Research Paper E-ISSN NO : 2455-295X | VOLUME : 5 | ISSUE : 9 | SEPTEMBER 2019

EVALUATING THE RELIABILITY OF A NEWLY DEVISED MULTIPLE INTELLIGENCES ASSESSMENT TOOL (M.I.A.T.)

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ABSTRACT:

Multiple Intelligences, as instances of non-public traits, are believed to be fastened. Gardner's theory considers intelligence as a changeable construct which could be increased through education in acceptable contexts. The present study aimed at investigating the reliability of a newly formulated multiple intelligences assessment tool used in school going children. The required data were collected using Multiple Intelligences Assessment Tool (M.I.A.T). The obtained data were analyzed using repeated measures one-way ANOVA procedures. Results showed the statistical reliability of M.I.A.T. amongst 6 to 14 year old children.

KEYWORDS:

MULTIPLE INTELLIGENCES, SCHOOL CHILDREN, FACTOR ANALYSIS, RELIABILITY.

INTRODUCTION

"It's not how smart you are that matters, what really counts is how you are smart."

The concept of intelligence is an influential factor in human's social, educational and professional life. Intelligence consists of the many separate mental skills that operate separately. Piaget believed that intelligence represents the biological adaptation of an individual to the environment. Piaget suggests that intelligence will increase as kids will develop, particularly from birth through age 5.Intelligence is that ability to develop a good product or supply a service that's valued during a culture; a collection of skills that make it potential for a person to unravel issues in life; the potential for locating or making solutions for issues that involves gathering new information.[1]

Howard Garner's (the father of multiple intelligences) description of human intelligence offers greater clarity. He states, it is the capacity to do something useful and valued in the society, the ability to respond successfully to new situations and to learn from past experiences and the ability to resolve problems encountered in life. Dr. Howard Gardner, a psychologist and professor of neuroscience from Harvard University, developed the theory of Multiple Intelligences (MI) in 1983.Human beings have 9totally different varieties of intelligences that replicate alternative ways of interacting with the world. Each person has a unique combination, or profile. Although we have a tendency to have all eight intelligences, no two people have them within the same actual configuration-like our fingerprints.

Multiple intelligences theory may be a psychological feature model that seeks to explain how ever individuals use their intelligences to resolve issues and fashion merchandise.

There is existence of nine intelligences i.e. Linguistic, Logical-Mathematical, Visual-Spatial, Bodily-Kinesthetic, Musical, Interpersonal, Intrapersonal, Naturalistic and Existential intelligences. These are a system of independent intelligences that interact with each other and that the traditional view of intelligence does not manifest the various abilities of humans. The most important thing The Multiple Intelligences theory has done is called attention to the ways children express themselves. The implication of multiple intelligences in different domains of life of a child lies on the identification of child's weaknesses and strengths through utilizing Multiple Intelligences Assessment Tool. Based on Gardner's Multiple Intelligences Tool (MIT) a new Multiple Intelligences Assessment Tool (M.I.A.T.) was formulated targeting five to fourteen year old school going children. The multiple intelligences included were-

•ANALYTICAL-

The succeeding three intelligences square measure analytic as a result of even supposing they will have a social or introspective element to them, they most essentially promote the method of analyzing and incorporating knowledge into existing situations. The analytical intelligences are naturally heuristic (speculative formulation) processes.

LOGICAL-MATHEMATICAL INTELLIGENCE: It is the ability of both dealing with numbers effectively and reasoning. This intelligence includes sensitivity to logical

patterns and relationships, statements and propositions (if-then, cause-effect), functions, and other related abstractions. Categorization, classification, inference, generalization, calculation, and hypothesis testing are processes related to Logical-Mathematical domain.[3]

MUSICAL INTELLIGENCE: It is the ability to perceive, discriminate, transform, and express forms related to music. This intelligence incorporates sensitivity to the rhythm, pitch or melody, and timbre or tone colour of a musical piece.

One will have a figurative or "top-down" understanding of music (global, intuitive), a formal or "bottom-up" understanding (analytic, technical), or both.[3]

Naturalistic intelligence: It is the ability to recognize and classify species in one's environment. It is related to recognition, appreciation, and understanding of the natural environment.

• INTROSPECTIVE-

The following two intelligences square measure introspective as they need a looking inward by the learner, an emotive connection to their own experiences and beliefs in order to make sense of new learning. The introspective intelligences are by nature affective processes.

SPATIAL-VISUAL INTELLIGENCE: It is related to the appreciation of visual-spatial patterns and the capacity to manipulate them. It puts emphasis on the ability to perceive the visual-spatial world accurately (e.g., as a hunter, scout, or guide) and to perform transformations upon those perceptions (e.g., as an interior decorator, architect, artist, or inventor). This intelligence involves sensitivity to hue, line, shape, form, space, and the relationships that exists between these elements. It includes the capability to check, to graphically represent visual or spatial ideas, and to orient oneself appropriately in a spatial matrix.

INTRAPERSONAL INTELLIGENCE: It is identified as self-knowledge and the capacity to use this knowledge to have a good life. This intelligence includes having a precise image of oneself (one's strengths and limitations); awareness of inner moods, intentions, motivations, temperaments, and desires; and the capacity for self-discipline, self-understanding, and self-esteem.

• INTERACTIVE-

The following three intelligences are interactive asthey will be excited through passive activity and will generally invite and encourage interaction to realize understanding. Even if a child completes a task discretely, s/he must consider others through the way s/he writes, creates, constructs and makes conclusions. The interactive intelligences are by nature social processes. Interpersonal intelligence: It is the capacity to appreciate and discriminate among people's feelings, moods, intentions, and motivations. Moreover, this intelligence offers the potential tofurther know the meanings projected through body gestures.

LINGUISTIC INTELLIGENCE: It is the ability of using language effectively in spoken or written form through knowledge of syntax, semantic, phonology, and pragmatic. Some of these uses embrace rhetoric (using language to persuade others to take a particular course of action), mnemonics (using language to remember information), explanation (using language to inform), and meta-language (using language to talk about itself).

BODILY-KINESTHETIC INTELLIGENCE: It is related to the ability of expressing one's feelings and ideas through one's whole body or parts of body or the ability of manipulating objects by hands. This intelligence includes specific physical skills like coordination, balance, dexterity, strength, flexibility, and speed, and also proprioceptive, tactile, and tactual capacities.[3]

AIM:

The present study was conducted with the aim of assessing the reliability of a newly formulated Multiple Intelligences Assessment Tool (M.I.A.T.) used amongst school going children in the age group of 6 to 14 years.

METHODOLOGY

DESCRIPTION OF THE SAMPLE:

The Sample consisted of 105 school children from 'The New Era Primary School', Ahmedabad city, from the State of Gujarat, India. A total of 110 questionnaires on emotional intelligence were distributed out which only 105 were found complete in all aspects. Children in the age group ranging from 6 to 14 years of age are the participants for the study. The sample children consisted of equal numbers of 46 boys and 59 girls. Almost majority of the children are from economically and socially backward sections of the society. An ethical approval from the school ethics committee had been obtained before conducting the study.

TOOLS USED FOR THE STUDY:

The current study is based on the primary data elicited through a well framed structured tool. The tool was formulated by taking the reference of Gardner's MIT items. The tool focused on eight different intelligence models such as (Linguistic, Logical-Mathematical, Visual-Spatial, Bodily-Kinaesthetic, Musical, Interpersonal, Intrapersonal and Naturalistic intelligences. 48 items were framed and the highest score was assigned as 4 to 'mostly agree', 3 to 'slightly agree', 2 to 'slightly disagree' and the least score 1 was assigned to 'mostly disagree'. Since the school students belong to English medium, the statements were kept in English for easy understanding. This has facilitated the school children to understand and fill the tool easily. Moreover, the school teachers also assisted them in filling up the tool. After collecting data from 105 school children statistical evaluation was done.

SAMPLING AND STATISTICAL TECHNIQUE USED:

110 students between the ages of 5 to 14 years were randomly selected and were given the M.I.A.T. form. Out of

which 105 tools were complete. The data collected was statistically analysed using the Cranach's alpha scale of reliability.

SAMPLE ITEM:

MULTIPLE INTELLIGENCES ASSESSMENT TOOL (M.I.A.T.)

(Score the statements: 1 = Mostly Disagree, 2 = Slightly Disagree, 3 = Slightly Agree, 4 = Mostly Agree.)

1. I enjoy working on a garden.
2. I believe preserving (saving/keeping) our National Parks is important.
3. Animals are important in my life.
4. I enjoy studying biology, botany and/or zoology.
5. I spend a great deal of time outdoors.
6. Environmental issues are important to me.
7. I focus on noise and sounds.
8. I've always been interested in playing an instrument.
9. Concentration is difficult while listening to a radio or television.
10. Remembering song lyrics is easy for me.
11. At school I love / loved music lessons.
12. Singing makes me feel happy.
13. I keep my things neat and orderly.
14. I find it easy to remember telephone numbers.
15. My favorite subject at school is / was maths.
16. I can complete calculations quickly in my head.
17. I can't begin an assignment until all my questions are answered.
18. I don't use my fingers when I count.
19. Study groups are very productive for me.
20. Participating in politics is important.
21. I am a "team player".
22. I dislike working alone.
23. Clubs and extracurricular activities are fun.
24. I can tell easily whether someone likes me or dislikes me.
25. I play a sport or dance.
26. To learn something new, I need to just get on and try it.
27. Sitting still for long periods of time is difficult for me.
28. A fit body is important for a fit mind.
29. Arts and crafts are enjoyable pastimes.
30. I find ball games easy and enjoyable.
31. I keep a diary.
32. I am happy spending time alone.
33. Working alone can be just as productive as working in a group.
34. I need to know why I should do something before I agree to do it.
35. I like to be involved in causes that help others.
36. I set myself goals and plans for the future.
37. My favorite subject at school is / was art.
38. Rearranging a room is fun for me.
39. I can recall things in mental pictures (I often see clear images when I close my eyes).
40. I am good at reading maps, atlases and blueprints.
41. I can always recognize places that I have been before, even when I was very young.
42. I find graphs, charts and diagrams easy to understand.
43. At school one of my favourite subjects is / was English.
44. I enjoy reading all kinds of materials.
45. Taking notes helps me remember and understand.
46. Foreign languages interest me.
47. I find it easy to make up stories.
48. It is easy for me to explain my ideas to others.

TYPE OF STRENGTH	TOTAL SCORE
1-6 NATURALISTIC	
7-12 MUSICAL	
13-18 LOGICAL-MATHEMATICAL	
19-24 INTERPERSONAL	
25-30 BODILY-KINESTHETIC	
31-36 INTRAPERSONAL	
37-42 SPATIAL-VISUAL	
43-48 LINGUISTIC	

CASE PROCESSING SUMMARY

		N	%
CASES	VALID	105	100.0
	EXCLUDED[A]	0	.0
	TOTAL	105	100.0

a. List wise deletion based on all variables in the procedure.

RELIABILITY STATISTICS

CRONBACH'S ALPHA	PART 1	VALUE	.[a]
		N OF ITEMS	1[b]
	PART 2	VALUE	.[a]
		N OF ITEMS	1[c]
TOTAL N OF ITEMS			2
CORRELATION BETWEEN FORMS			.378

SPEARMAN-BROWN COEFFICIENT	EQUAL LENGTH	.549
	UNEQUAL LENGTH	.549
GUTTMAN SPLIT-HALF COEFFICIENT		.536

a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

b. The item is: EVEN

c. The item is: ODD

ITEM STATISTICS

	MEAN	STD. DEVIATION	N
EVEN	67.0762	11.03116	105
ODD	68.6095	8.57265	105

INTER-ITEM CORRELATION MATRIX

	EVEN	ODD
EVEN	1.000	.378
ODD	.378	1.000

SUMMARY ITEM STATISTICS

		Mean	Minimum	Variance	N of Items	Maximum	Range	Maximum / Minimum
Item Means	Part 1	67.076	67.076	.000	1[a]			
	Part 2	68.610	68.610	.000	1[b]			
	Both Parts	67.843	67.076	1.176	2	68.610	1.533	1.023
Inter-Item Correlations	Part 1	.000	1.798E308	.000	1[a]			
	Part 2	.000	1.798E308	.000	1[b]			
	Both Parts	.378	.378	.000	2	.378	.000	1.000

a. The item is: EVEN

b. The item is: ODD

SCALE STATISTICS

	MEAN	VARIANCE	STD. DEVIATION	N OF ITEMS
PART 1	67.0762	121.686	11.03116	1[a]
PART 2	68.6095	73.490	8.57265	1[b]
BOTH PARTS	1.3569E2	266.660	16.32972	2

a. The item is: EVEN

b. The item is: ODD

CONCLUSION

The research described in this paper addressed the development and reliability of a self-report measure of multiple intelligences. The model of multiple intelligences provided the conceptual foundation for the items used in the scale. The scale showed evidence of reliability. Scores on the scale were related to four measures predicted to be related to the multiple intelligences. The assessment helps children realize their unique talents and boost confidence. It can be used to enhance the academic performance of students. The assessment scores function as a foundation for examining appropriate careers for children.

It enables children to establish their strengths and weaknesses, thereby, highlighting areas of improvement. In sum, the findings indicate that M.I.A.T holds promise as a reliable measure of multiple intelligences. Potential uses of the scale in theoretical research involve exploring the nature of multiple intelligences, including the determinants of multiple intelligences, the effects of multiple intelligences and whether multiple intelligences can be enhanced in children. Every child has all the intelligences which they can strengthen.

Few things in life are as enjoyable as when we concentrate on a difficult task, using all our skills, knowing what has to be done. So, if you know what is going on, you haven't got a clue about what's going on. Discover your differences, the asynchrony with which you have been blessed or cursed and make the most of it.

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