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A Study of Visual Impairment in the Art Creation Process Using Clay

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The focus of this study discusses art activities conducted by visually impaired people in a Social Rehabilitation House (Panti Rehabilitasi Sosial). This study uses a technical approach and clay material using as an agreed theme. The research process was directed by the creativity of art in aesthetic activities, processes and artworks, and sensitivity of the participants. The artwork was presented through collaborative researchers with the experiences of five participants who were visually impaired and had different characteristics. The fruits, which became the theme, generated artworks based on their favourite form, scent, and curiosity. The intensity of sensitivity could be seen in the activities of holding, recognizing, identifying objects and expressing opinions. The nature of the clay material created a re-creation process of art-making techniques that produced quality from the elements and principles of art. Artworks using clay material produced the media of expression-communication-actualization in a non-verbal way. The aesthetic role of the visually impaired participants was affected by complexity in the sensitivity of individual experiences and cognitive abilities.

Key words: *Art expression, visual impairment, clay elasticity.*

Introduction

Disability services for visual impairment focus on developing independent attitudes and social adaptation. Functional needs become a common problem in capturing knowledge and delivering real communication. Expressions of feelings and opinions cannot be fully relayed because they are blocked by the concept of the perception of an object with what normal people see. The experience of people with visual impairment collides with the concept of visualization which can not fully be obtained automatically, but through the training process and self-habits which became the rehabilitation program. Integrated and targeted services

become facilities for rehabilitation institutions for visually impaired people to improve their potential and social skills in the future community (Rainey et al, 2006; H. et. al., Senra, 2011; Pivac, 2017).

Previous studies have debated the concept of perceptions of people with congenital blindness towards the use of the palpable senses as a determining nerve function (Spence & Driver, 2004; S. Hayhoe, 2013). Doubts about this arises from the initial occurrence of eye organ disability. There are opinions of the visual impairment which cannot represent the principle of spatial perspective and visualize two dimensions (Bin & Shiu, 2010). The behaviour of people with visual impairments has different perceptual characteristics in terms of the level of vision and the origin of their disability. There are cases of people with low vision perceiving information from limited vision and other supporting senses. The ability to touch is the only way used by people with near-blindness or total blindness. People with near-blindness can still refer to the transition of damage to the eye's function towards the capture of the object. The optimism of their lives leads to consideration of the needs of the individual development of their respective environments and public policies to be implemented regarding quality of life on a specific scale (Oliveira et al, 2018).

A significant amount of research approaches are aimed at humanism in the field of educational services and public facilities for groups of visually impaired people. Public facilities for their mobility are designed through the provision of assistive media and social environment-based education with the aim of maximizing quality of life (Dursin, 2012; Sefat et al, 2016; Mboshi; 2018). The application of special skills for groups of people with visual impairments requires a unique education that develops the ability of self-sensitivity and spontaneity. Art education is an effort to develop individual skills to hone cognitive, affective, and psychomotor skills for children with visual impairment. The impact of art is related to the dominance of the hemisphere as the centre of visualization, imagination and conceptualization stimulating the brain as a fabric of neurology through art activities (Demarin, 2016). The psychological constraint for blind people is the problem of socializing in the local environment, whereas the function of perception is an important window of information on the interpretation and understanding of memories and expectations.

The capacity and role of art education is to represent the ability of people with visual impairments as self-exploration in terms of their sense abilities. The process of creating art can be investigated from the limitations of vision, sense of touch, the use of the of hearing and other supporting abilities that allow an object to be made. Aesthetic activities can provide perceptual experiences through appreciation and artistic activities in the kinesthetic sensing process and sound responses to the intended understanding (Lowenfeld, 1973; Linderman & Linderman, 1984). This initiative framework includes the quality of self-experience as measured using media in a work of art. An art education approach in the application of media

can reduce the disparity of expression of visual impairment to feel aesthetic values in their inner needs. The results of creating artworks with tactile abilities create pleasure effects, fine motor skills to produce self-confidence and modalities for learning science and subsequent levels of education (Szubielska et al, 2019; Janson et al, 2003; Meggie & Edward, 2012). When choosing themes in creating art, one must consider the types and character of the materials and tools used to generate art by considering comfort, safety, and easy application. Technical orientation and simple methods can create works that are useful for positive experiences and feelings (Shih & Chao, 2010).

The purpose of this study is to demonstrate and explain the act of releasing the emotions of visually impaired people through aesthetic activities. This is achieved through the process and results of artistic work and the meaningfulness of art in terms of senses sensitivity through the theme of daily life objects. The capacity and capability of the values of the resulting artworks can be considered for further research studies. The renewed construction of the results places on the process and media for creating art using clay material that was applied by visually impaired participants as connection and cathartic in psychology. The project was carried out in a rehabilitation center and social services in Kudus, Indonesia, which had the same level of social interaction.

Methodology

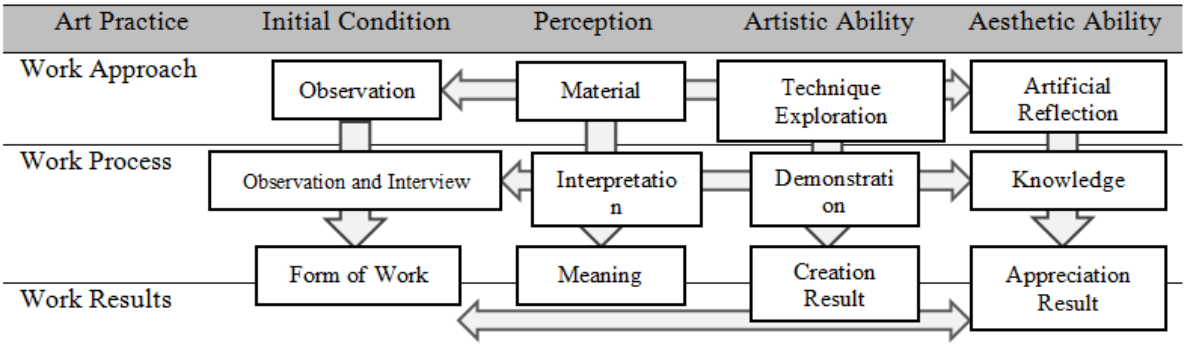
The research approach leads to creative art as research as an interdisciplinary study that underlies the methodology of art studies for certain groups with a new paradigm (McNiff, 2014). Emphasis on the art creation activity rests on media experiments using stimuli from techniques, clay materials, and the meaning of works in response to researchers' actions. The preparation of relevant contexts leads to analysis of theories and concept findings (Rohendi, 2011). Researchers act passively towards the behaviour studied from scheduled routines in the form of fieldwork, in-depth interviews, and content analysis. Activities of visually impaired participants were observed and documented by researchers by writing a daily journal of permanent participants as active participants. The data was obtained from observing a variety of behaviours, aesthetic actions, and artworks using clay materials. Active participants had characteristics based on the sex and age of five visually impaired participants living in a social rehabilitation centre with an average age of 12 years. The recommended grouping of data for the category of the participants was used as thesource data of research participants. In addition, the criteria for sensory needs was the structure of changes in eye disability seen at the onset of symptoms of visual impairment (World Ophthalmology Congress, 2008). Table 1 shows a reference for research participants:

Table 1: Data of active participants in the research

No.	Vision Level	Sex	Disturbance Symptoms	Age
1	Low Vision	Male	During adulthood	12 years old
2	Near-Blindness	Male	Since born	11 years old
3	Near-Blindness	Female	During adulthood	12 years old
4	Totally Blind	Male	Since born	13 years old
5	Totally Blind	Female	Since born	12 years old

Negotiation in the initial conditions utilizes the process of observation, in-depth interviews, and artwork. The perception process of artificial objects and materials in the works were interpreted by researchers. Participant's artistic abilities were seen through the exploration of techniques in the artwork process to produce three-dimensional works. Art appreciation could be found in the imitation of objects to find out the aesthetic level in the art studies appreciation. Artistic themes focused on fruit objects using clay material as an intermediary was used as the basic idea of creating art. The direction of the research was aimed at the knowledge that combined creative principles in the problem stage, data and content processing, analysis, interpretation and representation in art practices that use materials, tools and techniques. The structure of the research phase was developed and engineered by researchers in solving problems and documented carefully and transparently as a proof of scientific inquiry in the study of art practice (Sullivan, 2005) which can be seen in Figure 1 as follows:

Figure 1. Research Phase



Result and Discussion

Aesthetic dialogue about the process and results of the artwork implemented by the visually impaired participants was positioned as a study regarding disability culture on the psychology of art and sociological orientation in the aesthetic domain. Groups of visually impaired people are positioned as life justice seekers to develop talents and interests in life

experiences, not as a reliable for their artistic expression ability (Feeney, 2019). Aesthetic scientific procedures focused on the aesthetic workflow of the available senses, individual representations in the artwork created, and its evaluation during the process of groups of visually impaired people based on different levels of vision.

Artwork Themes in the Aesthetic Perceptual for Visual Impairment

The process of creating an artwork with clay material was reviewed from the beginning to the end from the aspect of sensitivity, sensory observation, and the actions of the children during aesthetic activities. There was no comprehensive and standard approach given for groups of the participants. Each person was considered individually (Shepherd, 2001). The participation of the subjects in the art activities with clay material was carried out by the participants with low vision, near-blindness, and total blindness on the portion of habits, sensory limitations and spontaneous initiatives that arise instantly in the process. Based on the results of interviews and research questionnaires, the desire of the visually impaired participants is to create objects of art from the types of fruits perceived. The researcher handed over a stimulus by giving the types of fruits to bring up the name, character of the object, and the quality of experience of fruit types that were imitated as initial perceptions as themes. Table 2 describes the perception of data regarding the fruit types:

Table 2: Stimulus data based on the desire analysis in the theme of visual impairment art creation

No	Vision Level	Stimulus on the Fruits Types	Sensation of Art Elements	Result of the Responses
1.	*Low Vision*	Mangosteen, Orange, Snake fruit	Fields, Shapes, Textures and Colors	Sensitive to the original object based on the experience
2.	*Near-Blindness*	Orange, Snake fruit, Grape	Fields, Shapes and Textures	Limited experience on the object observation
3.	*Totally Blind*	Banana, Orange, Grape	Shapes and Textures	Limited cognition of objects that have not yet been experienced

The initial simulation acts as a stimulus to identify experiences about the fruit types so that researchers are able to find out and understand the desires of the visually impaired subjects. Basically, groups of people with visual impairment lead to their preferred experiences according to their interest in shape, aroma and memory about the fruits. The perceptual stage of the visually impaired is explained by Parsons (1987) and Housen (1983) in the hierarchy of interest, the construction of sensory responses, the quality of experience, material clarification and creative reconstruction.

The Intensity of Visual Impairment Sensitivity in the Aesthetic Response to the Artwork Process

People with visual impairment have their uniqueness and strengths in fulfilling self-expression. Sensitivity possessed is related to the ability of gradual cognition including the discovery and imitation of object characters, techniques and the use of media works in understanding contextual concepts. Aesthetic activities encompass holding, recognizing, identifying and expressing opinions.

Figure 2. Aesthetic activities of visual impairment in object recognition

People with low vision usually look or see very close to identify the character of the object being imitated. Visualization of the investigation results of the imitated object parts is also obtained from information feedback from the perceived hearing. Observation of low vision children's senses can be seen in the inquiry of the behaviour of the object being imitated. Touching and seeing activities from a very close distance can capture the shape of objects based on everyday life practice. The intensity of palpation assisted by limited vision can help to find out the questions raised by researchers about the introduction of art elements. The results also depend on the frequency of the senses used to build the child's imagination. The action perspective requires close observation, researching and recognizing in a reciprocal relationship regarding information-objectives, information-control, and the compilation of various information that is known (Schurink et al, 2006).

Figure 3. Activity of kids with low vision identifying objects

There is similarity in the sensitivity aspect of people with near-blindness and totally blind in capturing information through the touching and smelling of objects that are imitated by repetition. Palpability of hands and sensitivity to smell are possible to identify the presence of objects for children who have fatal vision problems. The ability of people with near blindness and total blindness is influenced by how many questions are addressed and the affirmation of something that has been known to show something familiar at the time being.

Figure 4. Activities of people with near blindness in capturing objects at a light source

Based on observations by researchers, people with near blindness can minimize vision by taking the position of the back of the light source so that the objects formation will look vague. Functional constraints lie on the sight of objects with a background that has minimal light intensity. This makes bad perception of an object in shape, colours, strength, and position movement (Maitre et al, 2005; Flanagan., 2003; Freeman et al, 2016). The interception of imitated object information is influenced by how much lighting can be captured with limited vision in the eye of the child to be perceived as an artwork. Three-dimensional shapes can be captured by eyesight in the form of an object silhouette based on the direction and position of the light. The active routine of people with near blindness focuses on the movements of the hand palpability and the reflection of artificial objects in the position of light captured with close eyesight. The ability of touch on the imitated object helps the totally blind detect the existence of objects through its sensing system.

Active movements in tactile reach out and explore sensations of objects to recognize the surface and the quality of various information leading to intimate knowledge of reality (Montagu; 1986; Everett & Gilbert, 1991). The smell of an object they face is related to the chemical perception of an object (chemosensory). The use of the sense of smell is due to the habit pattern of visual impairment in identifying a foreign object. There is no significance of subjects with visual impairment more superior in discrimination and identification of feelings (Majchrzak, 2017; Smith, 1993). It is possible to have repetitive training and routines so that it can be said to be a spontaneous self-movement from each individual. Although they do not know exactly how children with visual impairments are affected by the sense of smell,

individual behavior in an interaction with a given object, habitual sense of smell, is sometimes used to connect what is experienced with concrete references.

Researchers observed that there was an unwary attitude toward the existence of objects and information received through touch and hearing. The activeness of persons with total blindness is constrained by the perception of the objects they face by holding objects and influencing their environmental information from hearing and detecting smells and tastes as a means of sensitivity. Hearing sense for near-blindness and totally blind people tends to be used in compensation of the weakness of their experiences due to loss of vision (Salleh et al, 2010).

Figure 5. Activity of a totally blind person smelling the imitated object

Demonstration of three-dimensional works of art using clay material for children with visual impairments focuses on the use of techniques through the ability to touch, shape, choose, and exhibit. Understanding of people with low vision is more dominant using object vision with maximum close range. The mastery of techniques for people with near blindness and total blindness focuses on the formation of objects through the palpation of artificial objects by holding and feeling as the controller of the global formation of an object that is imitated to make art.

Clay Elasticity in the Technique and Process of Spiritual Re-Creation of Visual Impairment

Forming clay material should be done as well as playing. The chewier or more elastic, the easier it is used by the subjects. Plasticity of material can maintain the basis of working

power which is fast-drying or easily changed. Clay provides alternatives as a medium of imagination and expression. The trait of this natural material is perfect for manipulating. The advantage of clay elasticity is easy to improve in forming spatial perception and texture sensation on the surface (Yamacli et al, 2005; Elbrecht & Antcliff, 2014). The characteristics of the material can be constructed in various efforts to apply for the them using hand skills, blunt tools such as a piece of wood, plastic tools, and shape-texture accents to fruit-themed works. Specifically, regarding clay material in learning (Fox, 2012), motor skills involve muscles, shoulders, arms and fingers while playing with printing, shaping, sticking and designing construction. Various fruit object imitations can be added to clay by taking a bunch of materials, putting the material on the palm of the hand, pressing the surface of the material as you wish and forming the material perfectly. Making art elements in fruit artworks such as lines, fields, spaces, and textures as an introduction and understanding to visually impaired people can be done to maximize the plasticity of clay. The process of making art elements can also take advantage of material condition by utilizing the intensity of water.

The ability of visual impaired people to explore clay can bring out curiosity about art experiments, even the recognition of material cognition emerges from the practice of art works. This includes the nature of water, simple printing equipment, surface pads and all media used. The basic techniques of artwork such as those used in making ceramic works. John (2015) emphasizes on hollowing shapes with the technique of massaging materials (pitching), square or angular shape using slab techniques, and making the basic form of a coil (coil) for long diameter shapes. The basic development of creative techniques can give rise to the imagination of imitated objects stimulus in various manifestations of fruits such as round, oval, spiral, box, irregular shapes in the initial perception of making art. The creations present inner recreation and artistic experience based on exploring the senses.

The adhesiveness of clay material gives the sensation to the hand to try to play the fingers in a feeling of pleasure and satisfaction as a positive expression for motor development and self-maturity that underlies their lives confidence. The existence of media for creating art on the mental health of them is found in environmental conditions that make art for meaningful communication-expression. These art activities have a life sensitivity and information content conveyed. Acceptance of spirituality enriches the individual's inner world through empathy and dialogue with the environment concerned (Güler, 2019).

The Artwork Quality in the Activities of Persons with Visual Impairments Using Clay

Artworks with clay material for the visually impaired people are related to the desires of copied objects types. Freedom of ideas and opinions is applied according to the child's taste to build motor, interaction and confidence in expressing art (Papadopoulos et al, 2013). The opportunity to express oneself for visual impairment without concerning their difficulties can

certainly develop self-esteem and inspire further behavior. The creativity of work and the level of perfection are adjusted to the competence of every visually impaired person. Aesthetic response based on the idea of the stimulus stage produces people with low vision to make fruit types that have the integrity of shape. People with near blindness want to make textured and complete fruit types. Meanwhile, people with total blindness try to find the type of fruit that has an attractive aroma and sweet taste.

The general description of an art creating activity is in the form of imitating, determining ways, and choosing the media character in artistic rituals. The ability level of sense and mastery of work will be different based on the vision needs of the visually impaired people. The expression of visual impairment produces complexity from the art elements such as lines, fields, spaces and textures in artworks based on the interpretation of the art principles. The theme of fruit shape was given by researchers and was adjusted to the shape and size imitated with simple working techniques. Additive and subtractive techniques produce creative works of art seen in the addition of media forms although there is still the guidance of researchers.

Shape Proportion in Mangosteen in the Work of Persons with Low Vision

The results of fine art works with three-dimensional shapes using clay material have an embodiment of the basic shape of the mangosteen fruit. The basic object equation of the fruit occurs in the character of the mangos teen made with almost the same size. Impersonation of the object's character is clearly seen on the mangosteen's skin, stalks, and petals with a balanced proportion. The unitality of art consists of a global form of fruit supported by fruit stems and petals. Three works have different symmetries at almost the same size; the proportion of works of art is balanced at a larger size but has a quite short stem, and the smaller size has a longer fruit stalk. Textures in artwork are created through line elements made with additive techniques in parts of the fruit with the emphasis of hand massage (pitching) to shape as wanted.

Figure 6. Mangosteen artwork created by people with low vision

Artwork Variants Harmonization of People with Near Blindness

Fruit-shaped artwork with clay material made by people with near blindness consists of four types: water apple, snake fruit, guava and apples in the making works technique. Some oval shapes were made by pitching and texture techniques of point-depth grooving. Fineness of the surface of the work was made on the type of water apple and apple, but the results were not perfect and had the impression of fruit skin texture. Texture elements in artworks had lines using tools in the form of fused objects, but it seemed still rough so that the identification of textures in fruit works had a tenuous line density. The work size was close to its original form in the tactile sense of touching system. Exploration of the form of work was produced in various techniques (slab, pitching and coil) that were seen in the fruit leaves and stalks patterns.

Image 5. Artworks of various fruit types made by people with near-blindness

Basic Forms Imitation in the Works of Totally Blind People

Artworks with clay have basic appearance of orange fruit. The creation technique was pitching to make the basic shape. The overall character of works of art made by people with totally blind was almost the same in size and elements from people with near blindness, but the repetition of works experiences a stable quality in the lines and textures of the work. The creation of irregular lines is used as a perception for totally blind people of the copied object. The principle of tactile is an adaptation to the intensity of the line functions as a perception of the distinction of object textures made (Krivec et al, 2014). The problems here related to people with totally blind are more complex than the constraints of vision sensitivity, social psychology, and self-motivation. Art works with clay material produced generally have objects of imitated work, but the proportion and size of them only appear on a global surface.

Image 6. Orange artwork made by totally blind people

The Meaning of Art in the Complexity of Aesthetic Needs of Visual Impairment

The understanding of art for people visual impairment depends very much on the relevance and subjectivity of the material. The art is present as a self-expression in their narrow world even though they are visually impaired. Their knowledge and imagination cannot be limited by the perspective of beauty from the sense of sight. Art is not limited to a narrow scope, the manipulation of people who are aware of making the whole concept of art disappear. Also, the perspective of beauty is not inherent in the concept of art itself.

The simplicity of art is an inner benefit outside of the matters of beauty and skill alone. The process of art creation is sticking out because of the primitive needs of limited vision. The art approach, especially handicraft, is a contemporary visual culture that has the handmade qualities of sensory functions in an intensive exploration of the meaningfulness of human visuality (Klanten, 2012). This means that art is positioned as disinterestedness, universality, essentiality and purpose of its performers.

Clay treated in an artwork by visually impaired people is too narrow when peeling the beauty of material, but aesthetic studies themselves must be returned to something that can be absorbed by the five senses. During the art process, they represent themselves in capturing the events of their experience to be known by a special perspective. Artwork with clay material is a means of expression-communication-actualization in emotional space where procedural art is related to the memories and feelings of the past contained in it as a central

window of non-verbal representation. Art with clay material is close to nature which can be related to aesthetic sensitivity when shaping and reducing the work material. The reflective process of art activities occurs because of the existence of raw materials leading to finished materials. The individual is the focus of the art creation process and the results are worthy to be studied or followed up (Catterall, 2005).

Conclusion

In the data searching phase of the visual impairment project through initial literacy, perception, and regulation of universal forms, the internal intellectual construction and the construction of metaphorical and imaginative ideas as well as creations are involved in aesthetic growth. With further understanding, the arena of visual-spatial learning, as enhanced by the learning of art and design, can find more inclusion in disability education (Lerner, 2018). The activity of creating art for the visually impaired participants in this study was inspired by the creation of artworks from the fruits types that are categorized based on form, aroma and memory. The process of creating art using clay material by visually impaired participants has an intensity of sensitivity to individual characters in terms of physical needs.

The process of transferring knowledge and skills from the production of art experiments requires a special approach based on inquiry through the initial question of artistic creation, namely, the determination of criteria that involve participants in improving implementation. People with low vision do inquiry activities by groping and seeing at close range, but people with near-blindness and totally blind have similarities in capturing information through hearing and touching. The difference in perceiving for people with near blindness is an effort to maximize the direction of the light source on the object, whereas totally blind people use the smell of objects repeatedly to interpret them concretely.

The process of using the elasticity of clay material in art creation creates a sensation from art elements in the power of imagination and expression to manipulate objects. Motor skills are needed by the subjects through printing, forming, sticking and designing object construction. The artwork from clay is a combination of techniques and material approaches based on feelings of pleasure and satisfaction. The quality of artwork produced by persons with low vision lies in the proportion of shapes, while persons with near blindness is based on the harmonization and quantity of works of art. Meanwhile, persons with total blindness prioritize characteristics on the imitation of the object's basic forms. From the various processes and works, visually impaired people express an emotional outflow from the realization of self-actualization. The domain of the conceptual skills of the blind focuses on communication and self-direction (Andelkovic, 2017). Aesthetic skills enable the development of emotional communication skills gained from the modality of the participants.

Further research can possibly lead to the implementation of art works in the form of contemporary art exhibitions based on the psychology of the participants who introduce the characteristics of installation works in a wider community.

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