

Plastic arts education and example of the students engineering faculty

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Abstract

In the act of acquiring knowledge, as it is in many other fields of life, the ability to use technology has taken the lead in the world of education, as well. Engineering education is one of these areas. The increasing dependence of people on technology is alarming. In this study, it is examined that how students at the Faculty of Engineering evaluate their visual perception change and the point of view to the arts and arts education after they receive plastic arts education at a basic level. Written opinions were gathered from 150 students who took the elective course 'Plastic Arts Education' at the Faculty of Fine Arts at Hacettepe University. 14-week syllabus is used in this course, including one theoretical hour and two practical hours each week. This syllabus covers two or three dimensional applied studies, the research and examination of art and its movements, artists, works of art, and exhibition and museum visits. Written findings indicate that students have chosen this course since they were fed up with their theoretical courses, or the workload of courses, and realized they had an interest towards art thinking that it merely and simply requires ability, and they were excited to recognize the difference between 'look' and 'see'.

Keywords: Plastic Arts, art education, engineering students, Fine Arts, technology.

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1. Introduction

Learning how to see in our era where the visual culture is effective, is noticing the details and also improving perception, senses and mental abilities. Studies that try to utilize the feature of art which opens the gates of consciousness, attracts attention in order to relieve the worries that arouse from limitation of education and teaching to data reading ability which is acquired only through technological instruments. In Yale University, when a group of Medical Students, which was observed that they always miss the details that verifies the diagnosis, were given art lecture at the museum over authentic works of art, it is observed that the ability of the group to observe and identify was improved considering another group who didn't get that lecture (Braverman, 2001). According to another research based on the understanding of "Looking is not seeing", lectures were also given to nursery students at art museums in order to improve their observation abilities (Pellico, Friedlaender & Fennie, 2009). There are researches, with medical students whom there was concern that their physical examination skills are diminishing, where there are meaningful results that studies of careful examination and observation of art works also improves seeing skills. (Naghshineh, Hafler, Miller, Blanco, Lipsitz, Dubroff, Khoshbin & Katz, 2008). Each field has its own particular education approach, however the realization of the distinction between looking and seeing is not limited with one's career development. At the same time, it is also a need of the nature of "human as a being of emotion". In this aspect, Darwin writes in his autobiography that he had intensely enjoyed music and poetry and pictures until his thirtieth year, but through the following years he lost all his taste for these interests: "My mind seems to have become a kind of machine for grinding general laws out of large collections of fact. The loss of these tastes is a loss of happiness, and may possibly be injurious to the intellect, and more probably to the moral character, by enfeebling the emotional part of our nature." (Fromm, 1997). Developing the visual perception with an aesthetic purpose, allows the individual to recognize his/her holistic development with his/her mental development and world of emotion. "With blind or closed eyes it is futile to present the most dazzling show... it is firstly art that allows one to see the things that one cannot see otherwise" (De Konnick, 2003). When the way that art makes one think, get better, get richer and saves life from its monotony is taken into consideration in the education programs that are applied at every step and every area, it would be possible to influence humans' vital bond with themselves and the world.

2. Problem

The engineering field which usually remains among the choices of the teenagers, is one of the areas which depends on workings areas that reach from micro level to macro level and that expand gradually, and technical information and the computer technology is most effective. Among the main objectives of the engineering education, educating individuals that can utilize technology, improve new technologies, apply them and adapt to global changes can be predominantly listed. But is it enough to realize these objectives? In terms of the acquisition of human values, the fact that they finish their education as developed and sensitive individuals who are equipped with aesthetic values should not be less important than developing and utilizing technology on behalf of modern living.

Because the students in Turkey, in the pre-exam period (because they are directed only to pass exams), cannot benefit enough from the art classes, it is observed that they lack basic information and skill concerning art. For this reason, the fact that which changes occur when engineering students are provided with plastic arts education at basic level becomes prominent.

3. Method and Technique

A program that includes plastic arts at basic level, in which it is considered that they could not receive adequate amount of art education at pre-faculty education period was applied. The program includes a 14-week period, 1 hour theoretical and 2 hours' application, with students from the engineering faculty who selected the plastic arts class voluntarily. In the program, the purpose was not the direct contributions of arts education to engineering education but that the students who

receive engineering education can have an experience related to themselves and art. In accordance with this purpose, the following applications and theoretic subjects are included in the program:

1. Application subjects; seeing ratio and proportion properties in ordinary objects, identifying plastic elements (light-shadow, dark-light, texture, balance, rhythm, composition relationships, etc.), Identifying similarities and differences, object-space relationships, basic perspective studies.

2. The institutional subjects that were considered in the program; Basic concepts of art (art, art work, audience, etc.), General information about the art movements, Recognizing artist and art works. One-to-one encounters with original works (Exhibition and museum trips).

After a program that is based on perception with an aesthetic purpose -eye training-, the written opinions of the teenagers on what did they experience in terms of emotion and thought and how they would describe what they experienced in their own words, were obtained and examined. The purpose of the examination was to reveal what kind of impression that the change in their visual perception left on themselves when the engineering students who take selective plastic arts classes were directed to identifying the most basic plastic elements and seeing with an aesthetic purpose.

4. Findings and Interpretation

In this study, the opinions of 150 engineering students, of whom 90 were female and 60 were male, who participated in the selective plastic arts class from nine engineering faculties of Hacettepe University were obtained. The distribution of students according to engineering faculties is as follows;

Table 1. The distribution of students according to engineering faculties

Faculty of Engineering	Number of students	Percentage
Physics	54	% 36
Industry	21	% 14
Electrical Electronic	20	%13,33
Food	19	% 12,66
Geology	15	% 10
Chemical	7	% 4,66
Hydrogeology	7	% 4,66
Nuclear Energy	5	% 3,33
Computer	2	% 1,33
Total	150	

When the students receive information about artist and art movements while doing two and three dimensional applications and this information is supplemented with exhibition and museum trips, it is observed in their accounts about their experience that awareness in accordance with the purpose of the art education had emerged.

Of the students:

1. 62.66% expressed positive opinions by using the statement “I understood the difference between looking and seeing”,
2. 37.33% expressed that they feel themselves different from their state prior to taking the course by using passive words in a positive sense,
3. All of the students who think that they can increase their GPA easily (17%), expressed that they had preconceptions about this field (about its being easy) but now they understood that this field requires work and effort too,
4. The students who got bored from the field courses and want to be interested in a different field (31%) expressed that their ideas are enhanced by entering this program and they would also like to dedicate time to it in the future.

In this scope, the accounts which show that the engineering students experienced positive changes in emotion and thought are collected under the following statements:

- *I realized the difference between seeing and looking,
- * I started to look at objects with an aesthetic concern,
- *I felt privileged, considering my friends (who didn't take the lecture) at the same department,
- *I realized my own competence.
- *I started to look at my surroundings with a different, critical way than before,
- *I realized that I had prejudices about art and artists unknowingly until today.

Examples from Student Accounts:

"It was very important for me to understand the difference between seeing and looking. Because it can be said that this was an awakening in myself. I will look at the world with my "own" eyes." (Physics Engineering).

"My tower of seeing the life was raised a couple of floors. Thus, I was provided with a view of a larger area." (Electrical Electronic Engineering).

"I realized that I lived very empty and I am insensitive to many things around me. I think this changed our way of looking at nature. Because yes, we were looking, we knew the existence of many things around us but didn't perceive them. At least, I started to see their details. I saw that an object has many different aspects." (Physics Engineering).

"Since we were kids, we thought that happiness comes from being successful in our courses, being the winner among people. Now I understand that the most beautiful and important aspect of happiness was understanding our emotions." (Hydrogeology Engineering).

"In time, I saw that art is a part of our lives. An occupation which enhances our thoughts, really opens up our horizon. A person need to be versatile, I understand that now. Maybe a sculpture which is examined will provide the ground for a breakthrough, maybe making a painting will enhance our horizon. Knowing=Awareness=Happiness" (Physics Engineering).

"Studies I have done during the course, started to make me notice myself" (Food Engineering).

"I understood that the paintings I glanced at are actually the result of a great effort and ability." (Food Engineering).

"...one the most important deductions I made is that eye and hand training is harder than mental training..." (Electrical Electronic Engineering).

"As an engineering student, I think a scientist involved with art will be more different and creative than the others." (Chemical Engineering).

"... the way I look at the things around me and what I feel when I look has changed. Now I look at everything around me more carefully and the things I see when I look makes more sense to me." (Geological Engineering).

"My respect and admiration for art and artist has increased many times more. I started to look at the outside world, my surroundings differently; I see relationships between objects. Thus, I realized that everything around me makes more sense to me and what provides meaning to an object is its relationship with the outer world. It made me find a way that I was either keeping my distance from or detracted from. Now my purpose is not to lose this way and improve in terms of thought and culture." (Electrical Electronic Engineering).

"I took this course to distance myself from the calculations of engineering. As I continued to come here, I could breathe easier. As if I got away from the pollution of the city and breathed in a forest for the first time, because numbers cannot be expressed through emotions. Regretfully, our education system works only to raise engineers, cannot reach to human." (Electrical Electronic Engineering).

5. Conclusion

It is seen that positive approaches to nature, life and themselves have developed in a meaningful way in the students who had an encounter with the most basic art concepts and were given the opportunity to inspect and apply basic aesthetic elements. This development occurs as a result of awakening an aesthetic excitement. When aesthetic education in the field of art, especially based on seeing, is given to engineering students in addition to an one-way field education that is reduced to numbers, it is observed that meaningful additions were made to the emotional and intellectual development of the students. Regardless of the field of training and education, the statements which were obtained from the students shows that art education has important contributions to the development, self-discovery and ability of the individual to express himself/herself. It is considered that the changes related to the realization of the difference between looking and seeing could be beneficial to the student in the education of their own fields. Because the effects of art education in forming a multidirectional viewpoint could trigger creative thinking in every field. The opportunity to feel the joy and happiness of discovery is provided by showing the need to information about art and artist, as this constitutes the infrastructure of creative thinking. An art education which includes sensitivity education has an important role also in the development of the awareness of social responsibility. At the same time, this result can also be a source for researches in topics like to what extend engineering students can change their observational skills regarding their own fields.

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