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Multiple Intelligence of the BTEB Officials in Bangladesh

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Abstract: *The study purpose to understand the multiple intelligence condition of Bangladesh Technical Education Board (BTEB) official. It was found from the study that TVET Associates owned on an average 73.32% Linguistic intelligence, 74.66% Logical-Mathematical intelligence, 60.00% Spatial intelligence, 86.66%Bodily-Kinesthetic intelligence, 61.36% Musical intelligence, 93.32% Interpersonal intelligence, 70.66% Intrapersonal intelligence, 80.00% Naturalist intelligence, and 72.00% Existential intelligence. The study shows that interpersonal intelligence has highest percentage whereas spatial intelligence has lowest percentage.*

Keywords*-Multiple Intelligence,BTEB, Officials, Bangladesh*

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I. Introduction

Teaching is a process meant mainly to facilitate students' learning. It is a teacher activity which aims to providelearners with better learning opportunities. In this context, learners have different needs, interests and learning styles[1]. Sometimes, teachers struggle to meet these needs. This entails that teachers should adjust their instructional strategiesso that they can cater for the varying needs of TVET learners. Howard Gardner's multiple intelligences could helpteachers be aware of students' individual characteristics in order to cater for these needs. They can incorporate theseintelligences in their lesson plans for practical use in the classroom.

Technical and Vocational Education and Training (TVET) is used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life [2]. Technical and Vocational Education and Training (TVET) is a term applied to schools, institutions, and educational programs that specialize in the skilled trades, applied sciences, modern technologies, and career preparation. It was formerly (and is still commonly) called vocational education; however, the term has fallen out of favor with most educators.

In this broad definition, TVET refers to a range of learning experiences which are relevant to the world of work. The learning experiences may occur in a variety of learning contexts, including educational institutions and work places.

TVET also refers to deliberate interventions to bring about learning which would make people more productive (or simply adequately productive) in designated areas of economic activity (e.g., economic sectors, occupations, specific work tasks)[3]. This is the distinctive purpose of TVET. However, TVET will also have other purposes which are not unique to TVET, and which also apply to other forms of education, e.g., knowledge, skills, insights and mindsets which are deemed to be generally valuable for the learners, not only in designated areas of economic activity. Such "other" aims will be especially pertinent for longer and full time courses for youth in contrast to short and episodic training events (e.g., for persons already at work in the occupations concerned). TVET also needs to be conducted according to general social norms about how learners and people in general are to be treated by institutions, e.g., that persons be treated with respect. Thus "work productivity" is not the only aim and concern of TVET, but it is its distinctive objective which sets it apart from other forms of education and training.

"Education" as all forms of deliberate interventions designed to bring about learning, and "training" as interventions specifically aimed to achieve mastery of performance in specified roles or tasks [4]. There is however also in the Western tradition of educational philosophy an original concept of "education" which refers to enabling persons to "realize their potential" across a wide range of valued "human development".

TVET may be offered in middle schools and high schools or through community colleges and other postsecondary institutions and certification programs. At the secondary level, TVET is often provided by regional centers that serve students from multiple schools or districts. For example, Bangladesh Technical Education Board (BTEB) administers a network of more than seven thousand Institutes that serve students

throughout the state. BTEB has developed 28 different curriculums for offering different types of course or program in different engineering trade, technology and specializations. BTEB also has affiliated a total of 7773 public and private institutes with seat capacity of 714,644 up to December 2015. It is observed that only 9% of the total seat capacity is under public institutes and rest 91% are in private institutes.

One of the more recent ideas to emerge is Howard Gardner's theory of multiple intelligences. Instead of focusing on the analysis of test scores, Gardner proposed that numerical expressions of human intelligence are not a full and accurate depiction of people's abilities. Multiple Intelligences is the theory, created by Howard Gardner that every person excels at a different type of learning. Gardner's theory (1985) proposed various types of intelligence capacities that result in many different ways ofunderstanding and learning about the world [5]. As Gardner (1993) states: It is of the utmost importance that we recognizeand nurture all of the varied human intelligences, and all of the combinations of intelligences. We are all so differentlargely because we all have different combinations of intelligences. If we recognize this, I think we will have at least abetter chance of dealing appropriately with the many problems we face in the world.

Christison& Kennedy (1999) maintained that the theory of multipleintelligences includes more than verbal/linguistic and logical/mathematical abilities [6]. MIs theory implies that all humanspossess at least eight different intelligences that represent a variety of ways to learn and demonstrate understanding.

From "Mainstream Science on Intelligence" (1994), an open statement in the Wall Street Journal signed by fifty-two researchers (out of 131)[7]. 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 our surroundings—"catching on," "making sense" of things, or "figuring out" what to do.

From "Intelligence: Knowns and Unknowns" [8]a report published by the Board of Scientific Affairs of the American Psychological Association: 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. Concepts of "intelligence" are attempts to clarify and organize this complex set of phenomena. Although considerable clarity has been achieved in some areas, no such conceptualization has yet answered all the important questions, and none commands universal assent. Indeed, when two dozen prominent theorists were recently asked to define intelligence, they gave two dozen, somewhat different, definitions.

Besides those definitions,psychologyandlearningresearchers also have suggested definitions of intelligence Alfred Binet said thatJudgment, otherwise called "good sense," "practical sense," "initiative," the faculty of adapting one's self to circumstances auto-critique [9]. David Wechsler said that The aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment.Lloyd Humphreys said that the resultant of the process of acquiring, storing in memory, retrieving, combining, comparing, and using in new contexts information and conceptual skills [10]. Cyril Burt said that Innate general cognitive ability[11]. Howard Gardner said that to my mind, a human intellectual competence must entail a set of skills ofproblem solving enabling the individual to resolve genuine problems or difficulties that he or she encounters and, when appropriate, to create an effective product and must also entail the potential for finding or creating problems and thereby laying the groundwork for the acquisition of new knowledge [12]. Linda Gottfredson said that The ability to deal with cognitive complexity[13]. Sternberg& Salter said that Goal-directedadaptive behavior [14].Reuven Feuerstein said that The theory of Structural Cognitive Modifiability describes intelligence as "the unique propensity of human beings to change or modify the structure of their cognitive functioning to adapt to the changing demands of a life situation."[15]. Charles Spearman said that "all branches of intellectual activity have in common one fundamental function, whereas the remaining or specific elements of the activity seem in every case to be wholly different from that in all the others"[16]. Legg&Hutter said that A synthesis of 70+ definitions from psychology, philosophy, and AI researchers: "Intelligence measures an agent's ability to achieve goals in a wide range of environments,"which has been mathematically formalized [17].

Human intelligence is the intellectual capacity of humans, which is characterized by perception, consciousness, self-awareness, and volition. Intelligence enables humans to remember descriptions of things and use those descriptions in future behaviors[18]. It is a cognitive process. It gives humans the cognitive abilities to learn, form concepts, understand, and reason, including the capacities to recognize patterns, comprehend ideas, plan, problem solve, and use language to communicate. Intelligence enables humans to experience and think.

British psychologist Charles Spearman (1863-1945) described a concept he referred to as general intelligence or the g factor[19]. After using a technique known as factor analysis to examine some mental aptitude tests, Spearman concluded that scores on these tests were remarkably similar. People who performed

well on one cognitive test tended to perform well on other tests while those who scored badly on one test tended to score badly on others. He concluded that intelligence is general cognitive ability that could be measured and numerically expressed.

Psychologist Louis L. Thurstone (1887-1955) offered a differing theory of intelligence [20]. Instead of viewing intelligence as a single, general ability, Thurstone's theory focused on seven different "primary mental abilities."

Psychologist Robert Sternberg defined intelligence as "mental activity directed toward purposive adaptation to, selection and shaping of, real-world environments relevant to one's life."[21]. While he agreed with Gardner that intelligence is much broader than a single, general ability, he instead suggested some of Gardner's intelligences are better viewed as individual talents. Sternberg proposed what he referred to as 'successful intelligence' involving three different factors.

One of the more recent ideas to emerge is Howard Gardner's theory of multiple intelligences [22]. Instead of focusing on the analysis of test scores, Gardner proposed that numerical expressions of human intelligence are not a full and accurate depiction of people's abilities. His theory describes eight distinct intelligences based on skills and abilities that are valued in different cultures.

Emotional intelligence (EI) is the capability of individuals to recognize their own, and other people's emotions, to discern between different feelings and label them appropriately, to use emotional information to guide thinking and behavior, and to manage and/or adjust emotions to adapt environments or achieve one's goal(s) [23].

The term "emotional intelligence" seems first to have appeared in a 1964 paper by Michael Beldoch, and in the 1966 paper by B. Leuner entitled Emotional intelligence and emancipation which appeared in the psychotherapeutic journal: Practice of child psychology and child psychiatry.

Emotional intelligence can be defined as the ability to monitor one's own and other people's emotions, to discriminate between different emotions and label them appropriately and to use emotional information to guide thinking and behavior. Emotional intelligence also reflects abilities to join intelligence, empathy and emotions to enhance thought and understanding of interpersonal dynamics.

Multiple Intelligences is the theory, created by Howard Gardner that every person excels at a different type of learning. Use the following checklist to determine which intelligence each of your students possesses. Send it home to parents so they can better understand how their child functions and learns in the classroom. Then, check out our other Multiple Intelligences Resources [24].

The purpose of the study is to understand the multiple intelligences of the BTEB officials. By using this knowledge, the scope of this research would be extended to measure the multiple intelligences of TVET Learners, Teacher/Trainers, TVET Managers and TVET Professionals for re-forming and implementing the TVET curriculum.

II. Methodology

2.1 Scope of study

A total of 55 officials are working in the Bangladesh Technical Education Board (BTEB), the academic controlling authority for providing quality TVET in Bangladesh. Data has been collected from those officials of BTEB along with other TVET professional who are working with BTEB as invited or contract basis.

2.2Sampling

For selecting the officials of TVET, sampling was done by using formula of simple random sampling. After providing Margin of Error, ME = 5%, Confidence Level, CL = 95%, Response Distribution = 50% and Total Population Size, TPS = 55, the sample size (ss) is determined as 15 who were under the sampling unit and selected randomly.

$$s = \frac{Z^2 \times (p) \times (1-p)}{c^2} \quad \text{----------(1)}$$

$$\text{Correctedss} = \frac{Ss}{1 + \frac{ss - 1}{Pop}} \quad \text{----------(2)}$$

Where:

Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice/response distribution, expressed as decimal (e.g. 0.5)

c = confidence interval/margin of error, expressed as decimal (e.g., .05)

pop = population (55)

ss = sample size

2.3 Selection of data collection techniques and tools

Interviewing technique has been used while structure questionnaire was used as the tools for data collection process.

III. Result And Discussion

It was found from the frequency distribution table mentioned above that TVET Associates owned on an average 73.32% Linguistic intelligence, 74.66% Logical-Mathematical intelligence, 60.00% Spatial intelligence, 86.66% Bodily-Kinesthetic intelligence, 61.36% Musical intelligence,93.32% Interpersonal intelligence, 70.66% Intrapersonal intelligence, 80.00% Naturalist intelligence, and 72.00% Existential intelligence.

3.1 Linguistic intelligence condition of BTEB official

Table-1 Analyzing linguistic intelligence

Criteria	Valid (%)	
	Yes	No
Enjoy listening to other people talking?	86.70	13.30
Enjoy reading books?	93.30	6.70
Enjoy spelling?	60.00	40.00
Enjoy writing?	73.30	26.70
Have a good memory?	53.30	46.70
Average (%)	73.32	26.68

Table-1 shows that TVET Associates of BTEB are enjoying reading books mostly but they could not have good memory. This is because most of the TVET professionals required doing practical work and they give less emphasizing on memorizing.

3.2 Logical-mathematical intelligence condition of BTEB official

Table-2 Analyzing logical-mathematical intelligence

Criteria	Valid (%)	
	Yes	No
Enjoy chess, checkers, or other strategy games?	66.7	33.3
Enjoy counting?	66.7	33.3
Enjoy doing science experiments?	73.3	26.7
Enjoy math class?	73.3	26.7
Like to work with computers and calculators?	93.3	6.7
Average (%)	74.66	25.34

According to Table-2, it is found that BTEB officials are likely to work with computers but they don't like strategic games or enjoying counting. Because the officials are found mostly technically sound in their work required the computer literacy and they depend on computer for counting.

3.3 Spatial intelligence condition of BTEB official

Table-3 Analyzing spatial intelligence

Criteria	Valid (%)	
	Yes	No
Doodle (draw) a lot on notebooks?	53.30	46.70
Find the way around a new place easily?	66.70	33.30
Like to build interesting three-dimensional constructions?	40.00	60.00
Prefer to draw pictures rather than tell stories?	60.00	40.00
Read maps, charts, or diagrams more easily than text?	80.00	20.00
Average (%)	60.00	40.00

Table-3 shows that TVET Associates of BTEB are enjoying reading maps, charts, or diagrams more easily than text mostly but they could not have good drawing abilities. This is because most of the TVET professionals required doing practical work and they depend on computer for drawing.

3.4 Bodily-kinesthetic intelligence condition of BTEB official

Table-4 Analyzing bodily-kinesthetic intelligence

Criteria	Valid (%)	
	Yes	No
Enjoy hands -on?	93.30	6.70
Enjoy learning by doing?	100.00	-
Enjoy playing?	80.00	20.00
Enjoy Skilled on craft?	93.30	6.70
Run, swim, and exercise without getting tired?	66.70	33.30
Average (%)	86.66	13.34

Table-4 shows that TVET Associates of BTEB are enjoying learning by doing mostly but they could not have good running, swimming, and exercisingabilitieswithout getting tired. This is because most of the TVET professionals required doing hands-on job with stress and they become tired and getting fatigue on doing physical work.

3.5 Musical intelligence condition of BETB official

Table-5 Analyzing musical intelligence

Criteria	Valid (%)	
	Yes	No
Enjoy easily with sounds in nature?	86.70	13.30
Enjoy playing a musical instrument?	46.70	53.30
Enjoy reciting poetry, rhymes with music?	86.70	13.30
Have a good singing voice?	26.70	73.30
Listen to music a lot?	60.00	40.00
Average (%)	61.36	38.64

Table-5 shows that TVET Associates of BTEB are having less musical intelligence. Therefore, the curriculum required to include extra-curricular activities for increasing musical intelligence.

3.6 Interpersonal intelligence condition of BETB official

Table-6 Analyzing interpersonal intelligence

Criteria	Valid (%)	
	Yes	No
Be helping and cooperative?	100.00	-
Give advice to friends who have problems?	93.30	6.70
Have a good sense of empathy or concern for others?	100.00	-
Have two or more close friends?	80.00	20.00
Enjoy group work?	93.30	6.70
Average (%)	93.32	6.68

TVET associates of BTEB are found cooperative (Table-6). They are focused on group work. Their interpersonal intelligences are dominant in nature.

3.7 Intrapersonal intelligence condition of BETB official

Table-7 Analyzing intrapersonal intelligence

Criteria	Valid (%)	
	Yes	No
Avoid social gathering?	60.00	40.00
Can realize any circumstances in prior?	73.30	26.70
Less talkative?	60.00	40.00
More thinking?	80.00	20.00
Want to learn alone?	80.00	20.00
Average (%)	70.66	29.34

Table-7 shows that TVET Associates of BTEB are having extrovert qualities mostly. They become good leader in their field of job but having less intrapersonal intelligences. This is because most of the TVET professionals required doing hands-on job with stress and they become tired and getting fatigue on doing physical work and maintaining communication effectively.

3.8 Naturalist intelligence condition of BETB official

Table-8 Analyzing naturalist intelligence

Criteria	Valid (%)	
	Yes	No
Enjoy collecting bugs, flowers, or rocks?	73.30	26.70
Enjoy planting and gardening?	86.70	13.30
Enjoy talking on pet animal or favorite natural places?	73.30	26.70
Like to visit Zoo, Botanical garden, village or forest?	86.70	13.30
Shouting for environmental conservation?	80.00	20.00
Average (%)	80.00	20.00

Table-8 shows that TVET Associates of BTEB are not nature friendly mostly. Therefore, the curriculum required to include field visit and extra-curricular activities for increasing naturalist intelligence.

3.9 Existence intelligence condition of BETB official

Table-9 Analyzing existential intelligence

Criteria	Valid (%)	
	Yes	No
Adjust prior experience with new information?	80.00	20.00
Enjoy comparative religion?	66.70	33.30
Keep relationship closely with family members and friends?	86.70	13.30
Want to know why learn?	73.30	26.70
Want to know why people born on earth or why people die?	53.30	46.70
Average (%)	72.00	28.00

According Table-9 it is found that TVET Associates of BTEB are going to be technical body mostly. They do not get any interest on spiritual activities which tend to make them robty body. Philosophically, TVET professional are less emotional, less cultural, and less mankind beyond their work. They are always busy with their daily routine work, work with machine & materials. It may also highlight the areas revealed in this study where TVET Associates of BTEB havea negative attitude towards musical and naturalistic intelligences. Therefore, the curriculum required to include morale education and training along with field visit and extra-curricular activities for increasing existential intelligence.

3.10 Intelligence criterion condition of BETB official

Table-10 Intelligence criteria

Criteria	Valid (%)	
	Yes	No
Linguistic Intelligence	73.32	26.68
Logical-Mathematical Intelligence	74.66	25.34
Spatial Intelligence	60.00	40.00
Bodily-Kinesthetic Intelligence	86.66	13.34
Musical Intelligence	61.36	38.64
Interpersonal Intelligence	93.32	6.68
Intrapersonal Intelligence	70.66	29.34
Naturalist Intelligence	80.00	20.00
Existential Intelligence	72.00	28.00
Average (%)	74.66	25.34

Finally, Table-10 expresses the summarizing of all the intelligences getting from the perceptions of BTEB Associates and it is found that the BTEB officials are having interpersonal intelligence mostly and spatial intelligence in smallest amount. The average values show that the respondents having some logical mathematical intelligences also.

IV. Conclusion

Multiple Intelligence (MI) theory has a significant place in educational researches and it is one of the leading learning theories regarding the importance given on individual differences. Psychology and Philosophy in linking skills training and the world of work can be a tool for improving practice even though the gap between philosophy and learning style or practice often seems impossible to close. In reaching marginalized people, there are three important issues that need to be considering while choosing the learners diversification in teaching which are the changing of work, poverty and being exclusion. Since most of the marginalization is more towards lifelong learning education, Human Resource Development (HRD) and career education are play as a main role in education in linking the skills and the world of work and personal development as well. For instance, by having a right intelligence, it can be used to work with process, while the experience of practice gives new insights into theory. Multiple intelligences also can serve as a guide for practice in giving direction to research. Experiences in instructional planning, and evaluation of learning provide a basis for determining the effectiveness of a theory in a practical manner. As BTEB officials were found robty rather than empathetic which indicates to revise the curriculum of TVET for future workforce. It is also recommended that the same type of research need to be carried out for TVET Managers, TVET Teacher/Trainers and finally for the students of TVET. Then the holistic approach would be used for developing curriculum of TVET focusing on enhancement of multiple intelligences of the 21st century workforce.

References

[1]. Biggs, J. B. *Teaching for quality learning at university: What the student does*. (McGraw-Hill Education, UK, 2011).
[2]. Hollander, A., & Mar, N. Y. Towards achieving TVET for all: the role of the unesco-unevoc international center for technical and vocational education and training. In *International handbook of education for the changing world of work*(Springer Netherlands, 2009) 41-57.
[3]. MNSE, E. A. A. U., Province, N., & Pascal, E. G. *The role of Technical and Vocational Education and Training (TVET) in Human Resources Development: The case of Tumba College of Technology (TCT)*-(Rwanda,2009)
[4]. Barry Issenberg, S., Mcgaghie, W. C., Petrusa, E. R., Lee Gordon, D., &Scalese, R. J, Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review. *Medical teacher*, *27(1*), 2005,10-28.
[5]. Gardner, H. *Frames of mind: The theory of multiple intelligences*. Basic books, (2011).
[6]. Pandian, A. (2010). On the relationship of multiple intelligences with listening proficiency and attitudes among Iranian TEFL university students. *TESL Canada journal*, *28(1)*,2010, 97.
[7]. De Judicibus, D. The Definition of Intelligence. *Journal of Cognitive Science*, *16(2)*, 2015 107-132.
[8]. "Intelligence: Knowns and Unknowns" (1995),
[9]. Anastacio, D. D., &Choe, P. I. Genetic Factors Contributing to Gifted and Talented Students in the Philippines. *경영컨설팅리뷰*, 6(2), 2015,pp.15-34.
[10]. Singh, A.Intelligence Improvement and Intellect Enrichment by Seven Effective Thinking Patterns (SETP) Tool, (2015).
[11]. Burt, C. (). The evidence for the concept of intelligence. *British Journal of Educational Psychology*, *25*(3), 1955, 158-177.
[12]. Gardner, H. *Frames of mind: The theory of multiple intelligences*. Basic books, (2011).
[13]. Gottfredson, L. S. *The general intelligence factor*, (1998).
[14]. Sternberg, R. J. A contextualize view of the nature of intelligence. *International Journal of Psychology*, *19*(1-4), 1984,307-334.
[15]. Feuerstein, R., Klein, P. S., &Tannenbaum, A. J. (Eds.). *Mediated learning experience (MLE): Theoretical, psychosocial and learning implications*, (Freund Publishing House Ltd, (1991).
[16]. Das, J. P., Kirby, J. R., &Jarman, R. F. *Simultaneous and successive cognitive processes*. (Academic Press, 2013).
[17]. Mishra, P. *Universal artificial intelligence: evaluation and benchmarks* (Doctoral dissertation, Massachusetts Institute of Technology,2016).
[18]. Lezak, M. D. *Neuropsychological assessment*. (Oxford University Press, USA,2004).
[19]. Carroll, J. B. *Human cognitive abilities: A survey of factor-analytic studies*. (Cambridge University Press,1993)
[20]. Willis, J. O., Dumont, R., & Kaufman, A. S. Factor-analytic models of intelligence. *The Cambridge handbook of intelligence*, (2011), 39-57.
[21]. Guilford, J. P. Triarchic theory of intelligence.
[22]. Gardner, H. E. *Multiple intelligences: New horizons in theory and practice*. Basic books, (2008).
[23]. Goleman, D. *Emotional intelligence*. (Bantam,2006).
[24]. Gardner, H. E. *Multiple intelligences: New horizons in theory and practice*. Basic books, (2008).

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