Application of Multiple Intelligences Theory in Art History Instruction

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ABSTRACT

Howard Gardner's Multiple Intelligences theory and its classroom implementations have been widely accepted and applied in the field of education for the past two decades by most educators and researchers. This study discusses the critic's view of the Multiple Intelligences theory within the field of art education in higher education. This research examines whether there is a significant difference between multiple intelligence instruction and traditionally designed Art History instruction. There are two groups in the experiment, namely experiment group and control group, which are randomly selected. The experimental group has been instructed through Multiple Intelligence strategies while the control group has employed traditional methods. After the study, independent t-test analysis indicated that the experimental group produced significantly greater achievement in increasing the levels at knowledge, grade, a sense of art, interpretation, remembrance and aesthetic value.

Keywords: *Multiple Intelligences, Art Education, Art History, Pedagogy*

Çoklu Zeka Teorisinin Sanat Tarihi Eğitiminde Uygulanması

ÖZET

Howard Gardner'in çoklu zeka teorisi ve teorinin sınıfta uygulamaları, son yıllarda eğitimciler ve araştırmacılar tarafından yaygın olarak kabul görmekte ve kullanılmaktadır. Bu çalışma, çoklu zeka teorisinin yüksek eğitimde, sanat eğitiminde uygulanması üzerinedir. Çalışma, Sanat Tarihi dersinde, çoklu zeka teorisinin uygulandığı sınıflar ile teorinin uygulanmadığı geleneksel metotla ders yapılan sınıfların basari oranları arasında belirgin bir fark olup olmadığını araştırmaktadır. Araştırma, deney ve kontrol grubu olmak üzere, rastgele seçilen iki grupla uygulanmıştır. Deney grubunda, dersler çoklu zeka teorisine göre uygulanmış, kontrol grubunda ise dersler geleneksel yöntemle yapılmıştır. Çalışma sonrasında uygulanan t-test analizi, deney grubunun, bilgi düzeyinin artması, ders notları, sanat anlayışı, yorumu, hatırlama ve estetik değer anlayışı kazanma gibi alanlarda kontrol grubuna göre, belirgin olarak daha fazla başarı gösterdiğini kanıtlamıştır.

Anahtar Kelimeler: *Çoklu zekâ, Sanat Eğitimi, Sanat Tarihi, Eğitim bilimi.*

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Introduction

Multiple Intelligence (MI) theory and its implementations have been employed to various fields of education. Intelligence, briefly, is the capacity to modify and adjust one's behaviors in order to accomplish new tasks successfully.[1] Gardner defined intelligence as "the ability to solve problems or to create products that are valued within one or more cultural settings."[2] According to Gardner, nearly all major scholars in the area of human cognitive development have agreed on what it means to be 'well developed' adult. Today's studies have not been looking only at the estimate of overall intelligence, but also at the different combination of intelligences.[3] This idea of different combination of intelligences has been offered by Howard Gardner's Frames of Mind[4] and it came to challenge the limited concept of intelligence outlined above.

This study aims to design an Art History course by including various combinations of intelligences helping learners to get the maximum benefit from the lesson at knowledge level as well as to gain a sense of art, interpretation and aesthetic value. The course teaches students to understand works of art in different geographies through both contextual and visual analysis at the period between the ancient world through at the end of Baroque and Rococo Periods. For this purpose two groups have been chosen as experimental group and control group at TOBB University of Economics and Technology and the study has been developed.

Multiple Intelligences Theory

Gardner's theory diverges from certain traditional conceptions. Gardner argued for a notion of intelligence that included non-cognitive abilities. He defined intelligence as the ability to solve problems or to fashion new products that are valued in at least one culture. The major claim in the theory is that the human intellect is better described as consisting of a set of semi-autonomous computational devices, each of which has evolved to process certain kinds of information in certain kinds of ways.[5] Haggarty stated, "MI theory offers a richly diversified way of understanding and categorizing human cognitive abilities, and combinations of abilities, heightening our awareness of what makes learning possible for individual students".[6]

The Eight Intelligences

As Armstrong points out, Gardner provided a means of mapping the broad range of abilities that humans possess by grouping their capabilities into eight comprehensive categories of intelligences are as follows: Linguistic Intelligence, Logical-Mathematical Intelligence, Spatial Intelligence, Bodily-Kinesthetic Intelligence, Musical Intelligence,

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[1] J.E. Ormrod, *Educational Psychology: Developing Learners*, Pearson Prentice Hall, Upper Saddle River-NJ, 2006.

[2] Howard Gardner, *Frames of Mind,* Basic Books, New York, 1983, p. .cited by Adrian Furnham, "The Validity of a New, Self-report Measure of Multiple Intelligence", *Current Psychology*, Vol. 28, 2009, pp. 225–239.

[3] Howard Gardner, *Art Education and Human Development,* Getty Publications, Los Angeles, 1990.

[4] Howard Gardner, *Frames of Mind,* Basic Books, New York, 1983.

[5] J. L. Castejon, A. M. Perez & R. Gilar (2010). "Confirmatory Factor Analysis of Project Spectrum Activities: A Second-Order G Factor or Multiple Intelligences?", *Elsevier*, Vol. 38, 2010, pp. 481-496.

[6] P. Ozdemir, S. Güneysu & C, Tekkaya, "Enhancing Learning Through Multiple Intelligences" *Biological Education*", Volume 40 Number 2, 2006, pp. 74-78.

Interpersonal Intelligence, Intrapersonal Intelligence and Naturalist Intelligence.[7] Furthermore, Gardner has also mentioned a possible ninth intelligence of spiritual intelligence (or existential intelligence), but has not included it officially in his theory.[8]

Linguistic Intelligence

Linguistic Intelligence is the capacity to use words effectively, whether orally or in writing.[9] It includes the ability to effectively manipulate language to express oneself rhetorically or poetically.[10] The significant components of this intelligence are employed by communicating through reading, writing, listening and speaking. Linguistic Intelligence helps students produce and refine language use in many formats and in the ability to form and recognize words and their patterns by sight or sound. The value of the linguistic intelligence is emphasized through testing reading and language arts and comprehension in other content areas.[11] The question that the instructor in History of Art I class might ask to arouse Linguistic Intelligence could be; "How can I use the spoken or written word to describe a painting?"[12]

Logical-Mathematical Intelligence

This intelligence consists of the ability to detect patterns, reason deductively, think logically and use numbers effectively.[13] Additionally, it includes sensitivity to logical patterns and relationships, statements and propositions, functions and other related abstractions (Armstrong, 2009), especially in mathematics and science.[14] It also includes, abstract problem solving and understanding complex relationships of interrelated concepts, ideas and things.[15] According to Armstrong (2009), the kinds of processes used in the service of the logical-mathematical intelligence include categorization, classification, inference, generalization, calculation and hypothesis testing. The question that the instructor in History of Art I class might ask to arouse Logical-Mathematical Intelligence could be; "How can I bring in numbers, calculations, logic, classifications, or critical thinking skills?[16]

Spatial Intelligence

As Armstrong puts it, it is the ability to perceive the visual-spatial world accurately and to perform transformations on those perceptions. Spatial Intelligence involves

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[7] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.

[8] Jamon F. Peariso, "Multiple Intelligences or Multiply Misleading: The Critic's View of the Multiple Intelligences Theory", *Liberty University*, Spring , 2008, pp. 1-26.

[9] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.

[10] A. C. Brualdi, "Multiple Intelligences: Gardner's Theory", *ERIC Clearinghouse on Assessment and Evaluation Washington DC.*, ERIC Identifier: ED410226, ERIC Digest, 1996, pp. 1-6.

[11] J. Bellanca, J. (2009). 200+ Active Learning Strategies and Projects for Engaging Students' Multiple Intelligences. Corwin Press,Thousand Oaks-CA, 2009.

[12] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.

[13] A. C. Brualdi, "Multiple Intelligences: Gardner's Theory", *ERIC Clearinghouse on Assessment and Evaluation Washington DC.*, ERIC Identifier: ED410226, ERIC Digest, 1996, pp. 1-6.

[14] Jamon F. Peariso, "Multiple Intelligences or Multiply Misleading: The Critic's View of the Multiple Intelligences Theory", *Liberty University*, Spring , 2008, pp. 1-26.

[15] J. Bellanca, J. (2009). 200+ Active Learning Strategies and Projects for Engaging Students' Multiple Intelligences. Corwin Press,Thousand Oaks-CA, 2009.

[16] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.

sensitivity to color, line, shape, form, space and the relationship between these elements. It includes the capacity to visualize, to graphically represent visual and spatial ideas, and to transfer these to concrete representations in art forms. This intelligence begins with the sharpening of sensory motor perceptions. As the intelligence develops, hand-eye coordination and small-muscle control enable the individual to reproduce the perceived shapes and colors in a variety of media.

Artists transfer images in their minds to physical objects. In this way, visual perceptions are mixed with prior knowledge, experience, emotions and images to create a new vision for others to experience.[17] In addition, it gives one the ability to manipulate and create mental images in order to solve problems.[18] The question that the instructor in History of Art I class might ask to arouse Spatial Intelligence could be; "How can I use visual aids, visualization, color, art, or metaphor?" (Armstrong, 2009)

Bodily-Kinesthetic Intelligence
This intelligence covers expertise in using one's whole body to express ideas and feelings to produce or transform things. It includes specific physical skills such as coordination, balance, dexterity, strength, flexibility and speed (Armstrong, 2000). According to Bellanca, intelligence enables us to control and interpret body motions, manipulate physical objects and establish harmony between the mind and the body.[19] In addition, as Gardner expresses characteristic of this intelligence is the ability to use one's body in highly skilled ways for expressive as well as goal-directed purposes. Characteristic as well is the capacity to work skillfully with objects; both those that involve the fine motor movements of one's fingers and hands and those that exploit gross motor movements of the body.[20] The question that the instructor in History of Art I class might ask to arouse Bodily-Kinesthetic Intelligence could be; "How can I involve the whole body or use hands-on experiences?"[21]

Musical Intelligence
This intelligence is the ability to create, comprehend and appreciate music.[22] It is the capacity to perceive, discriminate, transform and express musical forms. Musical intelligence includes sensitivity to the rhythm, pitch or melody and timbre or tone color of a musical piece. One can have a figural or "top-down" understanding of music; a formal or "bottom-up" understanding or both.[23] This intelligence starts with the degree of sensitivity one has to a pattern of sounds and the ability to respond emotionally. As students develop their musical awareness, they develop the

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[17] J. Bellanca, J. (2009). 200+ Active Learning Strategies and Projects for Engaging Students' Multiple Intelligences. Corwin Press,Thousand Oaks-CA, 2009.

[18] A. C. Brualdi, "Multiple Intelligences: Gardner's Theory", *ERIC Clearinghouse on Assessment and Evaluation Washington DC.*, ERIC Identifier: ED410226, ERIC Digest, 1996, pp. 1-6.

[19] J. Bellanca, *200+ Active Learning Strategies and Projects for Engaging Students' Multiple Intelligences*, Corwin Press,Thousand Oaks-CA, 2009.

[20] H. Puchta & M. Rinvolucri, *Multiple Intelligences in EFL,* Helbing Languages, London, 2005.

[21] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.

[22] Jamon F. Peariso, "Multiple Intelligences or Multiply Misleading: The Critic's View of the Multiple Intelligences Theory", *Liberty University*, Spring , 2008, pp. 1-26.

[23] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.

fundamentals of this intelligence.[24] The question that the instructor in History of Art I class might ask to arouse Musical Intelligence could be; "How can I bring in music or environmental sounds, or set key points in a rhythmic or melodic framework?"[25]

Interpersonal Intelligence
This is the intelligence of social understanding, or the ability to understand and relate to others. Interpersonal Intelligence includes verbal and nonverbal communication skills, collaborative skills, conflict management, consensus-building skills, and the ability to lead and motivate others. Empathy for feelings, fears, anticipations and beliefs of others and desire to help others are important character traits of those with a strong interpersonal intelligence.[26] According to Armstrong, this intelligence is considered the ability to perceive and make distinctions in the moods, intentions, motivations and feelings of other people.[27] This can include sensitivity to facial expressions, voice and gesture; the capacity to discriminate among many different kinds of interpersonal cues; and the ability to respond effectively to those cues in some pragmatic way. The question that the instructor in History of Art I class might ask to arouse Interpersonal Intelligence could be; "How can I engage students in peer sharing, cooperative learning, or large group simulation?"[28]

Intrapersonal Intelligence
This intelligence is self-knowledge and the ability to act adaptively on the basis of that knowledge. It includes having an accurate picture of oneself, one's strengths and limitations, awareness of inner moods, intentions, motivations, temperaments and desires; as well as the capacity for self-discipline, self-understanding and self-esteem.[29] As Bellanca puts it, individuals with strong intrapersonal intelligence are able to understand their emotions and draw on them to direct their behavior.[30] They thrive on time to think and to reflect. This intelligence enables learners to take responsibility of their own learning. In Gardner's words; "the intrapersonal intelligence amounts to little more than the capacity to distinguish a feeling of pleasure to one of pain and, on the basis of such discrimination, to become more involved in or to withdraw from a situation"[31]. When working in the mode of this intelligence, one focuses on and functions in terms of self-knowledge, self regulation and self-control, exercising their meta-cognitive skills.[32] The question that the instructor in an History of Art I class

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[24] J. Bellanca, *200+ Active Learning Strategies and Projects for Engaging Students' Multiple Intelligences*, Corwin Press,Thousand Oaks-CA, 2009.
[25] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.
[26] J. Bellanca, *200+ Active Learning Strategies and Projects for Engaging Students' Multiple Intelligences*, Corwin Press,Thousand Oaks-CA, 2009.
[27] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.
[28] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.
[29] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.
[30] J. Bellanca, *200+ Active Learning Strategies and Projects for Engaging Students' Multiple Intelligences*, Corwin Press,Thousand Oaks-CA, 2009.
[31] Howard Gardner, *Frames of Mind,* Basic Books, New York, 1983.
[32] H. Puchta & M. Rinvolucri, *Multiple Intelligences in EFL,* Helbing Languages, London, 2005.

might ask to arouse Intrapersonal Intelligence could be; "How can I evoke personal feelings or memories, or give students choices?"[33]

Naturalist Intelligence
Gardner added this newest intelligence to his original seven in 1995. This intelligence has to do with being harmony with the nature[34] and it is the expertise in the recognition and classification of numerous species –the flora and the fauna- of an individual's environment. It also includes sensitivity to other natural phenomena, such as cloud formations and mountains, and in the case of those growing up in an urban environment, the capacity to discriminate among non-living forms such as cars, sneakers and CD covers.[35] Individuals, such as John Audubon, Rachel Carson, Charles Darwin and Jane Goodall are well-known naturalists. The question that the instructor in History of Art I class might ask to arouse Naturalistic Intelligence could be; **"**How can I incorporate living things, natural phenomena, or ecological awareness?"[36]

Implications of Multiple Intelligences Theory in Art Education
According to Gardner, the arts involve emotions, that they induce feelings of mystery and magic, or that they have a religious or spiritual dimension.[37] Indeed, in this view, the emotions are seen to function cognitively-to guide the individual to make certain distinctions, to recognize affinities, to build up expectations and tensions that are then resolved. However, human artistry is viewed first and foremost as an activity of the mind, an activity that involves the use of and transformation of various kinds of symbols and systems of symbols. Individuals who wish to participate meaningfully in artistic perception must learn to decode, to "read," the various symbolic vehicles in their culture; who wish to participate in artistic creation must learn how to manipulate' how to "write with" the various symbolic forms present in their culture; and, finally, individuals who wish to engage fully in the artistic realm must also gain mastery of certain central artistic concepts. Just as one cannot assume that individuals will-in the absence of support-learn to read and write in their natural languages, so, too, it seems reasonable to assume that individuals can benefit from assistance in learning to "read" and "write" in the various languages of the arts.[38]

In the light of this pluralistic view of the intellect, the question whether there is a separate "artistic intelligence" arises. Gardner says, according to his analysis there is not. Rather each of these forms of intelligence can be directed toward artistic ends; that is, the symbols entailed in that kind of form of knowledge may be organized in an aesthetic fashion.[39] For example, linguistic intelligence can be aesthetically employed in the art class. Similarly, spatial intelligence can be used by sculptors, or bodily-kinesthetic intelligence can be utilized by dancers or mimes. Even musical intelligence can be used aesthetically just as logical-mathematical intelligence can be directed in an

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[33] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.
[34] H. Puchta & M. Rinvolucri, *Multiple Intelligences in EFL,* Helbing Languages, London, 2005.
[35] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.
[36] T. Armstrong, *Multiple intelligences in the Classroom,* ASCD, Alexandria-VA, 2009.
[37] Howard Gardner, *Art Education and Human Development,* Getty Publications, Los Angeles, 1990.
[38] Howard Gardner, *Art Education and Human Development,* Getty Publications, Los Angeles, 1990.
[39] Howard Gardner, *Multiple Intelligences: The Theory in Practice,* Basic Books, New York, 1993.

artistic vein. In brief, all combinations of intelligences offered by Multiple Intelligences Theory can be employed in the curriculum of an art class so that all the learners enrolled get the maximum benefit from the instruction.

As Goodman puts it, once the arts and sciences involve working with – inventing, applying, reading, transforming, manipulating – symbol systems that agree and differ in certain specific ways,[40] we can perhaps undertake pointed psychological investigation of how the pertinent skills inhibit or enhance one another; and the outcome might well call for changes in educational technology.[41]

Over the course of history, human intelligences have been trained in one of two contrasting ways. On the one hand, individuals have become participants from an early age in activities that mobilize and canalize their intelligences. This process occurs in traditional *apprenticeships* as well as in those informal scholastic activities which are related to observation, demonstration and coaching. According to Kezar, Gardner recommends the use of apprenticeships for developing intelligences that need more active engagement such as spatial intelligence.[42] The experiential learning movement also suggests the importance of applying knowledge and working in real settings. Gardner's theory reinforces the importance of these forms of pedagogy, but it also suggests that faculty consider more than one approach to learning. Although many faculty members are adapting their teaching practices, they tend to align themselves with one approach, for example collaborative learning. MI theory suggests that faculty think about a repertoire of approaches that tap into the various intelligences.

On the other hand, human intelligences have also been trained in more *formal scholastic settings*. In these formats, learners attend lectures and read textbooks and they are expected to master what they hear and read about these subject matters. According to Gardner (1993), in few areas of knowledge has the distinction between these two forms been more salient than in the field of art education. As Gardner expresses, an individual's level of understanding of the arts emerges slowly as a result of his interactions in the artistic realm and his more general understandings of physical and social life. Efforts to train an individual didactically to have a more sophisticated level of understanding are destined to fail. One can perhaps induce the parroting of a response representative of a higher level; but such a response will prove fragile once the particular circumstances of the training have been removed. If one wants to enhance an individuals who are more sophisticated than she is, and to give her ample opportunity to reflect on her own emerging understanding of the domain. While this sounds like a pedagogical recipe, it in fact more closely approximates the developmental course through which a connoisseur actually passes in the course of her training. Indeed, when it comes to the student's conceptualization and re-conceptualization of the artistic realm, one encounters a domain that is apparently "development" in the sense originally described by Piaget.[43]

For hundreds of years, students have learned much of artistry through apprenticeships by observing artistic masters at work and they are gradually drawn

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[40] N. Goodman, Language of art, Oxford: Bobbs-Merrill, Oxford, 1968.

[41] Howard Gardner, *Art Education and Human Development,* Getty Publications, Los Angeles, 1990.

[42] A. Kezar, "Theory of Multiple Intelligences: Implications for Higher Education", *Innovative Higher Education,* Vol. 26, No. 2, 2001, pp. 141-154.

[43] Howard Gardner, *Art Education and Human Development,* Getty Publications, Los Angeles, 1990.

into these activities. Over the last years, however, a second front has been opened in the area of arts education. With the emergence of fields like art history, art criticism, aesthetics, semiotics and the like, a more scholastic understanding has gained importance in the academy. As Gardner (1993) puts it, rather than being acquired through apprenticeship, these bodies of knowledge are mastered primarily through traditional scholastic methods; such as lecturing, reading or writing. It is believed that learners need to be introduced to the multiple ways of thinking exhibited. According to Gardner (1993), in order to achieve that the following points need to be called attention:

1. Perceptual, historical, critical and other peri-artistic activities should be closely related to learners' own experiences and productions. That is, rather than being introduced in an alien context to art objects, learners should encounter such objects in relation to the particular projects with which they are themselves engaged.

2. Arts curricula need to be presented with a deep knowledge of how to think in an artistic medium. Education in the musical arts must occur at the hands and through the eyes of an individual who can "think visually or spatially."

3. Whenever possible, artistic learning should be organized around meaningful projects which are carried out over a period of time and allow opportunity for feedback, discussion and reflection. Such projects are likely to interest learners, motivate them and encourage them to develop skills and result in a long term influence on the students' competence and understanding.

4. Artistic learning does not only include the mastery of a set of skills or concepts. Arts are deeply personal areas where students encounter their own feelings as well as those of other individuals. Learners need educational vehicles that allow them such exploration. They must see that personal reflection is important.

5. In general, it is risky and unnecessary to teach artistic taste and value judgment directly. However, it is important for learners to understand that arts are saturated by issues of taste and value that matter to anyone who is seriously engaged in the arts.

6. While ideally all students would study all art forms, this is not a practical option. There are simply too many subjects and intelligences. Thus, learners should all have exposure to some art form depending on the purpose of the class being thought or the learner group engaged.

The most obvious implications are that faculty might consider teaching their courses/subject matter through the multiple intelligences.[44] In addition, MI reinforces the value of faculty members' desire to experiment with new approaches such as cooperative, collaborative, or community service learning.

Even though higher education tends to be more learners centered than K-12 because students have choices in their curricula, they do choose from a prescribed set of courses developed by faculty. These courses are most likely taught through the intelligence(s) with which the faculty members might explore increased ways to individualize the curriculum through independent study, experiential learning

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[44] A. Kezar, "Theory of Multiple Intelligences: Implications for Higher Education", *Innovative Higher Education,* Vol. 26, No. 2, 2001, pp. 141-154.

opportunities, self-paced learning, and other curricular modifications to include the multiple intelligences.[45]

In addition, MI theory might provide the intrinsic motivation for faculty to alter their approach to teaching since this theory is based on a realization that students have different intelligences. The biological support for these different intelligences should be quite compelling to faculty who tend to be persuaded by research. Most faculty and administrators believe in the need to develop people to meet their potential. Many change initiatives fail because they simply do not provide compelling evidence of the benefit to students or learning.

Taking all these facts and factors into account, this study has been designed so that some variety is offered to the art education courses and faculty members are inspired and so that all the learners get the maximum benefit from the class at knowledge level as well as a sense of art, interpretation and aesthetic value.

Art Education

The curriculum of Art education should be arranged to ease and improve student learning for forthcoming courses.[46] Hence, the key to distinguishing the knowledge base of teaching lies in the intersection of content and pedagogy. The concepts surrounding the Venn diagram exemplify contents in the knowledge base of visual arts education and how these are approached, which is indicated in Fig. 01. Research in visual arts education typically has its origin either in education or in the art world.[47]
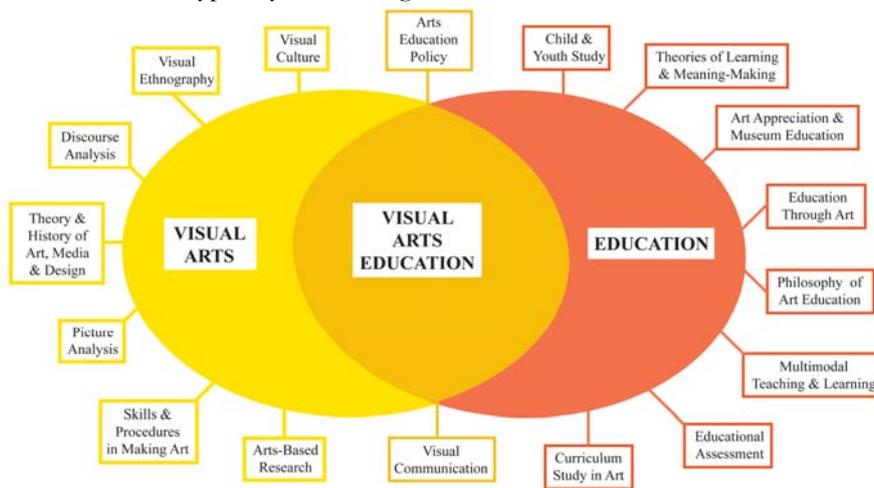
Fig. 1. The Venn diagram demonstrates that Visual Arts Education is made of the intersection of Visual Arts and Education. (Lindstörm, 2011)

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[45] A. Kezar, "Theory of Multiple Intelligences: Implications for Higher Education", *Innovative Higher Education,* Vol. 26, No. 2, 2001, pp. 141-154.

[46] O. O. Demirbaş & H. Demirkan, H. "Focus on architectural design process through learning styles", *Design Studies*, Vol. 24, Issue 5, 2003, pp. 437-456.

[47] L. Lindström, "The Multiple Faces of Visual Arts Education", The International Journal of Art & Design Education, Volume 30, Issue 1, 2011, pp. 7-17.

Art education has been saddled with a long-standing bias towards the development of intra-personal aesthetic, intelligence, expression and experimentalism. Art education sets itself apart from other branches of education in its emphasis on learning and encouraging innovations in forms of expression and communication between the conscious and subconscious aspects of people. Effective Art education requires a dynamic balance of stability and change. Knowledge types in Art education are commonly classified as explicit, tacit and implicit. Another classification divides knowledge into declarative, procedural and casual. Human and social knowledge in Art education are found to have a strong administrative flavor.[48]

Art pedagogy, based for the most part on reality, has to be aware of the immense influence of the New Media and the uncountable doors it opens. In contrast to the metaphorical aspect in the arts, art pedagogy should capture the immediate character of the New Media. In this context, it becomes possible to see and experience differences. Art teachers are especially reserved when it comes to placing a computer next to their easel. One could say that, whereas the classical Prometheus stole fire from heaven to give it to humans, it is computers that the electronic Prometheus has brought down to earth.[49]

History of Art I Course
In the course syllabus, the objectives of the course are specified as that learners develop skills in identifying, describing, and analyzing works of art and they learn to identify common characteristics among diverse artworks based on periods, styles and themes. The course also aims that learners develop strong writing skills when describing, analyzing and comparing works of art and they foster an appreciation for all styles of art. In addition, by the end of this course, it is aimed that students will have related the works of art to their artists, politics, religion, patronage, gender, cultural, socio-cultural status, ethnicity and historical origins.

Research Design
The present study aims to illustrate and empirically test an extended framework of students' goal orientations as cognitive abilities and academic achievement in History of Art I course at Faculty of Fine Arts at TOBB ETU, Turkey.

They enroll to both sections of History of Art I course without diversity of knowledge and experience of computer aided learning. Both sections were taught by the same instructor and took same examinations.

In the light of all the points mentioned, the purpose of this study is to achieve a well-designed lesson in History of Art I course by including different combinations of intelligences and paying attention to these points as well so that all the students can be engaged in the activities and get the conception of the subject matter covered thoroughly. This is because meeting the needs of diverse learners is the area with the greatest implications for higher education.

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[48] A. Y. K. Chua & S. K. Heng, "A knowledge management perspective on Art Education", *International Journal of Information Management*, 30, 2010, pp. 326-334.

[49] J. Kirschenmann, J. "The electronic Prometheus and its consequences for art education", *The International Journal of Art & Design Education*, Vol. 20, Issue 1, 2001, pp. 11-18.

For this study, a typical lesson for the above purposes has been selected within the course from Faculty of Fine Arts. In Fall Semester in 2010-2011 Academic year, there were two randomly-selected sections as the experiment group with 65 students and the control group with 52 students. The both sections consisted of female and male students and Art major and Non-Art major students. Students, who repeat the course, are out of the experiment. Before this study was examined, no significant difference was found between the study groups. The experimental group employed Multiple Intelligence strategies while the control group was instructed through traditional methods.

In order to integrate the offerings of MI theory into the content of the lesson, wide ranges of techniques have been applied. Among them were the use of the Linguistic Intelligence, Logical-Mathematical Intelligence, Spatial Intelligence, Bodily-Kinesthetic Intelligence, Musical Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence and Naturalist Intelligence types.

During the interpretation of various paintings from the aforementioned periods, the students are asked to look at the related painting of the lesson for a few minutes. This would address to their appreciation of art and aesthetic value as well as addressing the needs of learners with a dominant spatial intelligence, enhancing their visually strong sides. After the students look into the painting, the instructor asks a few questions to guide the students to thinking process regarding the proportions and the perspectives reflected in the paintings. Students with logical-mathematical intelligence dominance would definitely benefit from the activity for the sake of a better understanding and interpretation of the painting. Then, the instructor asks students to describe the painting orally or in a written form. The students speak or write about the description of the painting as well as the feelings it has aroused within them. This process would contribute to the linguistic side of the students. In addition, thinking about the feelings the painting has aroused is certainly and inner reflection process and it contributes comprehensively to the development of intrapersonal intelligence type. Then, the students discuss their feelings, compare and contrast them with other students in order to share ideas and to contribute to the formation of aesthetic value and art appreciation. During all these processes, a music from the time of the painting plays at the background, which contributes to the thematic integration and wholeness of the lesson, as well as enhancing the musical intelligence. Another way that the instructor made use of in order to integrate students into the lesson is having students stand and pose like the figures in the painting. For example, a student has been asked to pose like *Mercury (*Giovanni da Bologna, The Flying Mercury, 1580, the National Museum, Florence.). Or another student has been asked to pose like *Mona Lisa* (Leonardo Da Vinci, Mona Lisa, 1504, the Musée du Louvre, Paris.). Students with a dominant bodily-kinesthetic intelligence would find the activity o benefit. In addition, it contributes to the visual sides of the other students in the group.

Figure 2: A student giving the pose of Mercury   *Figure 3: A student giving the pose of Mona Lisa*

While guiding the students to the tasks with questions, the instructor follows a certain order with the questions asked. The questions asked are in the order from lower level thinking abilities to higher order thinking abilities. As Bell and Rohan put them, the questions and the lecturer's order of asking them are as follows:

1. What can you see in the picture?
2. What is happening in it?
3. What do you think the figures in the picture are doing and why?
4. What type of place is it?
5. How many colors can you see at the painting?
6. What is on the foreground at the painting?
7. What is on the mid-ground at the painting?
8. What is on the background at the painting?
9. Where do your eyes go when you first look at it?
10. What has the artist done to make your eyes travel at the painting?
11. Explain the painting within its historical context.
12. Explain the painting by examining issues such as politics, religion, patronage, gender, function and ethnicity.
13. Do you like this painting? Why / Why not?[50]

Data Analysis

In order to prove the effectiveness of the methods offered in this study, quantitative methods were employed to analyze the data by using Statistical Package for Social Sciences (SPSS) 17.0 version.

A descriptive analysis and an independent sample t-test were used to understand the difference between the experimental group and control group

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[50] D. Bell & T. Rohan, "Leaving the Safety Zone: Trans-cultural Encounters in Arts Education", *The International Journal of the Arts in Society*, Vol. 4, No. 3, 2009, pp. 87-97.

according to their gender and department. The statistical significance level was used as α <.05 for all the independent sample findings.

	Type	N	Mean	Std. Deviation	Std. Error Mean
Midterm_1	Experimental	65	70.11	20.54	2.55
	Control	52	64.23	21.02	2.92
Project & Presentation	Experimental	65	79.31	15.33	1.90
	Control	52	75.92	13.54	1.88
Final	Experimental	65	77.42	16.23	2.01
	Control	52	71.58	16.45	2.28
Term Average	Experimental	65	75.79	14.58	1.81
	Control	52	70.68	13.75	1.91

Table 1: Midterm, Project & Presentation and Final Exam averages of the Experimental and Control Groups

Table 1 gives information about the points that students divided by control and experimental groups got from the first midterm, Project & Presentation and final exam, also it could be seen the term average. The table clearly indicates that students in experimental group are more successful compared with control group.

Letter Grade	AA	BA	BB	CB	CC	DC	DD	FF
Grade Point Equivalent	4.00	3.50	3.00	2.50	2.00	1.50	1.00	0.00
Mark	90-100	85-89	75-84	70-74	60-69	55-59	50-54	0-49

Table 2: It shows grade system, consists of letter grades, grade point equivalents and marks

Table 2 reflects the current TOBB ETU grade system and its corresponding grade point and letter values.

Experimental	Freq.	Percent	Valid Percent	Cum. Percent	Control	Freq.	Percent	Valid Percent	Cum. Percent
AA	14	21.5	21.5	21.5	AA	7	13.5	13.5	13.5
BA	12	18.5	18.5	40.0	BA	2	3.8	3.8	17.3
BB	16	24.6	24.6	64.6	BB	14	26.9	26.9	44.2
CB	6	9.2	9.2	73.8	CB	6	11.5	11.5	55.8
CC	10	15.4	15.4	89.2	CC	12	23.1	23.1	78.8
DC	2	3.1	3.1	92.3	DC	4	7.7	7.7	86.5

DD	4	6.2	6.2	98.5	DD	6	11.5	11.5	98.1
FF	1	1.5	1.5	100.0	FF	1	1.9	1.9	100.0
Total	65	100.0	100.0		Total	52	100.0	100.0	

Table 3: The letter grades that students took at the end of the term stood for Midterm and Final Exam averages of the Experimental and Control Groups.

Table 3 displays the letter that students took at the end of the term. When the cumulative percentages are analyzed, 64.6% of the experimental group got at least BB, however only %44.2 of the control group got at least BB. In addition, when valid percentages are analyzed, 21.5% of the experimental group got AA. However 13.5% of the control group got AA. Furthermore, according to the analysis of the valid percentages, 18.5% of the experimental group got BA, however 3.8% of the control group got BA. Table 3 displays descriptive information about the students regarding their groups, who obtained letter grades as DC, DD and FF. According to the analysis of the percentages of DC, DD and FF letter grades, 10.8% of the experimental group got letter grades below CC. However, 21.1% of the control group got letter grades below CC. It proves that the experimental group's students are more successful than students in the control group.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AA	8	24.2	24.2	24.2
	BA	6	18.2	18.2	42.4
	BB	7	21.2	21.2	63.6
	CB	3	9.1	9.1	72.7
	CC	6	18.2	18.2	90.9
	DC	1	3.0	3.0	93.9
	DD	1	3.0	3.0	97.0
	FF	1	3.0	3.0	100.0
	Total	33	100.0	100.0	

Table 4: The distribution of ordinal of female students in the Experimental group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AA	5	16.7	16.7	16.7
	BA	1	3.3	3.3	20.0
	BB	10	33.3	33.3	53.3
	CB	3	10.0	10.0	63.3
	CC	7	23.3	23.3	86.7

		Frequency	Percent	Valid Percent	Cumulative Percent
	DC	1	3.3	3.3	90.0
	DD	2	6.7	6.7	96.7
	FF	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

Table 5: The distribution of ordinal of female students in the Control group

Table 4 and Table 5 show the letter that female students took at the end of the term. When the cumulative percentages are analyzed, 63.6% of the experimental group got at least BB, however only %53.3 of the control group got at least BB. In addition, when valid percentages are analyzed, 24.2% of the experimental group got AA. However 16.7% of the control group got AA. Furthermore, according to the analysis of the valid percentages, 18.2% of the experimental group got BA, however 3.3% of the control group got BA. It proves that the experimental group's students are more successful than students in the control group.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AA	6	18.8	18.8	18.8
	BA	6	18.8	18.8	37.5
	BB	9	28.1	28.1	65.6
	CB	3	9.4	9.4	75.0
	CC	4	12.5	12.5	87.5
	DC	1	3.1	3.1	90.6
	DD	3	9.4	9.4	100.0
	Total	32	100.0	100.0	

Table 6: The distribution of ordinal of male students in the Experimental group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AA	2	9.1	9.1	9.1
	BA	1	4.5	4.5	13.6
	BB	4	18.2	18.2	31.8
	CB	3	13.6	13.6	45.5
	CC	5	22.7	22.7	68.2
	DC	3	13.6	13.6	81.8
	DD	4	18.2	18.2	100.0
	Total	22	100.0	100.0	

Table 7: The distribution of ordinal of male students in the Control group

Table 6 and Table 7 indicate the letter that male students took at the end of the term. When the cumulative percentages are analyzed, 65.6% of the experimental group obtained at least BB, however only 31.8% of the control group got at least BB. In addition, when valid percentages are analyzed, 18.8% of the experimental group's male students got AA. However 9.1% of the control group's male students got AA. Furthermore, according to the analysis of the valid percentages, 18.8% of the experimental group's male students got BA, however 4.5% of the control group got BA. The results prove that the experimental group's male students are more successful than male students in the control group.

As indicated in Tables 4 to 7, female students benefited more from the Multiple Intelligence influenced instruction carried out in class. They scored generally higher than their counterparts in the control group. In addition, female students scored higher than male students in general. Besides, male students in the control group generally scored higher than their counterparts in the experimental group. Therefore, it could be asserted that differentiated teaching which was enabled through Multiple Intelligence Theory has provided help for both male and female students. However, the fact that female students scored higher than male students can be related to the ways female brain learns better. For instance, the female brain has a larger hippocampus, which is the center of memory. This enables female memory to be more active. Also, as the hippocampus is larger in the female brain, women are better at emotional tasks, empathy, and language processing as well as memory tasks.[51] All related tasks have been integrated in the class carried out in the experimental group's curriculum. Another reason why females outperformed males is that the corpus callosum, which is a bundle of nerve fibers between the left and the right hemisphere of the brain, is larger in the female brain. The corpus callosum enables the transfer of information between the two hemispheres. Therefore, women are swifter in the process of information and they are faster thinkers.[52] This might have aided female students in the study to compile the curriculum better together and make use of the input in more useful way.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AA	1	5.0	5.0	5.0
	BA	1	5.0	5.0	10.0
	BB	3	15.0	15.0	25.0
	CB	1	5.0	5.0	30.0
	CC	8	40.0	40.0	70.0
	DC	2	10.0	10.0	80.0
	DD	3	15.0	15.0	95.0

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[51] L. Brizendine, *The Female Brain,* Three Rivers Press, New York, 2007.
[52] R. Sylwester, *A Celebration of Neurons,* Association for Supervision and Curriculum Development, Alexandria-VA, 1995.

		Frequency	Percent	Valid Percent	Cumulative Percent
	FF	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Table 8: The distribution of ordinal of Art major students in Experimental group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AA	1	4.0	4.0	4.0
	BA	1	4.0	4.0	8.0
	BB	4	16.0	16.0	24.0
	CB	1	4.0	4.0	28.0
	CC	9	36.0	36.0	64.0
	DC	3	12.0	12.0	76.0
	DD	5	20.0	20.0	96.0
	FF	1	4.0	4.0	100.0
	Total	25	100.0	100.0	

Table 9: The distribution of ordinal of Art major students in Control group

Table 8 and Table 9 display the letter that Art major students took at the end of the term. When the cumulative percentages are analyzed, 25.0% of the experimental group's Art major students obtained at least BB, however only 24.0% of the control group got at least BB. In addition, when valid percentages are analyzed, 5.0% of the experimental group's Art major students got AA. However 4.0% of the control group's Art major students got AA. Furthermore, according to the analysis of the valid percentages, 10.0% of the experimental group's Art major students got BA, however 8.0% of the control group got BA. The results could be concluded that there are no significant differences between Art major students' ordinals in the experimental group and the control group.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AA	13	28.9	28.9	28.9
	BA	11	24.4	24.4	53.3
	BB	13	28.9	28.9	82.2
	CB	5	11.1	11.1	93.3
	CC	2	4.4	4.4	97.8
	DD	1	2.2	2.2	100.0
	Total	45	100.0	100.0	

Table 10: The distribution of ordinal of Non-Art major students in Experimental group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AA	6	22.2	22.2	22.2
	BA	1	3.7	3.7	25.9
	BB	10	37.0	37.0	63.0
	CB	5	18.5	18.5	81.5
	CC	3	11.1	11.1	92.6
	DC	1	3.7	3.7	96.3
	DD	1	3.7	3.7	100.0
	Total	27	100.0	100.0	

Table 11: The distribution of ordinal of Non-Art major students in Control group

Table 10 and Table 11 show the letter that Non-Art major students took at the end of the term. When the cumulative percentages are analyzed, 82.2% of the experimental group's Non-Art major students obtained at least BB, however only 63.0% of the control group got at least BB. In addition, when valid percentages are analyzed, 28.9% of the experimental group's Non-Art major students got AA. However 22.2% of the control group's Non-Art major students got AA. Furthermore, according to the analysis of the valid percentages, 24.4% of the experimental group's Non-Art major students got BA, however 3.7% of the control group got BA. The results could be concluded that there are no significant differences between Non-Art major students' ordinals in the experimental group and the control group.

As indicated in Tables 8 to 11, students majoring non-art departments generally outperformed their counterparts majoring art; which might have been considered an unexpected result. However, when the attendance rates of the students majoring art were studied, it was noticed that, they attended much less classes that their counterparts majoring non-art. As most of the work has been carried out in class for the purposes of this study, it was essential that students attend classes regularly and participate actively during the execution of activities. However, frequent absence resulted in them being left behind their counterparts who have attended and participated in class activities regularly and actively.

	Gender Type	N	Mean	Std. Deviation	Std. Error Mean
Midterm-1	Experimental Female	33	72.12	21.64	3.77
	Control Female	30	68.67	19.49	3.56
Midterm-2	Experimental Female	33	76.97	17.48	3.04
	Control Female	30	79.67	11.08	2.02

Final	Experimental Female	33	77.55	16.64	2.90
	Control Female	30	71.70	19.75	3.61
Term Average	Experimental Female	33	75.75	16.38	2.85
	Control Female	30	73.18	14.38	2.63

Table 12: The descriptive information about female students regarding in both groups

Table 12 shows the descriptive information about exams of female students regarding their groups. In all exam types, there are no significant differences between female students in the experimental group and female students in the control group.

	Gender Type	N	Mean	Std. Deviation	Std. Error Mean
Midterm-1	Experimental Male	32	68.0313	19.45961	3.44001
	Control Male	22	58.1818	21.95588	4.68101
Midterm-2	Experimental Male	32	81.7188	12.58067	2.22397
	Control Male	22	70.8182	15.11428	3.22238
Final	Experimental Male	32	77.2813	16.04879	2.83705
	Control Male	22	71.4091	10.90067	2.32403
Term Average	Experimental Male	32	75.838	12.7279	2.2500
	Control Male	22	67.264	12.3540	2.6339

Table 13: The descriptive information about male students regarding in both groups

Table 13 shows the descriptive information about exams of male students regarding their groups. In all exam types, male students in experimental are more successful than male students in control group.

In addition to the mentioned points, an independent samples t-test has been conducted to evaluate the mean differences in any two groups. This analysis has been done to find out if there are any significant differences between the two groups. The homogeneity of the variance between the two groups is examined using Levene's Test for Equality of Variances. If the 'Sig.' (p-value) is greater than 0.05, it can be assumed that variances are equal. It is possible to test the hypothesis using the t-test row of results labeled *Equal variances assumed*. The second step to analyze independent t-test is examining the Sig. (2-tailed) value. If the Sig. (2-tailed) value is smaller than 0.05, it can be concluded that there is a significant difference between two groups.

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Midterm-1	Equal variances assumed	.006	.937	.663	61	.510
	Equal variances not assumed			.667	60.997	.507
Midterm-2	Equal variances assumed	1.023	.316	-.723	61	.472
	Equal variances not assumed			-.738	54.741	.464
Final	Equal variances assumed	.036	.851	1.274	61	.207
	Equal variances not assumed			1.264	57.001	.211
Term Average	Equal variances assumed	.087	.769	.658	61	.513
	Equal variances not assumed			.662	60.931	.511

Table 14: It displays Levene's Test for Equality of Variances and t-test for Equality of Means for Female students

According to Table 14, since none of the Sig. (2-tailed) value is smaller than 0.05, it could be concluded that there are no significant differences between female students in experimental group and female students in control group in the first midterm, in the second midterm, in the final exam and term average scores.

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Midterm-1	Equal variances assumed	.279	.600	1.734	52	.089
	Equal variances not assumed			1.696	41.590	.097
Midterm-2	Equal variances assumed	2.061	.157	2.881	52	.006
	Equal variances not assumed			2.784	39.673	.008

Final	Equal variances assumed	5.509	.023	1.494	52	.141
	Equal variances not assumed			1.601	51.999	.115
Term Average	Equal variances assumed	.045	.833	2.461	52	.017
	Equal variances not assumed			2.475	46.175	.017

Table 15: It displays Levene's Test for Equality of Variances and t-test for Equality of Means analysis of male students

According to Table 15, there are no significant differences between the first midterm and the final scores of male student scores' regarding their group type however; there are significant differences in the second midterm and term average scores.

	Type of Major	N	Mean	Std. Deviation	Std. Error Mean
Midterm-1	Experimental Art	20	52.70	23.58	5.27
	Control Art	25	53.56	16.20	3.24
Midterm-2	Experimental Art	20	71.60	22.14	4.95
	Control Art	25	70.32	14.86	2.97
Final	Experimental Art	20	65.50	16.50	3.69
	Control Art	25	66.20	18.86	3.77
Term Average	Experimental Art	20	63.49	16.72	3.74
	Control Art	25	63.64	12.92	2.58

Table 16: The descriptive information about Art major students regarding their groups

Table 16 shows the descriptive information about Art students regarding their groups. In a descriptive manner, no category is more successful than other.

	Type of Major	N	Mean	Std. Deviation	Std. Error Mean
Midterm-1	Experimental Non-Art	45	77.84	13.20	1.97
	Control Non-Art	27	74.11	20.34	3.91
Midterm-2	Experimental Non-Art	45	82.73	9.55	1.42
	Control Non-Art	27	81.11	9.88	1.90

Final	Experimental Non-Art	45	82.71	13.12	1.96
	Control Non-Art	27	76.56	12.22	2.35
Term Average	Experimental Non-Art	45	81.26	9.45	1.41
	Control Non-Art	27	77.19	11.19	2.15

Table 17: The descriptive information about Non-Art major students regarding their groups

Table 17 displays the descriptive information about Non-Art major students regarding their groups. In a descriptive manner, Non-Art students in experimental group got more scores in all exam types.

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Midterm-1	Equal variances assumed	3.298	.076	-.145	43	.886
	Equal variances not assumed			-.139	32.394	.890
Midterm-2	Equal variances assumed	.399	.531	.231	43	.818
	Equal variances not assumed			.222	31.884	.826
Final	Equal variances assumed	.006	.940	-.131	43	.897
	Equal variances not assumed			-.133	42.616	.895
Term Average	Equal variances assumed	.226	.637	-.035	43	.972
	Equal variances not assumed			-.034	35.139	.973

Table 18: According to Levene's Test for Equality of Variances and t-test for Equality of Means, the descriptive information about Art major students

According to independent t-test results indicated in Table 18, there are no significant differences between Art students in all exam types according to their groups.

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Midterm-1	Equal variances assumed	3.197	.078	.945	70	.348
	Equal variances not assumed			.852	39.320	.399
Midterm-2	Equal variances assumed	.086	.770	.689	70	.493
	Equal variances not assumed			.683	53.419	.498
Final	Equal variances assumed	.011	.916	1.977	70	.052
	Equal variances not assumed			2.013	58.020	.049
Term Average	Equal variances assumed	.535	.467	1.650	70	.103
	Equal variances not assumed			1.581	47.824	.120

Table 19: According to Levene's Test for Equality of Variances and t-test for Equality of Means, the descriptive information about Non-Art major students

In Table 19, according to independent t-test results, since the Sig. (2-tailed) value is 0.05, it could be conclude that there is a significant difference between non-art students in the final exam according to their groups.

Conclusion

In conclusion, MI theory makes a distinctive contribution to our understanding of teaching and learning in History of Art I and that it should become a theory more commonly applied within higher education research and practice in Art education. The theory suggests the need to change admissions practices, honors placement, assignments, and, testing; and it reveals the need to broaden assessment practices. MI theory provides a mechanism for developing multiple intelligences through new pedagogical approaches in History of Art I. This theory also reinforces current movements in higher education such as student and faculty collaboration; the connection of mission, goals, processes, and outcomes in assessment; the need for technology in college classrooms; and the relationship between affective and cognitive learning outcomes. This article is a call for application and implementation of this theory to the higher education environment.

MI theory provides the intrinsic motivation for faculty to alter teaching practices since this theory is based on a realization that students have different

intelligences. Most faculty and administrators believe in the need to develop multiple intelligences to meet full potential of students. However, many change initiatives fail because they simply do not provide compelling evidence of the benefit to students or learning.

Finally, MI theory promotes the importance of the work of all faculty and staff, helping to bring people together to work collaboratively toward change.

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