Learning Style Preferences of Junior School Students in Bangladesh

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ABSTRACT

The reason of this study was to identify the learning style preferences of English medium junior school students in Bangladesh. A questionnaire was administered to 500 randomly selected students from the five topmost English medium schools of Bangladesh. These schools were Australian International School (AUSIS), The Aga Khan School, International School Dhaka (ISD), International Turkish Hope School (ITHS) and Scholastica. The questionnaire was taken from an unpublished dissertation and then modified by the researcher for using in this research. This dissertation comprises two published books, a published dissertation and 13 journal articles published in the last thirty years that give information about different learning styles and their detailed description. At first the researcher describes the definition of learning style, and different types of learning style models. Then she gives different views on The Learning Style Inventory and its criticism along with Learning Modalities and also on the importance of identifying students' learning style in Bangladesh. This research mainly focuses on indentifying the learning style preferences of junior school students in Bangladesh.

Key words: learning style, learning style models, the learning style inventory, learning modalities

DECLARATION

I hereby declare that all information in this thesis has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and given reference all material and consequences that are not original to this work.

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DEDICATION

To My Beloved Father (May Allah Rest Him in Peace)

ACKNOWLEDGEMENTS

First of all, I express my gratefulness to Allah, whose mercy has enabled me to complete this dissertation. Then I would like to convey my deep gratitude to my thesis supervisor Mr. S. M. Mohibul Hasan for his constant patience, valuable input and precious suggestions. I would like to thank to my friend, S.M. Moinul Islam and Shatabdi Das Gupta for their support, encouragement, and understanding at all times. Last but not the least I would like to express my gratitude to my family who gave me love, support and encouragement throughout my life.

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1.0 Introduction

A person's learning style is the way of his/her processing, internalizing, and concentrating on new material. It is seen that people learn best when they are interested in what they are studying. Everyone has a separate learning style like a fingerprint. Researchers have investigated to find out the correlations between individual preferences and other influences on learning. Their investigations established that there is a connection between learning style and birth order, cognitive expansion, maturation, field dependence or independence, temperament, self-concept, and global or analytic processing (Gremli, 1996, p.24). By interacting with the members of the society they can develop certain qualities of their personalities which finally help to make their learning style preferences. It is seen that the people who live within the same cultural patterns of a society get certain basic and common characters of that culture (Huda, 2013, p. 43). For the extensive variety of individual dissimilarities there is no single method for nurturing creativity. It is preferable to keep an eye on the needs of individual students (as cited in Smith & Renzulli, 1984, p.44). It is, therefore, necessary to identify the learning style preferences of the learners of Bangladesh that has her own idiosyncrasies regarding society, culture, history geography and language. In my research work, I want to find out the learning style preferences of English medium junior school students' in Bangladesh.

Chapter 2

2.0 Literature Review

2.1 Definition of Learning Style

Keefe (1987) defined learning style as: "Learning styles are characteristic cognitive, affective, and physiological traits that serve as relatively stable indicators of how learners perceive, interact with and respond to the learning environment." Lemlech (1984) asserted that "learning styles emanate from natural, inborn inclinations. The individual's learning style manifests itself through preferred senses and personality characteristics" (as cited in Stewart, 1990, p. 371). Expressing similar view Reid (1995) stated that people have different learning styles and they vary in their natural, habitual and preferred ways to absorb, process, and retain new information and skills. Dörnyei (2005) pointed out that learning styles are usually bipolar entities (for instance reflective versus impulsive, random versus sequential) that represent two extremes of a broad continuum (as cited in hatami, 2013, p. 488). Vester (2005) elucidated learning style is the way a person perceives, conceptualizes, organizes and recalls information. All these definitions point out that learning style is an extensive concept, which consists of a learner's cognitive, psychological and affective variables (as cited in Huda, 2013, p.43). The notion of learning style is examined as an element in the complex process to prepare students for professional practice (Kruzich, Friesen & Soest, 1986, p.22).

Learning styles theory proponents think that it is possible to identify students' learning style. An educator can teach to that style of learning through the use of a learning styles inventory (LSI). Learning style theory has found out three views in its favor. First view is that when a student's learning style is identified and taught through it increases his/her learning. Secondly, a student may easily adopt and remember lesson if his/her learning style is implemented. Finally, learning style theory seems to be instinctively correct and draws little discussion regarding its merits (Muse, 2001, p.5).

2.2 Learning Styles Models

 Learning style is a part of the wider conception of personality. Learning style falls into the categories of dispositional qualities and characteristic versions where there are dissimilarities across individuals but there are groupings of individuals who have similar learning style characteristics. There are six well-known and widely available learning style instruments offered by Kolb, Gregorc, Felder–Silverman, Fleming, and Dunn and Dunn as well as the Entwistle and Tait Revised Approaches to Studying model (Hawk & Shah, 2007, p.2).

2.2.1 Kolb Experiential Learning Theory

The model of Kolb's Experiential Learning Theory (1984) defines learning as "the process where knowledge is created through the transformation of experience" (p. 26). Learning is a holistic continuous set of procedure which has a lesser emphasis on outcomes. He has also declared that learning style is the "generalized differences in

learning orientation based on the degree to which people emphasize the four modes of the learning process" (p. 76). The model gives importance to a four-process learning cycle that usually begins with Concrete Experience (CE), moving to Reflective Observation (RO), then to Abstract Conceptualization (AC), and finally to Active Experimentation (AE). That is not all, the most effective and absolute learning occurs when learning activities grasp all the four modes. On the other hand, learning can start at any one of the other modes in the cycle because it totally depends on individual's preference. Kolb depicts CE and AC as bipolar on a continuum and orthogonal to a second bipolar continuum of RO and AE. In addition, individual learning styles is the result from a combination of two adjacent mode preferences in the experiential learning cycle leading to four basic learning styles: Diverger (CE and RO), Assimilator (RO and AC), Converger (AC and AE), and Accommodator (AE and CE). Besides individuals may have preference for one of the four learning styles but they should gain knowledge of using the other modes (as cited in Hawk & Shah, 2007, p.3).
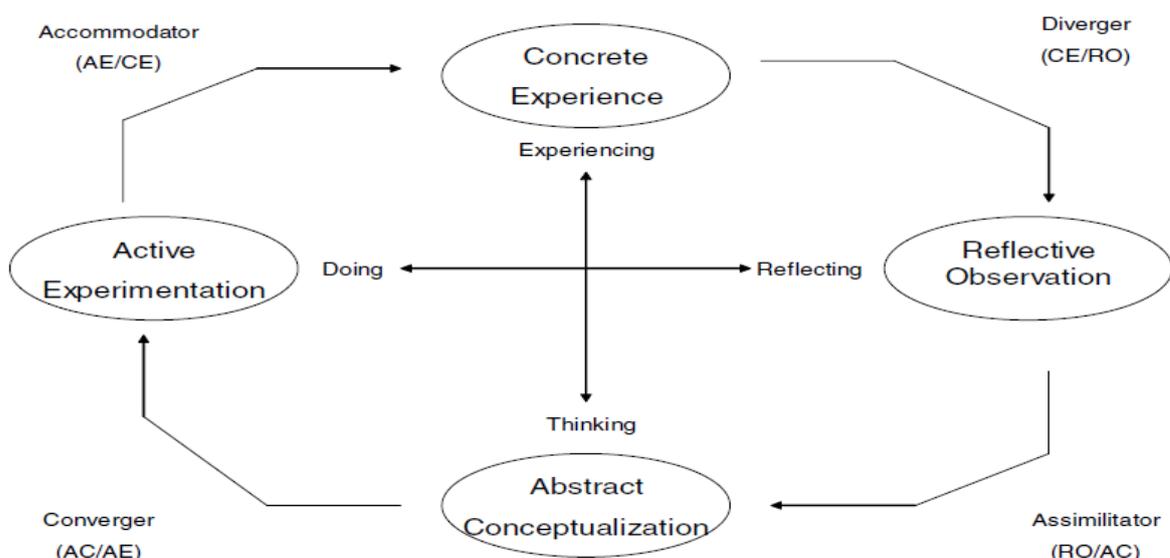

Figure 1: Kolb Experiential Learning Model

Figure 1 which is adapted from Kolb (1984) presents the Kolb Experiential Learning Cycle (as cited in Hawk & Shah, 2007, p.4).

Kruzich, Friesen and Soest (1986) revealed that Kolb (1981) declared learning process is imagined as a four-stage cycle. These are concrete experience which is followed by observation and reflection then leading to formation of abstract concepts and generalizations that result in hypotheses to be practiced in future actions, which in turn cause new experiences (as cited in Kruzich, Friesen & Soest, 1986, p. 23).

They gave detailed description about these four quadrants.

These are:

Converger (Abstract, Active): People with this style do best where there is a single solution or correct answer to a problem. Their greatest strength is the practical application of ideas and they use hypothetical-deductive reasoning.

Diverger (Concrete, Reflective): People of this style are opposite learning potency from converger. They have the quality of looking at circumstances from many points of view and can organize many relationships into a meaningful whole. Imaginative ability is their greatest strength.

Assimilator (Abstract, Reflective): People from this combination do extremely well in inductive reasoning and in combining dissimilar observations into an integrated explanation. Their greatest strength is the capability of creating abstract, hypothetical models.

Accommodator (Concrete, Active): The people belong to this style are opposite from Assimilator. Their greatest strength is in actively implementing plans and undertaking new experiences. They consider as risk-takers than the people belong

from the other three quadrants. They are good in instant circumstances. They prefer on other people for information rather than on own analytical capability for intuitive, trial and-error problem solving (Kruzich, Friesen & Soest, 1986, p. 24).

However Raschick, Maypole and Day (1998) affirmed that Kolb (1984) and other researchers developed a theoretical framework and conducted research by employing four combinations of the above learning style dimensions. These learning style combinations or quadrants are important for conceptual descriptions and to combine data for statistical analyses (1998, p.33).

2.2.1.1 The Learning Style Inventory and Its Criticism

The Learning Style Inventory (LSI) is a self-assessment tool that yields four scores which symbolizes learners' comparative emphasis on every step of the learning cycle. Two combination scores show the point to which a learner highlights abstractness over concreteness and the extent to which a learner emphasizes action over reflection (Kruzich, Friesen & Soest, 1986, p. 23). Jenkins (1981), Mark & Menson (1982) and Posey (1984) pointed out that LSI has been utilized for various purposes. It has worked as an instrument to help them discover their own learning styles in a nonthreatening manner, to compare their strengths and weaknesses, to choose the field into which they want to go and to stimulate their conscious efforts to expand new learning potential (as cited in Kruzich, Friesen & Soest,1986, p.24). Though the Kolb LSI is the most extensively used assessment instrument to investigative learning styles, it has criticism also. Freedman and Stumpf (1980) noted that more experiential evidence is desirable to hold the instrument's construct validity and internal reliability.

Whereas Hunsaker (1980) and West (1982) mentioned that the main criticism of LSI is that it fails to guess educational performance and career choices (as cited in Kruzich, Friesen & Soest, 1986, p.25).

2.2.2 Gregorc Learning Style Model

Gregorc's learning style model (1979) described that learning style gives hints about the mediation capabilities of individuals, how they learn and how their minds communicate to the world. As a result from individuals characteristic and observable behaviors facilitate to identify their learning styles (as cited in Hawk & Shah, 2007, p.5). Gregorc also asserts that learners have their own natural tendencies to learn. He has added that when the learners try to learn something from their surroundings, these four bipolar continuous mind qualities work as mediators. These four bipolar continuous mind qualities of the learners' are abstract and concrete perception, sequential and random ordering, deductive and inductive processing, and separable and associative relationships.

The Gregorc Style Delineator (GSD) gives metrics on the first two qualities, perception and ordering. These two qualities give a learner a score from 10 to 40 with a maximum of 100 points in each of four learning styles of Concrete-Sequential (CS), Abstract-Sequential (AS), Abstract-Random (AR), and Concrete-Random (CR). Gregorc depicts 'Concrete and Abstract' as orthogonal to 'Sequential and Random'. Even though the scores point out the learners' innate characters for one, two, three, or all of the styles, they can develop their use of the mind qualities that do not score high (Hawk & Shah, 2007, p.5).

Butler (1986) presents a broad discussion of classroom approaches that accommodate the learning styles exposed through the GSD. The CS learners communicate best to the real world with hands-on experience. They prefer a structured, step-by step learning process by using all of the senses, and want explicit and clear instructions. However the AS learners fit best to the concrete world of ideas in a sequential and structured manner. They use their mind to explore, like well-researched documentation. These types of learners are very analytical and evaluative. The AR learner relates best to the world of emotions and the spirit. They have a preference on a nonlinear order that is melodious. In addition, they want personal experiences and supportive relationships, and like to work for good communication. On the other hand the CR learners also adjust well to the concrete world, and prefer a nonlinear order. They try to find the big picture, employ experience to explore, and is instinctive, creative, and a risk taker (as cited in Hawk & Shah, 2007, p.6).

2.2.3 Felder–Silverman Learning/Teaching Style Model

Felder–Silverman Learning/Teaching Style Model (1988) claims that learners have their own preference along five bipolar continua: the Active- Reflective, the Sensing-Intuitive, the Verbal-Visual, the Sequential-Global, and the Intuitive-Deductive (as cited in Hawk & Shah, 2007, P.8). Active learners do better in group works. On the other hand reflective learners like to do things alone because they need time to think about their task before doing it. Sensing learners work well with details with facts, data and experimentation and intuiting learners have a preference on ideas and theories when they grab new ideas and innovation. Verbal learners prefer hearing

their information and like to involve in discussion where as visual learners like words, pictures, symbols, flow charts, diagrams, and reading books. Sequential learners are better in linear reasoning, step-by-step procedures, and material that come to them in a stable resource. On the other hand global learners are strong integrators and synthesizers, making instinctive discoveries and connections of seeing the overall system or pattern (Hawk & Shah, 2007, p.9).

2.2.4 The VERK Model

The abbreviation VARK stands for Visual (V), Aural (A), Read/Write (R), and Kinesthetic (K). Fleming (2001) describes learning style as "an individual's characteristics and preferred ways of gathering, organizing, and thinking about information. VARK is in the category of instructional preference because it deals with perceptual modes. It is focused on the different ways that we take in and give out information" (as cited in Hawk & Shah, 2007, p.6). The VARK Inventory offers metrics in each of the four perceptual modes, with individuals having preferences for anywhere from one to all four modes. Individual students have comparative likings along each of the four perceptual modes but they can be trained to function in the other modes (Hawk & Shah, 2007, p.6-7).

There are also dissimilarities in learning approaches for the four VARK Learning Styles. When Visual learners have a preference on maps, charts, graphs, diagrams, brochures, flow charts, highlighters, different colors, pictures, word pictures, and different spatial arrangements then aural learners like to explicate fresh ideas to others, discuss topics with other students and their teachers, exploit a tape recorder,

attend lectures and discussion groups, and employ stories and jokes. Read/write learners favor lists, essays, reports, textbooks, definitions, printed aids, readings, manuals, web pages, and taking notes. On the other hand kinesthetic learners fond of field trips, trial and error, doing things to comprehend them, laboratories, recipes and solutions to problems, hands-on approaches, using their senses, and collections of samples (Hawk & Shah, 2007, p.7).

Fleming (2001) presents extensive suggestions for classroom approaches to match teaching styles and learning styles. He talks about the validity of the instrument, presenting research that supports the use of the instrument in recognizing learning preferences of students. Apart from his reports, there is no other research on validity or reliability. That is not all, he also presents the results of research that show students performance in courses when faculty match learning activities with students' learning styles as determined by the VARK instrument (as cited in Hawk & Shah, 2007, p.7-8).

2.2.5 Dunn and Dunn Learning Style Model

Dunn (1990) describes learning style as "the way in which individuals begin to concentrate on, process, internalize, and retain new and difficult information (p. 353)." Dunn and Dunn (1990) recommend that there are five learning style stimuli and a number of elements within each stimulus. The five stimuli and their particular elements are environmental (sound, light, temperature, and room design), emotional (enthusiasm, persistence, responsibility, and structure), sociological (learning alone, in a pair, with peers, with a teacher, and mixed), physiological (perceptual, intake

while learning, chronological energy pattern, and mobility needs), and psychological processing (global or analytic, hemisphericity, and impulsive or reflective) (as cited in Hawk & Shah, 2007, p.9-10).

2.2.6 The Revised Approaches to Studying Inventory

Duff (2004) has pointed out that The Revised Approaches to Studying Inventory model describes learning style as "the composite of characteristic cognitive, affective, and psychological factors that serves as an indicator of how an individual interacts with and responds to the learning environment"(as cited in Hawk & Shah, 2007, p.10). Deep, surface and strategic, these are the three approaches that measured by this model for individuals. For doing better in performance students select according to their preferred approaches. Mostly they choose one of the approaches that usually vary from one another (Hawk & Shah, 2007, p.10). Duff (2004) also pointed out students who prefer deep approach to study try to find the meaning in what they are learning and enjoy the learning activity. They create links to the previous learning. They are well in employing logic, reasoning and in evidence. They have the capability to examine critically on what they have learned and are learning. On the other hand students who choose surface approach to study use mainly memorization to learn. They find it difficult to employ logic, reasoning and evidence. They can make fewer connections to previous learning. That is not all they face difficulty studying. Finally students with a preference for a strategic approach to studying like to organize their studying routines, cope their time, and try to become skilled at what is expected to accomplish the highest grade possible (as cited in Hawk & Shah, 2007, p.11)

2.3 Learning Modalities

Levin et al. (1974) pointed out that teachers have always known that their students have different strengths. Students have different learning or cognitive styles. Some of them are better visual learners than aural learners. They acquire knowledge better when they are able to read new material rather than simply listen to it. Many learners can learn equally well either way. Still it has been estimated that for up to 25% of the population, the mode of teaching does make a difference in their success as learners (as cited in Freeman, 2000, 169). After researching with U.S. school children Reinert (1976) and Dunn (1983, 1984) have demonstrated that learners have four basic perceptual learning channels or modalities. These are given below:

- Visual learning: reading, studying charts

- Auditory learning: listening to lectures, audiotapes

- Kinesthetic learning: experiential learning, that is, total physical involvement with a learning situation

- Tactile learning: "hands-on" learning, such as building models or doing laboratory experiments.

Dunn and Dunn (1979) found that only 20-30% of school age children are auditory learners, 40% are visual and the remaining 30-40% are tactile/kinesthetic, visual/tactile, or some other combination. Price, Dunn, and Sanders (1980) established that very young kids are the most tactile/kinesthetic learners then there is a gradual development of visual potency through the elementary grades and in fifth or sixth grade most children learn and preserve information through the auditory sense (as cited in Reid, 1987, p. 89-90).

2.4 Learning Style Identification Instruments

Different instruments have been developed to identify learning styles. For instance, Dunn, Dunn, and Price (1979) mentioned that the learning style inventory identifies students' learning preferences in the context of classroom atmosphere, emotional characteristics, physical needs, and sociological preferences. On the other hand, Renzulli and Smith (1978) pointed out that the learning style inventory is a measurement of student preferences for instructional techniques. This instructional technique decides students' preferences related to teaching-learning methods such as discussion, projects, and imitation. Whereas, Keefe and Monk (1986) asserted that The National Association of Secondary School Principals (NASSP) pointed out learning style profile identifies students' learning modalities in regard to cognitive styles, perceptual replies, and instructional preferences (as cited in Stewart, 1990, p. 371).

2.5 Importance of Identifying Students Learning Style in Bangladesh

Proper mode of classroom practices is not used in English language teaching (ELT) in Bangladesh. In the twentieth century Communicative Language Teaching (CLT) replaced the Grammar-Translation Method (GTM) in Bangladesh but unfortunately accurate empirical investigation into the suitability of the principles of CLT in the context of the country was not maintained. That is not all contextual realities or the preferred strategies or styles of learners are mostly lacking in the classroom practices which should be appropriately implemented. The teachers here are little aware of the ways their students wish to learn the language. The truth is that both the teachers and

the students have their own preferences in respect to English language teaching and learning styles as they have their own cultural profiles that they have derived from the culture of their society. Islam (2011) pointed out that teachers in Bangladesh must discover their students' preferred ways of learning English; with the help of it they can make their teaching effective and interesting to the students to the best possible level (as cited in Huda, 2013, p. 45).

Chapter 3

3.0 Research Method

This chapter explains the methodology of the study to identify the learning style preferences of English medium junior school students' in Bangladesh. The research hypothesis will be mentioned in the background section. The other parts will describe the research objective, the importance of the study, participants, the nature of the research, the research instruments employed for data collection, the research design, procedures and the methods of analysis and limitations of the study. Multiple choice questionnaires were distributed to the students' of junior section of five topmost English medium schools of Bangladesh to find adequate information for the research. These schools are Australian International School (AUSIS), The Aga Khan School, International School Dhaka (ISD), International Turkish Hope School (ITHS) and Scholastica.

3.1 Background Information

The greatest way to gather quantitative data about something from a sample of participants is using a questionnaire. It facilitates to extract the necessary information in a standardized way through a set of questions from a large number of respondents making it internally reliable and logical for analysis. Powell (1998) defined that "A questionnaire provides a tool for eliciting information which can tabulate and discuss. In many evaluations, a questionnaire serves as the major source of information (Powell, 1998, p.2). "

3.2 Research Objective

The objective of the research is to identify the preferred learning styles of the English medium students' of junior school in Bangladesh.

3.3 Importance of the Study

For the diversity of individual differences there is no single method for developing students' creativity. This study will give an idea about the importance of identifying students' learning style preferences of English medium junior schools in Bangladesh. It presents an insight of students' individual preferred learning styles.

3.4 Participants

The participants of this research were in total five hundred students from the five top ranking English medium schools in Bangladesh. The subjects were randomly chosen from-

- Australian International School (AUSIS)

- The Aga Khan School

- International School Dhaka (ISD)

- International Turkish Hope School (ITHS)

- Scholastica

Among the five hundred participants, two fifty of them were boys and the rest of them were girls. The age ranges of the participants are mostly 8-12 years.

3.5 Nature of the Research

3.5.1 Primary Research

The research is a primary research. Brown (1988) stated that Primary researches are those where the data is gathered from direct sources which means one's own data-based investigation rather than from secondary sources in order to obtain original information (as cited in Dörnyei, 2007, p.16). Here the data has been collected from a group of junior school students of five topmost English medium schools. This is why the research is a primary research.

3.5.2 Quantitative Research

This study is a quantitative research. A research where numerical data is used and then analyzed primarily by statistical methods is known as quantitative research (Dörnyei, 2007, p.24). In this study, close ended questions have been used and the

analysis includes numerical measurement. This is the reason why the study is a quantitative research.

3.6 Research Design

3.6.1 Data Collection Procedure

The research was done in the five famous English medium schools of Bangladesh. At first, the researcher took permission from the authorities of those English medium schools. Then survey questionnaires were distributed among the randomly selected students of junior section of those schools and were asked to give a tick to the suitable option based on their belief and experience of the topic.

3.6.2 Research Instruments for Data Collection

In this research, at first, the researcher has selected a close ended structured questionnaire consists of 44 close ended questions (Günes, 2004) and then edited it into 15 close ended questions and finally used the modified questionnaire to collect the participants' opinion on their learning style preferences. Malhotra (2006) defines closed-ended questions as: "specify the set of responses as well as their format. They may offer multiple-choices, or a scale (Malhotra, 2006, p. 183).'' In a closed-ended question, respondents have a set of responses to select from and cannot give any other answer by their own.

3.6.3 Methods of Analysis

To collect data for this research the researcher has chosen quantitative method. The data collected from the close ended questions was entered into spreadsheet and then collected raw data were analyzed by Microsoft Excel 2007. Finally, the percentages of the data were arranged in several tables in Microsoft Word 2007.

3. 7 Limitations of the Study

The study was conducted among only the students' of five top ranking English medium schools in Dhaka city. Even though, there are some other English medium schools inside and outside Dhaka, it was not possible to make contact with the students' of those schools due to time limitations. Besides it was not feasible to take interview students' as they were the students of junior school and not interested to answer open ended questions and comfortable with multiple choice items. In addition, bipolar characteristics of the questions in the instrument limit the students with two alternatives.

Chapter 4

Results

In this study 15 multiple choice questions were asked about the learning style preferences of junior school students' in Bangladesh. The results will be presented in the same sequence with the questions created for the study.

4.0 Findings and Analysis

In this chapter, the data obtained from the questionnaire have been presented, analyzed and interpreted.

4.1 Findings of Participants' Multiple Choice Questions

4.1.1 Visual Learners and Verbal Learners

Table 1: Students' get new information through

Choices	Girls (%)	Boys (%)	Total%
pictures, maps , graphs, or diagrams	210 (84%)	218 (87.2%)	85.6%
spoken information or written directions	40 (16%)	32 (12.8%)	14.4%

Table 1 shows that 85.6% students like to get new information through picture, maps, diagrams or related materials. Whereas only 14.4% students prefer to get new information through spoken information or written directions. The result of table 1 shows that majority of the students easily grasp new information by seeing different types of teaching aids. From the result it is clearly understandable that most of the learners are visual learners than verbal learners.

Table 2: Students' like teachers who

Choices	Girls (%)	Boys (%)	Total%
put many diagrams or pictures on the board	225 (90%)	230 (92%)	91%
spend a lot of time explaining	25 (10%)	20 (8%)	9%

If we have look at table 2, we can easily understand that the majority of the students are visual learners than verbal learners because 91% students like those teachers who

put many diagrams or picture on the board whereas only 9 % students like those

teachers who use a lot of time on explaining lessons.

Table 3: Students' easily remember their classroom lecture

Choices	Girls (%)	Boys (%)	Total %
When different kinds of visual materials are applied in the lecture	235 (94%)	239 (95.6%)	94.8%
When the teacher give detail information and give much time on explaining	15 (6%)	11 (4.4%)	5.2%

Table 3 shows that 94.8% students remember their teachers' classroom lecture when

they learn the lesson by seeing different kinds of visual materials whereas only 5.2%

students learn best when they hear lectures. So the result shows that majority of the

students are visual learners than verbal learners.

Table 4: For entertainment, students' prefer

Choices	Girls (%)	Boys (%)	Total %
watching television	200 (80%)	198 (79.2%)	79.6%
reading a story book	50 (20%)	52 (20.8%)	20.4%

From table 4 we can find out that 79.6% students choose watching television than

reading a story book for entertainment. On the other hand, 20.4% students are in favor

of reading story book than watching television. This result demonstrates that most of

the students are visual learners than verbal learners.

4.1.2 Active learners and Reflective learners

Table 5: Students' understand better after

Choices	Girls (%)	Boys (%)	Total%
trying it out	130 (52%)	132 (52.8%)	52.4%
thinking about it	120 (48%)	118 (47.2%)	47.6%

From table 5 it is seen that 52.4% students understand better when they try their lesson. On the other hand 47.6% do better when they think about it. This result shows that even if the percentages of these two types of learners are not very different but the students are more active learners than reflective learners.

Table 6: Students' like to study

Choices	Girls (%)	Boys (%)	Total%
alone	120 (48%)	115 (46%)	47%
in a study group	130 (52%)	135 (54%)	53%

In table 6 we get the picture that 47% students prefer to study alone. Conversely the rest of the 53% students like to study in groups. Therefore this result demonstrates that students are more active learners than reflective learners.

Table 7: In a study group working on tricky material, students' more likely to

Choices	Girls (%)	Boys (%)	Total %
give ideas	195 (78%)	187 (74.8%)	76.4%
sit back and listen	55 (22%)	63 (25.2%)	23.6%

From table 7 we get the picture that majority of the students which is 76.4% like to jump in and give ideas when they are handling the tricky material whereas only

23.6% students sit back and listen in group study. This result shows that students are more active learners than reflective learners.

Table 8: In a homework problem, students' are more likely to

Choices	Girls (%)	Boys (%)	Total %
start working on the solution directly	110 (44%)	148 (59.2%)	51.6%
try to fully understand the problem first	140 (56%)	102 (40.8%)	48.4%

Table 8 shows that 51.6% students like to work on the solution directly when they face a homework problem. On the other hand 48.4% students first try to fully understand the problem then start working on the solution. This result confirms that students are more active learners than reflective learners.

Table 9: Students' easily remember

Choices	Girls (%)	Boys (%)	Total %
something they have thought a lot about	105 (42%)	100 (40%)	41%
something they have done	145 (58%)	150 (60%)	59%

From table 9 we get the result that 59% the students can easily remember the lesson that they have done before. On the other hand, 41% of the students remember the lesson with no trouble when they have thought a lot about it. This result indicates that they are more active learners than reflective learners.

Table 10: When students' work on a group project, they first feel like to

Choices	Girls (%)	Boys (%)	Total %
have "group brainstorming" where everyone gives ideas	204 (81.6%)	202 (80.8%)	81.2%
brainstorm separately and then come together as a group to compare ideas.	46 (18.4%)	48 (19.2%)	18.8%

The result of table 10 shows that in group project, 81.2% of the students appreciate group brain storming. Nevertheless, 18.8% students prefer brainstorm individually and then come together as a group to compare ideas. It means learners are more active learners than reflective learners.

4.1.3 Global learners and Sequential learners

Table 11: After understanding

Choices	Girls (%)	Boys (%)	Total%
all the parts then understand the whole thing	115 (46%)	110 (44%)	45%
the whole thing then spot how the parts fit	135 (54%)	140 (56%)	55%

The result of table 11 shows that 55% learners understand the whole lesson first then they can identify how the parts fit in. However 45% students first understand the parts and then comprehend the whole lesson. It means that students are mainly global learners than sequential learners.

Table 12: To solve math problems students'

Choices	Girls (%)	Boys (%)	Total %
normally work on the solutions one step at a time	120 (48%)	118 (47.2%)	47.6%
see the solutions but struggle to solve the steps	130 (52%)	132 (52.8%)	52.4%

Table 12 illustrates that for solving math problems 52.4% students can see the solutions but then they struggle to solve the steps. However, 47.6% students usually work on the solutions one step at a time. This results shows that students are more global learners than sequential learners.

Table 13: When Students' need to do a task, they like to

Choices	Girls (%)	Boys ((%)	Total %
master one way for doing it	120(48%)	122(48.8%)	48.4%
find new ways for doing it	130 (52%)	128(51.2%)	51.6%

In table 13 we can see that 51.6% students prefer to find new ways to do a task. Conversely 48.4% students are comfortable to master one way to do that task. This result illustrates that students are more global learners than sequential learners.

4.1.4 Intuitive learners and Sensing learners

Table 14: When students' do long calculations, they

Choices	Girls (%)	Boys (%)	Total %
repeat all the steps and check the work carefully	58 (23.2%)	53 (21.2%)	22.2%
find checking boring and have to force themselves to do it	192 (76.8%)	197 (78.8%)	77.8%

From the result of table 14 we get the picture that while doing long calculations only 22.2% students repeat all the steps and check the work carefully, whereas the majority of the students, which is 77.8% find checking boring and have to force themselves to do it. This result indicates that most of the learners are intuitive learners than sensing learners.

Table 15: When students' read story book in free time, they like writers who

Choices	Girls (%)	Boys (%)	Total %
clearly say what they mean	20 (8%)	25 (10%)	9%
say things in imaginative, interesting ways	230 (92%)	225 (90%)	91%

From table 15 we get the idea that in leisure 91% students like to read those writers' stories who narrate things in creative and attractive ways whereas only 9% students like to read the stories where the writers say clearly what they mean. This result shows that in the case of entertainment majority of the students are intuitive learners than sensing learners.

Chapter 5

5.0 Discussion and Conclusion

This chapter comprises the discussion and conclusion of the study.

5.1 Discussion

This study aimed to determine the learning style preferences of junior school students of Bangladesh. In order to determine the LSPs of the junior school students in Bangladesh, descriptive data was used to depict the percentages for each of the learning style.

Learning style gives emphasis to the different ways people think and feel as they solve problems, make products, and interact. Learning style theory claims that dominant ideologies of intelligence inhibit our understanding of human differences; learning styles are concerned with differences in the process of learning (Silver, Strong &Perini, 1997, p.22). The research demonstrates that students are characterized by considerably different learning styles. They focus on different types of information, have a tendency to operate on perceived information in different ways, and achieve understanding at different rates. Some learners learn better by seeing things whereas others learn better by hearing. Some learners learn by doing something with information. They prefer to process information by talking about it and trying it out. However there are other learners who learn by thinking about information. They like to think things from beginning to end and understand things before acting. It is seen that several learners prefer to take in concrete and practical information. They are focused towards details, facts, and figures and prefer to use proven procedures.

They are realistic and like practical applications. Nonetheless there are various learners who choose to receive information which is abstract, original, and oriented towards theory. They look at the big picture and try to grip the overall outline. They like to discover possibilities and relationships and work with ideas. When some learners prefer to organize information in a linear, orderly fashion; others favor to organize information more holistically and in a random manner without seeing connections.

From this research result we get the clear picture that most of the learners are visual learners than verbal learners as 85.6% students get new information through picture, diagram and other visual material whereas the percentage of the verbal learners are only 14.4 in this sector. In addition, in terms of remembering class lectures 94.8% students stand on the fact that they remember their class lecture easily when their teacher uses different kinds of visual material to explain the topic. Whereas only 5.2% students mentioned that they remember the class lecture better when their teacher spends lot of time on explaining the topic. 91% students like those teachers who put many diagrams, pictures or related visual material on the board whereas only 9 % students like those teachers who use a lot of time on explaining lessons. In addition 79.6% students choose watching television than reading a story book for entertainment and 20.4% students are in favor of reading story book than watching television. These results demonstrate that most of the students are visual learners than verbal learners.

From this study we get the picture that there is a balance between active learners and reflective learners. For example 52.4% learn better when they try things out and the

rest of 47.6% students prefer to think first. 53% students like to study in a group whereas 47% like to study alone. On the other hand for solving a homework problem we see that students are almost equally active learners and reflective learners because 51.6% students start working on the solution directly and 48.4% of them try to fully understand the problem first. However 59% students easily remember the lesson that they have done before and the rest of the 41% students remember it without any difficulty when they thought a lot about it.

When a body of material is covered, the students are tested on their mastery and after that move to the next stage (Felder & Silverman, 1988). In this research study, only in understanding dimension, there were slightly dissimilar results. Junior school students were both sequential and global learners. For instance, 55% learners first understand the whole lesson then they can identify how the parts fit in. However 45% students first understand the parts and then comprehend the whole lesson. For solving math problems 52.4% students can see the solutions but then they struggle to solve the steps. However, 47.6% students usually work on the solutions one step at a time. This study also showed that 51.6% students prefer to find new ways to do a task. Conversely 48.4% students are comfortable to master one way to do that task. So this study demonstrates junior school students are slightly more global learners than sequential learners.

Another statistic of this study illustrates that the students of junior school in Bangladesh are mainly intuitive learners than sensing learners. The study demonstrates that only 22.2% students repeat all the steps and check the work carefully when they do long calculations. On the other hand 77.8% of the students

find checking boring and have to force themselves to do it. From another study of this research we get the idea that in free time 91% students like to read those writers' stories who narrate things in creative and attractive ways whereas only 9% students like to read the stories where the writers say clearly what they mean. This result shows that in the case of entertainment majority of the students are intuitive learners than sensing learners. In short, from this study we get the clear picture that the learning style preferences of junior school students' of Bangladesh are mainly visual, global and intuitive than verbal, sequential and sensing.

This research pointed on the fact that indentifying students' learning styles and implementing learning style play an important role for students' academic achievement because when their LSP has been identified teachers can easily design their lesson plans regarding the students' need. For this reason they can easily get the maximum output from the students. If they fail to do it then there is fair chance that students will be bored and inattentive in class. As a result they will not get good marks in the courses and that arise the question on teachers' competence.

5.2 Conclusion

Learning style preferences is the characteristic strengths and favorites in the ways people take in and process information. The learning style preferences of the students' of junior school in Bangladesh are mainly visual, global and intuitive than verbal, sequential and sensing learners. Everyone uses all preferences at different times, but not usually with equal levels of confidence. A single method is not appropriate to foster students' creativity. For the individual differences teachers should incorporate different types of methods for the maximum benefit of the students. They need to remember that the same fire that melts the butter hardens the egg. Even though the different styles with which students learn are numerous, the addition of a comparatively small number of techniques in a teacher's range should be sufficient to meet the needs of most or all of the students in any class. It is true that it is not feasible to use all the techniques in every class but after identifying the learning style preferences of the majority of the students, teachers can pick several techniques that look practicable and try them. Then continue the ones that work and drop the others. Finally try a few more in the next course. In this way a teaching style that is both useful for students and comfortable for the teachers will develop naturally and comparatively easy, with a potentially dramatic outcome on the quality of learning that later takes place.

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Appendix

Survey Questionnaire

This study will determine the learning styles of junior school students in Bangladesh. The first part of the questionnaire intends to obtain personal information, and in the second part there are questions that will find out your learning styles. Please read the questions in each part carefully and answer them.

PART I

Name: …………………………………………

Class: ………………………………………….

School's Name: ……………………………..

Age: …………………………………………

Gender: ☐ Male ☐ Female

PART II

There are 15 questions with two options below. Give a tick to the suitable option that indicates you. If both "i" and "ii" seem to relate to you then choose the one that relates you most.

1. I like to get new information through

(i) pictures, maps , graphs, or diagrams.

(ii) spoken information or written directions.

2. I like teachers

(i) who put many diagrams or pictures on the board.

(ii) who spend a lot of time explaining.

3. I easily remember my classroom lecture

(i) When different kinds of visual materials are applied in the lecture.

(ii) When the teacher gives detail information and give much time on explaining.

4. For entertainment, I prefer

(i) watching television.

(ii) reading a story book.

5. I understand better after I

(i) try it out.

(ii) think about it.

6. I like to study

(i) alone.

(ii) in a study group.

7. In a study group working on tricky material, I am more likely to

(i) give ideas.

(ii) sit back and listen.

8. In a homework problem, I am more likely to

(i) start working on the solution directly.

(ii) try to fully understand the problem first.

9. I easily remember

(i) something I have thought a lot about.

(ii) something I have done.

10. When I work on a group project, I first feel like to

(i) have "group brainstorming" where everyone gives ideas.

(ii) brainstorm separately and then come together as a group to compare ideas.

11. After I understand

(i) all the parts, I understand the whole thing.

(ii) the whole thing, I spot how the parts fit.

12. To solve math problems

(i) I normally work my way to the solutions one step at a time.

(ii) I regularly just see the solutions but then struggle to solve the steps to get to them.

13. When I need to do a task, I like to

(i) find new ways for doing it.

(ii) master one way for doing it.

14. When I do long calculations,

(i) I have a tendency to repeat all the steps and check my work carefully.

(ii) checking my work is boring and have to force myself to do it.

15. When I read story book in free time, I like writers to

(i) clearly say what they mean.

(ii) say things in imaginative, interesting ways.