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DETERMINING THE LEVEL OF SUCCESS BY MULTIPLE INTELLIGENCES THEORY FOR FASHION DESIGN EDUCATION

ABSTRACT

First-grade students at the Fashion Design Education Department of Vocational Education Faculty of Gazi University in Ankara were administered an MI inventory, which defined the well-developed intelligences of both classes for Textile Materials lesson, at the beginning of the fall semester in 2007. One class served as the experimental group; the other class as the control group. The lesson curriculum and class activities of the experimental group were designed according to the MI theory of Howard Gardner (1983). The control group was taught by the traditional teaching method relying heavily upon on lecture as a primary teaching method. When the posttest scores of both classes were compared, it is seen that students in the experimental group showed a significantly greater increase in exam scores than did the control group.

Keywords: Multiple Intelligence Theory, Intelligent Learning, Vocational Education, Textile Materials, Fashion Design

MODA TASARIMI EĞİTİMİ İÇİN ÇOKLU ZEKA TEORİSİ İLE BAŞARI DÜZEYİNİN BELİRLENMESİ

ÖZET

Ankara Gazi Üniversitesi Mesleki Eğitim Fakültesi Moda Tasarımı Eğitimi 1. Sınıf öğrencilerine, 2007 yılı Güz Dönemi başında Tekstil Malzeme Dersi için, iki sınıfta derslere giren öğrencilerin hangi zekâlarının daha çok geliştiğini ortaya koymamıza yarayacak bir Çoklu Zeka Testi uygulanmıştır. Bir sınıf deney grubu, diğer sınıf da kontrol grubu olarak alınmıştır. Deney grubunun ders müfredatı ve sınıfiçi faaliyetleri Howard Gardner (1983) tarafından ortaya konan Çoklu Zekâ Teorisine uygun düzenlenmiştir. Kontrol grubu, Anlatım ve Soru cevap teknikleri temel öğretim teknikleri olmak üzere, Klasik Öğretim Metodu ile eğitilmiştir. Her iki sınıfın sontest puanları kıyaslandığında deney grubunda bulunan öğrencilerin sınav puanlarının kontrol grubundaki öğrencilerin sınav puanlarından belirgin bir oranda daha yüksek olduğu görülmüştür.

Anahtar Kelimeler: Çoklu Zekâ Teorisi, Zekaya Dayalı Öğrenme, Mesleki Eğitim, Tekstil Malzemeleri, Moda Tasarımı Eğitimi

1. INTRODUCTION (GİRİŞ)

By the 1920s and 1930s while intelligence was initially perceived as a unitary concept, that would be captured by a single number (IQ) when, University of Chicago psychologist L.L. Thurstone disagreed, contending that there were 7 primary mental abilities: verbal comprehension, word fluency, computational ability, spatial visualization, associative memory, perceptual speed, and reasoning. Another psychologist, J.P. Guilford mentioned 120 types of mental abilities in his *Structure of Intellect Theory* (SI). The evaluation of the knowledge in human intellect continued when, a contemporary Harvard scientist and prolific science author Stephen Jay Gould rejected to the very thing that IQ is meant to measure, "general intelligence" (or *g*) in his book *The Mismeasure of Man* (1981). Gould claimed that proponents of IQ tests assume that there was such a thing as general intelligence, and analyze the data to produce one number; he suggested that an IQ test was really a combination of a number of different tests that test a number of different things. Gould argued that this one number was in fact an artifact of the statistical operations psychologists apply to the raw data, telling that one could analyze the same data more effectively and end up with a number of different scores rather than one score. Although theories regarding intelligence whether singular or multiple, have assumed that intelligences are simply biological entities or potentials which exist "in the brain" and can be measured reliably, independent of context; many different instruction techniques and approaches were put into stage without giving any importance on the effectiveness of learning intelligence.

According to Feuerstein (1980), the teacher's interactive role is crucial in the mediated learning experience of children's cognitive development. In their major review of studies of linguistic interactions in classrooms, Green and Smith (1982) conclude that language is used by teachers to "frame" the presentations of content, the tasks students are to perform, and the norms of acceptable and unacceptable conduct. In other words, teachers tell students what to do, when to do it and how to behave when they do it. All these traditionally balanced instruction approaches tend to fade away as the MI Theory of Howard Gardner was introduced in 1983. The theory sought to broaden the scope of human potential beyond the confines of the IQ score, testing an individual's intelligence through the practice. He suggested that "intelligence is more than just being able to do the isolated tasks out of an unnatural learning environment". *He said* "intelligence is having the capacity for solving problems and fashioning products in a context-rich and naturalistic setting" (Gardner, 1985).

It is put forth by the recent studies about human cognitive potential that, intelligence as measured by IQ is one possible explanation in terms of ability, however, within a profession; creative achievement correlates poorly with IQ (Barron 1969; Wallach 1976a, 1976b). Within the common tradition of intelligence, the unitary human cognition is the fundamental assumption, which results in describing individuals by a single quantifiable intelligence notation. But the recent researches done, not only widen the scope of the human intelligence, but also refresh the pragmatic definition of how the intelligence should be defined. It is also a restricting fact that focusing on a preponderance of linguistic and mathematical intelligences minimizes the importance of other forms of abilities. Gardner calls them as intelligences. No matter what their names or notions are, the important thing is that they are essential in other

kinds of learning in our lives besides the traditional academic learning.

As the theory of a human intelligence, which possesses the full spectrum of intelligences and deals with ability or talents as something valuable in one's culture, became more evident, educators around the world and also in Turkey, immediately recognized the truths contained within the concept of multiple intelligences from their own learning experiences and from those of their students.

- **Enrichment of Context by the Senses:** Schools of the past have imposed on lecture as a primary teaching method. Still today's conventional teachers use lecture assuming as if students learn only auditorily. Yet through brain research, we know that not many do learn that way. Only about 20% of students learn auditorily, the other 80% learn either visually or kinesthetically (Sousa, 1997). Another type of learning modality, which is important for the teacher, is visual where information is processed and stored in occipital lobe at the back part of the brain. Visual learners are those who need a mental model that they can see. One of the most effective tools for visual learners is graphic models, sometimes-called concrete models that help students connect or relate new information to prior knowledge, helping students understand and remember difficult concepts such as sequencing, comparing and, contrasting and, classifying. Learning modality can be varied by our sensory channels through which the brain gets all information. When designing a lesson plan and a sensory enriched environment, our tactile, gustatory, olfactory, visual, kinesthetic, and auditory senses, should also be employed. It is obvious that persons whose sensory pathways are open and alert absorb more information from the environment than those whose pathways are withered and immune to sensory stimuli.

  Cognitive education should also include the development of sensory acumen, since the interaction of the senses enriches the meaning. The arts are not mere diversions from the important business of education, they are very essential resources. Education in the arts cultivates sensitive perception, develops insights, fosters imagination, and places a premium on well-crafted form. May be the very point which MI theory will be placed as a uniform concept is the artistic and creativity related education. Cognition requires that ideas be linguistically mediated, whereas the arts are expressive and affective activities depending more upon sensitive perception or talent than cognition.

  Sousa (1995) says that working memory is temporal and deals with information for only a short amount of time before deciding whether to discard it. He identifies the time rate to be 5 to 10 minutes for pre-adolescents and 10 to 20 minutes for adolescents. Using this information as a guide, teachers should give information for about 15 minutes followed by activities or discussion to reinforce the learning. During the first 20 minutes of the class, he says, students learn best. The rest of the lesson should be interesting and cooperative so that the students will not lose contact with the content. Because of the time-limitation for the listeners and necessity of sensory enrichments, the teaching tools should go far beyond the traditional teacher-as-lecturer mode of instruction.

  As Gardner (1993a:15) states: "It is of the utmost importance that we recognize and nurture all of the varied human intelligences, and all of the combinations of intelligences. We

are all so different largely because we all have different combinations of intelligences. *If we recognize this, I think we will have at least a better chance of dealing appropriately with the many problems we face in the world".*

Today, MI theory serves as one of the most effective curricular and instructional frameworks for classroom teachers to use in designing their lesson plans. Since the MI theory certainly provides one approach that at least attempts to address the multiple ways of learning and understanding that our students bring with them to the classroom, even the most ardent supporters of MI will never claim this framework is a curricular or instructional panacea. The solution rests in the hands of the learners. The emphasis of multiple intelligences needs to shift from teacher to learner.

The use of multiple intelligences in classrooms is the choice of instructors and their institutions. Instructors must first recognize the need to go beyond the verbal-linguistic and logico-mathematic intelligences. While these two intelligences have dominated academe traditionally, other intelligences should not be ignored. Once having recognized the need to reach out to learners who favor the other intelligences, instructors need to release and empower their students to use these intelligences to learn. Technologies can certainly make their demonstration and implementation more accessible in the classroom setting, adapting to the age of information other than the traditional ink and paper forms of essays, term papers and exams.

For the time being, in Turkey too, more and more educators are recognizing the importance of teaching students from an interdisciplinary point of view. Because many years of experience insisting on classical academic teaching disciplines has showed that although academic skill teaching or the teaching of isolated chunks of knowledge provided students with competencies or background information that can be useful to them in their further education, such instruction often failed to connect students to the real world.

The truths underlying Gardner's multiple intelligences are self-evident. Learners favor different intelligences and use different combinations in their acquisition of material and knowledge. There is no genuine attempt to utilize all eight intelligences in our teaching practices. It also appears that the higher the academic ladder a student ascends, the fewer learning intelligences are made available for that student. At the college level, where the creativity and productivity should be at their highest peaks, there emerge only two primary learning intelligences: logico-mathematic and verbal-linguistic on the contrary. The traditional mid-term, final and a paper only allow a narrow choice of learning intelligences. May be an MI school is a far beyond dream within the Turkish education system today, but I feel that enrichments in the curriculum are each teachers' responsibility and each student deserves this opportunity.

- **The MI Theory in Practice:** In his theory Dr. Gardner points eight different potential pathways to learning. The theory proves to be so intriguing because it expands our horizon of available teaching/ learning tools beyond the conventional linguistic and logical methods used in most schools. Whether you are a kindergarten teacher, a graduate school instructor, or an adult learner seeking better ways of pursuing self-study on any subject of interest, the same basic guidelines apply.

One of the appealing elements of the Multiple Intelligences framework is that it allows teachers to teach in a manner that does not ask them to sacrifice verbal and analytical skills for, what some might term, more affective or nontraditional forms of intelligence. Instead, it provides a model for educators to provide students with a deeper understanding, which Gardner defines as *"a sufficient grasp of concepts, principles, or skills so that you can bring them to bear on new problems and situations."*

Examining through Gardner's MI Theory, one sees that among the complexities of the theory, it depends solely on project-centered instruction and that there is no distinct rules other than the demands imposed by the cognitive components of the intelligences themselves. It suggests that teachers be trained to present their lessons in a wide variety of ways using cooperative learning, art activities, role play, multimedia, field trips, and inner reflection and much more other than the same old dull way, through dry lecture, and boring worksheets and textbooks. Within the framework of Gardner's vision of an MI student, it is recommended that older students should choose apprenticeships based on assessment of their intellectual proclivities, interests and available resources, which is why I thought MI theory is an appropriate approach to be employed at a Vocational Education level.

MI theory went well beyond the traditional focus on logical-mathematical and linguistic intelligence; that were the sole focus of standardized tests and classroom instruction. Gardner defined ***intelligence*** as the "capacity to solve problems or to fashion products that are valued in one or more cultural settings." As mentioned previously, Gardner's MI theory includes eight distinct intelligences or ways of learning (defined in Table 1 and 2).

Table 1. Summary of gardner's eight intelligences (Central components)
(Tablo 1. Gardner'ın çoklu zeka kuramına gore sekiz zeka)

Logical/Mathematical	Discern logical or numerical patterns; deductive reasoning
Verbal/Linguistic	Use written and spoken language to express complex meaning
Visual/Spatial	Perceive the visual world accurately; create mental images
Musical/Rhythmic	Produce and appreciate forms of musical expressiveness
Body/Kinesthetic	Control body movements and handle items skillfully
Naturalist	Recognize patterns and distinctions in the natural world
Interpersonal	Understand others; discern verbal and non-verbal cues
Intrapersonal	Understand oneself; engage in self-reflection & metacognition

Table 2. MI instructional strategies (Teaching activities)
(Tablo 2. Çoklu zeka stratejilerinin eğitimde kullanılması (Öğretim etkinlikleri))

Logical/Mathematical	Problem solving, investigation, experimentation, questioning
Verbal/Linguistic	Discussion, narration, advanced organizers, writing activities
Visual/Spatial	Imagery, map analysis, observation activities, construction of diagrams or posters
Musical/Rhythmic	Simulations, song analysis, creative song writing, performances
Body/Kinesthetic	Simulations, modeling, role playing, analyzing manipulatives
Naturalist	Recognize and classify cultural and natural artifacts, data gathering in natural setting
Interpersonal	Cooperative learning, peer teaching, brainstorming, shared inquiry
Intrapersonal	Decision making, journal writing, self-discovery, independent learning projects

Table 3. Intelligences in detail
(Tablo 3. Zeka alanlarının detayları)

Learners who are strongly:	Think…	Love…	Need…
Linguistic	in words	reading, writing, telling stories, playing word games, etc.	books, tapes, writing tools, paper, diaries, dialogue, discussion, debate, stories, etc.
Logical-Mathematical	by reasoning	experimenting, questioning, figuring out logical puzzles, calculating, etc.	things to explore and think about, science materials, manipulatives, trips to the planetarium and science museum, etc.
Spatial	images and pictures	designing, drawing, visualizing, doodling, etc.	art, LEGOs, video, movies, slides, imagination games, mazes, puzzles, illustrated books, trips to art museums, etc.
Bodily Kinesthetic	through somatic sensations	dancing, running, jumping, building, touching, gesturing, etc.	role play drama, movement, things to build, sports and physical games, tactile experiences, hands-on learning, etc.
Musical	via rhythms and melodies	singing, whistling, humming, tapping feet and hands, listening, etc.	sing-alongs, trips to concerts, music playing, musical instruments
Interpersonal	by bouncing ideas off other people	leading, organizing, relating, manipulating, mediating, partying, etc.	friends, group games, social gatherings, community events, clubs, mentor/apprenticeships
Intrapersonal	deeply inside themselves	setting goals, meditating, dreaming, being quiet, planning	secret places, time alone, self-paced projects, choices, etc.

From Multiple Intelligences in the Classroom by Thomas Armstrong. Association for Supervision and Curriculum Development, 1994, page 27.

The instructor should give importance to how students learn when planning the lesson activities first. According to the MI theory, teacher can reach to his students by the ways they prefer. Hence, the idea that teachers control multiple intelligences within their classes is nonsensical. Students should be empowered to learn in the method conductive to their learning intelligence. The job of the educator is to supply the opportunity, context and framework in which learning is to take place. The job of the student is to learn by utilizing the intelligences that best suit them for the task. Teachers may utilize multiple intelligences in their class by allowing students to employ the intelligences of their choice in the acquisition of the material. The instructor supplies the context and outlines the content to be covered by the learners, who utilize the intelligences of their choice to obtain the material.

Research indicates that MI based curriculum activities can enhance cognitive development in order to advance success in the academic school experiences. Thus, the hypothesis for this study was the following: Faculty's first-grade students, who were administered by an MI based curriculum, would expand their level of success in the academic school experiences, after they participated in such prepared lessons. The Intelligences of the MI theory are listed below for more detailed information about all of the intelligences (see Table 3).

2. RESEARCH SIGNIFICANCE (ÇALIŞMANIN ÖNEMI)

For the past years, Turkish VET system at college level empowered only the traditional learning intelligences: logical-mathematic and verbal-linguistic, which were utilized and recognized by the standardized and traditional assessments as written exams. The long ago-established curriculum and the time-honored approaches to the disciplines did not lend themselves to other intelligences in a natural manner. With inadequate time to cover even the basically mandated elements of the course, teachers, not only lack the time in their classrooms to utilize other intelligences but also fail to prepare for such lessons. Moreover some teachers do not prefer to "waste" time by covering the same material for other students learning through another intelligence. In addition, teachers did not have the full expertise in the other intelligences to produce meaningful lessons. In addition many thought that it would take too much time and effort to plan and implement such innovative adaptations. Most teachers took rather a relatively traditional approach to instruction, relying firmly on classroom presentations, textbooks, and workbook-or teacher-prepared exercises. Hence the ubiquitous lecture predominated not only at the primary and secondary education levels but at the higher educational levels as well. Nevertheless, some teachers found creative ways to reflect on their best teaching methods and to expand their current teaching repertoire to include a broader range of methods, materials, and techniques for reaching an ever wider and more diverse range of learners.

The purpose of the present study was to identify the intelligences of the students(as described in the MI theory) and through the use of a modified curriculum and a well-organized set of lesson activities, to determine their level of success in the standard exams. This research was carried out to prove that implementing the principles of MI theory and incorporating multiple intelligences into the lesson curriculum, would result with outcomes of improved test scores, improved discipline in classroom and improved lesson attitudes of students.

3. EXPERIMENTAL STUDY (DENEYSEL ÇALIŞMA)

There was little accessible information on the research topic, which hindered the analyses of the data, but allowed us to explore the topic from a fresh perspective. This study was conducted during the fall semester of 2007. Participants consisted of 87 first-grade students from a University in the capital of Turkey, Ankara. In this experimental study, in order to control the teaching ability of the instructor as a constant variable, each of the two groups were instructed by the same person (the researcher herself).

- **Sample:** This investigation was a pretest- posttest experimental study in which the research team identified the multiple intelligences of the first-grade students of the Vocational Education Faculty of Gazi University, Ankara in Turkey. There were two classes formed by a voluntary basis, one of which we took as the experimental group and the other as the control group at random. Participants were 87 students who completed the pretest and the MI inventory. 54 students were in 1-A which was identified as the Experimental group, whereas 33 students were in 1-B, as the control group. We are well aware of the fact that experimental group was crowded that would cause some difficulty in implementing MI teaching methods. Both of the groups were experimentally compared all through the semester for 14 weeks. At the end of the study we retested all the students.
  The students ranged in age from 18 to 20 (see Table 4) (M of the experimental group=19, and M of the control group=19). In terms of ethnicity, students included Caucasian (n=3, girls, having no difficulty in lessons with full control of the Turkish language), 3%, the rest of the class is Turkish. There were no significant differences between the experimental and control groups.

Table 4. Demographic properties of the students
(Tablo 4. Deneye katılan öğrencilerin demografik özellikleri)

		Age	No.Of Students	Sum	Group Sum
1-A Experimental Group	GIRLS	18	1	51	54
		19	47		
		20	3		
	BOYS	18	0	3	
		19	3		
		20	0		
1-B Control Group	GIRLS	18	0	31	33
		19	31		
		20	0		
	BOYS	18	0	2	
		19	2		
		20	0		

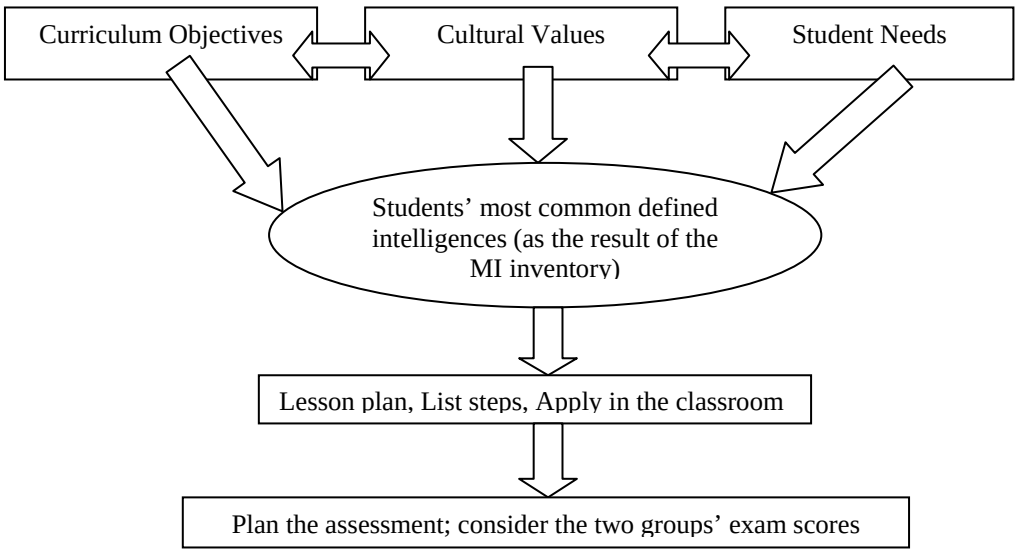

Figure 1.Planning and implementing the MI curriculum
(Şekil 1. Çoklu Zeka Kuramı müfredat programının planlası ve uygulanması)

An experimental model for planning and implementing MI theory to the lesson curriculum was prepared by the researcher (see Figure1). The model can be applied in many configurations as a framework allowing each lesson to tailor its own needs.

- **Instrument:** The instrument was a 135-item, Multiple Intelligences inventory, an instrument prepared as a 5-point likert scale. The inventory was developed from the inventories in the internet.

4. FINDINGS AND DISCUSSIONS (BULGULAR VE TARTIŞMA)

The reliability tests of the inventory were done and the results were found as below stated;

N of Cases = 508,0 N of Items =135 Alpha = ,9433

The minimum alpha of the subscales of the analysis was found to be ,7224 which stated that the inventory is highly reliable. As a pre- and post-test instrument, a standardized exam was prepared by the teacher and applied to both of the groups. A group of 21 children, ranging in age from 18 to 20 (M=19), were measured at a 3-week interval to establish pretest-posttest reliability of the instrument. The result indicated that the reliability coefficient of the test was r=.78, p<.01. Determining the brain maps of the students before administering these instruction techniques to both the experimental and control group, was very important. Since three of the common strongest intelligences of the experimental group would be empowered through the MI curriculum in this research. In order to control one variable, the brain map of the control group was very important too.

- **Procedure:** The teacher administered the pretest at the beginning of the fall semester to students in the first-grade students. The test was administered again as the posttest at the end of the semester. As the result of the MI inventory processed by SPSS 13.0 program, the frequency tables of both the control and experiment group were drawn, and the strongest intelligences of the two groups were identified as shown in Table 5.

Table 5. The results of the MI inventory, Experimental Group
(Tablo 5. Çoklu Zeka Testi Sonuçları, Deney Grubu)

	Inter-Personal	Visual	Linguistic	Intra-Personal	Logical	Musical	Naturalistic	Kinesthetic
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
5	26 (48)	16(30)	6(11)	18(34)	10(19)	15(28)	7(13)	6(11)
4	24(44)	32(59)	17(31)	31(57)	18(33)	16(29)	15(28)	27(50)
3	1(2)	4(7)	27(51)	2(4)	12(22)	9(17)	17(31)	16(30)
2	3(6)	2(4)	4(7)	3(6)	9(17)	6(11)	12(22)	1(2)
1	0(-)	0(-)	0(-)	0(-)	5(9)	8(15)	3(6)	4(7)

N=54 *5-Very high, 4-High, 3-Medium, 2-Weak, 1-Poor*

Table 6. The results of the MI inventory, Control Group
(Tablo 6. Çoklu Zeka Testi sonuçları, Kontrol Grubu)

	Inter-Personal	Visual	Linguistic	Intra-Personal	Logical	Musical	Naturalistic	Kinesthetic
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
5	22 (67)	17(51)	12(36)	15(45)	11(33)	7(21)	11(33)	10(30)
4	6(18)	7(21)	10(30)	13(39)	10(30)	10(30)	5(15)	8(24)
3	5(15)	7(21)	8(25)	2(7)	11(33)	11(33)	8(24)	10(30)
2	0(-)	2(7)	3(9)	3(9)	1(3)	5(15)	9(27)	1(3)
1	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	0(-)	4(12)

N=33 5-Very high, 4-High, 3-Medium, 2-Weak, 1-Poor

As the data from the MI was processed by SPSS 13.0 program, it is seen that the strongest intelligences of the experimental group were defined. Interpersonal intelligence of the class rates as 92% at high level, Intrapersonal intelligences as 91% and visual intelligence as 89%. After defining the key intelligences of the class, the researcher decided that the experimental classroom would provide special lessons and activities developed according to the three defined intelligences (Interpersonal, Intrapersonal and Visual intelligences) (see Table 7).

As Table 6, is examined, the strongest intelligences of the control group were as follows; Interpersonal intelligence of the class rates as 85% at high level, Intrapersonal intelligences as 84% and visual intelligence as 72%. (The distribution of the first three strongest intelligences is same as the experimental group) For 14 weeks, 2 times per week (45 min per session), students both in the experimental and control group had lessons designed according to the research model. The graphic distribution of the experimental group's intelligence is shown in Figure 2.

Results from the research showed that the most frequent MI profile for these students was Interpersonal intelligence (92%). Other researches and practices on interpersonal students in other settings explain that interpersonal intelligence is so closely connected to interaction with others that most educators claim that they could not teach without pairing or grouping students (Campbell,1996:161). This kind of intelligence includes the ability to form and maintain relationships and to assume various roles within the groups. They respond best in cooperative learning situations. The second highly possessed intelligence was Intrapersonal intelligences (91 %) that is effectively based upon self directed, independent learning approaches. They respond best in self-esteem, goal setting, emotional processing skills, the curricular model of self-directed learning, and intrapersonal forms of technology. The third strongest intelligence of

the experimental group was visual-spatial (89 %) that includes an aggregate of related skills such as visual discrimination, recognition, projection, mental imagery, spatial reasoning, and image manipulation. The detailed MI techniques were given in Table 7.
Being aware of all of these characteristics of the students (most common), it was easy to establish a purpose oriented designed lesson activities as shown in Table 7; Key materials and methods. After the instruction techniques used during the research, the posttest scores of both the experimental group and the control group were compared by SPSS 13.0 program by Independent samples t test as shown in Table 8.

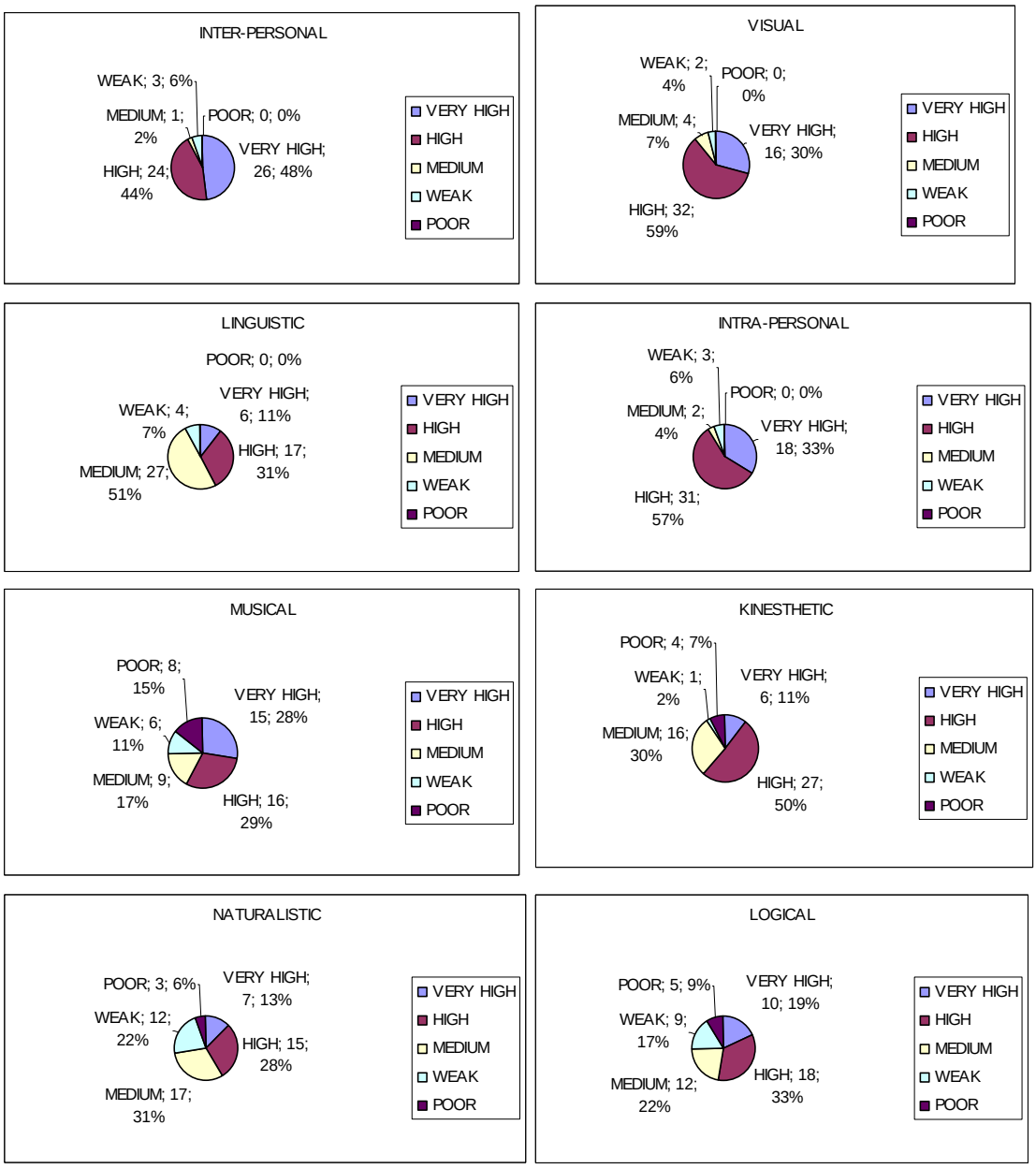

Figure 2. The pie-graphs of defined intelligences of experimental group
(Şekil 2. Deney grubunun zeka alanları)

Table 7. Key Materials and Methods of MI teaching used in this research
(Tablo 7. Bu araştırmada kullanılan materyaller ve çoklu zeka öğretim metodları)

INTELLIGENCE TYPES	KEY MATERIALS AND METHODS
Linguistic Intelligence	Lectures/ Conduct a debate on/ Large and small group discussions/ Brainstorming/ Individualized reading/ Reading to the class/ Conduct an interview on
Logical-Mathematical Intelligence	Scientific demonstrations/ Design and conduct an experiment on/ Science thinking/ Make up analogies to explain/ Describe the patterns or symmetry in/ Mathematical problems on the board
Bodily-Kinesthetic Intelligence	Create a movement or sequence of movements to explain/ Make task or puzzle cards for/ Build or construct a project/ Plan and attend a field trip that will make them understand the lesson more/ Bring hands-on materials to demonstrate
Visual Intelligence	Chart, map, cluster, or graph/ Create a slide show, videotape, or photo album of textile materials/ Create a piece of art that demonstrates/ Videos, slides, and movies(shooting a film)/ Illustrate, draw, paint, sketch, or sculpt, picture metaphors.
Musical Intelligence	Give a presentation with appropriate musical accompaniment on/ Indicate the rhythmical patterns in/ Make an instrument and use it to demonstrate/
Interpersonal Intelligence	Conduct a meeting to address/ Peer teaching/ Intentionally use social skills to learn about/ Participate in a service project to/ Interpersonal interaction/ Conflict mediation/ Apprenticeships
Intrapersonal Intelligence	Independent study/ self-paced instruction/ Individualized projects/ Individual web pages. Class Web Sites, e-homeworks/ exposure to inspirational/motivational curricula
Naturalist Intelligence	Create observation notebooks of/ Describe changes in the local or global environment/ Use binoculars, telescopes, microscopes, or magnifiers/ Draw or photograph natural objects

Table 8. Independent samples t-test results
(Tablo 8. Bağımsız iki grup arasındaki farkların t-testi sonuçları)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
posttest	Equal variances assumed	,014	,907	10,037	85	,000	22,493	2,241	18,037	26,949
	Equal variances not assumed			10,558	78,316	,000	22,493	2,131	18,252	26,735

5. CONCLUSION (SONUÇ)

It is high time that the education system in Turkey needs to extend its focus from the teaching and learning of skills and content to include an emphasis on the purposeful use of intelligent learning of skills and knowledge. For more thoughtful learning to occur, teachers need to orchestrate a broader range of instructional experiences than they presently use in order to provide students with

the opportunities to prepare for, review, and extend their new learning.

Modern learning instructional techniques such as; discussion teams, cooperative work groups, learning by doing, individual learning logs, computer networking, and other activities that engage students as active learners need to be added in education, and perhaps even predominate. To use new approaches, teachers have to move away from traditional authoritarian roles and take on the role of a guide. When it comes what and how to teach, Nickerson (1981) said that no one taxonomy existed, advising that educators would be wise to select abilities that represent what they want students to be able to do and incorporate these particular skills into their curriculums and school programs. Just as in any other country of the world, curriculum or systematic modifications though intelligent learning will undoubtedly be difficult in Turkey too, requiring time for the changes in established procedures and traditions in the curriculum and in systems of educative revolution.

From this study we can infer that the posttest scores of the two groups differ as the result of the lesson curriculum prepared. With a controlled variable of the instructor’s power to teach and her technique, this research has shown that only the difference of the lesson activities would cause an increase in the exam scores of the group. Since the mean of the exam scores of the control group is 51. 97, whereas the exam scores of the experimental group is 74.46, indicating that modern learning instructional techniques in implementing MI in the curriculum such as; discussion teams, cooperative work groups, individual learning logs, computer networking, and other activities that engage students as active learners, have positive effect on the class success.

The results of the research showed that if cognitive education is enriched by the sensory acumen, the success of each student will be higher. Furthermore, students and teachers can use e-mail to share multimedia and textual data relevant to MI activities they are working. In addition to textual data, graphics, images, audio and video clips, students can include hypermedia and hypertext links to other resources on the World Wide Web on their individual web pages just as Class Web Sites. Class chat rooms can be ideal means for sharing information or checking on the progress of classroom MI projects. While this is an especially useful tool for addressing interpersonal learning needs, it can be used to assist with activities representative of each of the other seven intelligences. Teachers may choose to synthesize student products into a course or class web page. In addition to providing a means for comparison, these web sites also serve as excellent examples for future classes attempting to complete MI activities.

It is a common fact that knowing how students learn is the key to success for a class teacher. Every teacher can increase the rate of teaching by analyzing students, identifying their intelligences (as described in the MI theory) and using a well-developed curriculum and a well-organized set of lesson activities. Although, today the physical conditions of the institutes are not available for the MI based education in Turkey, Curriculum development can at least be backed with MI theory’s implementation in the Vocational Education lesson’s curriculum in harmony with the goals of high school vocational education.

The theory and practice of MI focused these students on learning rather than competing with each other, and this encouraged risk-taking. Students reported putting "twice the effort" into their projects and papers as they had in other classes on traditional

assignments. The integration of MI into the curricula fostered an intellectual excitement and zest for learning.

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