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The effects of different student backgrounds in basic design education

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Abstract

Higher institutions offering undergraduate degree in design accepts whether science-based students whose qualitative and quantitative reasoning abilities are evaluated by student selection examination, or art-based students going through aptitude exams, in Turkey. The aim of the study is to investigate the differences between these two groups as science-based and art-based. Through the works done by freshman design students in basic design course, the effect of diverse backgrounds on design education is tried to be evaluated. The responses of the so called student groups are compared on the basis of creative capacity and the ability to generate new approaches to the concepts presented.

Keywords: Basic design education; science-based; art-based; intuition.

1. Introduction

The design process is identified as bringing about change in man-made things as a serious of events which starts with the supply of materials and components and ends with the evolutionary effects upon society (Jones, 1992). So design profession not only applies artistic skills, but also a variety of fields from natural sciences to social sciences. The designer, regardless of field of specialization, is expected to be equipped with artistic, scientific and social sensitivity.

Turkish education system offers two methods for students who are likely to become designers. The students who want to be enrolled in one of design departments need to take either the student selection examination which is organised once a year by Student Selection and Placement Centre, or aptitude exam which is independently organised by the higher education institution giving bachelor's degree in art and design. Student selection examination score needed to be enrolled in a design department such as architecture, landscape architecture, city planning, industrial design and interior architecture is based on the evaluation of qualitative and quantitative reasoning abilities. On the other hand departments of fine arts, graphic design, and visual communication design accept students by aptitude exams. Generally these aptitude exams are based on the evaluation of special skills, such as drawing, and general and academic knowledge. So it can be claimed that the art and design departments in

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Turkish Higher Education System accepts whether science-based students taking student selection examination, and art-based students going through aptitude exams.

The aim of the study is to investigate the differences in these two groups of design students. Through basic design exercises carried out with freshman industrial design and visual communication design students of Gazi University Faculty of Fine Arts, the effect of diverse student backgrounds is tried to be evaluated. The responses of the so called student groups are compared on the basis of creative capacity and the ability to generate new approaches in design.

2. Basic Design Education

Fundamentally, the aim of educational practice is to provide knowledge, skills and sensitivity on certain subjects (Saranlı, 1998). Similarly, design education curriculum, in general, consists of courses that develop design knowledge, artistic skills and technical background (Demirbaş, Demirkan, 2003; Uluoğlu, 2000), which are structured around the main spine of curriculum, the design studio courses. The design courses are in a sense the simulation ground for the students where the outcomes of the other courses are combined and utilized within the studio projects carried out.

Among the design courses, basic design stands crucial since the freshman design students encounter with the phenomenon of design first in basic design course (Denel, 1998). In first year's curriculum of every university art and design department, regardless of the fields of specialization, there is always a course called basic design which deals with the grammar of visual language. This visual language is the basis of design creation and a designer must be equipped with the knowledge of principles, rules and concepts of visual organization in order to enhance his capability in visual organization (Wong, 1993).

Most people already know a great deal about design however very few of them recognize the visual sophistication (Zelanski, Fisher, 1996). For this reason the course aims to awaken an awareness of design by enhancing visual sensitivity. It can be regarded as a foundation course for further design studios for all design departments varying from architecture to graphic design which provides the students the fundamental skills and knowledge needed for design education.

In general, the course curriculum includes topics such as:

1. Elements of design: point, line, direction, size, shape, value, texture, color
2. Visual perception: organization principles, proximity relationship, similarity, shape properties, figure-ground relationship.
3. Principles of Design: repetition, harmony, contrast, concept, balance, unity, hegemony
4. Space, form and geometry: two and three dimensional concepts (Gürer, 1998)

Although the course is designed within a defined framework, it aims to provide the students with fundamental behaviors and skills needed for design act. Denel (1998) separates this fundamental/basic education into three phases. The first phase aims to provide the students the basic skills while the second phase provides certain professional course of conduct. The third and the last phase is named as the most important and the hardest phase which aims the student to create his/her own scale of values. This phase is best thought by discussions and case presentations. The discussions are carried out whether individually between student and teacher, or publicly between student and design jury. In fact verbal interaction is a significant component of design studio (Wender, Roger, 1995).

3. Art Education at Secondary School Level

Before enrolling a design department, students generally go through art education at a limited level during secondary education. Turkish secondary education comprises of mainly two categories of institutions which are general high schools and vocational and technical high schools. In both of the categories, minimum 4 years of education is obligatory which aims to provide the students general knowledge and to prepare them, in line with their interests and talents, for institutions of higher learning. While general high schools aim to prepare students for higher education, vocational high schools provide specialized instruction with the aim of training qualified personnel (OSYM, 2006). General high schools have sub branches which are specialized in language education that

aim to teach a foreign language at a level to follow the global scientific and technological developments (Milli Eğitim Bakanlığı Anadolu Liseleri Yönetmeliği, 1999). These schools can either be run by the government, or be owned by private sector. Admission to the mentioned schools is available by showing out an academic success in the selection exam held at the beginning of secondary education. Similarly, apart from vocational and technical high schools, there exist schools specialized in teacher's education and military high schools, which aim to prepare the students for higher education in relevant fields.

The curriculum in secondary education in Turkey covers mainly 40 hours a week. Among the courses offered, art courses only take one hour a week in classical high school education. However the vocational and technical schools specialized in art education offer a curriculum condensed in the field. The vocational schools in graphic design and photography offer a basic art education out of 18, 22 and 28 hours a week during second, third and forth years of secondary education. The courses offered vary from drawing, basic design, photography, illustration, typography, computer aided design, animation, print making etc.
(http://talimterbiye.mebnet.net/Ogretim%20Programlari/dersdaglimcizelgeleri/haftal%C4%B1k%20ders%20da%%9F%C4%B1l%C4%B1m%20%C3%A7izelgesi.pdf.)

4. The Research

The study aimed to evaluate freshman design student's approach to the phenomenon of design without having any education of design. Within the case study, three design exercises were given to two groups of students and their approach to the problem were observed on the basis of their former education and type of admission to the design school. The main question was if the students intuitively applied principles of visual organization in forming two dimensional compositions. In order to observe their apprehension of design at the very beginning of education, the students were given studio critiques at a minimum level or none.

4.1 The participant profile

The exercises were carried out by two separate student groups of Gazi University Faculty of Fine Arts in 2009-2010 fall semester. The first group, which will be called as science-based, consisted of freshman industrial design students placed in the university by quantitative part of Student Selection Examination. The group consisted of 16 female and 1 male students whose ages were 18 and 19. The average age of the group was 18,35 (Table 1). All of the students were placed in the university by quantitative part of the student selection exam.

The second group, which will be called art-based, consisted of freshman visual communication design students placed in the university by aptitude exam. The group consisted of 5 female and 8 male students whose age varied between 18 and 22. The average age of the group was 19.23. With respect to the students in the first group, the second group was heterogeneous in sex, age and background (Table 1). All of the second group participants had a prior training in drawing.

Table 1. The Participant Profile

		Science-based	**Art-based**
	Male	1	8
	Female	16	5
	Average Age	18.35	19.23
graduation	State High Schools specialized in language education	15	2
	Private High Schools specialized in language education	1	1
	General High School	-	3
	Vocational High School	-	5
	Technical High School	-	1
	Teacher's High School	1	-
	Military High School	-	1

4.2. Exercise 1

In the first exercise, the students were asked to create a composition by using their handprints in black ink on free format white paper. The students were free to do anything they want for the sake of making a composition. The exercise was conducted as a homework and the students had 1 weeks time for submission. The students were not given critiques during the execution of the exercise. The exercises were evaluated on the basis of raising alternative techniques and approaches in composition.

4.3 Exercise 2

In the second exercise, the students were asked to create nine different compositions on 20x20 cm white construction paper with nine 2x2 cm black squares. The students were given four hours to complete and submit their work. In this exercise, the students were forced to create different approaches in each of nine pieces. In both of the groups, the students were permitted to overlap or to fold the black squares, to make three dimensional compositions, or to place the black squares out of the format. At the end of the exercise each student submitted nine compositions.

4.4. Exercise 3

In the third exercise, which is originated from Zelanski and Fisher (1996), the students were asked to create four different compositions on A4 format white paper with line elements cut out of black paper. The first composition had to be made out of horizontal and vertical lines, the second should be out of diagonal lines, the third should consist of curvilinear lines and the fourth should involve all of the vertical, horizontal, diagonal and curvilinear lines (Figure 1). Again the students were given four hours, but this time they were not permitted to make distortions on line elements by folding or bending or putting them out of format. The students were not given any critiques and were free to create abstract or representational compositions. At the end of the exercise, each student submitted four works.

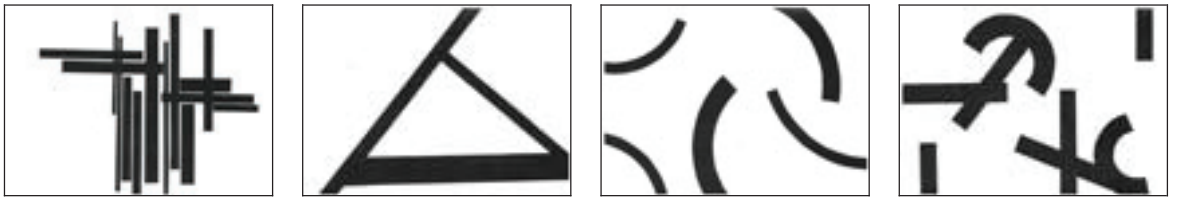

Figure 1: Works on exercise 3

5. Results and Conclusion

In the end of the first exercise, a considerable distinction between the two groups was observed. For the first group, which consisted of science-based industrial design students, the exercise and the technique of using ink in creating handprint was a new encounter. For this reason, the students were more concentrated on grasping the technique. On the other hand, art-based visual communication design students were comfortable in using ink. The students used alternative techniques like using negative space to create a shape and felt free to draw typographic elements and written messages as well. Science based group, on the other hand, attempted to create three dimensional compositions.

When a shape is derived from nature or man-made world, it is representational. This representation may be realistic, stylized, or near abstract (Wong, 1993). When there is no reference to real objects, the work is called

nonrepresentational (Zelanski, Fisher, 1996). In the first exercise, mainly both of the groups tried to achieve a whole by repeating a unit like finger print. However, science based students were inclined to create representational compositions while art based group felt free to create abstract compositions. There appeared representational compositions in art based group as well; but most of these had a message content like a poster.

The aim of the second exercise was to investigate if the students were able to intuitively apply organization principles drawn by Gestalt theory (Figure 2). Designer's job in creating a visual unity is made easier by inserting some sort of organization which relates various elements (Lauer, Pentak, 2000). Design is very much fed by Gestalt psychology in terms of identifying these visual organization principles. The studies done on the perception of the whole in Gestalt school, helped design to make out laws on visual harmony. The so called visual organization principles aid achieving unity in design. The conditions that facilitate the organization of a heterogeneous visual field is identified with proximity, similarity, continuance, and closure (Thiel, 1981).

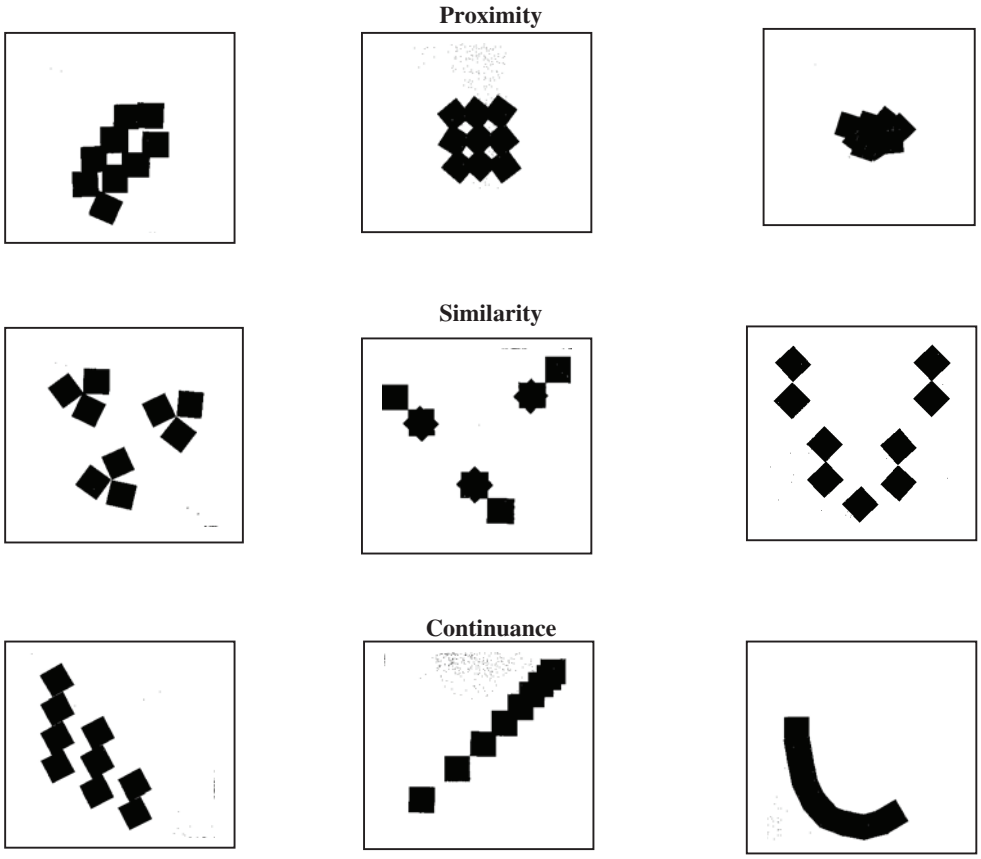

Figure 2: Student works reflecting Gestalt principles

Proximity is simply putting things close together as if they belong together. It tries to create wholeness by putting things close to each other. Similarity, also known as repetition, is about grouping elements and repeating the group in a composition to create unity. Continuance is about achieving movement or direction in a composition. It tries to carry viewer's eye from one thing to other by putting things in line or gradually changing color, size, number etc. Closure deals with the visual language in more then one compositions. 2 or more compositions look as if they belong to the same family by closure.

The students were not given an instruction about the so called principles at the beginning of the exercise. Since basic design course aims to awaken a visual awareness about the already known principles, the students were

expected to apply visual organization principles intuitively. Intuition is regarded as a strong factor which is linked to creativity (Durling et. al., 1996) The compositions submitted at the end of the exercise were evaluated on the basis of presence of the first three laws. The forth law, which is "closure" was not included as a criteria for the exercise since closure deals with the use of a visual identity in a number of composition more then one. However within the exercise each composition had to raise its own identity.

Table 2. The application of Gestalt laws in exercise 2

	Science-based	**Art-based**
Proximity	80 (51,28%)	49 (46,66%)
Similarity	29 (18,58%)	23 (21,90%)
Continuance	38 (24,35%)	26 (24,76%)
Unsuccessful	9 (5,79%)	7 (6,68%)
Total	156	105

Regardless of their former education, both of the groups responded the problem in nearly same rates (Table 2). In most of the works at least one of the principles were used although there were unsuccessful examples. Among the organization principles, proximity appeared as the most preferred one to manifest unity. Representational compositions covered a considerable amount among the entire student works. Besides the abstraction of natural objects, typographic elements or graphic symbols were also used in the representational compositions (Figure 3).

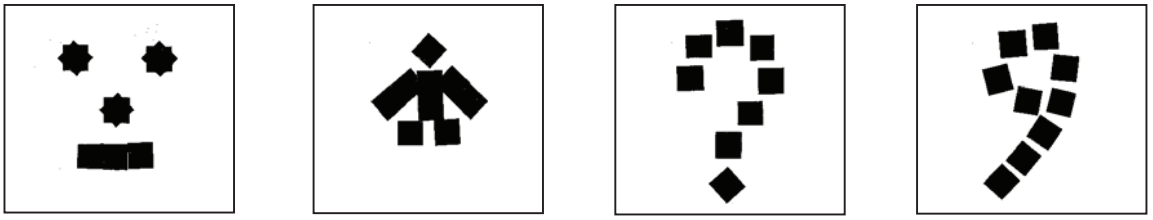

Figure 3: Representational works on exercise 2

In the third exercise the students were allowed to use a variety of elements in the compositions. This variety resulted in an increase in emergence of representational compositions. However the variety of elements used in the compositions allowed the students to present better abstraction levels with stylistic representations as well (Figure 4) In some of the compositions the students were able to use design principles such as hierarchy and rhythm without being thought.

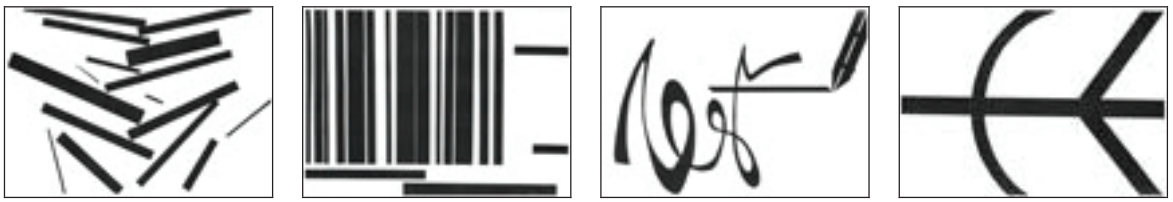

Figure 4: Representational works on exercise 3

Within the exercises carried out, science based students appeared to create representational compositions more (Table 3). Art based students did not hesitate to create abstract works dealing with pure elements of design while

science based students tried to achieve unity by repeating already existent shapes. The variety of the elements used in the third exercise resulted in the science based students an extreme representational approach. On the other hand, art-based students used graphic symbols and typographic elements in representational works at a considerable level (Table 4).

Table 3. The use of representational expressions

	Exercise 2		Exercise 3	
	Science-based	**Art-based**	**Science-based**	**Art-based**
Non representational	120 (76,92%)	92 (87,61%)	39 (57,35%)	38 (73,07%)
Representational	36 (23,08%)	13 (12,39%)	29 (42,65%)	14 (26,93%)
Total	156	105	68	52

Table 4. The use of graphic symbols

	Exercise 2		Exercise 3	
	Science-based	**Art-based**	**Science-based**	**Art-based**
Graphic symbols in representations	7 (4,48%)	3 (2,85%)	2 (2,94%)	6 (11,53%)
Total	156	105	68	52

Art based students' prior trainings in drawing, and awareness of visual concepts results in pleasing works at the beginning of basic design course. On the other hand, science based students' first attempts in forming two dimensional compositions generally depend on repetition of already existent images. Although representational compositions are created by both of the groups, art based students create different approaches in the so called works like inserting a message content, making stylized abstractions, or creating close up compositions. Science based group's insufficiency in creating such approaches can be linked to their poor experience with the materials and techniques used. Since science based group is not accustomed to hands on exercises and education in practice, at the beginning of design education the students' focus on grasping techniques and enhancing visual sensitivity.

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