson planning, teaching strategies and assessment techniques, they can experience and find that the understanding comprehension and assimilation of the subject knowledge is much better as compared to the traditional style of adopting one teaching method for the whole class of students with different intelligences.

3.4 Scope for MI Instructional Strategies in Classroom

According to the statements quoted by Jenkins (1997), and Deming, all children should be seen to be born 'as motivated' which rather than believing that students should be 'motivated', which suggests that trainers do not need to know how to motivate students, rather they should know what decreases students' motivation. When a teacher always uses the method, he/she finds the easiest and fails to meet students' needs, hence the students' motivation is affected negatively. There are many possible methods which can be applied in a classroom setting. What is important is to select methods and techniques which are appropriate for the subject and which enable active participation of the students. Thus, motivation and discipline problems will be eliminated and more permanent learning behaviors will be ensured. The use of Multiple Intelligence Theory in a classroom setting can solve possible motivation and discipline problems. However, Gardner always suggests that, Multiple Intelligence Theory is not an Education prescription; that this theory can always be applied in education; that it is the trainers who will detect the areas to which this theory will be applied; and that the teaching activity to be performed according to this theory does not have one specific way. Gardner underlines the need to handle nearly all issues (in the application phase) by using different methods from storytelling to regular discussions and artistic research (Vickers,1995, pp.130-131). An important result is obtained when inspecting from a different perspective. Since all children do not learn with the same method, it will be possible to reach more children using this approach. Gardner calls this attractive approach, figuratively

speaking 'different windows into the same room'. When students observe that, a teacher can explain a piece of information using a number of different ways, they understand what it means to be an expert and also discover that they can also explain a specific subject in more than one way.

3.5 Learning Styles of Students

The way in which students' process information like how well they learn and how well they retain knowledge is directly related to the learning style of the individual. Teachers have long felt that if they lecture and tell students the same thing over and over again, the student will learn and understand a particular science of concept. This learning style and instructional technique were traditionally thought of as the way that the majority of people learn. Now, it does not hold true. Not everyone learns best with a single instructional technique. Students actually learn best through various styles: learning by seeing, learning by hearing, learning by doing, learning with music, learning by analyzing, and learning by discussing. Students process information according to their relationship to the individual. They learn by listening and sharing ideas, they perceive information concretely and process it reflectively, they tackle problems by reflecting alone and then brainstorming with others, and they view experiences from many perspectives. These learners are usually insightful and have a need to become personally involved with their learning. Those who acquire knowledge best through conceptual learning are goal-oriented that solitary learners who tackle problems with the logic. They perceive information abstractly and process it reflectively form theory and concepts, by integrating observations into what is known and think sequentially. Students who are actively involved in their own learning thrive during manipulation of objects or when presented with a problem to be solved. They are the 'how things work' learners. They love a challenge and will cut right to the heart of the matter. They perceive information abstractly and process it actively and also excel in down-to-earth, hands-on problem solving, and tackle problems by acting without consulting others. Some students learn through self-discovery. Such students are stimulative, impulsive, and enthusiastic; avoids isolation; and seeks to energize others. However, the drawback to all of this enthusiasm is that he/she will often take on too many responsibilities and a result will often not complete a task. These learners perceive information concretely and process it actively; are impulsive and intuitive; and thrive on challenges and crises.

3.6 Instructional Techniques

Students have different learning styles and multiple intelligences. This has implications for the design and execution of a Lesson plan or any teaching situation. Science teachers should think these with equal important and aim to reach a broader range of talents and skills. This philosophy contradicts the traditional educational systems of teaching science that typically emphasize the development and use of verbal and mathematical intelligences (Brualdi, 1996). Consideration of the various learning styles and intelligences of participants in learning, science requires that, the teachers select instructional techniques that engage most or all of the intelligences and learning styles. This not only excites students about learning, but it allows a teacher to reinforce the learning concept in various ways. By activating a wide assortment of intelligences, a teacher can facilitate a deeper understanding of the subject matter, and a student's ability to observe, memorize, and recall facts will be significantly higher (Maner, 1997). Although each learner has his or her own characteristics, it is important to realize, just as Gardner did, that some of these characteristics overlap. One instructional technique may address the needs of more than one learning style or intelligence. The instructor may draw on various instructional technique and accommodating all the learning styles during the period of teaching. Such techniques involve offering materials to read, giving puzzles or riddles to solve, composing music for the theme, holding group discussions on the topic, creative expression of the concept, allowing making models, taking on field trips so forth and so on.

3.7 Survey of Multiple Intelligence of Class

If teachers gain an understanding of the strong and weak intelligences of the students in their classrooms, they can better direct instruction to appeal to the students' strengths as well as improve upon their weaknesses. Questions arise as to the kinds of activities that best promote multiple

intelligences in the classroom. Applying Multiple Intelligence Theory in the classroom is meaningful because it promotes a change in the methodologies of teaching strategies through the sole use of drill worksheets; dialogue memorization, field visits, experiments; dramatizations and flow charts, which in recent years are called as "performance – based activities". In order to integrate the MI strategies into lesson planning, it is imperative to understand the students in the classroom related to their dominant intelligences. There are many standardized tests developed by the Educationists and psychologists such as the MI Questionnaire by Dr. Terry Armstrong, Birmingham Multiple Intelligence Test, Connell MI Test, etc. These tests can help the teachers determine which intelligences are strongest in each of his/her student. The teacher can also use it to find out which intelligences the learner uses most often. The teachers on administering the above questionnaire / test can find the Multiple Intelligence of each of the learner. The knowledge on the Multiple Intelligences of the class will facilitate the teacher to structure his/her lesson – plan with activities pertaining to the learning style and MI of each student of her class. The teacher executing the lesson –plan with integrated MI activities relevant to the concept of learning, can find that she/he is able to reach to each and every student of the class and the learning ability of the entire class is progressive.

3.8 Lesson Plan

Planning of a lesson is very essential for every teacher to conduct the lesson in an orderly fashion and allows the student to know what they learn. Preparing a good lesson plan will increase the confidence of the teacher to proceed. Before the preparation of the plan, it is required to identify the learning objectives for the class, then design appropriate learning activities that well fits into the syllabus.

3.8.1 Traditional Lesson Plan

Traditionally the teachers prepare lesson plans or unit plans under the following headings:

Aim: The objective or the learning outcomes of the lesson is listed.

Motivation: The way in which the teacher takes the class from the 'known to unknown' / 'simple to complex' / 'abstract to concrete' is expressed.

Presentation: The teacher share the methodology used to transact the lesson content to the students is charted.

Resources: The teaching resources used for the lesson is planned.

Review: The method by which the teacher recalls or revises the content is planned.

Evaluation: The teacher lists the activities by which the learners' understanding is assessed.

3.8.2 Lesson Plan Integrated with MIT Activities

Teachers using multiple-intelligences approach strive to present subject matter in the ways that allow students to use several intelligences. The teachers can meticulously chart out the Lesson –Plans incorporating the activities for each of the Multiple Intelligences of the students relevant to the concept to be taught. The following activities and strategies can help teachers strengthen and support the development of each of the students' intelligences. When teachers begin systematically to implement these multiple strategies to teach any subject, concept, or activity, they will naturally meet the individual needs of more children. As Colin Rose states, "The more ways you teach, the more people you reach." By adopting the lesson plan shown in Figure 1 which is integrated with MI activities, the students comprehend better because they learn the way they understand. The different MI activities reinforce their learning. All the students of the class gain opportunity to enhance their less dominant intelligences too.

3.9 Suggested MI Activities to Integrate In Lesson Plan

3.9.1 Verbal/Linguistic Activities

Choral speaking, declarizing, storytelling, retelling, speaking, debating, presenting, reading aloud, improving vocabulary, emergent/creative writing, writing and reading reports/essays, taking and giving dictation, giving and listening to verbal instructions (oral and/or written), lecturing, impromptu speaking, dramatizing, dialogue and discussion, publishing, telling jokes, listening to tapes, doing crossword puzzles, book making, non-fiction reading, researching, listening, process writing, writing journals comes under Verbal/Linguistics activities.

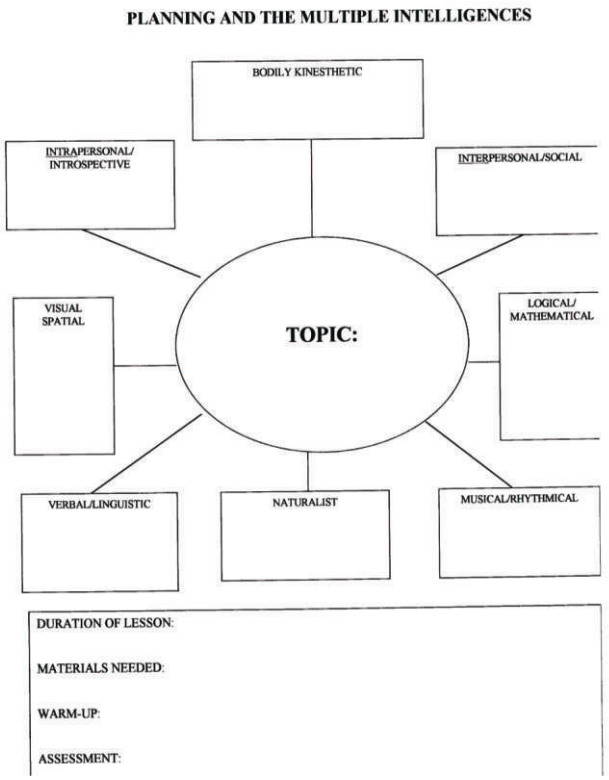

Figure 1. Lesson Plan

3.9.2 Logical/Mathematical Activities

Sorting and classifying objects or ideas, taking apart or fixing things, solving math problems, solving mysteries, riddles, puzzles, and word problems, measuring, coding, sequencing, exploring, outlining, grouping and calculating activities, creating timelines and sequences, comparing and contrasting, critical thinking, predicting, logic games, collecting data experiences that demonstrate change over time (e.g., before/after), using symbols and formulas, classifying, using manipulative, scientific model, using money, using geometry, playing pattern games, socratic questioning-especially open-ended and "what if" questions comes under Logical/Mathematical activities.

3.9.3 Visual/Spatial Activities

Using guided imagery, playing with patterns and designs, mind-mapping, taking pictures/photos, drawing/painting/sculpting, watching and making videos, creating charts and graphs, using color cues and organizers, circle/line dancing, changing teaching locations, rearranging the room to suit the subject or project, giving or taking visual/spatial instructions, visual metaphors, mapping stories, 3d projects, illustrating, sketching, patterning, visual puzzles comes under Visual/Spatial activities.

3.9.4 Body/Kinesthetic Activities

Role playing/drama, playing sports, playing physical games such as pictionary or charades, dancing, miming, using physical gestures, physical exercise, "hands-on" activities, changing seats and moving to different learning stations/centers, creating new room rearrangements, standing or moving while listening, learning a topic or idea with a physical gesture associated, taking things apart and tinkering, finger writing on palms or back, experiments, lab activities, physical arrangement, movement, physical education activities, crafts, dramatizing, cooperative groups, dancing are comes under Body/Kinesthetic activities.

3.9.5 Musical Activities

Listening to background, instrumental, or environmental music, unison recall activities, giving or listening to musical performances, singing, clapping and slapping memory games, rhythm, chants, and rap, setting new ideas to familiar tunes, using musical instruments, composing music, humming comes under Musical activities.

3.9.6 Interpersonal Activities

Cooperative learning, working with a partner, group projects and games, creative drama/role playing, simulation, practicing empathy, win/win competition, peer teaching and buddy systems, subject drills with partners, Quizzing each other, discussion, getting and giving feedback, classroom parties, peer editing, sharing, group work, forming clubs, social awareness, conflict mediation, tutoring, brainstorming comes under Interpersonal activities.

3.9.7 Intrapersonal Activities

Guided imagery, thinking about how to solve a task/problem, meditation, journal writing, self assessment, personal contracts and goal-setting, silent reflection and review time for recall or thinking about what has been learned, emotional processing, focusing/concentrating, higher-order reasoning tasks, time to be alone, providing choices, setting, individual projects, journal log keeping,

independent reading comes under intrapersonal activities.

3.9.8 Naturalistic Activities

Reading outside, cloud watching, identifying animals, building habitats, indentifying plants, dissecting, using a microscope, nature walk, build a garden, studying the stars, bird watching, collecting rocks, going to the zoo comes under naturalistic activities.

3.9.9 Existential Activities

Planning a charity event, maintaining a current event's notebook, art replicas, staging dramas comes under existential activities.

Investing time and effort into planning and constructing lesson plans will result in an optimal educational outcome. Numerous instructional techniques can be employed, but various ways are needed to evaluate the students. Assessment that truly reflects what a student has learned can be accomplished through group projects, journals, artwork, and portfolios. As Gardner believes, students should be encouraged to use their strongest domains and help them to develop their less dominant abilities and reflect on and analyze their own learning styles and ways of thinking. They must learn to think about how they think and learn (Brualdi 1996).

3.10 Implications of Multiple Intelligence Instructional Strategy

Professor Howard Gardner's ideas on multiple intelligences have had most appeal in the classroom where they confirm what teachers know from their everyday experience, namely that pupils have different skills and capabilities. The theory can be used to discuss what we mean when we describe people as being 'intelligent', 'able', 'gifted', 'talented' or 'clever' to remind students that everyone is good at something and has difficulty with others. Gardner is extremely critical of traditional school systems, which he says based on outdated models that regard intelligence as fixed and general. He also believes that, schools place far too great an emphasis on logical/mathematical and verbal/linguistic intelligences and in doing so, they fail to develop other talents and capacities of young people. Multiple intelligences provide a wide variety of identifiable areas of knowledge and skills beyond the traditional verbal and numerical to include the personal, social and creative. By focusing on these and other intelligences, pupils can more easily discover that they have strengths and use the resulting gains in confidence to develop those areas in which they are not so strong. Multiple intelligences can be used as a conceptual framework for organizing and reflecting on the curriculum. Teachers can use the theory of multiple intelligences to get to know each pupil's dominant strengths and areas for development. In applying theories of intelligence in the classroom, it is important that, teachers do not categorize or compartmentalize the learners, but instead recognize that pupils are strong in some aspects of intelligence and less strong in others. All young people should be provided with learning opportunities that help to nurture and develop their talents and abilities, and assessment methodologies should reflect the multiple nature of intelligence.

Conclusion

Howard Gardner's Theory of Multiple Intelligences honors and promotes the development of all eight avenues of intelligence in young children. This approach provides a framework to identify how children learn to build on their strongest assets; to help them become more intelligent by exposing them to a variety of ways of learning; to better individualize for their interests and needs; and to use teaching strategies that make learning more efficient, successful, and enjoyable for all children. Meaningful learning experiences can be administered using multiple teaching tools and strategies and by building positive, supportive relationships with children. Through environments that offer a variety of stimulating, hands-on materials that children individually select and by creating learning centers that provide natural opportunities to move, be active, and fully engaged in either solo or small group experiences, teachers better serve and meet the needs of more children. "All students can learn and succeed, but not all on the same day in the same way"- William G. Spady. With MI Integrated Lesson-Plans, teachers can reach all students with all intelligence profiles. With a large array of MI Activities, the teachers can match all students' intelligences; can make the curriculum attractive and engage to students strongly in the corresponding

intelligence. By using MI Integrated Lesson-Plans, students become smarter in many ways. As teachers use a range of instructional strategies, students get to know their strengths, their weaknesses, their likes, their dislikes. And they become aware of their unique intelligence profiles and of their peers as well. Students learn to celebrate their own uniqueness and the diversity among them. As teachers are better equipped with a wide range of MI Integrated Lesson-Plans for each concept, the more likely they are to reach students dominant in each intelligence, and the more likely they are to stretch students in all intelligences.

Reference

[1]. **Armstrong, T., (1999).** *7 Kinds of smart: Discovering and identifying your Multiple Intelligences (revised and updated with information on two new Kinds of Smart)*, Plume, New York, (pp 10)

[2]. **Brualdi, (1996).** *Multiple intelligences: Gardner's theory.*, ERIC Digest [Online]. Retrieved from http://www.eric.ed.gov/ contentdelivery/servlet /ERICServlet?accno=ED410226

[3]. **Gardner, H, (1983).** *Frames of Mind: The theory of Multiple Intelligences*, Basic Books, New York

[4]. **Gardner H., (1999),** *Intelligence Reframed: Multiple Intelligences for the 21st century*, Basic Books, New York, pp 15-16

[5]. **Gardner, H., (1999b).** *Are there additional intelligences? The case for naturalist, spiritual, and existential intelligences*, Englewood Cliffs, NJ: Prentice Hall (pp. 111-131).

[6]. **Jenkins, L., (1998).** *Improvement of learning in Classroom settings*, Harvard Education Publishing Group.

[7]. **Maner et al., (2002).** *Personality and Social Psychology Bulletin*, Vol. 28, pp 1601-1610

[8]. **Richards, J. C. and Rodgers, T. (2001).** *Approaches and Methods in Language Teaching,* 2nd Edition. Cambridge University Press, pp123

[9]. **Vickers, C. (1995).** *Multiple Intelligence: Interviews and Articles.*

ABOUT THE AUTHORS

Dr. B. Tamilselvi is an Associate Professor in the Department of Education, Karpagam Academy of Higher Education, Coimbatore. She has published more than ten papers in the specialization of Educational Psychology as well as Educational Technology in National and International Journals and has presented papers in Education, Yoga and Biology in International Conferences and National Seminars.

D. Geetha is a Ph.D. Research Scholar in the Department of Education, Karpagam Academy of Higher Education, Coimbatore, Tamil Nadu, India.