

## CHAPTER 6: THEORY OF MULTIPLE INTELLIGENCES

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### TRADITIONAL UNDERSTANDING OF INTELLIGENCE

What intelligence exactly means and which skills it includes is one of the fields on which studies have been carried out for years. In 1904, for the first time in the world, the Ministry of National Education in France wanted Alfred Binet to develop a tool in order to determine students who were likely to fail at primary school level.<sup>1</sup> Then, the test developed by Binet was adapted to English by one of the psychologists of Stanford University in 1916. This test was called Stanford-Binet Intelligence Test. According to Binet, intelligence stood out in complex processes such as perception, decision-making, reasoning<sup>2</sup> and each child's intelligence could be developed with a well-planned education. However, on the contrary of this belief, in time, tests called IQ tests began to be accepted as a basic criterion for measuring students' mere capacity of intelligence, in other words, students' intelligence and it became a widespread view that a person's intelligence could be measured objectively and reduced to a mere figure known as IQ.<sup>3</sup> According to this view, intelligence began to be accepted as a stable, measurable and unchangeable concept determined by birth.

In the following years, Piaget, Vygotsky, Feuerstein and many other researchers have put forth with the researches they have conducted that intelligence is not stable<sup>1</sup>. For example, Piaget went beyond traditional concept of intelligence and stated that intelligence was not the point one got at an intelligence test<sup>2</sup> and defined intelligence as "the power of mind to change and renew itself."

Many researchers had discussed the question whether intelligence was formed by genetic reasons or mostly by environmental conditions. In the following period, intelligence began to be accepted as a phenomenon formed by genetic skills, experiences and environmental elements<sup>1</sup>. Scientists who were studying on behavioral genetics came to this conclusion as a result of the conducted researches: "Heredity determined the highest and lowest limits of behavioral features. Where the behaviour will be within these limits is determined by environmental conditions." In this sense, the final form of behaviour is determined by the continuous interaction between genetic heredity and environment.

An exact agreement on the definition of intelligence could not be achieved in this process; but a common pattern stands out in the definitions which state that intelligence is the ability to (1) compare abstractly, represent mentally, solve problem, make decision (2) adapt to the environment (3) learn<sup>7</sup>. If we have to summarize the traditional perception of intelligence in general, we can come to these conclusions<sup>3</sup>:

1. Intelligence is gained by birth and it is stable. Intelligence cannot be changed or developed.
2. Intelligence can be measured numerically and expressed as a single number.
3. Intelligence is singular.
4. Intelligence can be measured (with certain intelligence tests) by means of isolating oneself from real life situations.
5. Intelligence is used to classify students according to certain levels throughout their educational lives and predict their future success.

Today, it is possible to come across a lot of people having special skills and potentials that do not exist in the test (IQ test) developed according to the traditional understanding of intelligence<sup>5</sup>. This situation proves the insufficiency of traditional sense of intelligence and the need of an intelligence

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theory that reflects the complex skills and performances possessed by people. Multiple Intelligence Theory (MIT) is a theory created out of this need.

### HOW MIT CAME INTO VIEW

Howard Gardner, one of the lecturers in Harvard University, developed multiple Intelligence Theory that has brought a new sense to the concept of intelligence in 1983. Gardner gained a more comprehensive point of view to the concept of intelligence and named people's skills and potentials as "areas of intelligence" and defined intelligence as "(1) problem solving and (2) the capacity to create new products in rich and natural environments<sup>1</sup>. Gardner means different and independent skills whose number is not known with the word "multiple" which he used in the concept of "multiple intelligence." In other words, the key word in the sense of intelligence handled by this theory is "multiple."<sup>3</sup>

Although Gardner does not appreciate standardized tests such as IQ test, he used such tests in his studies while determining the first seven intelligences. Because of this reason, this theory is also supported by psychometric findings. Gardner states that a feature should have a system of symbols, have a cultural value, enable production of goods and services, and enables problem solving in it to be defined as intelligence<sup>2</sup>. Moreover, Gardner does not accept that intelligence and skill are different things. According to him, intelligence in terms of its traditional meaning is a group of certain "skills" that come out in the fields of language and/or logic<sup>3</sup>.

Within the framework of this theory, Gardner (1993) defines intelligence as "the skill of solving problems of shaping a product that has got a value in one or more cultural structures<sup>5</sup>.

### Types of Intelligence According to MIT

While the number of intelligence areas is 7 in Gardner's book "Frames of Mind" published in 1983, this number has risen to 8 with the additional naturalistic intelligence he added in his book "Intelligence Reframed" published in 1999<sup>1</sup>. These intelligence areas are as below<sup>10</sup>:

1. Linguistic-verbal intelligence
2. Logical-mathematical intelligence
3. Spatial intelligence
4. Bodily-kinesthetic intelligence
5. Musical intelligence
6. Social-interpersonal intelligence
7. Intrapersonal intelligence
8. Naturalist intelligence

### Linguistic-Verbal Intelligence

*When ...writing ... all the natural instincts are at work the way some people play a musical instrument without a lesson and, others, even as children, understand an engine.*

LILLIAN HELLMAN, *An Unfinished Woman*<sup>12</sup>

This type of intelligence includes the skills of listening, reading, speaking and writing<sup>7</sup>. This intelligence expresses the capacity to use language effectively as means of communication<sup>1</sup>. This intelligence requires people to use their own language in conformity with the language's grammatical structure, word order, stress and meaning of concepts<sup>3</sup>.

According to Gardner, a person with high linguistic-verbal intelligence tells stories, makes jokes, fabricates events and has a good memory; he/she likes word games, reading and writing, has a rich terminology when compared to his/her peers and has a good verbal communication<sup>10</sup>. Some of the professions suitable for such people are: poet, writer, teacher, journalist and politician.

The activities that address students with high linguistic-verbal intelligence are as below:

- Note-taking,
- Telling a story,

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- Writing a play, an article or a letter,
- Associating a story or a novel with other subjects<sup>1</sup>.

Moreover, some activities that can be used to activate this intelligence are as below<sup>1</sup>:

1. Read one of the stories you like and write an end for the story.
2. Listen to the views of people around you on a specific subject matter and discuss this matter with them.
3. Learn a new and interesting word every day and try to use it in your daily life.
4. Make a speech on a subject that attracts your attention and that is exciting for you.
5. Subscribe to a magazine or write a diary about your observations on daily events.

Some of the people who have come to the forefront with their linguistic-verbal intelligence in Turkey and in the world are Nazım Hikmet Ran, Cem Yılmaz and William Shakespeare<sup>7</sup>.

### Logical – Mathematical Intelligence

*The first man who noted the analogy between a group of seven fishes and a group of seven days made a notable advance in the history of thought. He was the first man who entertained a concept belonging to the science of pure mathematics.*

ALFRED NORTH WHITEHEAD<sup>12</sup>

It includes individuals' skills to think logically, use numbers effectively, producing scientific solutions for the problems, recognizing the relationship between and pattern among concepts, classify, generalize, express with a mathematical formula, calculate, test a hypothesis, draw an analogy<sup>13</sup>.

People with a high logical-mathematical intelligence are good at perceiving objects and the relationship between them; using concrete concepts and abstract symbols representing objects; establishing and testing a hypothesis; defining, analyzing, mathematical subjects and solving problem and they like matching similar things, deducing a shape out of complex pictures, maths, puzzles and problem solving<sup>7</sup>.

The activities that address students with high logical-mathematical intelligence are as below<sup>1</sup>:

- Doing puzzle and playing maths games,
- Writing a problem,
- Turning problems into equations,
- Making a time line,
- Doing an experiment, comparing and classifying phenomena.

Study fields appropriate for such people are maths, statistics, accounting, banking, engineering, computer programming and science<sup>1</sup>. Some activities that can be used to activate this intelligence are as below<sup>15,9</sup>:

1. Compare two objects. For example, find four specific typical features of typewriter and computer and then find four common typical features of these two objects.
2. Make a persuasive speech with reasons on some subjects that are deemed to be nonsense. For example, the advantages of playing football with a basketball.
3. Participate in a project that necessitates usage of scientific methods.

Some of the people who have come to the forefront with their logical-mathematical intelligence are Sir Isaac Newton, Albert Einstein, Bill Gates and Cahit Arf<sup>7</sup>.

### Spatial Intelligence

It includes individuals' thinking with pictures, images, shapes and senses besides their skills of perceiving and comparing<sup>4</sup>. The capacity of this intelligence is related to record and perceive the objects and event in the world correctly; recognizing faces, designing three-dimensional objects, direction finding and paying attention to details<sup>7</sup>.

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People with high spatial intelligence can see clear mental images, can easily read maps, graphs and figures, are more imaginative than their peers, like artistic activities, enjoy jigsaw puzzle and games such as finding the way, learn more with pictures instead of words while reading<sup>10</sup>.

People whose spatial intelligence is strong tend to be hunter, guide, scout, architect, decorator, artist and designer<sup>13</sup>. Some of the activities addressing these people are:

- Reading a map,
- Taking photo,
- Puzzles,
- Three-dimensional experiments and exemplifying with cartoons, posters and pictures,
- Creating a slide show, video or photograph album,
- Story-telling looking at a map<sup>1,15</sup>.

These activities are recommended to improve spatial intelligence<sup>15,9</sup>:

1. Use some tools (crayon, clay, paint and marker) to express your dreams. For example, tell what 21st century will look like by means of using these tools.
2. Dream. For example, imagine your ideal holiday place and the visual details of this place.
3. Do exercise to improve your imagination. For example, imagine yourself in a specific period of history.
4. Use your design skills such as pictures, graphs or a poster in order to tell your opinions to people around you.

Some of the people who have come to the forefront with their spatial intelligence are Leonardo Da Vinci and Piri Reis<sup>7</sup>.

### **Bodily-Kinesthetic Intelligence**

It expresses how a person uses his/her body and movements<sup>13</sup>. It is the capacity to solve a problem, produce something and use materials artfully by means of using all the body and some parts of the body effectively<sup>1</sup>.

Bodily-kinesthetic intelligence includes skills such as controlling body movements, controlling previously-planned body movements, being aware of the body, establishing a strong connection between mind and body, pantomiming, using the body well as a whole (Lazear, 2000, cited<sup>5</sup>). People who have high bodily-kinesthetic intelligence possess a good relationship between brain and body; they can imitate artfully; they are good at coordination, harmony and muscular movement; their bodies are flexible; they have hot a strong sense of touching and they are good at handcraft<sup>10</sup>. These people can be successful if they are actor, dancer, pantomime artist, operator, technician and sculptor<sup>13</sup>.

The activities stated below are recommended to activate this intelligence<sup>15,9</sup>:

1. Play in a drama. Play a role about an idea, an opinion or a feeling.
2. Play a game that needs physical activity/role. For example; a group people who don't know each other's name can express their names with arm and hand movements.
3. Do physical exercises such as folk dances, running, swimming and hiking.
4. Observe yourself carefully while carrying out jobs you do every day and that need physical effort such as shoveling snow, washing the dishes and parking your car in order to be aware of your bodily functions.

Some of the people who have come to the forefront with their bodily-kinesthetical intelligence are Charlie Chaplin, Tan Sağtürk and Selim Sırrı Tarcan<sup>7</sup>.

### **Musical Intelligence**

It is the skill to think with sounds, notes and rhythm; to recognize different sounds and to produce new sounds and rhythm<sup>16</sup>. It includes abilities such as playing a musical instrument and finding the similar one of a song<sup>13</sup>.

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Musical intelligence includes the capacity to value the structure of music and rhythm; to shape graphs about music; to be sensitive to sounds; to imitate, recognize and create melody, rhythm and sound; to use different features of tone and rhythm (Lazear, 2000, cited<sup>5</sup>). People with high musical intelligence can learn rhythm; melody and music best and very effectively; these people not only remember musical works easily but also try to think about, comment on and express events in a musical way<sup>1</sup>. These people enjoy playing a musical instrument, murmuring, composing a song and singing this song.

The activities stated below are recommended to activate this intelligence<sup>15,9</sup>:

1. Listen to different kinds of music that will heal your mood. For example; listen to instrumental music to get relaxed during or before a stressful event.
2. Sing song to express your feelings and compose a simple song about your family.
3. Make rhythms in your head with murmuring. For example, read one of the vowel sounds with a different pitch and intonation in each time.
4. Record a cassette of different sounds in the nature (wind, waterfall, storm). Ask ourselves what you can learn from the noise and rhythm of the nature.

Some of the people who have come to the forefront with their musical intelligence are Wolfgang Amadeus Mozart, Aşık Veysel and Fazıl Say<sup>7</sup>.

### **Social-Interpersonal Intelligence**

The scope of this intelligence includes communicating with people, empathizing with them and interpreting their behaviours<sup>13</sup>. It is the capacity to work cooperatively in a group, communicative verbally and non-verbally, understand and interpret people's feelings, ideas and behaviours, and to persuade people<sup>16</sup>.

People with high social-interpersonal intelligence have the capacity to communicate with people effectively through verbal or non-verbal means, to read one's mood and feelings, to work cooperatively in a group, to listen to a person with his/her own point of view, to empathize, and to gain and create synergy (Lazear, 2000, cited<sup>5</sup>).

The activities stated below are recommended to activate this intelligence<sup>15,9</sup>:

1. Make a group within the framework of a to-be completed project. Assign a task to the members of the group.
2. Do exercise to listen to the person across you effectively.
3. Guess what a person thinks and feels according to his/her mimes, then control the accuracy of your guess.
4. Find different ways to communicate a person. For example, communicate with mimes, body movements, gestures and sounds.

Some of the people who have come to the forefront with their social-interpersonal intelligence are Mustafa Kemal Atatürk and Mahatma Gandhi<sup>7</sup>.

### **Intrapersonal Intelligence**

It is the capacity to understand yourself, who you are, your limits, wishes, reactions and interests<sup>16</sup>. This intelligence expresses the cognitive skill of an individual to hear and understand himself/herself<sup>13</sup>. People who have high intrapersonal intelligence can understand the limits of their own enthusiasm and they can consider these limits while directing their own behaviours<sup>1</sup>.

People with high intrapersonal intelligence are independent; they know their strengths and weaknesses realistically; they can direct themselves; they prefer working alone to working in groups and they have a high level of self-confidence<sup>10</sup>. These people are good at understanding their own feelings and ideas, concentrating, focusing, thinking beyond objects and they like self-focused activities.

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The activities stated below are recommended to activate this intelligence<sup>15,9</sup>:

1. Try to be very careful in a routine activity. Be aware of what is happening all around you. For example; be aware of sounds, body movements, feelings and your mimes.
2. Try to observe you're your feelings, ideas and behaviours as an observer from outside.
3. Write an answer of 25 words or a short answer to the question of "Who am I?" Review what you have written every day for a week and make the necessary changes and amendments that you think are necessary.

Some of the people who have come to the forefront with their intrapersonal intelligence are Mevlana Celaleddin Rumi and Sokrates<sup>7</sup>.

### Naturalist Intelligence

It can be defined as recognizing plant species, recognizing the important differences in natural life and using this ability productively (hunting, farming or biological sciences)<sup>13</sup>. It includes the capacity to recognize and research all the living beings in the nature, and to think over creation of living beings<sup>16</sup>. This intelligence includes the capacity to commune with nature; to be sensitive to natural flora; to be sensitive to the reactions of the nature; to interact with other living beings; to recognize and classify the plants and animals in the nature, and to grow a plant (Lazear, 2000, cited<sup>5</sup>).

People with high naturalist intelligence know the characteristic features of natural life; they compare the observations carried out in the nature with other observations; they enjoy dealing with the nature; they draw or take photos of the objects in the nature; they enjoy joining trekking<sup>16</sup>. The professions suitable for these people are biologist, geologist, florist, archeologist and meteorologist.

Some of the people who have come to the forefront with their naturalist intelligence are Charles Darwin and Hayrettin Karaca<sup>7</sup>.

### ENVIRONMENTAL FACTORS DETERMINING INTELLIGENCE AREAS

According to Gardner's analysis, all of the people have at least seven different types of intelligence. Each intelligence is shaped by factors valued in one or more cultural environments and they help problem solving. Intelligence tests measure linguistic and mathematical, and perhaps visual intelligences. However, people also possess musical, bodily-kinesthetic, intrapersonal and interpersonal intelligences. Although everyone has got all these mentioned intelligences, none of them has these intelligences in the same form and at the same level<sup>1</sup>. The development of the mentioned intelligences is also different in one individual. Gardner (1993) summarizes the factors that can be accepted as environmental factors affecting the development of the mentioned intelligences and that can be an advantage or disadvantage for people as below<sup>2</sup>:

- a. The chance of reaching the resources:** For example, if the financial situation of the family is not good, the child cannot easily reach musical instruments such as violin or piano that can develop musical intelligence. Because of this reason, it may be difficult for this intelligence to be strong in that child.
- b. Historical-cultural factors:** For example, if the education system in a society primarily focuses on maths or science, the students' logical-mathematical intelligence is more likely to develop than others.
- c. Geographical factors:** For example, a child who grows up in a rural area uses his/her body more than a child that grows up in city center and so s/he will be more likely to develop his/her bodily-kinesthetic intelligence.
- d. Family factors:** The level of importance given to an area by a child may be related to the child's family's wishes. For example, if the family of a student wants their son or daughter to be an engineer, they will provide the student with more opportunities to use his/her mathematical intelligence.

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- e. **Situational factors:** For example, individuals who grow up in a large family have more chance of benefiting from social opportunities when compared to individuals growing up in small families.

In general, if we have to summarize the new understanding of intelligence, we can come to these conclusions<sup>3</sup>:

1. The capacity of intelligence brought by the individual's birth can be improved.
2. Since intelligence can show itself as a performance, it is a variable that cannot be calculated numerically.
3. Intelligence is not singular, but a multiple system. In other words, intelligence can be expressed with various tools.
4. Intelligence presents students different ways to be successful.
5. The concept of intelligence cannot be isolated from experiences of daily life. In other words, it is an applicable area.

### THE PRINCIPLES OF MULTIPLE INTELLIGENCE THEORY

The general principles of multiple intelligence theory can be summarized as below<sup>1</sup>:

1. Multiple Intelligence Theory emphasizes that intelligence does not have a singular feature, on the contrary, there are a lot of various types of intelligences. According to this theory, each person has got nine different types of intelligences and can use all of these intelligences to a certain extent. While some individuals can have good skills in a few of these intelligence areas, some can have good skills in all the areas.
2. Multiple Intelligence Theory defends the idea that each person has got his/her own specific intelligence profile that helps the person to put forth products valuable for the society in which this person lives and to solve the problems he/she faces, and that is composed of a special combination of strong and weak intelligences.
3. According to Multiple Intelligence Theory, different intelligence areas of individuals can be improved. In this context, it is possible to determine the intelligence profile of individuals composed of their active and passive intelligences by means of a rating scale developed in line with Multiple Intelligence Theory.
4. Although Multiple Intelligence Theory admits that the intelligence has got nine dimensions, it claims that these intelligences have got a complex and simultaneous process. For example, a ballet dancer uses bodily-kinesthetic intelligence while dancing at the stage, spatial intelligence while recognizing the dance floor in order not to get out of the stage, linguistic-verbal intelligence and bodily-kinesthetic intelligence while learning the choreography, musical intelligence while recognizing the music with which she/he will dance, intrapersonal intelligence while presenting the choreography by means of living it.
5. Multiple Intelligence Theory has got a dynamic and developing feature unlike the traditional approach. This theory is always open to innovation and Gardner admits that there may be some other intelligences different from those ones known today.

### IMPLEMENTATIONS OF MULTIPLE INTELLIGENCES

When Gardner was asked what Multiple Intelligence Theory could contribute to education, he stated that MIT was not a goal of education in itself, that the intelligence areas mentioned in the theory were just strong means to reach the goals of education<sup>5</sup>. In traditional education, schools mostly deal with linguistic and logical intelligences and they do not give importance to individual skills and different learning methods. On the other hand, according to MIT, students do not have to learn with a single curriculum and the same method all the time<sup>20</sup>.

Implementing MIT in the field of education gives the opportunity to run educational programmes around different learning methods addressing different types of intelligences and to help students to handle the same subjects with different dimensions and different points of view by means of these educational methods<sup>17</sup>.

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According to Gardner, all the intelligence areas of individuals have the capacity to be improved by means of appropriate teaching, an enriched environment and a good guidance<sup>1</sup> since the process of education should focus on and support students' strengths instead of focusing on their weaknesses. Only by this method can the principle of "equality of opportunities" that exists in modern educational approach be implemented<sup>1</sup>.

But, for this purpose, the teacher should internalize MIT and follow the results of the implementation. The first step of this for the teacher is to determine the students' intelligence areas accurately. According to Armstrong, "Each child is a genius in multiple intelligence classes and these geniuses have some features such as curiosity, game spirit, imagination, skepticism, wisdom, spirit of invention, liveliness, sensitiveness, flexibility, humor and cheerfulness. If teachers want to pick the genius of the students out, they should be careful about arranging activities that will improve students' features in and outside of class<sup>17</sup>.

This theory puts emphasis on being "according to the student" in educational activities. This understanding also complies with "student-based education" or "student-centered education" on which the Ministry of National Education has been putting great emphasis recently<sup>22</sup>. The model of teacher in this teaching approach is quite different. This difference changes the definition of teacher. From now on, teacher is a multi-dimensional model who can present information to students in different ways and who can help students to process information in a creative and flexible environment<sup>17</sup>.

### Determining Intelligence Areas

Gardner is against the idea that separate tests should be developed for each intelligence area and thus separate points can be available at the end of each test. Intelligence areas can be evaluated through observation. Observing how children spend their free time generally gives a good idea about their dominant intelligence area<sup>1</sup>. In determining different skill areas, some inventories such as "Multiple Intelligence Areas Observation Form for Students" and "Multiple Intelligence Area Profile for Students" can be used. These inventories are not IQ tests and they should not be used for this purpose<sup>1</sup>. However, it is important for the teacher to determine intelligence areas of students to be able to understand which student will learn through which method and to help students in their learning. Moreover, it is also important to determine students' dominant multiple intelligence areas in order to arrange suitable in-class activities that comply with these intelligence areas. The points stated below should be kept in mind while determining intelligence areas:

- It is important to run teamwork with other teachers and staff at school.
- It is important to organize conferences on related subjects for parents.
- It is important to make use of newspaper/magazine, autobiography, artistic activities, discussion groups, projects, one-to-one interviews in order to determine students' multiple intelligence areas.
- It is important to use questionnaires and check lists.
- It is important to observe students' performed and unperformed behaviours.
- It is important to document students' performances.
- It is important to look at school records, exam results, students' success in different lessons and different comments on students.

A person can be taught a lot of things that this person has difficulty in learning by means of using people's dominant intelligence area or in other words, using the teaching method that is best and specific to that person. To be clearer, one can open the doors to meet and learn different areas for a person by means of using that person's interest and skill areas that he/she enjoys most as an effective tool<sup>25,5</sup>.

The necessity to teach everything through seven or eight different ways is not the core idea of MIT. According to MIT, each subject in all lessons can be taught by means of different ways. Teachers should have a rich and vivid imagination and should help students to understand something better in line with their intelligence areas<sup>1</sup>.

### Steps of Implementing Multiple Intelligence

Campbell has divided the steps of using MIT in curriculum under five headings (cited<sup>17</sup>):

1. *Lesson Design Based on Multiple Intelligence:* Intelligence areas are accepted as the starting point in designing a lesson. For example; using bodily-kinesthetic intelligence area and helping students who have difficulty in learning maths and geometry to learn the formulas by means of the method of role-making.
2. *Inter-disciplinary Programme:* Core programme approach is recommended in order to pick students' intelligence areas out. According to this approach, students learn common core subjects first of all. Then, they have lessons about their interest areas in line with their intelligence areas.
3. *Students' Projects:* With this approach, students are helped to do research in their interest areas, to interpret the results of their research and to discuss these results with their friends in class.
4. *Evaluation:* It is not enough to use fill in the blanks or short answer tests at the step of evaluating students. Instead of these, students should be evaluated by means of creating situations in which they can reveal their advanced thinking skills, generalize what they have learnt, associate their lives with the content of the lesson and transfer knowledge they have to new situations.
5. *Apprenticeship:* The curriculum of primary and secondary schools should be run so as to provide students with the chance of apprenticeship and in an individualized manner. Students can be included in three different areas of apprenticeship; education on apprenticeship about 1) art and craft 2) academic field 3) dance and sports.

### PREPARING LESSON PLAN ACCORDING TO MULTIPLE INTELLIGENCE THEORY

According to Campbell, within the framework of a teaching approach based on the principles of Multiple Intelligence Theory, it is necessary for the teacher to contemplate on how to adapt the to-be-taught subject or concept from one intelligence area to another appropriately (cited<sup>5</sup>). In order to help this purpose, the questions stated below can be used at the step of planning a lesson after choosing the subject<sup>17</sup>:

1. Logical-mathematical intelligence: How can I express this situation with numbers? How can I bring critical thinking skills, logical thinking principles and classifying into the class?
2. Verbal intelligence: How can I use spoken language and written texts in this subject?
3. Spatial intelligence: How can I use visual materials?
4. Musical intelligence: How can I bring music into the class and how can I use music in this subject?
5. Bodily-kinesthetic intelligence: How can I help students to use all body skills and handcraft?
6. Interpersonal intelligence: How can I get students to do group-work?
7. Intrapersonal intelligence: How can I awake students' individual feelings and how can I give them the chance of choosing?
8. Naturalistic intelligence: How can I bring natural elements to the class?

### EVALUATION ACCORDING TO MULTIPLE INTELLIGENCE THEORY

According to MIT, evaluation should be multifocal; it should be able to focus on multiple areas, not only a single area. This situation makes evaluation "authentic" and "equalitarian." Original (authentic) measurements are important in that they show what students have learnt in the context to the teachers<sup>5</sup>.

In authentic evaluation, a portfolio (a file that includes all the works done by the student) is kept for each student and these portfolios ensure a more realistic evaluation when compared to standard tests (multiple choice, true-false or fill in the blank questions)<sup>3</sup>. According to this, as knowledge can be measured at least in eight different ways, students' portfolios should include materials related to each of the eight intelligence types.

The most important component of an accurate evaluation is documenting students' portfolio products and problem-solving processes. These documents may include these<sup>3</sup>: anecdote records, examples of

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study, audio cassettes, videos, students' diaries, informal test results, interviews with the students, check lists, class map and exams based on the understanding of absolute evaluation.

### FINAL WORD!

According to Multiple Intelligence Theory, each individual has got at least 8 intelligence areas. In his book "Multiple Intelligence," Gardner underlines especially a subject, which constitutes the base of the theory. This subject can be summarized as below:

One or two intelligences are improved when compared to others in a person; but every individual needs every intelligence area. For example, a conductor needs spatial, intrapersonal and interpersonal intelligences as well as musical intelligence<sup>20</sup>. Moreover, the success that an individual displays in different fields is the product of different intelligences he/she has. In other words, MIT has got as its basic idea that "there is not just one or two ways to be intelligent."

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