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Understanding the minds using Howard Garner MI test-A tool for Training methodology

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ABSTRACT

We all have faced different learning experiences in life. Just go back a few years when you were sitting in the class, the professor or teacher teaching a subject. Suddenly he shoots up a question few hands goes up in the air and you are left wondering, why I am not able to grasp fast like them. With time the explanation you give to yourself ranges from "they being smart" to "me being not so smart". This research paper gives an insight to a more rational reason for these differences. Which is - each person has their own learning styles and their own natural intelligences. This empirical research paper captures information based on Howard Gardner multiple intelligence questionnaire. The essence of it is as Howard believed is different individuals possess different multiple intelligence. And how these intelligences, provides the panacea by making use of this test, which can be considerably used by the HR managers while designing training program for the employees and designing the learning style of the individuals. This research paper will provide a powerful tool to be used during the employee training design.

Introduction

"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will spend its whole life thinking it's stupid" - Einstein

We all have faced different learning experiences in life. Just go back a few years when you were sitting in the class, the professor or teacher teaching a subject he asks a question and immediately a hand shoots up here's the answer, and you wonder, damn he understood why couldn't I ,maybe I'll do a group study and then I will be better able to understand .Why does this happen why does the same lecture or learning experience has different impact on different people. This phenomenon can be attributed to different learning styles or multiple intelligence that everyone has. A person's learning style is the method though which they gain information about their environment. This research paper is an effort to analyze the different intelligence pattern of a sample of 71 MBA students. The research is based on the multiple intelligence tests by Howard Gardner which identifies the various types of intelligences in an individual based on the responses given to the 35 questions. It embodies the above quote by Einstein that is each individual is having different types of intelligence in various domains.

Literature review

In the world of education there are a few theories that have established their relevance with the golden words and one such theory is Howard Gardner's theory of multiple intelligences. It was in 1983 that he presented his theory in the book named as "Frames of Mind" which talked about the seven areas of intelligence that a human being possessed. Gardner is Professor of Cognition and Education at the Harvard Graduate School of Education. He also holds an adjunct faculty post in psychology at Harvard and in neurology at Boston University School of Medicine. He is best known for his work in the area of Multiple Intelligences, which has been a career-long pursuit to understand and describe the construct of intelligence (Gardner, 1999a; Project Zero Website, 2000). He is of the view that the seven areas he has identified provide a far more accurate picture of human capacity. His theory is used to probe in the ways of imparting education in general, curriculum improvement, instruction, and evaluation.

Gardner presents the argument that the concept of human intelligence is far more complex than the traditional notion. According to Gardner (1999a), "intelligence is much more than IQ because a high IQ in the absence of productivity does not equate to intelligence". In his definition, "Intelligence is a bio-psychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture" (p.34). Consequently, instead of intelligence being a single entity described psychometrically with an IQ score, Gardner's definition views it as many things. He endeavored to define intelligence in a much broader way than psycho-morticians. To achieve this goal Gardner (1983; 1999a) established several criteria for defining intelligence. In identifying capabilities to be considered for one of the "multiple intelligences" the construct under consideration had to meet several criteria rather than resting on the results of a narrow psychometric approach.

Gardner suggests that all people possess at least eight different intelligences that function in varying degrees depending upon each individual. This unique combination marks the intellectual identity of a person. It is this difference that makes each one of us more human. Due to this difference no two human beings exhibit identical intelligence profile not even identical twins. The root of this dissimilarity lies in the fact that each one of us has got different life experiences and these experiences in turn have different impact on each one of us further more each one comes from a different cultural

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background. Another fact of human behavior is that everyone wants to be different than the other. As such these three factors i.e. Life experiences, culture and motives leads to the development of these intelligences.

He had primarily suggested that an individual possess seven intelligences which were identified by Gardner and include linguistic intelligence, logical-mathematical intelligence, spatial intelligence, bodily-kinesthetic intelligence, musical intelligence, interpersonal intelligence, and intrapersonal intelligence. The eighth, Naturalistic intelligence was not part of Gardner's original framework but was added in 1996 to include those who outshine in the sphere of natural science.[1]

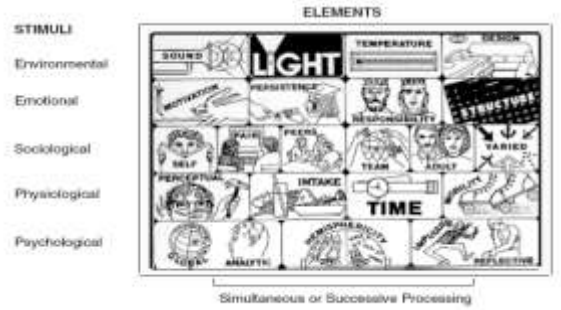


Figure 1. Dunn and Dunn Learning Styles Model (Dunn & Dunn, 1993)

The Figure 1, is given by Dunn and Dunn which indicates that there are different stimuli present and there are various elements which can be used in the learning style[2].

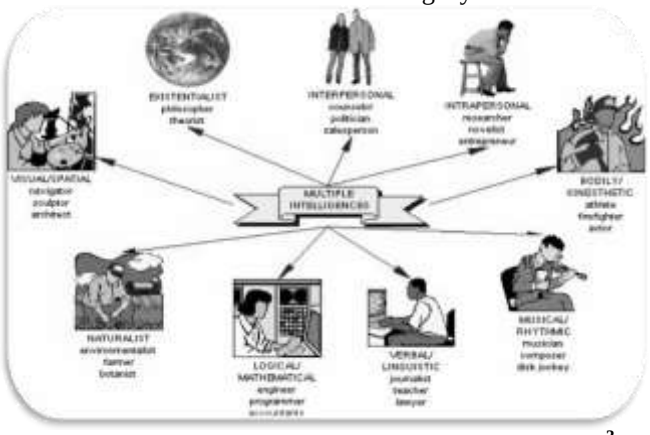


Figure 2: Howard Gardner's Multiple Intelligence[3]

The general characteristics associated with each of these intelligences are described in table no: 1[4].

Review of literature about Indian education System:

According to the survey that has been conducted by the University Grants Commission, regarding the **India education** GDP and such other related factors, the higher education sector in India has witnessed a substantial extent of growth in the Growth Enrolment Ratio between the years 2009 and 2010. The increase in the rate has touched the 17.25% mark in comparison to 12.5% which was the growth rate in 2008-2009. Both nationalized and private banks offer India education loan for higher studies in the country and abroad at affordable terms and conditions.

Higher education in India quantitatively ranks third in the world after China and the US. There are around 16,000 colleges, 100 deemed universities, 20 central universities and 215 state universities.[5]

And especially considering "Management", in the modern economic scenario all over the world- "Management" – as a stream of education and training has acquired new dimensions. Management is an exciting field where you can have an immediate impact on the operations of any business. The field of Management is dynamic in nature. New tools and techniques are continually being introduced to improve the efficiency, productivity, and profitability of any organization. All organizations and their departments, functions, or groups use Management methodologies, which include problem solving techniques and guidelines for various related activities.

Education in management should have mainly following aims:

• Increase the understanding of the factors which influence the conduct of organizations

• Provide students with the tools and techniques that they may use to influence organizational life. Influence the economy in general [2]

The various colleges and universities of India offer a wide range of undergraduate and postgraduate courses. The India education curriculum has been divided in the following fields:

- Management
- Fashion Designing
- Company Secretary
- Catering and Hotel Administration
- Engineering
- Medical and Pharmacy
- Law
- Dental
- Mass Communications
- Journalism
- Agriculture
- Nursing
- Finance and Accounts
- Teaching
- Computer Applications
- Architecture
- Arts and Humanities
- Interior Designing
- Travel and Tourism Management
- Performing Arts
- Aviation
- Animation and Multimedia

In this paper we are concentrating only on the management sector and find out how best the Howard garner Multi Intelligence test can be used in the education field as a tool to design learning style.

Management Services in India

Marketing, Finance, Production and Personnel are the four major areas in management with each having several sub-branches. Marketing Management includes sales, purchase, international marketing (exports-imports), advertising, marketing strategy, materials management, consumers' behavior, market development and research. Financial Management includes all the aspects relating to finances, investments, financing decisions, portfolio management, project management, working capital management, international financial management, etc. Production Management takes care of Production methodology, costing, operations research and quality control etc. Personnel Management deals with the most complicated aspect. It looks after the areas of Human Resource Development (HRD), recruitment, training, management-union relations, labor and personnel policies, organization behavior, management of change and general administration.

India's Competitive Advantage: Why India needs Management skills?

- India and the Indians have undergone a paradigm shift. There have been fundamental and irreversible changes in the economy, government policies, outlook of business and industry, and in the mindset of the Indians in general.
- From a shortage economy of food and foreign exchange, India has now become a surplus one.
- From an agro based economy, India has emerged as a service oriented one.
- From the low-growth of the past, the economy has become a high-growth one in the long-term.
- Having been an aid recipient, India is now joining the aid givers club.
- Although India was late and slow in modernization of industry in general in the past, it is now a front-runner in the emerging Knowledge based New Economy.
- The Government is continuing its reform and liberalization not out of compulsion but out of conviction.
- Indian companies are no longer afraid of Multinational Companies. They have become globally competitive and many of them have become MNCs themselves.
- Fatalism and contentment of the Indian mindset have given way to optimism and ambition.
- Introvert and defensive approach have been replaced by outward-looking and confident attitude.
- In place of denial and sacrifice, the Indian value system has started recognizing seeking of satisfaction and happiness.
- The Indian culture, which looked down upon wealth as a sin and believed in simple living and high thinking, has started recognizing prosperity and success as acceptable and necessary goals.
- Indian management graduates no longer queue up for safe government jobs. They prefer and enjoy the challenges and risks of becoming entrepreneurs and global players in the emerging private sectors[6].

Before moving forward, let us find out something about the effective teaching methodology and how we can make effective use out of it.

What is effective teaching? How may it be defined? These are the questions that Young & Shaw (1999) set out to determine in their study on effective teaching. They surveyed college students from two separate colleges and asked them to rate the techniques of their past teachers. By doing this, researchers were able to determine what behaviors students consider most helpful in the teaching learning process. The behaviors that scored high focused more on personal attributes than the teacher's ability to instruct. The highest were ability to motivate students, genuine concern for students, effective communication, and genuine respect for the student. Items that also scored well were value of the course to the student and course organization (Young & Shaw, 1999)[7].

But the big question is that, does effective teaching really takes place in the current education system. Though we can't deny 100 percent that effective teaching is not happening, somewhere down the line, educationalist has a feeling that education system is not going well. Higher education in India suffers from several systemic deficiencies. As a result, it continues to provide graduates that are unemployable despite emerging shortages of skilled manpower in an increasing number of sectors. The standards of academic research are low and declining. Some of the problems of the Indian higher education, such as – the unwieldy affiliating system, inflexible academic structure, uneven capacity across various subjects, eroding autonomy of academic institutions, and the low level of public funding are well known. Many other concerns relating to the dysfunctional regulatory environment, the accreditation system that has low coverage and no consequences, absence of incentives for performing well, and the unjust public funding policies are not well recognized.[8]

In this paper, our primary focus is to find out the best teaching methodology and learning style for the students with help of Howard garner Multi intelligence test.

Objectives of the study:

1. To find out the most prevalent type of intelligence among management students with the help of Howard Gardner Multiple Intelligence Test.
2. To find out which type of intelligence is least prevalent among management students with the help of Howard Gardner Multiple Intelligence Test.
3. To find out the effective learning style for the students possessing different intelligence level.
4. To find out the effective use of this tool for organizations by HR personnel.

Research methodology and data collection:

Research design:

The purpose of the present study is to identify the level of multiple intelligences present among the students and relate it with learning styles that can be followed which can be used during designing learning style and also during the training programs. In order to achieve the purpose of the study, a survey design was employed. The survey design was selected because as authors, we felt it is the best suited method to collect data from a large group of people. A survey is a way of obtaining self-reported information about the attitude, beliefs, opinions, behaviors' and other characteristics of a population (Samuel McCllelland, 2004)

Population and sample:

The population of the study consists of the management students.

The sample was drawn from the population based on the random sampling and convenience sampling

- ❖Population: Students of MBA.
- ❖Sample element: First and second year MBA students.
- ❖Sample Size: 71
- ❖Sampling Method: Simple Random and convenience sampling.

The sample consisted of both Male and female student's .Total was 71 out of which 42 were male students and 29 were female students. The age group of the students was between 20-28 years old.

Tool:

The data has been extracted through a structured questionnaire namely **"Multiple Intelligences Test - based on Howard Gardner's MI Model**" (downloaded from Business balls .com) developed by Howard Gardner. It consists of 35 questions designed to elicit information regarding 8 multiple intelligence of the respondents. The highest scores indicate the respondent's natural strengths and potentials (natural intelligences).

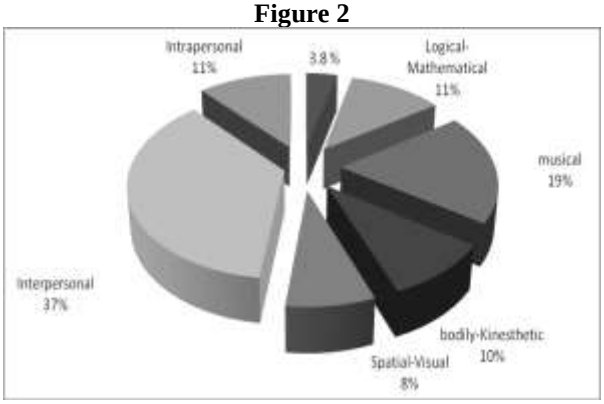
Methodology:

The questionnaires were distributed to the respondents personally, during the inter –collegiate meet.

All respondents were the students of MBA of various management institutes in Pune city. When they assembled for a college meet, questionnaire was distributed and filled on the spot and were collected immediately.

Research Data, findings and Interpretations:

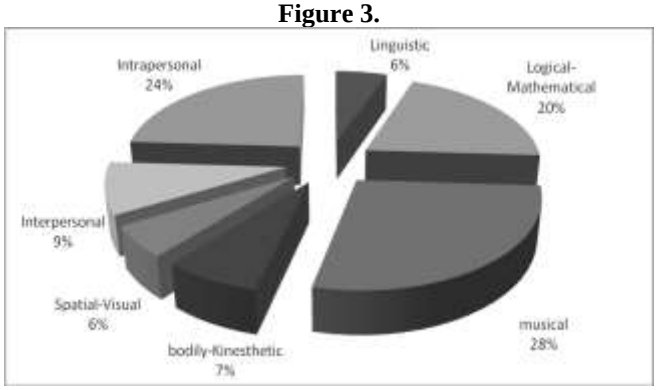
Figure 2



Interpretation:

During the research it was found that, majority (i.e.: 36.5 %) of the management students possessed highest level of natural intelligence as inter personal intelligence. Among the 71 samples collected data showed that the most prevalent natural intelligence found among the respondents was interpersonal Intelligence. Interpersonal can be defined as not only how we communicate with others, but also confidence, ability to listen and understand, Problem solving and decision making .Howard has indicated in the questionnaire that highest score indicates the natural strengths and potential lying in that particular area. He has defined this intelligence as to interact well with people. These kinds of people have a propensity to be extroverts, which is characterized by their understanding of others' moods, thoughts emotions, temperaments and motivations. They also possess the ability of a good team player. They communicate effectively and empathize easily with others. They typically learn best by working with others and often enjoy discussion and debate.

Figure 3.



Interpretations:

During the research it was found that the least (2.8 %) of he intelligence found was musical. Among the 71 samples collected, the most least natural intelligence found among the respondents was musical. Howard Garner refers musical intelligence as a capacity to appreciate a variety of musical forms as well as being able to use music as a vehicle of expression. Musically intelligent people are perceptive to elements of rhythm, melody, and pitch and Show sensitivity to rhythm, melody, and sound. May study with music in the background, play an instrument, notice non-verbal sounds in the environment, learn more easily if sung or tapped out.

Interpretation (Observations from table no: 4):

1. It was found from the table no: 4, that out of the 17 respondents having more than one intelligence only 5.9% were having linguistic and spatial- Visual, and linguistic and musical potential.
2. It was observed that only two respondents were having dual intelligence are having one of them as logical mathematical. Out of the two one was having dual potential area as logical mathematical and bodily kinesthetic, & logical mathematical and interpersonal.
3. It was seen that again only 11.8% i.e. two respondents were having dual intelligence area , as musical – linguistic and musical - bodily kinesthetic
4. The data showed that 47.06% out of the 17 respondents were having one of their dual potential areas as bodily –kinesthetic. Out of this 12.5% were having dual intelligence as logical mathematical, musical & intrapersonal. Whereas 62.5% were having dual natural intelligence as bodily – kinesthetic and interpersonal.
5. It was found that 23.53% i.e. 4 respondents out of total 17 respondents having dual natural intelligence were having spatial – visual as one of their intelligence area. Out of the 4 respondents 3 of the respondents were having second potential area as interpersonal and only 1 respondent hade intrapersonal as his second natural domain.
6. The data indicates that 64.7% respondents – the highest level were having one of their dual intelligence as interpersonal intelligence.
7. It was seen that only 11.85 respondents were having intrapersonal intelligence as one of their dual intelligence.
8. None of them were having dual intelligence domain as linguistic and logical mathematical, bodily kinesthetic, interpersonal or intrapersonal.

Conclusion:

The research provided an insight about the various intelligence areas and potential of the respondents, which can further be used to plan the teaching methodologies for them. It was also observed that the highest intelligence possessed by the respondents was interpersonal intelligence, which is characterized by the ability to understand others, and helps them in having good communication skills. Which signifies their potential to become efficient management student. May be in the due course on time they will develop self awareness and better intrapersonal skills.

Likewise it was identified that, least intelligence found among the respondents was musical intelligence. And dual intelligence such as linguistic and spatial, logical mathematical and bodily kinesthetic was also found. Here there will be a question that how this findings can be useful? By finding out the preferred and least preferred intelligence of the respondents, the learning style can be analyzed which can be used while designing teaching methodology (as this case) or can be used by HR professionals while designing the training methodology for their employees.

To provide a backdrop of how the learning style can be designed is, suppose a student has got high natural intelligence level as interpersonal skill, he can be taught by giving him through role-play or provide a topic ,ask him to work as a group and present it in front of the class. Even he/she can be given mini projects to work on as a group to work on. This kind of activity will make learn the concepts better than teaching him through regular class room lecture method. These activities can

be inculcated into the system. Though it will difficult at initial stage to bring in changes with the routine teaching and learning style, we (authors) strongly belief that this multiintelligence test can be used in a very efficient and effective manner.

We also conducted a small survey through interview method with few hr professionals and got their view point about using this tool in the training and analysis stage while designing the training program. The response was quite overwhelming and the effort was appreciated. We intent to carry out the full fledge research in the future to find out the usage in the training field.

Future scope:

In this research paper, we have concentrated on the target group as students, but it can be used even by the Hr professional in the business environment and organization, while dealing with the employees to find out about their learning style. Trend has become to provide training to employees and then focus on ROI (return on investment) of the training, but many Hr professionals fail at the training designing and training need analysis stage .To overcome the problem, this research paper provides the panacea by making use of this test, which can be considerably used while designing training program for the employees. This paper will provide a powerful tool to be used during the employee training design. Thus, leaving less dependency on trial and error method of designing training programme.

The next best use or further scope can be that, even the top management people can make use of this test to during succession planning process to provide enough training to the potential successors apart from regular training programs. These days, organizations focus more on linking performance with pay, but this model helps to link performance with learning style. Where all the organizations and specialists are more focusing on the terminology called as continuous learning. Giving a chance to each employee to develop his full potential, will ensure continuous organizational development & make sure organizational learning happen incessantly.

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8. Teaching Techniques Research Paper Outline

Table 1: different types of intelligences

Type of intelligence	Main characteristics	Examples
Linguistic intelligence	Refers to an individual's capacity to use language effectively as a means of expression and communication through the written or spoken word	(Examples: poets, writers, orators, and comedians. Some famous examples include: Shakespeare, Virginia Woolf, Abraham Lincoln and Walt Whitman).
Logical-Mathematical	Refers to an individual's ability to recognize relationships and patterns between concepts and things, to think logically, to calculate numbers, and to solve problems scientifically and systematically.	(Examples: mathematicians, economists, lawyers and scientists. Some famous examples include: Albert Einstein, Erwin Schrodinger, and John Dewey).
Visual -Spatial	Refers to the capability to think in images and orient oneself spatially. In addition, spatially intelligent people are able to graphically represent their visual and spatial ideas	(Examples: artists, decorators, architects, pilots, sailors, surveyors, inventors, and guides. Some famous examples include: Picasso, Frank Lloyd Wright, and Leonardo DaVinci).
Musical	Refers to the capacity to appreciate a variety of musical forms as well as being able to use music as a vehicle of expression. Musically intelligent people are perceptive to elements of rhythm, melody, and pitch	(Examples: singers, musicians, and composers. Some famous examples include: Mozart, Julie Andrews, Andrea Boccelli and Leonard Bernstein)
Bodily-Kinesthetic	Refers to the capacity of using one's own body skillfully as a means of expression or to work with one's body to create or manipulate objects	(Examples: dancers, actors, athletes, sculptors, surgeons, mechanics, and craftspeople. Some famous examples include: Michael Jordan, Julia Roberts, and Mikhail Baryshnikov).
Interpersonal (Social)	Refers to the capacity to appropriately and effectively communicate with and respond to other people. The ability to work cooperatively with others and understand their feelings	(Examples: sales people, politicians, religious leaders, talk show hosts, etc. Some famous examples include: Bill Clinton, Ghandi, Oprah Winfrey).
Intrapersonal	Refers to the capacity to accurately know one's self, including knowledge of one's own strengths, motivations, goals, and feelings. To be capable of self-reflection and to be introverted and contemplative are also traits held by persons with Intrapersonal intelligence.	(Examples: entrepreneurs, therapists, philosophers, etc. Some famous examples include: Freud, Bill Gates, and Plato).
Naturalistic	Refers to the ability to identify and classify the components that make up our environment. This intelligence would have been especially apt during the evolution of the human race in individuals who served as hunters, gatherers, and farmers.	Examples: botanists, farmers, etc. Some famous examples include: Charles Darwin, E.O. Wilson).

Table 2: Highest Percentage of Intelligence found among management students.

Linguistic	Logical-Mathematical	Musical	Bodily-Kinesthetic	Spatial-Visual	Interpersonal	Intrapersonal
3.8 %	11.5 %	19.2 %	9.6%	7.7 %	36.5 %	11.5 %

Table 3: Lowest Percentage of Intelligence found among management students.

Linguistic	Logical-Mathematical	Musical	bodily-Kinesthetic	Spatial-Visual	Interpersonal	Intrapersonal
5.6 %	20.4 %	27.8 %	7.4 %	5.6 %	9.3 %	24.1 %

Table 4

Major Natural Intelligence	Linguistic					
Compared With Others	Logical-Mathematical	Musical	Bodily-Kinesthetic	Spatial-Visual	Interpersonal	Intrapersonal
Actual Data In Numbers	0	1	0	1	0	0
Percentage Out Of 17	0.0	5.9	0.0	5.9	0.0	0.0
Major Natural Intelligence	Logical-Mathematical					
Compared With Others	Linguistic	Musical	Bodily-Kinesthetic	Spatial-Visual	Interpersonal	Intrapersonal
Actual Data In Numbers	0	0	1	0	1	0
Percentage Out Of 17	0.0	0.0	5.9	0.0	5.9	0.0
Major Natural Intelligence	musical					
Compared With Others	Linguistic	Logical-Mathematical	Bodily-Kinesthetic	Spatial-Visual	Interpersonal	Intrapersonal
Actual Data In Numbers	1	0	1	0	0	0
Percentage Out Of 17	5.9	0.0	5.9	0.0	0.0	0.0
Major Natural Intelligence	bodily-Kinesthetic					
Compared With Others	Linguistic	Logical-Mathematical	Musical	Spatial-Visual	Interpersonal	Intrapersonal
Actual Data In Numbers	0	1	1	0	5	1
Percentage Out Of 17	0.0	5.9	5.9	0.0	29.4	5.9
Major Natural Intelligence	Spatial-Visual					
Compared With Others	Linguistic	Logical-Mathematical	Musical	Bodily-Kinesthetic	Interpersonal	Intrapersonal
Actual Data In Numbers	0	0	0	0	3	1
Percentage Out Of 17	0.0	0.0	0.0	0.0	17.6	5.9
Major Natural Intelligence	Interpersonal					
Compared With Others	Linguistic	Logical-Mathematical	Musical	Bodily-Kinesthetic	Spatial-Visual	Intrapersonal
Actual Data In Numbers	2	1	0	5	3	0
Percentage Out Of 17	11.8	5.9	0.0	29.4	17.6	0.0
Major Natural Intelligence	Intrapersonal					
Compared With Others	Linguistic	Logical-Mathematical	Musical	Bodily -Kinesthetic	Spatial-Visual	Interpersonal
Actual Data In Numbers	0	0	0	1	1	0
Percentage Out Of 17	0.0	0.0	0.0	5.9	5.9	0.0