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An evaluation of teacher candidates' opinions about art education and form-meaning relationship

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Abstract

We live in an age in which visuality is important. In this day and time, instead of long texts and narrations, incarnated forms of meaning and notions are used for informational transfer. As to the reach of an individual for abstract notions, it is a competence of that individual which is gained by the education. Due to the indispensable contributions of art education classes have on an individual's reasoning and imagination, they also directly contribute to development of said individual's cognitive abilities.

This research aims to evaluate the ability of thinking in expressible meanings of forms, examined among the teacher candidates who took visual arts education and art and aesthetics class in 2012-2013 academic year, majoring in pre-school teaching and social studies teaching respectively. Purpose is to present how teaching candidates develop the form-meaning relationship. A total of 298 teacher candidates were involved in the research. Symbols such as circle, triangle, square, tree, pencil, hand, fish, flying bird, wheel, bitten apple, and yin-yang were shown to these teacher candidates before and after 12 weeks curriculum, and it is asked from them to answer the question of what these symbols are and what may they express. Finally, answers were evaluated using qualitative research model.

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1. Introductions

Visual art education classes designed for general education majors except arts follows a process which intends to develop individual's visual thinking abilities that could be used in all aspects of life. The purpose of using art in education is to develop a certain individual's visual perception. Considering

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forms that are perceived through visual senses along with their expressed meanings (notions) and relating form and meaning in an intellectual sense are among the aims of visual arts education.

Cognitive functions are important in the learning process. However, the main material for cognitive functions is senses. A person learns by cognitively processing the gathered information by smell, taste, tactile, auditory and visual senses. Only eye provides substantial information about the outside world and that world's objects that other senses cannot provide such as colors, forms, movements, distances and depth. Thus, visual sense compared to other senses, provides a clear transmission medium, creating the best setting for using the intellect (Arnheim, 2007). According to Arnheim (2007), who asserts that the most powerful tools for strengthening the cognitive component are visual arts education classes and without cognitive component it is impossible for an individual to develop creative thought in any area, there is no actual reason for not calling the processes of visual sense "thinking". Because, thinking is cognitive in its essence, and visual sense is visual thinking.

Thinking is a chain of evolving rings of concrete to abstract, form to meaning, which starts with perception. The data of visual perception joins to one another in a way such as designing in mind, relating, questioning, analyzing, observing, interpreting, testing, deciding, re-interpreting, evaluating and implementation which ends up with interpretation (Abacı, 2003). All these processes are used in visual arts education. Examining an artwork, evaluating in a different context and understanding makes an individual experience visual learning.

Eye sees the concrete and compare what it sees with other concrete similar. After that, it grasps the form's notion which is invisible but makes its presence felt with the form. Symbols are formed states of abstract notions and they are the last stage of visual perception. An individual who has trained his own perceptions can read between the lines of symbols and make sense of it.

Since first age, visibility has an importance in human thinking system. Everything can be explained in an easier way visually. Visual communication has helped visual thinking abilities to develop. This is a circle without any start or end, evolving and reproducing. Expressing with form, in another words expression of social essence with symbols goes way back to societies without writing. Every culture expresses its social experiences with symbols. Civilization history shows that, symbols and symbolic compositions drawn in different times and places repeatedly are based on semantic values known and accepted by a society, not on personal interpretations (Ateş, 2001).

Societies, which go way back in time, are known for how they pass their values down. This is also correct for the geography which we are living on. Anatolia is a synthesis of rich cultures. Among our cultural richness, common feelings such as agony, joy, sadness, and enthusiasm are brought to forms by symbols and these became the language of Anatolian nations. We live in a culture which makes use of symbols. Some objects express a lot in our culture. Symbolized forms can be found in carpet and rug designs, head scarfs' point laces, fabric patterns, tiles and carvings on stone buildings. People of Anatolia have transformed symbols into a common language in years.

How do our people use their visual perceptions who have thought visually for centuries? Do they think that the forms they see mean something, or question their meanings? How do our youth do concerning abstract thinking whom we think as our future intelligentsia? In light of these questions, the purpose of this research is to determine the visual perception abilities of teacher candidates who are in their twenties and in the abstract thinking phase; make them be able to use the visual perception and thinking abilities they will acquire in visual arts classes and have them see and interpret the forms with expressible abstract notions.

2. Methodology and Sampling

This research is conducted by the participation of teacher candidates studying in Marmara University, Atatürk Faculty of Education, who took visual arts education and art and aesthetics class in

2012-2013 academic year, majoring in pre-school teaching and social studies teaching respectively. A total of 298 students have participated in the research, 205 of them belonging the first group mentioned whereas 93 of them belonging the second. During the research, teacher candidates have been presented with 12 black and white visuals, not only in the beginning of the term but also in the end of it. Moreover, they were asked to describe what these visuals are and what they mean via narration. The essays are examined and a report is prepared based on qualitative research method.

3. Data Collection Instruments

The data is generated based on the meanings expressed in the essays presented both at the start and at the end of the term concerning the 12 forms given in the visuals as circle, square, tree, apple, bitten apple, pencil, hand, fish, flying bird, wheel and yin-yang symbols. The context of the answers is evaluated by qualitative research method and a report is prepared.

4. Educational Program

298 teacher candidates are asked from them to describe the given 12 black and white visuals in their narrative essays in terms of what they are and what they can be. During the academic term the art objects civilizations produced since primeval era are examined, analyzed and evaluated by the aesthetics doctrine of our age. The studies focused in how every civilization's essence have formed in its art produced, how every form has layers of meaning, and how these hidden meanings can be reached by analyzing the form. In a manner of speaking, civilizations are analyzed through their artworks. At the end of the academic term, the same visuals are presented to the teacher candidates and they are again asked to describe what they are and what they can be. During the academic term and process of the research, the teaching method and techniques used involved analysis and interpretation of visuals with the educational objectives of developing abstract thinking ability, and being able to consider the layers of meaning behind concrete forms.

5. Analysis of the Data

During the research, the answers provided by teacher candidates in their essays regarding the 12 visuals shown are analyzed.

In the period of examination and evaluation of the essays qualitative research method is used. Reading the narrations, interpreting the explanations is fundamental to qualitative research method. Qualitative research method tries to understand the acts, narrations and how these intersect (Glesne, 2012). Qualitative data can be made used of since qualitative research method is not a process which data is reduced to numbers and analyzed like that. Thus, concrete object statements and abstract notion and meaning statements are deduced from the answers in numbers and the percentage is calculated. The resulting report is prepared by quantitative classing based on the context of the answers.

Table 1: Pre-school Teaching Candidates and Social Studies Teaching Candidates

Start of Academic Term	Form	%	Meaning	%	Total	
	Circle	245	82.2	53	17.8	298
	Triangle	263	88.2	33	11.8	298
	Square	259	86.9	39	13.1	298
	Tree	222	74.4	76	25.6	298
	Apple	238	79.8	60	20.2	298
	Bitten Apple	245	82.2	53	17.8	298
	Hand	142	47.6	156	52.4	298
	Pencil	173	58.1	125	41.9	298
	Fish	233	78.2	65	21.8	298
	Flying Bird	101	33.8	197	66.2	298
	Wheel	276	92.6	22	7.4	298
	Yin-Yang	67	22.5	231	77.5	298

Table 2: Pre-school Teaching Candidates

Start of Academic Term	Form	%	Meaning	%	Total
Circle	177	86.3	28	13.7	205
Triangle	183	89.2	22	10.8	205
Square	180	87.8	25	12.2	205
Tree	162	79.0	43	21.0	205
Apple	157	76.6	48	23.4	205
Bitten Apple	175	85.3	30	14.7	205
Hand	101	49.2	104	50.8	205
Pencil	125	61.0	80	39.0	205
Fish	162	79.0	43	21.0	205
Flying Bird	71	34.7	134	65.3	205
Wheel	191	93.2	14	6.8	205
Yin-Yang	40	19.5	165	80.5	205

Table 3: Social Studies Teaching Candidates

Start of Academic Term	Form	%	Meaning	%	Total
Circle	68	73.1	25	26.9	93
Triangle	80	86.0	13	14.0	93
Square	79	85.0	14	15.0	93
Tree	60	64.5	33	35.5	93
Apple	81	87.0	12	13.0	93
Bitten Apple	70	75.2	23	24.8	93
Hand	41	44.0	52	60.0	93
Pencil	48	51.6	45	48.4	93
Fish	71	76.3	22	23.7	93
Flying Bird	30	32.2	63	67.8	93
Wheel	85	91.3	8	8.7	93
Yin-Yang	27	29.0	66	71.0	93

6. Results

A person starts thinking from the concrete. Abstract notions became after concrete form is examined. For this reason, during the process of classification of the answers in the essays, even if there is an abstract value in the answer, that teacher candidate's answer's meaning is classified in meaning section.

Circle, 82.2% of 298 teacher candidates described circle as concrete objects such as Moon, Sun, ball, Earth, ring, plate, bracelet, watermelon, money, steering wheel, wheel, pizza and clock; whereas 17.8% of teacher candidates mentioned meanings such as loyalty, togetherness, solidarity, integrity, belief, flexibility, vicious cycle, and harmony. This ratio for pre-school teacher candidates is 86.3 to 13.7 and for social studies teacher candidates 73.1 to 26.9.

Triangle, 88.2% of 298 teacher candidates described triangle as concrete objects such as cheese slice, roof, pyramid, mountain, and kite; whereas 17.8% of teacher candidates mentioned meanings such as hierarchy, class discrimination, increase, summit, and intersection. This ratio for pre-school teacher candidates is 89.2 to 10.8 and for social studies teacher candidates 86.0 to 14.0.

Square, 86.9% of 298 teacher candidates described square as concrete objects such as cube, dice, room, box, book, table, carpet, tile, server on which engagement rings are presented and a house without a roof; whereas 13.1% of teacher candidates mentioned meanings such as government agency, limit, straight, standard scheme, and symmetry, equality. This ratio for pre-school teacher candidates is 87.8 to 12.2 and for social studies teacher candidates 85.0 to 15.0.

Tree, 74.4% of 298 teacher candidates described tree as concrete objects such as fruit, shadow, forest, firewood, heating stove, hammock, vacation, nature, green, branch, leaf, apple, root, swing, spring, and picnic; whereas 25.6% of teacher candidates mentioned meanings such as lifetime, family,

time, force, power, prosperity, home's plane tree, taking root. This ratio for pre-school teacher candidates is 79.0 to 21.0 and for social studies teacher candidates 64.5 to 35.5.

Apple, 79.8% of 298 teacher candidates described apple as concrete objects such as garden, worm, tree, and fruit; whereas 20.2% of teacher candidates mentioned meanings such as red, green, antique beauty contest, witch of Snow White, banishment of Adam and Eve from Heaven, and law of gravity of Newton. This ratio for pre-school teacher candidates is 76.6 to 23.4 and for social studies teacher candidates 87.0 to 13.0.

Bitten Apple, 82.2% of 298 teacher candidates described bitten apple as concrete objects such as cartoon, technological products, I-Phone, solid, and tooth; whereas 17.8% of teacher candidates mentioned meanings such as forbidden love, deficiency, and rot. This ratio for pre-school teacher candidates is 85.3 to 17.7 and for social studies teacher candidates 75.0 to 25.0.

Hand, 47.6% of 298 teacher candidates described hand as concrete objects such as gloves, finger, rig, dishwashing gloves, nail polish, hand cream, and solitaire ring; whereas 52.4% of teacher candidates mentioned meanings such as art, labor, working, cooperation, peace, oppression, slap, mother love, and friendship. This ratio for pre-school teacher candidates is 49.2 to 52.8 and for social studies teacher candidates 44.0 to 60.0.

Pencil, 58.1% of 298 teacher candidates described pencil as concrete objects such as wood, pencil sharpener, sword, minaret, class, arrow, rocket, make-up pencil, and stick; whereas 41.9% of teacher candidates mentioned meanings such as science, knowledge, poetry, future, civilization, success, culture, and career. This ratio for pre-school teacher candidates is 61.0 to 39.0 and for social studies teacher candidates 51.6 to 48.4.

Fish, 78.2% of 298 teacher candidates described fish as concrete objects such as anchovy, fish oil, deep fry, grill, fishing rod, Istanbul, raki, Eminönü district, aquarium, rocket, appetizer, Finding Nemo, and the story of Little Black Fish; whereas 21.8% of teacher candidates mentioned meanings such as fortune, captivity, memory, emotiveness, March, and Aquarius of Zodiac. This ratio for pre-school teacher candidates is 79.0 to 21.0 and for social studies teacher candidates 76.3 to 23.7.

Flying Bird, 33.8% of 298 teacher candidates described flying bird as concrete objects such as ferry, Istanbul, pigeon, eagle, seagull, wing, beak, and bird nest ; whereas 66.2% of teacher candidates mentioned meanings such as peace, freedom, struggle, love, migration, luck, eternity, infinity, messenger, and Phoenix. This ratio for pre-school teacher candidates is 34.7 to 65.3 and for social studies teacher candidates 32.2 to 67.8.

Wheel, 92.6% of 298 teacher candidates described wheel as concrete objects such as car, wheel, wheel of fortune, compass rose, eye, umbrella, sun, propeller, and journey; whereas 7.4% of teacher candidates mentioned meanings such as labor, antique age, invention, and civilization. This ratio for pre-school teacher candidates is 93.2 to 6.8 and for social studies teacher candidates 91.3 to 8.7.

Yin-Yang, 22.5% of 298 teacher candidates described Yin-Yang as concrete objects such as water drop, comma, seed, pea, cashew, twins, chicken drumstick, and embryo; whereas 77.5% of teacher candidates mentioned meanings such as contrast, good and bad, male and female, night and day, integrity, balance, completion, and energy. This ratio for pre-school teacher candidates is 19.5 to 80.5 and for social studies teacher candidates 29.0 to 71.0.

The study which was redone at the end of the academic term, it is noticed that every teacher candidate expressed every form with their respective abstract meanings.

7. Conclusion and Recommendation

Circle, triangle and square are not just geometrical figures. Throughout history, societies that have formed great civilizations attributed meanings to these figures. Circle is, for example, is the continuation of the same movement with no corners, no start and no end. When we examine the symbols concerning circle in history, we see that it has been concretized with the serpent biting its own tail, Ouroboros. It symbolizes universe and integrity in antique Egypt and Greece; in Hinduism and Buddhism, it is the symbol of death and reincarnation. In our age, the symbol of circle is used to describe a vicious cycle (Gibson, 2013). Triangle, according to the pointy side being up or down, symbolizes masculinity and fire or femininity and water (Gibson, 2013). As to square, giving the feel of robustness and stability, it symbolizes Earth and matter. Also, because of having four sides, it represents cardinal points, elements and seasons (Gibson, 2013). It is presumed that Leonardo Da Vinci expressed the humanity's two aspects with intertwining square and circle figures his Vitruvian Man, it is believed that the square represents the corporeality, while the circle represents the incorporeality. At the same time, circle represents the eastern civilization which has an unchanged order for centuries; while square represents the western civilization which has gone through social changes and produced revolutions.

Ever since ancient times, the tree of life symbol exists in the societies in our geography which has its branches and fruits reaching for skies. Tree represents past with its roots, present with its trunk, and future with its branches. Big families and countries are identified with a steady tree with powerful roots. According to Gibson (2013), tree represents cycle of life if it cast its leaves and immortality if it is evergreen.

Apple is known as the fruit that is forbidden in legends, poisonous in fairy tales, and as the fruit which has fallen from the branch proving the law of gravity to Newton in science. It does not just grow on a tree, or sold at a market. Bitten apple; however, is the expression of irreversible situations while being the symbol of a brand. It is the fruit that Eve has bitten, causing for Adam and her to get banished from heavens, forcing them to make their way on earth.

Historians interpret handprints that are seen very frequently in ancient works as an expression of possession. It is the symbol of identity. In our culture when the proverbs are examined, it represents cooperation, work sharing and labor.

Pencil has always been the symbol of the thinking brain and educated individual. Aside from that, in our culture, there are sayings such as "moving a pencil" meaning providing self-benefit and "got his pencil broken" meaning falling from grace.

Fish represents idealism in human beings while bird has always been the symbol of freedom. In the legends, Phoenix has been the symbol of ascent and reincarnation by being reborn from its own ashes.

The civilization process of human is in one sense the history of creativity. One of the first inventions is the invention of the wheel which is used not only in transportation but also in potter's wheel, providing momentum to the society and expanding the horizons of people.

Yin-Yang is a symbol of far-east known worldwide. The black half of the symbol represents passive, negative, feminine cosmic energy; identified with darkness, night, moon, cold, humidity and Earth. The white half of the symbol is active, positive and masculine. It corresponds to light, day, warmth, dryness, and sky. The symbol overall represents a complete eternal life cycle (Gibson, 2013).

When the numerical results gathered throughout the study are examined, it is seen that the teacher candidates are not able to think of the meanings symbolized by the forms yet. Every figure showed was compared to its concrete similar with by 80% of the teacher candidates, and it was not considered by them that they might mean abstract values. In fact, these teacher candidates should have acquired the skill of abstract thinking because of their ages. This situation brings one's mind that they have been

distant to their cultural environment and they have blunted their intellectual sides in the process of periodical exam cramming. It seems the main reason for this might have been that they simply did not have time to read novels, visit museums or be interested in different disciplines of art; which all would have helped them with acquiring the skill of abstract thinking.

It is seen that social studies teacher candidates showed slightly better results in terms of abstract thinking compared to pre-school teacher candidates. However, if the general situation is considered, this is not enough as well. But the ratio changes when the Yin-Yang symbol is of concern. It is seen that 77.5% of teacher candidates expressed the abstract meanings of the symbol. It is supposed that the reason for this particular result is Yin-Yang symbol being recognized symbol. The result of them knowing the meaning of the symbols they have learned such as Yin-Yang shows us that they are better learners than thinkers.

After an academic term that the teacher candidates have attended classes of visual art education and art and aesthetics, and examining the layers of meaning hidden behind figures' visible sides, it is determined that their views changed completely. This situation is considered as the outcome of a lack in our education system. This situation is considered as being the saddening result of the fact that the teacher candidates have been through an exam cramming type education system which highly depends on memorization of the information transferred by an authority; instead of the usage of education programs which develops abstract thinking.

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