The development of creative instructional program for architecture studio course

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The development of creative instructional program for architecture studio course

H I Dewi[1*], Yufiarti[2] and D N Musnir[3]

[1]Education Technology Magister Program at University of Muhammadiyah Jakarta Kh. Ahmad Dahlan Street, Cirendeu, Ciputat, SouthTangerang15419
[2]Graduate Program at University of Muhammadiyah Jakarta, Rawamangun Muka Street, Jakarta 13220
[3]Graduate Program at Jakarta State University, Rawamangun Muka Street, Jakarta 13220

*happy.indiradewi@gmail.com

Abstract. This purpose of this research to develop Creative Instructional Program for Architectural Studio Course. It focused on developing an efficient and effective instructional program that students enable to think in creative, clear and independent manner. Borg and Galls Research & Development method was chosen for this research, whereas M. Atwi Suparmans Instructional Development Program was applied on the overall program. Data collected from observations, interviews, documentations, and questionnaires was used to analyze the effectiveness and feasibility of this creative instructional program. This program has been implemented under instructional modules and tested in a formative evaluation to prove its effectiveness by comparing pre-test and post test results. The results of this research are the new Creative Instructional Program for Architectural Studio, five individual modules as instructional material, the Architecture Design Process Modification and the Creative Thinking Formulation to transform an idea into an architectural work for the beginner students.

1. Introduction

The lesson of space design in Department of Architectural, Faculty of Engineering at University of Muhammadiyah Jakarta was first given to the students of second semester, in the course of Architecture Studio 1. Based on the research, the hardest process students experienced was the process of transforming idea into a masterpiece. Students' ability of early level was not adequate to solve the problems of transforming idea into a masterpiece, because the lesson of space design has not been given on previous educational level. The lecturer was the center of the learning process, however, the learning tools were not thorough, the learning system was not maximum to be the rate of the motor drive of the learning process itself, resulting an inefficient, ineffective and unsystematically learning.

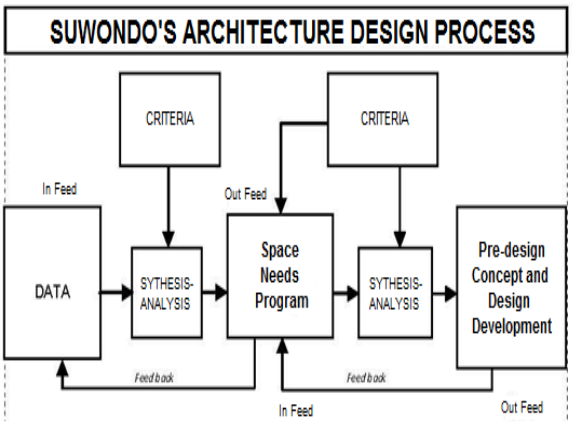

Figure 1. Suwondo's design process.

Architectural design process, uses Suwondo's Design Process. The steps to produce a masterpiece in learning Architecture are: (1) data collection; (2) synthesis-analysis data; (3) generate space program; (4) synthesis-analysis space program to generate Pre-design Preparation Concept and Design Development [1].

Some scientists stated the importance of creative thinking in the world of architecture learning. Lawson in his book of "How the Designer Think" stated the importance to think divergently and convergently for an architect to solve various design problems. How the brain works in creative thinking is that the right brain works divergently to dig ideas and see various new possibilities, while the left brain works convergently to think solely in developing ideas [2]. Kiswandono created a formulation to connect creative thinking and architectural thinking in Architecture Studio learning [3].

To expedite how the brain works divergently and convergently are, the first, mind map is a way to place information into the brain and take information from/out of brain, mind map helps to note creatively, effectively, and mapping mind [4]. Second, Biodrawing method is used to stimulate visual brain and one of the medias to utter imagination, with drawing activity which can help in developing human's brain [5]. Third, 3-dimension market study is a copy of the real object to limit various difficulties that students face, the real shade of the object can still be perceived by learners without having to reduce the real structure, so the learning can be meaningful [6].

Tjie in psychology studies and architecture found a transformatic concept, which can help someone to think and act creatively to generate new findings, with transformation method such as substitution, integration and combination [7]. And then Tji, found a way to transform ideas into a masterpiece using transformatic concept. Transformation from a concept into a design occurs slowly and can decrease a sharp bias between concept and pre-design image as design result. There are 5 steps of the transformation concept, it begins by doing observation. Second, to obtain the first finding, that is ideas. Third, establish objectives to be achieved imaginatively. Fourth, transformative ideas substitutionally, integrationally and in combinative. Fifth, product modification, and new findings would be generated [8].

Development for creative learning program of Architecture Studio 1, using design learning model based on the applied criteria for creative learning are: (1) design model that is used in course stage; (2) can develop Studio Architecture 1 course; (3) can be used for designing space practice; (4) as an object to do practices, as the main activity to develop creative thinking process.

Based on the applied criteria, from some design models that exist, the closest one to the criteria is Instructional Model Development (IMD) by M. Atwi Suparman. The concept, principal and procedure of this model have intention to help working in practical based on theoretical concepts, every step was made modest, avoiding complicated things, too detailed and which limits the creativity, and is not too abstract to be made as practical guide. Practices that follow every step of IMD are directed to developing every course, which is the responsibility for the lecturer [9]. Creative learning requires

creative lecturer, and the students can develop their creativity, to create new things according to data, information and elements that exist, so that students have the ability to think in high level and is hoped to have the ability to create a masterpiece which is obtained through their knowledge and experiences [10]. Next learning components, using system to reach learning objectives. System is being led by learning components which are linked and interacted to reach objectives. These components are objectives or competency, material, method, media, learning strategy and evaluation [11].

In this research, a learning program has been developed which used creative thinking as the method of Architecture Studio 1 course. The rationale is creative mindset can generate creative behavior, creative behavior leads to produce creative masterpiece. The problem of this research is how to use creative thinking method as learning strategy for learning program of Architecture Studio 1 course.

2. Research methodology

This research is a study of a development in educational field (*Educational Research and Development*). This research was held in Architecture Studio 1 class, the consideration in choosing the course was because the course is one of a whole group of main courses of Department of Architecture and is the basic knowledge to tiered work proficiency (Architecture Studio 1 to Architecture Studio 6).

The research took place in Department of Architectural, Faculty of Enginering at University of Muhammadiyah Jakarta. The time of the research was conducted for two years and six months. Subject of the research were 49 (forty-nine) Architecture Students of Faculty of Engineering at University of Muhammadiyah Jakarta, who chose to take Architecture Studio 1 course.

The collected data are quantitative data from *posttest* and *pretest*, analyzed data with t test to see the effectiveness of the program after following creative learning program. Qualitative data from the result of literature study, document study, observation, interview (to students, colleagues and the experts). This data was analyzed by describing narratively, *display* data and were concluded. Validity test data with credibility test used triangulation from 3 (three) colleagues and 6 (six) experts (in design learning field, creative architecture field and media field).

3. Result and discussion

The result of this research generated findings such as Architecture Creative Thinking Formula, improvement towards Suwondo's Architecture Design Process, Architecture Creative Learning Program which are full of 5 (five) Learning Module, to lead students into doing creative learning. The excess of using creative thinking formula for this learning program is that students that followed through creative learning program could transform ideas into creative masterpiece gradually and certainly.

Architecture Creative Thinking Formula, the ability to think creatively is an individual ability that students need to help the process of their thinking when they are transforming ideas into a masterpiece. If architecture students are skilled in using creative thinking ability, the students can easily be independent in creating architecture work.

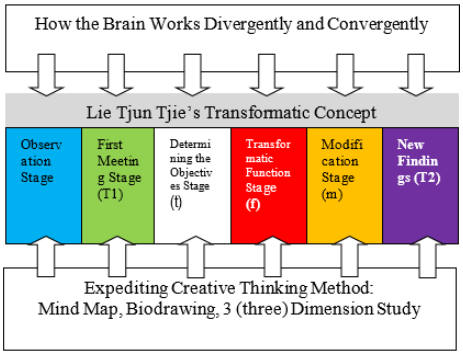

Figure 2. Architecture creative thinking formula.

This formula works in matrix of implementation in activity using Lie Tjun Tjie's transformatic formula, in every step, students were asked to maximizing how the brain works divergently and convergently. The method to activate brain works divergently and convergently, it is by using *mind map* method, *biodrawing* and 3-dimension study, in every step of Lie Tjun Tjie's transformation concept.

The Improvement of Suwondo's Architecture Design Process, The Improvement in Suwondo's Architecture Design Process after using Architecture Creative Thinking Formula, formerly consisted of 5 steps, it is now consisting of 8 steps. At first it was consisted of 5 steps, those are Data, Synthesis Analysis, Space Needs Program, Synthesis Analysis, Pre-design Concept and Design Developments. The improvement consists of Preparation, Data, Synthesis Analysis, Space Needs Program, Synthesis Analysis, Drafting Concept, Synthesis Analysis, and Pre-design (Design Development).

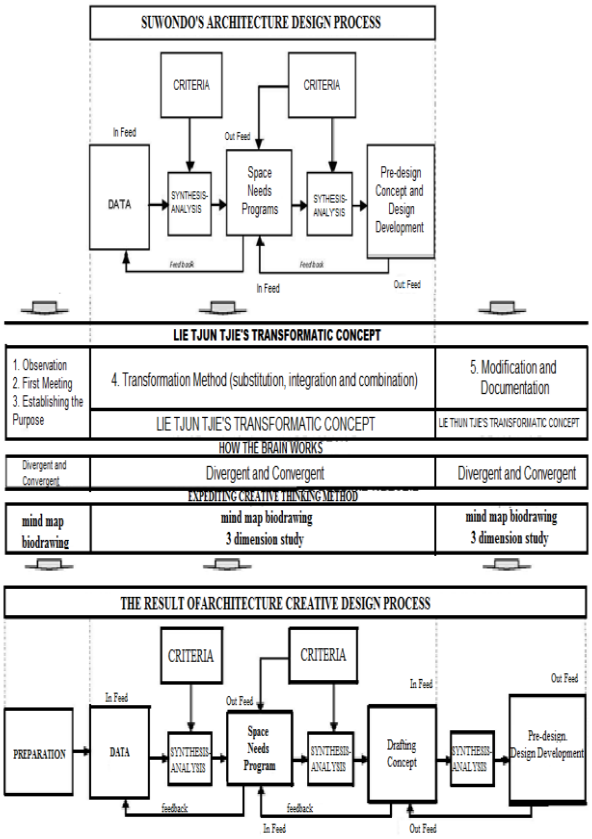

Figure 3. The improvement in Suwondo's architecture design process.

Architecture Creative Learning Program, Architecture Creative Thinking Formula was used as the learning method, the application was listed in 5 (five) Learning Module, those are Space Design Preparation Module, Transformation of Client Activity to Space Zoning Module, Transformation of Space Zoning to Mass Building Module, Modification of Mass Building Module and Documentation of Pre-design Image Module.

The result of the effectivity test of Architecture Creative Learning Program are, first, there is score achievement above the level of mastery which was set, that is 68 (B). The level of effectivity that the program has made which increase the number of students who achieved the score above 68 (B) on every trial. The climax was at field trial II, every student reached the score of 68 (B) (fig.4).

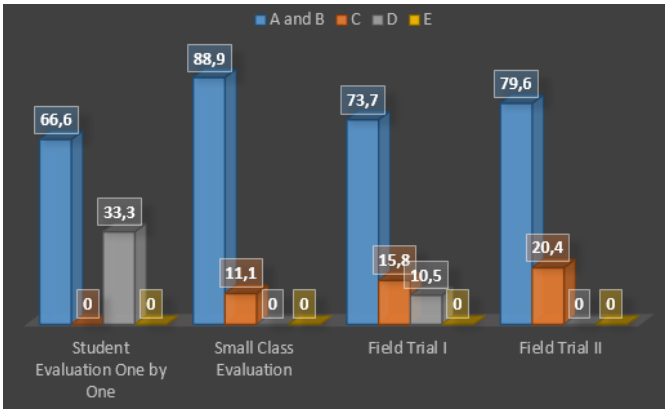

Figure 4. The achievement of the mastery level above the score of 68 (in %).

Second, score comparison between *pre test* and *post test*, effectivity of the creative learning program has showed the score rate of students' ability after the trial was given. Test Result t, showed the score *mean* between *pre* and *post test* are significantly different. The result of the trial fromthe first stage until Field Trial II, it is known that creative learning program is decent and effective and can give the students easiness to follow the learning of Architecture Studio 1 course (look at fig.5).

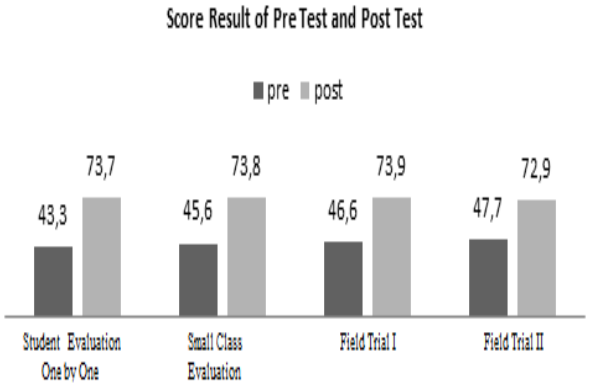

Figure 5. Graphic of score result of pre test and post test.

4. Conclusion

Based on the Effectivity Trials of Architecture Creative Learning, it can be clarified that Architecture Creative Learning Program is significantly proven to increase the result of students' learning process. Architecture Creative Thinking Learning is a learning method which used in Architecture Creative Learning Program which is really helpful in guiding the students to easily transform ideas into an architecture work. Architecture Creative Thinking Formula also gives contribution to Suwondo's Architecture Design Process development from 5 steps into 8 steps, which is proven to be the guidance of students of early level to do design process slowly but indubitably. Architecture Creative Thinking Formula is a combination of Lie Tjun Tjie's transformatic formula, how the brain works, and expediting creative thinking method.

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