

# STRENGTHENING THE TECHNOLOGY AWARENESS ON ART LEARNING TO IMPROVE CREATIVITY OF STUDENTS OF PROSPECTIVE 21<sup>st</sup> CENTURY TEACHERS

Zulfi Hendri<sup>1</sup> and Endang Nurhayati<sup>2</sup>

<sup>1</sup>Yogyakarta State University, Yogyakarta, Indonesia, ✉ [zulfi\\_hendri@uny.ac.id](mailto:zulfi_hendri@uny.ac.id)

<sup>1</sup>Yogyakarta State University, Yogyakarta, Indonesia

## Abstract

The emergence of industry 4.0 automatically influences Educational Institutions including the Fine Arts Education Study Program which has a curriculum framework that prepares prospective educators of fine arts. The foundation of current curriculum tends to rely on philosophical, social, and artistic aspects. If art education activities still maintain the current methods which strengthen the taste of aesthetic by only orienting in the manual process, it will lose its role while the technology develops very quickly. These conditions must be overcome by increasing the competencies of prospective art educators with the awareness of ideas, media and techniques which emphasize on the values of creativity, imagination and innovation. This is believed to be able to give a positive impact on the ultimate goal of preparing 21<sup>st</sup> century art teachers who can support independent Z-generations.

**Keywords:** Technology Awareness, Creativity

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## Introduction

The number of study programs of Fine Arts Education in Indonesia are quite a lot, philosophically, this study program aims to prepare students who are ready to dive to become art educators in various existing schools. From the information gathered from several lecturers in various colleges of the Institute of Higher Education in Indonesia, art learning apparently is still manual. The reason why it is still using the manual method, is of course, many aspects are considered and the artistic values that are behind the manual methods.

In general, the curriculum compiled by art education programs emphasizes the competency of fine arts and learning. Fine art is packaged in aesthetic frames, art criticism, painting, sculpture, and other art branches. Whereas for the sake of learning art at school, it is arranged through courses in art education curriculum studies, art learning strategies, learning media and so on. The concept is very complex on one hand, but on the other hand it is less professional. This is because the curriculum is too rigid with learning that is only oriented to the process of feeling and manual ways and far from the demands of the all-tech era. This certainly has an impact on the lack of competence of graduates who will become teachers in the 21<sup>st</sup> century.

The current of globalization with the presence of 4.0 revolutions, disruption era and millennial generation is a condition that cannot be avoided. Teachers as educators including art teachers besides being good motivators at school, now must have good competence in the field of science and be friendly with technology. For this reason, the Fine Arts Education Study Program must inevitably rise to think about and act quickly to adjust the curriculum to include digital literacy in all courses. By integrating technology into fine arts courses, it is very accommodating for graduates who are ready to work.

## Fine Arts Education

The context of art cannot be separated from the work itself. Because art can be seen from the work produced. Art work is a visual form that is packaged logically and creatively. As a result of the creative process, in art there are interrelated relationships and contain an explanation of the form of processes that take place within the intra-aesthetic and extra-aesthetic scope (Rohidi, 2011: 3). Through the creative process of working, the art will be moved all the strength in the human self which is oriented to intelligence. Forms of intelligence can be either fluid intelligence or crystallized intelligence. Fluid intelligence is related to reasoning skills or abilities that are influenced by the experience of learning art, while crystallized intelligence relates to the ability to analyse knowledge acquired in nature. Thus it can be believed that in fine

arts there are adaptations that come into contact with various creative forms at the personal level and a cross between thinking, imaginative, and technology as part of progress. This is the component in art education.

Art education in 1899 in the United States through the National Education Association (NEA), professional educator associations have set goals for art education including fine arts namely; (1) developing appreciation for beauty, (2) encouraging creativity, (3) developing visibility, (4) helping to develop reasoning skills, (5) preparing children who have skills. The aim of art education has a clear direction which is oriented towards preparing children who are creative, innovative, and productive and always open to the advancement of the times. This means that art education is not allergic and the presence of technology provided that it is still in the framework of building complex intelligence and supporting progress in all fields.

So far, art education seems to be oriented only to building aesthetic awareness and practicing how to draw, paint and make sculptures. Whereas in art education as described above, learning about fine arts does not merely speak in the aspect of aesthetic recognition and creating paintings, sculptures, or other fine art works. In the realm of aesthetics, indeed art learning introduces students more to the awareness of objects of beauty and forms of art. But in the production of artwork there are actually aspects of thinking and creative aspects that are less highlighted.

### **Thinking Aspect.**

Thinking in art remains the same as other people's forms of thinking which is a fairly complex cognitive activity. This means not only seeking satisfaction to express feelings only, but also solving problems. Thinking about art involves various forms of mental symptoms such as sensation, imagination, perception and memory. Thinking in art involves the use of symbols. Symbols used in general thinking are language or word symbols, and image or image symbols (Walgito: 2004). Language symbols and image symbols in the thinking process are related to information in memory, especially long-term memory (Walgito: 2004). Artistic thinking characteristics are random, intuitive and holistic, detailed, involving awareness related to feelings and emotions. The thought process begins with seeing, experiencing something, and more extraordinary thinking about something that is surreal. This, of course, is not just there, but in the process of art education must be realized in explicit texts so that the values of expensive thinking can be appreciated in an academic context.

### **Creative Aspect.**

Creativity is a series of actions that people do by using their mind to create new thoughts from a collection of memories that consist of various ideas, information, concepts, experiences, and knowledge. This understanding shows that creativity is characterized by the creation of something new from the results of various ideas, information, concepts, and knowledge that is in one's mind. Creativity can also be seen as a process used when an individual brings or raises a new idea. The new idea is a combination of previous ideas that have never been realized or are still in thought. Creativity can also mean problem solving and development of something that already exists (Torrance, 1988). It starts from the process of feeling and observing a problem, making a guess about this shortage (problem), assessing and testing the guess or hypothesis, then changing and testing it again, and finally conveying the results. In solving problems, individuals work on and combine mental elements until a "configuration" arises. This configuration can be in the form of ideas, models, and actions accompanied by motivation. This process is accompanied by feelings and emotions of someone who is a supporter. This is in line with Sternberg's (1988) thought of creativity, namely the typical meeting point between three psychological attributes, namely intelligence, cognitive style, and personality. Thus, someone is said that he has a high creative level if he is able to provide many possible answers and ways that are of true value. To know someone's creative thinking ability, can by giving open or open ended questions. Because open ended problems can stimulate creativity in combining ideas in several ways, so that someone can produce a new idea in solving the problem, including in realizing it in.

Art education that prioritizes working as a learning must contain creative aspects. The form of creativity in learning art is very complex, it can be seen from the process of work. Creative means the ability to produce new ideas that can be imaginative or sentimental. Creative can also be unique. "Creative action is an imposing of one's own whole personality on the environment in a unique and characteristic way" (Clark Moustakis 1967) and (Hulbeck, 1945). This means that creative action arises from the uniqueness of the overall personality in interaction with the environment.

Creativity in the work of art is very visible in the experience of expressing and actualizing individuals who are integrated between themselves, nature, and others through visual forms and integrated techniques. Another thing about creativity that appears in the form of art is the ability to create something that is innovative, inspiring, and visionary (Harris, 2006: 73).

## **The Strengthening of Technology in Fine Arts Education**

Art education has the aim of fostering aesthetic awareness, multiplying the creativity of students, and slowly but surely will lead to the birth of innovation. To achieve these objectives, there are three domains of art education studies, namely; taste, processing ideas / ideas, and processing techniques. This aspect of art learning has been well integrated so far, but it must change according to the development and needs of the times.

During this time the techniques of art learning, especially in subjects drawing shapes, illustrations, painting, sculpting, and drawing models are still using manual techniques (drawing by hand). The learning process starts from making a sketch / design with a strong or pencil to be completed later by giving shading or colouring. The technique (wet or dry) chosen for the completion of the work, the student uses a brush, a palette knife, and a spatula and emboss for the statue.

The development of technology for the sake of art education has been many and has long existed. The technology in question is drawing computer software. In addition, since 2010 there have been known the existence of printing tools for canvas, even the presence of revolution 4.0 has introduced 3D printers. Thus, it is very appropriate to add contemporary technology to the perception of art works such as painting, making graphics, and making sculptures. Although the debate about the values of spirit possessed by manual methods is different from the use of technology.

The question is what kind of technology and how to integrate it into learning the practice of creating art works? To answer this question, we again take a glimpse of the stages in learning fine art practices. In general, the learning of art practices by students is introduced to the knowledge of related material and the process of work. The process of creating fine art there are at least three stages that must be passed; (1) Inception of an idea, is the initial stage of an effort to find ideas, find sources of ideas, inspiration. (2) Elaboration and refinement, namely the process of refining, developing and stabilizing ideas into a pre-visual picture (sketch) to be realized into concrete terms, (3) Execution in a medium, is the final stage of the process of visualization with a medium which is a means of visualizing the idea becomes a work of art (Chapman (1978: 45).

In stages one and two, students carry out the process by reading conceptual and visual, doing buzzing by writing a number of ideas (in certain cases ideas can develop during the practice process), and then creating an initial sketch. This competence applies to the practice of fine art practices both manual and technological. The addition of competencies and changes that must be received and implemented in art learning in the art subjects for the preparation of 21<sup>st</sup> Century teachers is related to the use of technology in the form of computers by utilizing drawing software.

Computer software currently available for the benefit of working on 2-dimensional art (painting, creating illustrations, reporting forms, and drawing models) is CorelDraw, Adobe Photoshop, and others. By adding the competence to operate this software in each course, of course students can paint, make illustrations, draw shapes, draw models with computer medium. Even so, what is meant is drawing with a medium computer not exactly the same as the methods of professional work in other computer fields.

The initial needs of the students of art education study program to be able to paint and draw illustrations with computer medium are of course the addition of competencies related to the ability to use drawing computer software as appropriate. After that, competencies related to the work of fine arts use tools with various techniques. As is well known, other than having a good idea in art, students must have the ability to use the tools to work fine art. With these tools such as pencils, brushes, and pallets, students will be able to draw humans, natural objects, other forms according to ideas. This will also apply in working using computer media. The tools in the drawing software are basically borrowing tools that are used to draw manually. As for sketching painting, there is a fine brush, on the computer there is also a tool in the form of a brush whose size can be adjusted according to needs. Likewise, with other tools such as pencils, computers also have these tools. This means that the tools used are the same, but the methods of use are different.

In connection with the differences of opinion about the process of feeling to work art manually with a different computer, the answer is yes. But the tendency of manual methods used by artists to integrate with taste is not removed. All that will look the same if the characteristics of the equipment in the computer are well known and mastered. As an example we give different brush pressure to produce thick and thin lines, smooth and rough with brushes manually. With computer techniques this is certainly different, because our tools have a mouse as an extension to operate the device on the computer. Even so, the sense of taste in the sense of the process of feeling to produce a certain form by granting it on the canvas fabric and the mouse on the computer screen is the same. Both of these techniques also have advantages and disadvantages. Manually, the resulting painting has a high value compared to the results of the painting which is a print on canvas. This factor is due to the relationship between humanity values that exist in the art work as a taste processor, the owner of ideas, and with the techniques used by humans as connoisseurs of art works. But the

advantages possessed by computers as human discovery technology can produce objects by utilizing various aesthetic menus that are well programmed. So that by making use of the various menus, it is possible to find unhappy aspects of aesthetics which are ultimately served to be used as a reminder of the desired artwork.

The use of computer technology to work fine art is not really the use of tools to replace manual tools in general, but with the use of computers as a means of creating fine art, it is very possible for the artwork to be processed continuously before printing and exhibiting. Because the cutting process, adding and blurring to some objects is very easy and possible once in a fast time. Although this can be done manually, it will produce different work.

Working with art like painting using Adobe Photoshop software is certainly not a final form. The process of working using a computer can be used for the initial process (creating sketches) and the basis of the work. Sketches of drawings or bases of paintings produced by a computer can be continued by manual techniques after being printed on canvas. This means that collaboration or complementary techniques can also be done. Thus the things that are the nature of creative findings can be achieved well.

## Conclusion

The preparation of the needs of current and future art educators (teachers) must be done along with the fourth industrial revolution (i4.0). The Fine Arts Education Study Program which has the role of producing teachers in the art field immediately changes and develops the learning content of all subjects in the art field to increase computer competence. Computer competency needed is the ability to use software related to art needs such as CorelDraw and Adobe Photoshop. This competence emphasizes the techniques needed in the process of art work. The addition of these competencies is not replacing the manual techniques that have been used so far, but the ability of computers is used to enrich ways to produce works of art without reducing taste. With the addition of these competencies, aspects of the Fine Arts Education that have existed so far will feel richer and more sustainable with the needs of various fields in building a creative, innovative and prosperous nation. Through creative and innovative 21st century art teachers producing fine arts students who are ready to be independent and ready to use for the workforce.

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