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The Effectiveness of 3.1 Perspective Ruler Template for Basic Design Course

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Abstract

The Three-dimensional image has three approaches of three groups such as a) oblique b) axonometry and c) perspective. An object seen from a distance will change the size, distance, and colour of a natural object. These changes are called a perspective in the context of art. There are three ways that need to be emphasized in the perspective such as one-point, two-point, and three-point perspective and two techniques in perspective drawing that can be done using aids and based on a scale that is referred to as a measured perspective, while another technique is called perspective in the form of sketches done without using aids in other words referred to as freehand sketches. The objective of the study is to facilitate DVF1013 Introduction to Art and Design students' course in producing a measurable perspective process and to identify effectiveness of 3.1 PRT product to get accuracy of perspective image as a measurable perspective in DVI20053 Industrial Design 1 course. All respondents for this study are students of Diploma in Fashion Design and Clothing and Diploma in Industrial Design, Design and Visual Communication Department, Politeknik Ibrahim Sultan. This study was conducted in a quantitative method using a questionnaire that was analysed descriptively to semester one students as many as 72 respondents while semester two students as many as 51 respondents. Overall innovation 3.1 Perspective Ruler Template, hundred percent can be used as a facilitator in producing measurable perspectives as well as obtain the accuracy of perspectives in design sketches. In conclusion 3.1 Perspective Ruler Template very helpful in the production of quality design sketches as well as able to not waste time in producing sketches.

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Keywords: *Perspective, Sketches, Design and 3.1 PRT (Perspective Ruler Template)*

1.0 Introduction

The importance of perspective in art was realized long ago by Florentine architect cited in Myra. N, (2019) explained that perspective, simply put, is one's point of view. In terms of perspective in art, it is a technique for creating the illusion of depth and space (three dimensions) on a flat surface. Perspective is what makes a work of art appear to have form, dimension, distance, and space. In other words, it makes the work of art look realistic. This is a basic knowledge necessary in ensuring sketches that provide realistic effects and effective scenarios that need to be understood in art.

Perspective drawing is nevertheless concerned with achieving a sense of space, of depth and of the third dimension, within the limits of the flat drawing surface. According to Joseph. D'A, (2004) there are several visual principals which serve this end, such as diminution, foreshortening, convergence, shade and shadow, and so on. There are three types of perspective drawings practice by the designers in producing design drawings, namely one-point, two-point, and three-point perspectives. In drawing perspective, it is very important to pay attention to the position of the horizon line, all objects located far from the horizon line will appear larger, while objects approaching the horizon line will appear smaller.

An understanding of perspective is mandatory for all students and professionals involved with representational drawing. This include a wide variety of fields, such as: illustrations, interior design, architecture, industrial design, engineering design, fashion design even fine arts. While each of these areas applies perspective techniques for different purposes and to varying degrees of thoroughness, artists in all of them must be knowledgeable an experienced in basic perspective fundamentals and principles (Joseph. D'A, 2004). Design principles and elements are the things involved when producing a design. It can be easily seen and identified. Design principles are the rules, guidelines, philosophies that guide the production of a project. To produce a good design, we must consider every design principle as best we can. The seven elements of art are important because they clearly describe the basic nature or characteristics in a sketch.

According to Shahriman, Mohd Hariri and Zaidi, (2013), among them are lines, appearance, shape, interweaving, space, colour and value. The seven design principles used to explain the concept are such as unity, balance, emphasis, movement, contrast, rhythm and pattern. In conclusion, principles are rules that must be followed when producing a design while elements are things that help us complete those rules to get the best results. Students need to be proficient with all these design principles to enable students to apply them when producing a design (Roziana. J, 2017).

1.1 Background Study

In this study, perspective is the basic topic chosen to be emphasized in the basic module for DVF10013 and DVI20053 course and should be practiced by all Semester 1 students at JRKV to produce sketches of design products more creatively and innovatively. Students' awareness on the importance of this topic should also be emphasized to increase their understanding through accurate perspective sketching techniques and need to be mastered in supporting the production of good design ideas.

According to (Alan, 2007), the perspective is method of introducing systematic distortions into drawings to symbolise reality. Objects appear to diminish and converge as their distance from the viewer increases. The horizon is assumed to be infinite distance, so that parallel lines meet at vanish point. A perspective is a convention-in real life where many changing vanishing points act as the designer's (two) eyes and head move wander around a scene. Perspective in drawing means a method of drawing based on the point of disappearance. In a perspective drawing, there are three basic elements namely, clouds, horizon and ground surface (Shahriman, Mohd Hariri and Zaidi, 2013). The fourth edition of the Dewan Bahasa dan Pustaka dictionary states the definition of perspective is, the way of drawing (depicting) an object many more on a flat surface as seen from a place in one's eyes, a proper view (interpretation) is not something by estimating its parts in its overall relationship.

The art of constructing a credible perspective in choosing the viewpoint hence the position of the horizon and vanishing point. In a linear perspective drawing, the vanishing point is the point on the horizon line where the parallel line decreases (Helen, 2018). The viewpoint is a very important in perspective. According to Marion, 2019 viewpoint is the spot (point) from which you, the artist, is looking at (viewing) the scene. Linear perspective is worked out according to this viewpoint. There is no right or wrong choice of viewpoint, it is simply the first decision you make when beginning to plan your composition and figure out the perspective. The definition of viewpoint cited in Shahriman, Mohd Hariri and Zaidi, (2013) source of vision such as top, bottom, front, back, left, and right whether viewed horizontally or perspective. The view must be focused, appropriate, interactive, and engaging. There are several dimensions and points of view in the production of shape sketches such as front, top, side and bottom views.

Basic knowledge is required in producing sketches as preparation including the basics of design, perspective, techniques of having a point of view, techniques of measuring objects according to rate and the relationship between light, shadow, shape and color. Besides, important information that designers need to know such as design concept sketch, design concept sketching techniques, application of lines in sketches, level of sketch complexity, categories and description of sketches (Shahriman, Mohd Hariri and Zaidi, 2013). According to Anis, (2017) definition of sketch is a simple drawing in the early stages of design by showing important features without complete information. The resulting sketch design looks rough and has no design details and there are several types of sketches that are commonly used by designers to display sketch ideas. These types of sketches are scratch sketches, exploration sketches, technical sketches presentation sketches and digital sketches.

Designers use sketch shapes to explain the conceptual level of a design model in the process of idea development. This type of sketch can help design direction. At this stage, the sketches and images are more diverse and easily understood by others or third parties who see the sketch. The purpose of the sketch is to give an idea. Understanding and comparison of idea development design ideas. In the process of design development, a designer needs to produce more rough sketches or concepts quickly, interestingly, beautifully and easily understood (Shahriman, Mohd Hariri and Zaidi, 2013). Besides, details on the concept development sketch that was made at the beginning of the proliferation of ideas. A description of the elements, principles and materials used can be added to the sketch to facilitate the design process. The result of the sketch can be refined with the addition of elements such as shadow, background, rendering and braiding (Anis, 2017).

1.2 Problem Statement

Students previously sketched out perspectives by hand drawn technique to imagine the design. Student also have to trace perspective image using a frame block created by themselves. Students in reality do not like to use rulers in perspective drawings because it takes a long time to complete a design sketch and they need to think to get a perfect perspective image design process. Most of the students do not know how to transfer a perspective image accurately into a drawing or design sketches. However, a weak perspective drawing will cause the presentation of the idea to be inaccurate and fail. According to Willian F.Powell (1989) in Rozana and Rose Mardzieah, (2018) research "The foundation of all group paintings and drawings, no matter how beautifully shaded and coloured, is the correctness of perspective in the drawing of the form and the depth of the object portrayed".

Perspective is a basic and a most fundamental knowledge for sketching. It will help student to deliver the project expertly without it you will get nowhere -if you don't know the loss of perspective, the you let foundation (Olga, 2018). In explained Ahmad Marzuki Monir (2018) (as cited by Rozana and Rose Mardzieah (2018) "The process of learning the perfect design at the level of higher education institutions will expose design students to the whole design elements". This perspective sketch should be implemented by design students throughout their study period and this topic should be experts by industry designers in the future.

Sometimes students have creative ideas that can be highlighted but they failed to produce a good perspective drawing, the ideas are not accepted. Students who do not understand and not proficient in a perspective drawing will cause a deterioration of ideas and loss of confidence. This is in line with Willian F. Powell (1989) in the study of Rozana and Rose Mardzieah, (2018) "By knowing perspective, problems of proportion and the relationships of object one to another that my develop in our drawing are more easily sported. In opinion of Rudy De Reyna, (1996), "It's my firm believe that students fail in their attempts at drawing because they are unaware of eye level". To facilitate students to increase understanding and attract students in learning perspective drawing, teachers need to study from time to time the level of students' ability to receive knowledge. Similarly, the ability of students in the product construction process also needs to be measured so that it is in line with the allotted time. Students' skills in drawing product ideas should also be taken into account. This is because almost every chapter in the Design Technology subject requires a sketch of the students' initial ideas before a project is developed (Sahaat & Mohamad Nasri, 2020).

1.2 Research Question

The purpose of this study is to make a detailed study on research question that is, What and why the innovation product produce for Diploma in Fashion Design and Clothing and Diploma in Industrial Design students?

1.4 Research Objective

To facilitate student of Introduction to Art and Design course in producing a measurable perspective process. To identify effectiveness of 3.1 PRT product to get accuracy of perspective image as a measurable perspective in DVI20053 Industrial Design 1 course.

1.5 Significant of study

This study focuses on the whole semester one in Diploma of Fashion and Clothing Design students where perspective drawing is one of the topics that need to be studied in Introduction to Art and Design course in semester 1. While for this perspective sketch is also used by Industrial Design students from as early as semester one to the final semester. 3.1 PRT is main topic of perspectives learned including 1-point perspective, 2-point perspective and 3-point perspective techniques to create 3D effects on sketches and designs. This topic needs to be emphasised for the students to be expert, accurate and quick to produce perspective sketch.

2 Methodology

This study was conducted in a quantitative method using a questionnaire that was analysed descriptively to semester one students as many as 72 respondents while semester two students as many as 51 respondents. Overall innovation 3.1 Perspective Ruler Template, all can be used as a facilitator in producing measurable perspectives as well as obtain the accuracy of perspectives in design sketches.

3 Findings

The following is a breakdown of the findings according to demographic data that uses the score interpretation table to identify the effectiveness of the use of innovative products 3.1 PRT in producing sketches and designs in the Department of Design and Visual Communication.

Table 1: Distribution of demographic profiles of DFP respondents by gender for Introduction to Art and Design course.

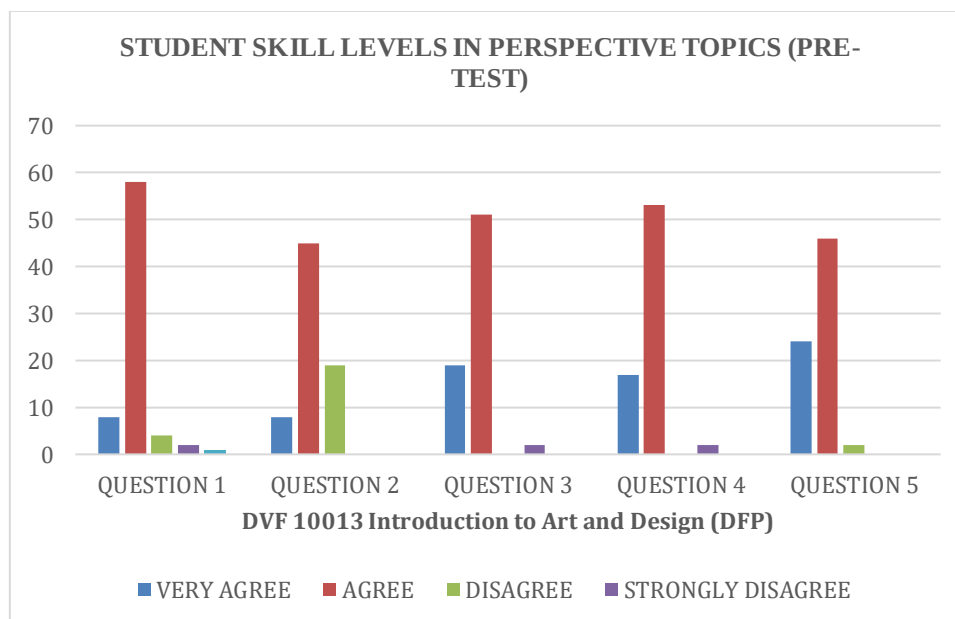
Gender	Frequency	Percent
Male	18	25
Female	54	75
Total	72	100

According to table 1 above, it is found that the number of male respondents is 18 people (25%) while the number of female respondents is 54 people (75%). These findings told that the female respondents are more than the male respondents and the difference of the respondents between the two gender is 36 people which is 50%.

Table 2: Distribution of demographic profiles of DRI respondents by gender for Industrial Design course.

Gender	Frequency	Percent
Male	29	57
Female	22	43
Total	51	100

According to table 2 above, it is stated that the number of male respondents is 29 people (57%) while the number of female respondents is 22 people (43%). These findings told that the male respondents are more than the female respondents and the difference of the respondents between the two gender is 7 people which is 14%.

Table 3: DFP Students Skill Levels In Perspective Topics (Pre-Test)

Results of the study through Table 3 show that DFP students choose a high percentage of agreed items for all questions. Question one recorded the highest percentage is 80% representing 58 respondents for the statement, "Perspective is an important basic topic in module DVF10013 Introduction to Art and Design and DVI20053 Industrial design 1".

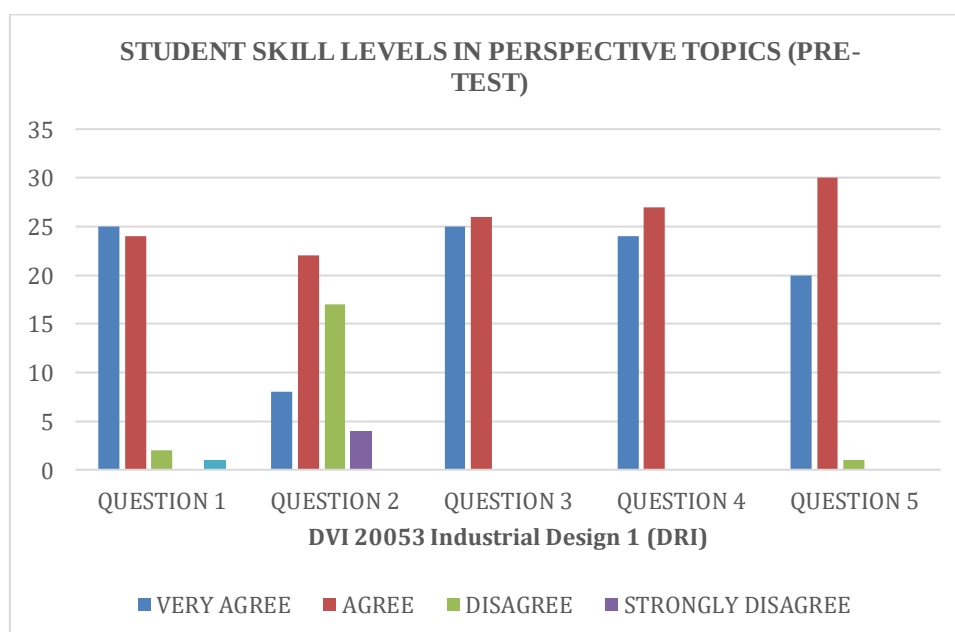
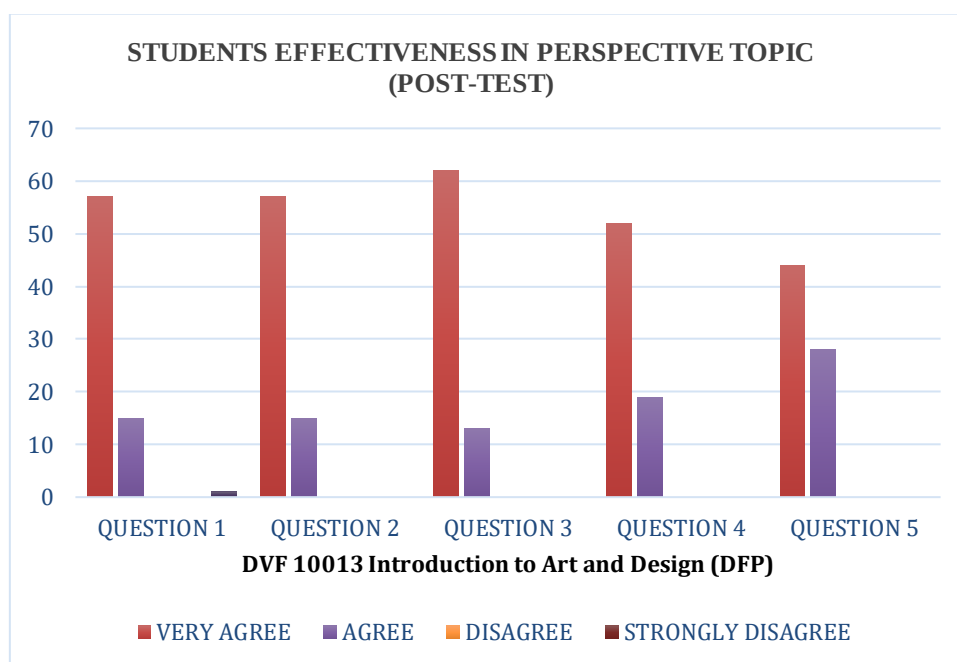
Table 4: DRI Students Skill Levels in Perspective Topics (Pre-Test)

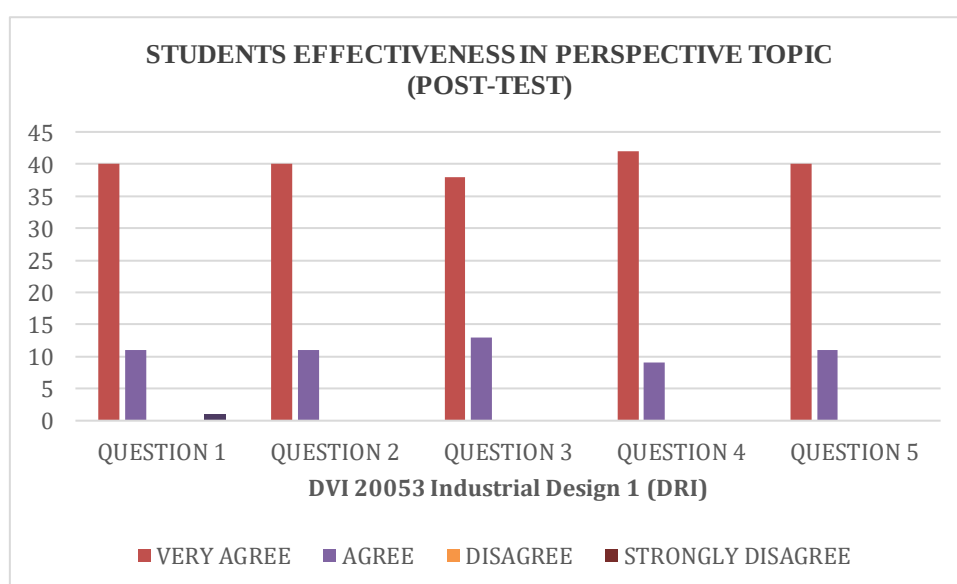
Table 4 show the results that most DRI students has chosen the items very agree and agree for statement one and statement two. Question five recorded the highest percentage is 59% representing 30 respondents for the statement, "A good design sketch can speed up the process of creative ideas in design". Question two for the statement, "Perspective is a topic that is difficult to understand and controlled" the percentage is quite high that is 33% representing 17 respondents stated disagree with the statement.

Table 5: DFP Students Effectiveness In Perspective Topics (Post-Test)



From results of the study from Table 5 show that all respondents very agree and agree with the use of innovative products 3.1 PRT can improve the level of students' skills in the topic of perspective in producing good sketches and designs. The highest percentage for question three is 86% representing 62 of respondents from DFP students for the statement, "I can sketch easily and quickly using 3.1 PRT in improving the quality of sketch design".

Table 6: DRI Students Effectiveness In Perspective Topics (Post-Test)



Results of the study through Table 6 show that all respondents very agree and agree with the use of innovative products 3.1 PRT can improve the level of students' skills in the topic of perspective in producing good sketches and design. The highest percentage for question four is 82% representing 51 of respondents from DRI students for the statement, "I can easily sketch in various vanishing point techniques found on 3.1 PRT product template"

4 Discussion and Recommendation

As for discussion, students of Jabatan Rekabentuk dan Komunikasi Visual are very satisfied with the innovative product 3.1 PRT (Perspective Ruler Template) in producing sketches and designs that save more time, can improve accuracy and facilitate students as well as improve students' abilities of DFP and DRI in perspective drawing and accelerate the generation of student ideas. The researcher believed there are many alternatives to other lectures and designer to come out in the future that is more varied to attract students' interest in teaching and learning. Producing the variety of sizes on the product and also for multifunctional concept to make it more interesting and easily. In keeping with the latest technological developments, product 3.1 PRT is recommended to be widely marketed not only to higher education students but also can be used by secondary and primary school students in art and technology design (RBT) courses. According to Shahrman, Mohd Hariri and Zaidi, (2013), notes that "Industrial designers play an important role as a trigger for ideas in the production of designs for the desired design style of an organization". Besides, 3.1 PRT product is a facilitator in solving problems through the old method of drawing perspective.

5 Conclusions

In conclusion, this study can help researchers introduce facilitator methods in teaching and learning on drawings and sketches of measured perspectives focused on the quality of sketch at a prescribed level of detail. Besides, the product approach 3.1 PRT used ensure the skills of JRKV students to become expert on topic of perspective drawing in preparation for the next level. In addition, this product assist students understanding in perspective quickly, accurately and effectively. This 3.1 PRT can also assist facilitate the teaching and learning of lecturers using demonstration techniques in addition to successfully attracting students with the way and method of its use.

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