CONTEMPORARY EXPLORATION OF SOCIAL SCIENCES INQUIRIES WITH NEW APPROACHES IN THE POST-PANDEMIC ERA

1

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Dr. Md Ruhul Amin Sardar
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CHAPTER 2

Effectiveness of Project-Based Instructional Models for Shop & Store Interior Design Courses, Faculty of Art and Design Universitas Trisakti

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ABSTRACT

This study aims to increase the final grade in the Shop & Store Interior Design course for students of the Interior Design study program, Faculty of Art and Design, Universitas Trisakti. This research is based on the acquisition of scores for the last 5 years in every even semester, from the 2017/2018 Academic Year to the 2021/2022 Academic Year. The existing conditions are known to be that almost all students experience difficulties in completing assignments in the form of Portfolios properly and correctly, on time and representatively. This study refers to The Dick and Carey Instructional Model up to the ninth step combined with the John Larmer Project-Based Learning Model from the Buck Institute for education in the sixth step and the Concept of Interior Design Planning, with research subjects namely Interior Design students at the Faculty of Art and Design at the University Trisakti. Experimental research was carried out through expert validation, including: Learning Design, Media and Teaching Materials and was carried out on students by conducting a Pre-Test and Post-Test 'One to one' test with 3 students, Small Group Trial with 9 Students, Trial field with 15 students and field trials with 31 students. The trial was declared feasible and effective to be developed and applied to the Shop & Store Interior Design Course so students can complete Portfolio assignments correctly, on time and representatively with a project-based approach in the design process, where students are able to think creatively, independently and collaboratively work in do: Gather information from both the literature and field surveys as 'Input', conduct a 'Process' study and analyze the information collected to determine the design concept as the final result or 'Output'. The results of this study are recommended in the form of: Textbooks, Lecturer Guides and Student Guides. Thus it can be concluded that this Project-Based Learning Model can increase students' final grades in the Shop & Store Interior Design Course.

Keywords: Project Based Learning, Design Concepts, Shop & Store

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INTRODUCTION

Shop & Store Course, Interior Design Study Program, Faculty of Fine Arts and Design – universitas Trisakti plans the interior of a shophouse in a Commercial Building, namely a Mall with a room plan of $\pm$ 150-250 m2. To make it easier for students as learners to understand the learning material provided and be able to apply and complete the progress of the assigned tasks using a project-based learning approach and the 'Input - Process - Output' design concept during the learning process. This research is based on Data for the Last 5 Years of the 2017/2018 Academic Year to the 2021/2022 Academic Year as shown in the following table:

Table-1: Average Student Score for the 'Shop & Store' Course in Odd-Even Semesters for the 2017/2018 Academic Year to the 2021/2022 Academic Year

Grade Point	Year Academic 2017/2018				Year Academic 2018/2019				Year Academic 2019/2020				Year Academic 2020/2021				Year Academic 2021/2022			
	Odd		Even		Odd		Even		Odd		Even		Odd		Even		Odd		Even	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
A	0	0	1	2.94	0	0	0	0	0	0	1	4.16	0	0	0	0	0	0	0	0
A-	0	0	1	2.94	0	0	0	0	0	0	2	8.33	1	7.14	0	0	0	0	1	3.7
B+	0	0	2	5.88	1	9.09	0	0	0	0	0	0	1	7.14	0	0	0	0	1	3.7
B	0	0	3	8.82	0	0	2	9.09	1	9.09	6	25	2	14.29	5	17.85	1	6.25	5	18.51
B-	1	12.5	4	11.76	1	9.09	3	13.66	2	18.18	3	12.5	1	7.14	6	21.42	2	12.5	6	22.22
C+	3	37.5	8	23.55	3	27.27	5	22.72	3	27.27	1	4.16	2	14.29	2	7.14	2	12.5	5	18.51
C	1	12.5	12	35.29	3	27.27	5	22.72	2	18.18	3	16.66	2	14.29	5	17.85	6	37.5	2	7.4
D	2	25	3	8.82	3	27.27	2	9.09	0	0	3	12.5	2	14.29	6	21.42	3	18.75	0	0
E	1	12.5	0	0	0	0	5	22.72	3	27.27	4	16.66	3	21.42	4	14.28	2	12.5	7	25.92
Total students	8		34		11		22		11		24		14		28		16		27	

Source: Faculty of Art and Design Universitas Trisakti, 2022

Table 1 Description:
Table 1 shows the Cumulative Grade Point Average data obtained by students for the last 5 years with the following description:

Score	Number of Student	%	Total Student	Calculation
A	2	2%	195	2/195 x 100% = 1,06%
A-	5	5%	195	5/195 x 100% = 2,56%
B+	5	5%	195	5/195 x 100% = 2,56%
B	25	25%	195	25/195 x 100% = 12,82%
B-	29	29%	195	29/195 x 100% = 14,87%
C+	34	34%	195	34/195 x 100% = 17,43%
C	42	42%	195	42/195 x 100% = 21,53%
D	24	24%	195	24/195 x 100% = 12,30%
E	29	29%	195	29/195 x 100% = 14,87%

Based on the facts in the form of value data, it can be concluded that the learning of the existing 'Shop & Store' course did not achieve the goal, namely: The student's final score was 'low'. At the four stages of the experiment which was carried out by conducting the Pre-Test and Post-Test as well as interviewing students, it was found that so far students have experienced

difficulties in doing Portfolio assignments correctly, on time and representatively because they have: 1) Are very dependent on the guidance and direction of the lecturer mentor; 2) There is no assignment progress schedule that must be completed per week and 3) There are no Lecture Handbooks and Student Handbooks.

The Project-Based Learning Model developed and applied during the learning process for the 'Shop & Store' course can make it easier for lecturers and students to complete the guidance process and assignments that must be completed.

1. MODEL DEVELOPMENT CONCEPT

The Dick and Carey learning model has 10 steps, namely:
1) Identify Instructional Objectives; 2) Performing Instructional Analysis; 3) Analyze students as learners and context; 4) Writing Performance Objectives; 5) Develop Assessment Instruments; 6) Revision of learning instructions; 7) Develop Instructional Strategies; 8) Develop and Select Teaching Materials; 9) Designing and Conducting Formative Evaluation of Instructions. In the sixth stage, the researchers combined the Project-Based Learning Model from John Larmer and the Design Process for the Shop & Store Course, Faculty of Art and Design – Universitas Trisakti.

The reasons for the researcher using the development of the Dick and Carey Instructional Model combined with the John Larmer Project-Based Learning Model and the Design Concept at the sixth stage in overcoming problems in the 'Shop & Store' course are as follows: 1) This model is able to address real needs and find solutions the most appropriate to solve the existing problem; 2) This research can produce knowledge and insight for lecturers and students to overcome problems during the learning process; 3) The recommendation of this research is to be able to produce products in the form of: Textbooks, Lecturer Guidance and Student Guidance which have expert validation values; Learning Design, Learning Media and Materials; 4) Able to motivate especially the lecturers of the Interior Design Study Program, Faculty of Fine Arts and Design - Trisakti University to innovate in developing new products that are always actual by adjusting to the times and technology and 5) Able to facilitate lecturers as mentors and students during the learning process.

1.1 Developed Model Concept

In this study, the stages of the Dick and Carey learning model were carried out up to the 'ninth step' starting from 'Identify Instructional Goals' to 'Design and Conduct Formative Evaluation of Instruction'. In the sixth step, the researcher combined it with the Project Based learning model from John Larmer and the Design Concept of the Design Concept of Interior Design 3 course, Faculty of Art and Design – Universitas Trisakti. The process and stages of this research in outline consist of 3 (three) steps which can be explained by the following cycles:
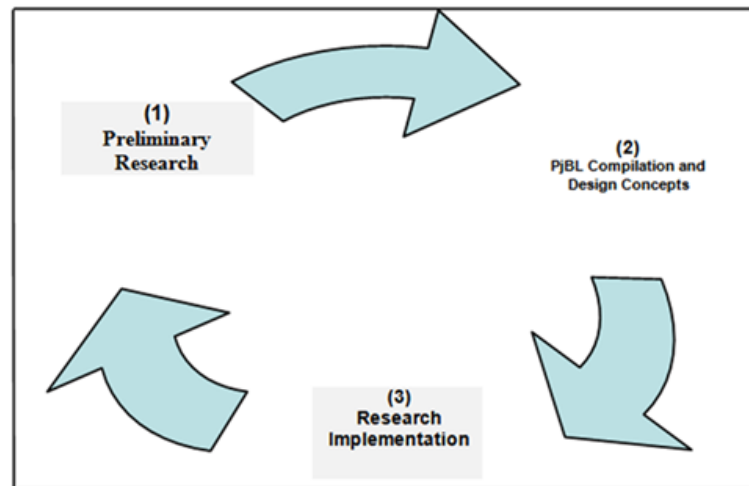
Chart 1. Circle of Research Steps

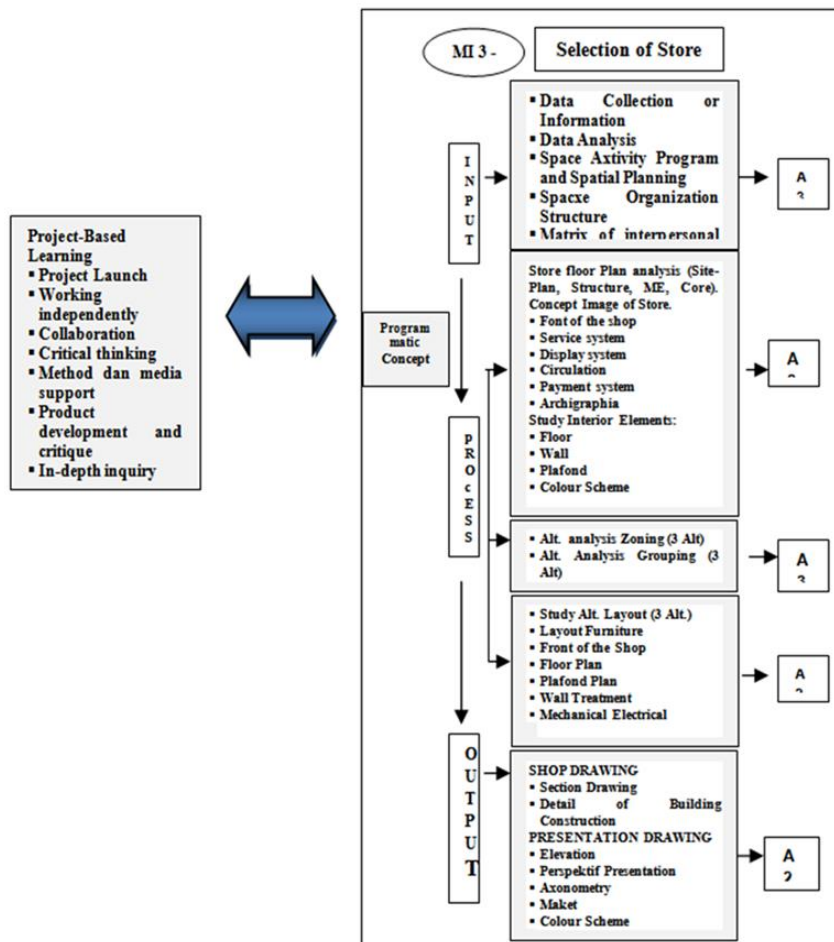From the research cycle above, the chart can be described as follows:

Chart 2. Preparation of PjBL and the Design Concept of the 'Shop & Store' Course by Asih Retno D

1.2 Chart Description

The chart above illustrates the compilation between the Project-Based Learning Model courses and the 'shop & store' course design concept during the learning process.

Research Stages

In accordance with the circle of research steps, the research stages can be described as follows:

Dick and Carey models:

a. Researchers identify instructional needs and set Instructional Objectives for the 'shop & store' course.
b. The researcher conducted an instructional analysis that described general competencies as sub-competencies of basic competencies and special competencies.
c. Researchers identify student behavior and characteristics, this is done to equate student perceptions before the learning process takes place.
d. The researcher sets the 'Shop & Store' Instructional Specific Objectives.
e. Develop an assessment tool to see the progress of the tasks students have done, including conducting several evaluations.
f. Develop an Instructional Strategy which includes 5 stages of activities, namely: 1. Pre-Instructional Activities; 2. Content Presentation; 3. Student Participation; 4. Assessment and 5. Follow-Up Activities.

   Notes:

   In the sixth phase, the researcher combined it with the project-based learning model from John Larmer and the 'Shop & Store' Design Concept course, namely: Input → Process → Output**.**

g. From combining the Dick and Carey learning model to the ninth step with the Project Based Learning and Design Concept models, at this stage the researcher develops teaching materials for the 'Shop & Store' course.
h. At this stage the researcher develops and conducts a formative evaluation by validating learning tools from experts: Learning design, Media and Teaching Materials before testing is done on students: One to one, Small Group, Field Trial I and Field Trial II.
i. Is the final stage of research in the form of recommendations in the form of products: Textbooks, Lecturer Guidance and Student Guidance

2. PROJECT BASED LEARNING

In this study, researchers used John Larmer's Project-Based Model of the Buck Institute for Education. This model has 8 (eight) important steps in involving students to be able to work independently to find solutions to solving problems in designing and planning shop interiors in commercial buildings, namely malls with tenant store areas between 150-250 m². The eight steps of the John Lamber model are:

a. Significant Content, in this case students choose the type of shop to be designed. For example, a Men's Clothing Store and making a time schedule for completing tasks according to the progress format of the tasks to be completed.

b. Students need to pay attention and know the service system and the characteristics of the products being sold. Among others: variant, type, size, design and color. Then from these data will be obtained the calculation of the number of products, product grouping and how to display. From these calculations, the shape, size and number of displays will be obtained.

c. A Driving Question, what students do is calculate the need for the amount of space, circulation of users (customers, sales assistants and store managers) on the Activity Chart and Facility tables.

d. Student Voice and Choice, students are able to complete their tasks independently after completing the Activity diagram and facility table by making a study and analysis of Zoning and Grouping.

e. 21st Century Competence, at this stage students create alternative layouts with the guidance of their supervisor taking into account user circulation, shape – size – display placement.

f. In-Dept Inquiry, after determining the selected layout students consider the zone grouping of products being sold, displays which are points of interest and circulation that occurs.

g. Criticism and revision, students choose the application of interior elements according to the image of the planned shop, the characteristics of the products being sold and complete the overall progress of the task and consult with the supervisor.

h. Public Hearings, students are able to present progress in the form of portfolios correctly, on time and representatively.

3. **DESIGN CONCEPT**

The design concept in the learning process for the 'Shop & Store' course can be described as follows:

INPUT → PROCESS → OUTPUT

Chart Explanation:

1) **Input,** is the stage where students collect various information related to store planning and design in Commercial Buildings, namely Malls with shop areas between 150-250 m². This information can be obtained from literature, lecture notes, articles, websites as initial data and field data obtained from: surveys, interviews, measurements and documentation.

2) **Process**, is the stage where students conduct a study and analysis of the data obtained, both initial data and field data adapted to the characteristics of the store and the products sold as well as applications in planning in the form of programmatic concepts to be used such as: Macro data (building location, environmental conditions and community users in the environment and SWOT) and micro data consisting of building data (site plans, building facades, structures, building facilities and building regulations); studies: Matrix diagrams according to grouping zones and bubble diagrams according to spatial organization; alternatives: Zoning, Grouping and User Circulation, layout alternatives, ceiling and floor plans, wall treatment and mechanical electrical plans.

3) **Output,** is the stage where students have made design decisions in accordance with the results of studies and analyzes made in a portfolio consisting of working drawings and presentation drawings, material and color schemes, mock-ups and axonometry.

4. **SHOP & STORE**

In planning store interiors, there are several opinions that we quote as a reference in the learning process, including: Holly Bastow-Shoop, et.all., David Mun and Lawrence J. Israel, AIA., FISP.

1) Holly Bastow-Shoop, et.all., states that:

'Visual Merchandising is anything the customer sees, both exterior and interior, that creates a positive image of the business and generates attention, interest, desire and action on the part of the customer.'

2) David Mun, stated that in designing a store there are several aspects that must be considered, including:

a) Types and characteristics of shops and products sold; b) Planning and Layout; c) Fixtures and Equipment; d) Store Front; e) Signs; f) Security system; g) Environmental services; h) Engineering services, and i) Implementation.

3) Lawrence J. Israel, AIA., FISP, states that in planning and designing a store there are things to note such as:

a) Store design is the formulation of all aspects of retail (physical environment to achieve image, operational performance and successful sales results); b) Store design is helping the client add value (the physical product through the provision and management of imagination), and c) store design is the creation of a compelling environment for competitive retail selling at profit.

From the three statements above, it can be concluded that in planning the interior of a store, there are several aspects related to aspects such as: storefront, store characteristics and products sold, layout, interior decoration, display, signs, service, comfort and security systems.

5. **METHOD**

The research design was carried out using an experimental method, namely providing learning with a project-based approach. To find out whether the learning is effective or not is done by giving a test before the learner (Pre test), and after learning is finished (Post test), if the value of the previous test is smaller than the test value after learning, it can be said that the learning process is effective in increasing student knowledge about shop & store courses as measured by student test scores. The learning process uses the Dick and Carey Instructional Model up to the ninth step combined with the Project-Based Learning Model and Design Concepts in the sixth step.

The stages of the research process carried out are: 1) Needs analysis and field observations; 2) Determine the research plan; 3) Initial Product Development; 4) Initial test; 5) Initial product revision; 6) Field trials; 7) Revision of field trials; 8) Product effectiveness test; 9) Last revision and 10) Socialization and Implementation.

From the results of this study, qualitative data were obtained in the form of: suggestions and input from experts (Learning Design, Media and Instructional Materials) and quantitative data were analyzed using the Paired sample test to see the effectiveness and feasibility of the applied product. In this test using $\alpha = 5\%$. The hypothesis proposed is as follows:

Ho : µ pre_test ≥ µ post_test (project-based learning is not effective in increasing comprehension)

Ha : µ pre_test < µ post_test (project-based learning effectively increases understanding)

The following are the results of the Pre-Test and Post-Test assessments which can be seen in the following table:

1. One to one trial tested on 3 (three) students

Students	GRADE			Value of Mean	
	Pre	Post	Final Score	Pre T.	Post T
a	55	75	B+		
b	58	78	A-	59,00	79,33
c	64	85	A		

Paired sample test results:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_test	59.0000	3	4.58258	2.64575
	Post_test	79.3333	3	5.13160	2.96273

From the table above, the average value before learning is 59 with a standard deviation of 4.58, while the average value after learning is 79.33 with a standard deviation of 5.13. It can be seen from this value that there is an increase in the value after learning.

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre_test & Post_test	3	.999	.023

The table above shows that there is a significant relationship between the pre-test and post-test values, which is shown by the correlation coefficient value of 0.999 and a sig value of 0.023 <0.05

Paired Samples Test

	Paired Differences							
				95% Confidence Interval of the Difference				Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1 Pre_test - Post_test	-20.33333	.57735	.33333	-21.76755	-18.89912	-61.000	2	.000

From the table above, the sig (2-tailed) value is 0.000, whereas in the hypothesis proposed in this study one tail, so that the sig value = 0.000/2 = 0.000 <0.05 the decision to accept Ha rejects Ho, which means that statistically and significantly the average value before learning is smaller than the average value after learning, so it can be concluded that there is an increase in the average value after learning, in other words an effective project-based learning method can improve understanding of subjects as assessed by the average score of 3 student.

2. Small group trial, this trial was conducted on 9 (nine) students with the following Pre-Test and Post-Test results:

Students	GRADE			Value of Mean	
	Pre	Post	Final Score	Pre-Test	Post-Test
1	50	70	B		
2	55	87	A		
3	50	75	B+		
4	45	80	A		
5	45	73	B	49,33	78,11
6	45	70	B		
7	50	80	A		
8	52	83	A		
9	52	85	A		

Paired sample test result:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_test	49.3333	9	3.60555	1.20185
	Post_test	78.1111	9	6.37268	2.12423

From the table above the average value before learning is 49,333 with a standard deviation of 1.20185, while the value after learning (Post tet) averages 78,111 with a standard deviation of 2.12

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre_test & Post_test	9	.678	.045

The table above shows that there is a significant relationship between the pre-test and post-test values, which is indicated by the correlation coefficient value of 0.678 and a sig value of 0.045

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre_test - Post_test	-28.77778	4.73756	1.57919	-32.41939	-25.13617	-18.223	8	.000

From the table above, the sig (2-tailed) value is 0.000, whereas in the hypothesis proposed in this study one tail, so that the sig value = 0.000/2 = 0.000 <0.05 the decision to accept Ha rejects Ho, which means that statistically and significantly the average value before learning is smaller than the average value after learning, so it can be concluded that there is an increase in the average value after learning, in other words an effective project-based learning method can improve understanding of subjects as assessed by the average student score.

3. Field trial I, this trial was conducted on 15 (fifteen) students with the results of the Pre-Test and Post-Test as follows:

Students	GRADE			Value of Mean	
	Pre T.	Post T.	Final Score		
1	40	75	B+		
2	40	73	B		
3	52	83	A		
4	55	85	A		
5	38	70	B		
6	40	85	A		
7	45	83	A		
8	40	76	B+	44,53	78,13
9	50	83	A		
10	45	83	A		
11	40	73	B		
12	46	73	B		
13	47	70	B		
14	50	83	A		
15	40	77	A-		

Paired sample test results:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_test	44.5333	15	5.34344	1.37967
	Post_test	78.1333	15	5.60442	1.44706

From the table above the average value before learning is 44.5333 with a standard deviation of 1.37967, while the value after learning (Post test) averages 78.133 with a standard deviation of 1.44706

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre_test & Post_test	15	.563	.029

The table above shows that there is a significant relationship between the pre-test and post-test values, which is indicated by the correlation coefficient value of 0.563 and a sig value of 0.029 <0.05

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pre_test - Post_test	-33.6000	5.12417	1.32306	-36.43767	-30.76233	-25.396	14	.000

From the table above, the sig (2-tailed) value is 0.000, whereas in the hypothesis proposed in this study one tail, so that the sig value = 0.000/2 = 0.000 <0.05 the decision to accept Ha rejects

Ho, which means that statistically and significantly the average value before learning is smaller than the average value after learning, so it can be concluded that there is an increase in the average value after learning, in other words an effective project-based learning method can increase the average value of students.

4. Field trial II, this trial was conducted on 31 students with the results of the Pre-Test and Post-Test as follows:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_test	41.5484	31	5.26522	.94566
	Post_test	79.5806	31	4.39526	.78941

From the table above, the average value before learning is 41.5484 with a standard deviation of 5.265, while the average value after learning is 79.5806 with a standard deviation of 4.39526. It can be seen from this value that there is an increase in value after learning.

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre_test & Post_test	31	.383	.033

The table above shows that there is a significant relationship between the pre-test and post-test values, which is shown by the correlation coefficient value of 0.383 and a sig value of 0.033 <0.05

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Pre_test - Post_test	-38.03226	5.41285	.97218	-40.01771	-36.04681	-39.121	30	.000

From the table above, the sig value (2-tailed) is 0.000, whereas in the hypothesis proposed in this study one tail so that the sig value = 0.000/2 = 0.000 <0.05 the decision to accept Ha rejects Ho, which means that statistically and significantly the average value before learning is smaller than the average value after learning, so it can be concluded that there is an increase in the average value after learning, in other words an effective project-based learning method can increase the average value of students.
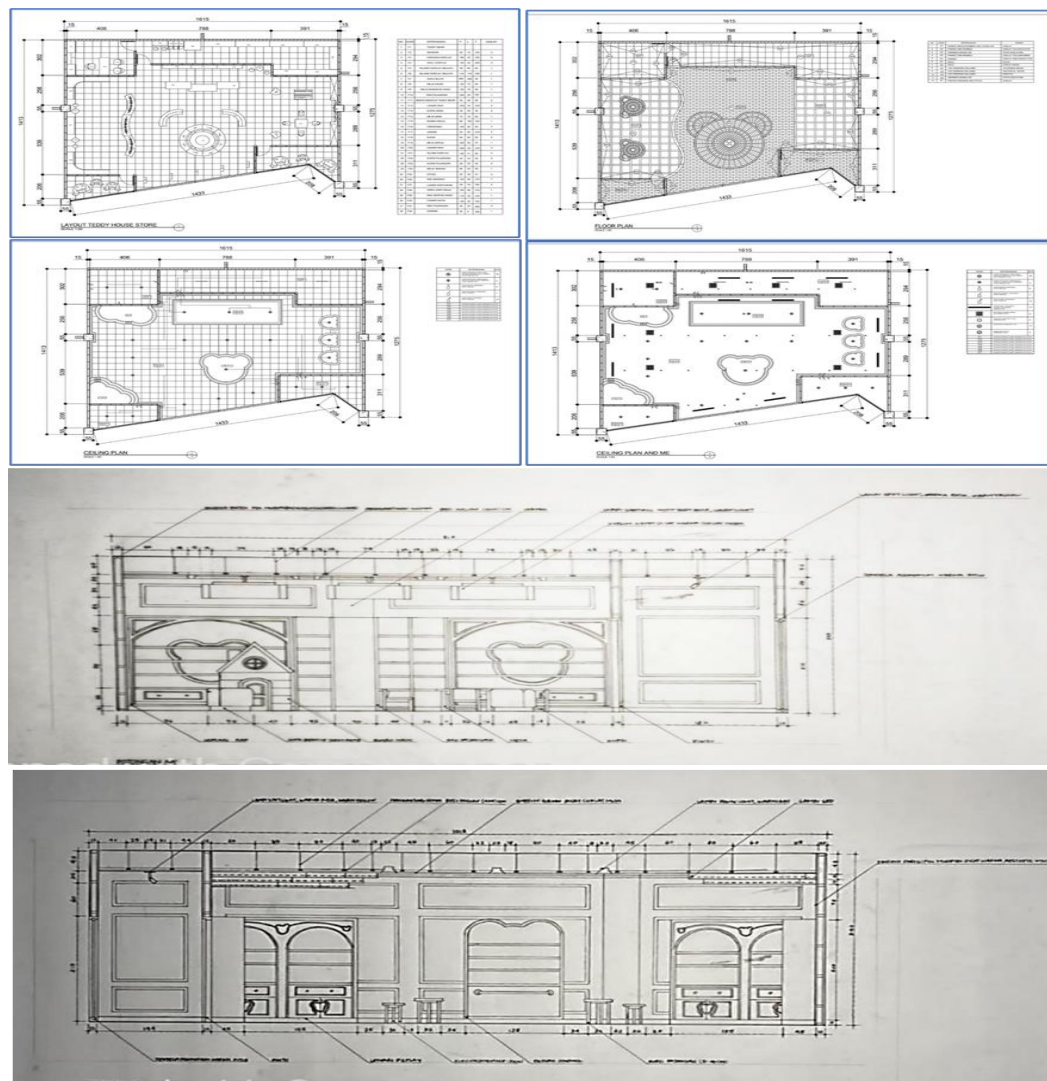
Sample Presentation Bord and Portfolio
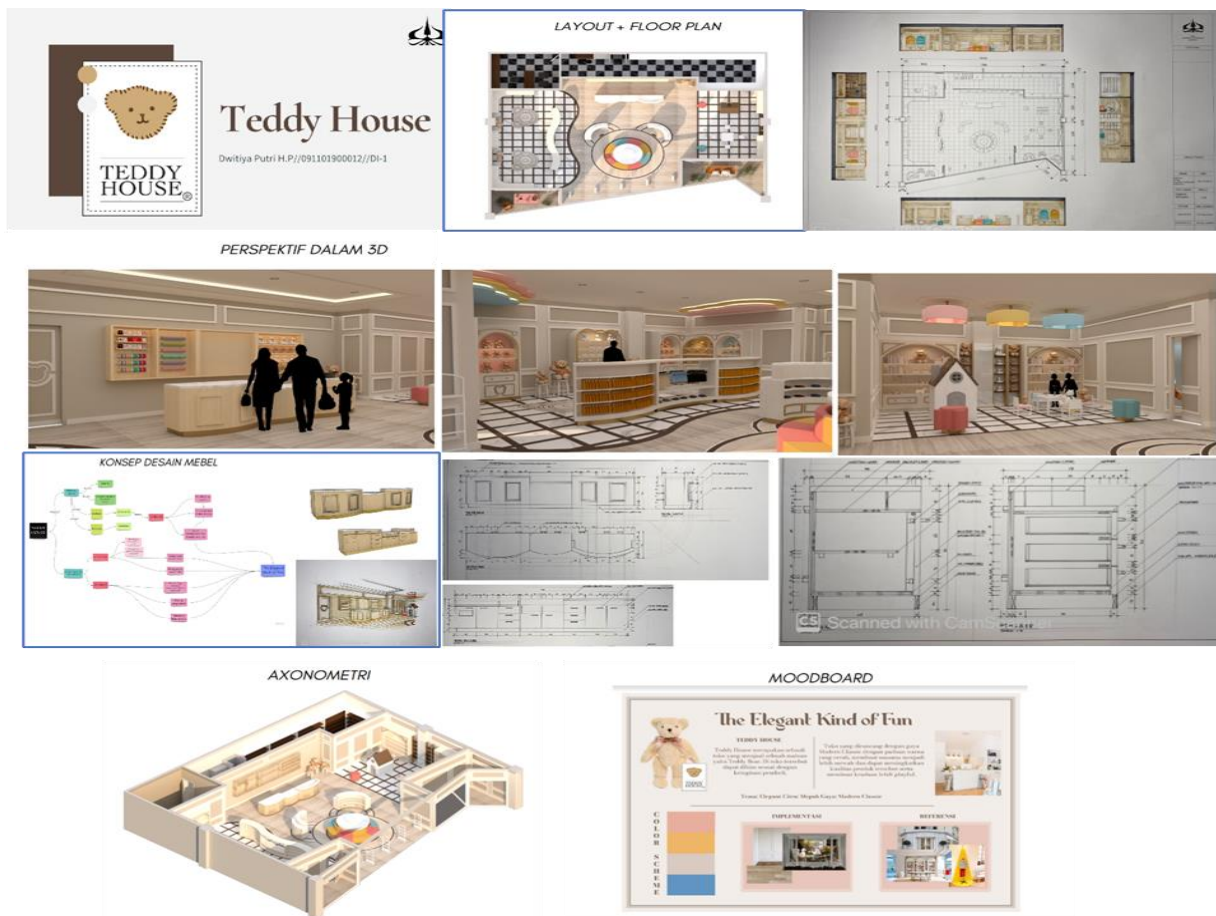Student: Dwitiya Putri H.P//091101900012//DI-1
(Presentation Board)

Portfolio – Working Drawing

Portfolio – Presentation Drawing

CONCLUSION

Based on the results of the experimental stages carried out, the results of the study 'Development of a Project-Based Learning Model for the 'shop & Store' Course, Interior Design Study Program, Faculty of Art and Design – Universitas Trisakti can be concluded that:

1. The results of this study are recommended in the form of products: Textbooks, Lecturer Guidance and Student Guidance.

2. Based on the results of the effectiveness and feasibility test of the product produced through the 't' test, it is stated that the product produced is 'Effective' and 'Decent' and is recommended for use in the Learning Process of the 'shop & store' Course.

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Effectiveness of Project-Based Instructional Models for Shop Store Interior Design Courses

by Asih Retno Dewanti

CHAPTER 2

Effectiveness of Project-Based Instructional Models for Shop & Store Interior Design Courses, Faculty of Art and Design Universitas Trisakti

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ABSTRACT

This study aims to increase the final grade in the Shop & Store Interior Design course for students of the Interior Design study program, Faculty of Art and Design, Universitas Trisakti. This research is based on the acquisition of scores for the last 5 years in every even semester, from the 2017/2018 Academic Year to the 2021/2022 Academic Year. The existing conditions are known to be that almost all students experience difficulties in completing assignments in the form of Portfolios properly and correctly, on time and representatively. This study refers to The Dick and Carey Instructional Model up to the ninth step combined with the John Larmer Project-Based Learning Model from the Buck Institute for education in the sixth step and the Concept of Interior Design Planning, with research subjects namely Interior Design students at the Faculty of Art and Design at the University Trisakti. Experimental research was carried out through expert validation, including: Learning Design, Media and Teaching Materials and was carried out on students by conducting a Pre-Test and Post-Test 'One to one' test with 3 students, Small Group Trial with 9 Students, Trial field with 15 students and field trials with 31 students. The trial was declared feasible and effective to be developed and applied to the Shop & Store Interior Design Course so students can complete Portfolio assignments correctly, on time and representatively with a project-based approach in the design process, where students are able to think creatively, independently and collaboratively work in do: Gather information from both the literature and field surveys as 'Input', conduct a 'Process' study and analyze the information collected to determine the design concept as the final result or 'Output'. The results of this study are recommended in the form of: Textbooks, Lecturer Guides and Student Guides. Thus it can be concluded that this Project-Based Learning Model can increase students' final grades in the Shop & Store Interior Design Course.

Keywords: Project Based Learning, Design Concepts, Shop & Store

INTRODUCTION

Shop & Store Course, Interior Design Study Program, Faculty of Fine Arts and Design – universitas Trisakti plans the interior of a shophouse in a Commercial Building, namely a Mall with a room plan of ± 150-250 m2. To make it easier for students as learners to understand the learning material provided and be able to apply and complete the progress of the assigned tasks using a project-based learning approach and the 'Input - Process - Output' design concept during the learning process. This research is based on Data for the Last 5 Years of the 2017/2018 Academic Year to the 2021/2022 Academic Year as shown in the following table:

Table-1: Average Student Score for the 'Shop & Store' Course in Odd-Even Semesters for the 2017/2018 Academic Year to the 2021/2022 Academic Year

Grade Point	Year Academic 2017/2018				Year Academic 2018/2019				Year Academic 2019/2020				Year Academic 2020/2021				Year Academic 2021/2022			
	Odd		Even		Odd		Even		Odd		Even		Odd		Even		Odd		Even	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
A	0	0	1	2.94	0	0	0	0	0	0	1	4.16	0	0	0	0	0	0	0	0
A-	0	0	1	2.94	0	0	0	0	0	0	2	8.33	1	7.14	0	0	0	0	1	3.7
B+	0	0	2	5.88	1	9.09	0	0	0	0	0	0	1	7.14	0	0	0	0	1	3.7
B	0	0	3	8.82	0	0	2	9.09	1	9.09	6	25	2	14.29	5	17.85	1	6.25	5	18.51
B-	1	12.5	4	11.76	1	9.09	3	13.66	2	18.18	3	12.5	1	7.14	6	21.42	2	12.5	6	22.22
C+	3	37.5	8	23.55	3	27.27	5	22.72	3	27.27	1	4.16	2	14.29	2	7.14	2	12.5	5	18.51
C	1	12.5	12	35.29	3	27.27	5	22.72	2	18.18	3	16.66	2	14.29	5	17.85	6	37.5	2	7.4
D	2	25	3	8.82	3	27.27	2	9.09	0	0	3	12.5	2	14.29	6	21.42	3	18.75	0	0
E	1	12.5	0	0	0	0	5	22.72	3	27.27	4	16.66	3	21.42	4	14.28	2	12.5	7	25.92
Total students	8		34		11		22		11		24		14		28		16		27	

Source: Faculty of Art and Design Universitas Trisakti, 2022

Table 1 Description:

Table 1 shows the Cumulative Grade Point Average data obtained by students for the last 5 years with the following description:

Score	Number of Student	%	Total Student	Calculation
A	2	2%	195	2/195 x 100% = 1,06%
A-	5	5%	195	5/195 x 100% = 2,56%
B+	5	5%	195	5/195 x 100% = 2,56%
B	25	25%	195	25/195 x 100% = 12,82%
B-	29	29%	195	29/195 x 100% = 14,87%
C+	34	34%	195	34/195 x 100% = 17,43%
C	42	42%	195	42/195 x 100% = 21,53%
D	24	24%	195	24/195 x 100% = 12,30%
E	29	29%	195	29/195 x 100% = 14,87%

Based on the facts in the form of value data, it can be concluded that the learning of the existing 'Shop & Store' course did not achieve the goal, namely: The student's final score was 'low'. At the four stages of the experiment which was carried out by conducting the Pre-Test and Post-Test as well as interviewing students, it was found that so far students have experienced

difficulties in doing Portfolio assignments correctly, on time and representatively because they have: 1) Are very dependent on the guidance and direction of the lecturer mentor; 2) There is no assignment progress schedule that must be completed per week and 3) There are no Lecture Handbooks and Student Handbooks.

The Project-Based Learning Model developed and applied during the learning process for the 'Shop & Store' course can make it easier for lecturers and students to complete the guidance process and assignments that must be completed.

1. MODEL DEVELOPMENT CONCEPT

The Dick and Carey learning model has 10 steps, namely:
1) Identify Instructional Objectives; 2) Performing Instructional Analysis; 3) Analyze students as learners and context; 4) Writing Performance Objectives; 5) Develop Assessment Instruments; 6) Revision of learning instructions; 7) Develop Instructional Strategies; 8) Develop and Select Teaching Materials; 9) Designing and Conducting Formative Evaluation of Instructions. In the sixth stage, the researchers combined the Project-Based Learning Model from John Larmer and the Design Process for the Shop & Store Course, Faculty of Art and Design – Universitas Trisakti.

The reasons for the researcher using the development of the Dick and Carey Instructional Model combined with the John Larmer Project-Based Learning Model and the Design Concept at the sixth stage in overcoming problems in the 'Shop & Store' course are as follows: 1) This model is able to address real needs and find solutions the most appropriate to solve the existing problem; 2) This research can produce knowledge and insight for lecturers and students to overcome problems during the learning process; 3) The recommendation of this research is to be able to produce products in the form of: Textbooks, Lecturer Guidance and Student Guidance which have expert validation values; Learning Design, Learning Media and Materials; 4) Able to motivate especially the lecturers of the Interior Design Study Program, Faculty of Fine Arts and Design - Trisakti University to innovate in developing new products that are always actual by adjusting to the times and technology and 5) Able to facilitate lecturers as mentors and students during the learning process.

1.1 Developed Model Concept

In this study, the stages of the Dick and Carey learning model were carried out up to the 'ninth step' starting from 'Identify Instructional Goals' to 'Design and Conduct Formative Evaluation of Instruction'. In the sixth step, the researcher combined it with the Project Based learning model from John Larmer and the Design Concept of the Design Concept of Interior Design 3 course, Faculty of Art and Design – Universitas Trisakti. The process and stages of this research in outline consist of 3 (three) steps which can be explained by the following cycles:
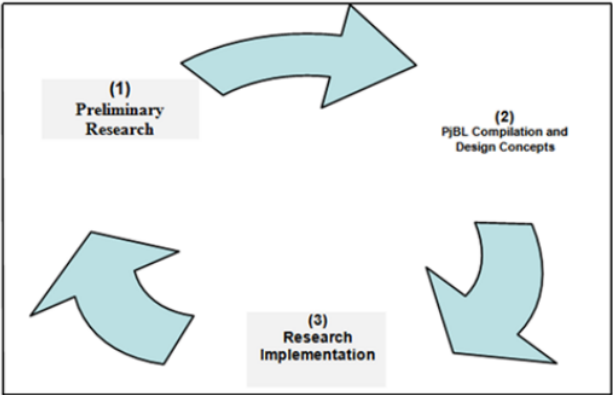
Chart 1. Circle of Research Steps

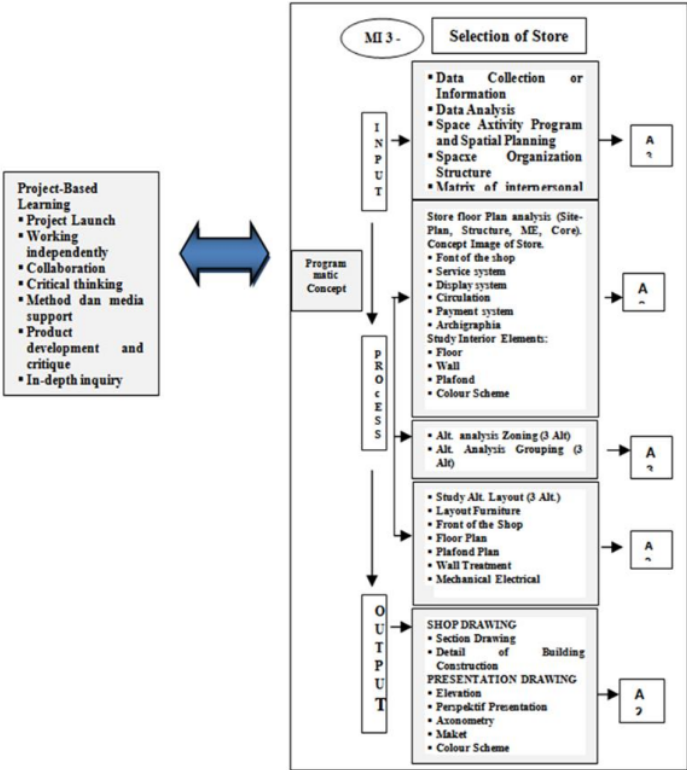From the research cycle above, the chart can be described as follows:

Chart 2. Preparation of PjBL and the Design Concept of the 'Shop & Store' Course by Asih Retno D

1.2 Chart Description

The chart above illustrates the compilation between the Project-Based Learning Model courses and the 'shop & store' course design concept during the learning process.

Research Stages

In accordance with the circle of research steps, the research stages can be described as follows:

Dick and Carey models:

a. Researchers identify instructional needs and set Instructional Objectives for the 'shop & store' course.

b. The researcher conducted an instructional analysis that described general competencies as sub-competencies of basic competencies and special competencies.

c. Researchers identify student behavior and characteristics, this is done to equate student perceptions before the learning process takes place.

d. The researcher sets the 'Shop & Store' Instructional Specific Objectives.

e. Develop an assessment tool to see the progress of the tasks students have done, including conducting several evaluations.

f. Develop an Instructional Strategy which includes 5 stages of activities, namely: 1. Pre-Instructional Activities; 2. Content Presentation; 3. Student Participation; 4. Assessment and 5. Follow-Up Activities.

   Notes:

   In the sixth phase, the researcher combined it with the project-based learning model from John Larmer and the 'Shop & Store' Design Concept course, namely: Input → Process → Output

g. From combining the Dick and Carey learning model to the ninth step with the Project Based Learning and Design Concept models, at this stage the researcher develops teaching materials for the 'Shop & Store' course.

h. At this stage the researcher develops and conducts a formative evaluation by validating learning tools from experts: Learning design, Media and Teaching Materials before testing is done on students: One to one, Small Group, Field Trial I and Field Trial II.

i. Is the final stage of research in the form of recommendations in the form of products: Textbooks, Lecturer Guidance and Student Guidance

2. PROJECT BASED LEARNING

In this study, researchers used John Larmer's Project-Based Model of the Buck Institute for Education. This model has 8 (eight) important steps in involving students to be able to work independently to find solutions to solving problems in designing and planning shop interiors in commercial buildings, namely malls with tenant store areas between 150-250 m². The eight steps of the John Lamber model are:

a. Significant Content, in this case students choose the type of shop to be designed. For example, a Men's Clothing Store and making a time schedule for completing tasks according to the progress format of the tasks to be completed.

b. Students need to pay attention and know the service system and the characteristics of the products being sold. Among others: variant, type, size, design and color. Then from these data will be obtained the calculation of the number of products, product grouping and how to display. From these calculations, the shape, size and number of displays will be obtained.

c. A Driving Question, what students do is calculate the need for the amount of space, circulation of users (customers, sales assistants and store managers) on the Activity Chart and Facility tables.

d. Student Voice and Choice, students are able to complete their tasks independently after completing the Activity diagram and facility table by making a study and analysis of Zoning and Grouping.

e. 21st Century Competence, at this stage students create alternative layouts with the guidance of their supervisor taking into account user circulation, shape – size – display placement.

f. In-Dept Inquiry, after determining the selected layout students consider the zone grouping of products being sold, displays which are points of interest and circulation that occurs.

g. Criticism and revision, students choose the application of interior elements according to the image of the planned shop, the characteristics of the products being sold and complete the overall progress of the task and consult with the supervisor.

h. Public Hearings, students are able to present progress in the form of portfolios correctly, on time and representatively.

3. DESIGN CONCEPT

The design concept in the learning process for the 'Shop & Store' course can be described as follows:

Chart Explanation:

1) **Input,** is the stage where students collect various information related to store planning and design in Commercial Buildings, namely Malls with shop areas between 150-250 m². This information can be obtained from literature, lecture notes, articles, websites as initial data and field data obtained from: surveys, interviews, measurements and documentation.

2) **Process**, is the stage where students conduct a study and analysis of the data obtained, both initial data and field data adapted to the characteristics of the store and the products sold as well as applications in planning in the form of programmatic concepts to be used such as: Macro data (building location, environmental conditions and community users in the environment and SWOT) and micro data consisting of building data (site plans, building facades, structures, building facilities and building regulations); studies: Matrix diagrams according to grouping zones and bubble diagrams according to spatial organization; alternatives: Zoning, Grouping and User Circulation, layout alternatives, ceiling and floor plans, wall treatment and mechanical electrical plans.

3) **Output,** is the stage where students have made design decisions in accordance with the results of studies and analyzes made in a portfolio consisting of working drawings and presentation drawings, material and color schemes, mock-ups and axonometry.

4. SHOP & STORE

In planning store interiors, there are several opinions that we quote as a reference in the learning process, including: Holly Bastow-Shoop, et.all., David Mun and Lawrence J. Israel, AIA., FISP.

1) Holly Bastow-Shoop, et.all., states that:

'Visual Merchandising is anything the customer sees, both exterior and interior, that creates a positive image of the business and generates attention, interest, desire and action on the part of the customer.'

2) David Mun, stated that in designing a store there are several aspects that must be considered, including:

a) Types and characteristics of shops and products sold; b) Planning and Layout; c) Fixtures and Equipment; d) Store Front; e) Signs; f) Security system; g) Environmental services; h) Engineering services, and i) Implementation.

3) Lawrence J. Israel, AIA., FISP, states that in planning and designing a store there are things to quote such as:

a) Store design is the formulation of all aspects of retail (physical environment to achieve image, operational performance and successful sales results); b) Store design is helping the client add value (the physical product through the provision and management of imagination), and c) store design is the creation of a compelling environment for competitive retail selling at profit.

From the three statements above, it can be concluded that in planning the interior of a store, there are several aspects related to aspects such as: storefront, store characteristics and products sold, layout, interior decoration, display, signs, service, comfort and security systems.

5. METHOD

The research design was carried out using an experimental method, namely providing learning with a project-based approach. To find out whether the learning is effective or not is done by giving a test before the learner (Pre test), and after learning is finished (Post test), if the value of the previous test is smaller than the test value after learning, it can be said that the learning process is effective in increasing student knowledge about shop & store courses as measured by student test scores. The learning process uses the Dick and Carey Instructional Model up to the ninth step combined with the Project-Based Learning Model and Design Concepts in the sixth step.

The stages of the research process carried out are: 1) Needs analysis and field observations; 2) Determine the research plan; 3) Initial Product Development; 4) Initial test; 5) Initial product revision; 6) Field trials; 7) Revision of field trials; 8) Product effectiveness test; 9) Last revision and 10) Socialization and Implementation.

From the results of this study, qualitative data were obtained in the form of: suggestions and input from experts (Learning Design, Media and Instructional Materials) and quantitative data were analyzed using the Paired sample test to see the effectiveness and feasibility of the applied product. In this test using $\alpha = 5\%$. The hypothesis proposed is as follows:

Ho : μ pre_test ≥ μ post_test (project-based learning is not effective in increasing comprehension)

Ha : μ pre_test < μ post_test (project-based learning effectively increases understanding)

The following are the results of the Pre-Test and Post-Test assessments which can be seen in the following table:

1. One to one trial tested on 3 (three) students

Students	GRADE			Value of Mean	
	Pre	Post	Final Score	Pre T.	Post T
a	55	75	B+		
b	58	78	A-	59,00	79,33
c	64	85	A		

Paired sample test results:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_test	59.0000	3	4.58258	2.64575
	Post_test	79.3333	3	5.13160	2.96273

From the table above, the average value before learning is 59 with a standard deviation of 4.58, while the average value after learning is 79.33 with a standard deviation of 5.13. It can be seen from this value that there is an increase in the value after learning.

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre_test & Post_test	3	.999	.023

The table above shows that there is a significant relationship between the pre-test and post-test values, which is shown by the correlation coefficient value of 0.999 and a sig value of 0.023 <0.05

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pre_test - Post_test	-20.33333	.57735	.33333	-21.76755	-18.89912	-61.000	2	.000

From the table above, the sig (2-tailed) value is 0.000, whereas in the hypothesis proposed in this study one tail, so that the sig value = 0.000/2 = 0.000 <0.05 the decision to accept Ha rejects Ho, which means that statistically and significantly the average value before learning is smaller than the average value after learning, so it can be concluded that there is an increase in the average value after learning, in other words an effective project-based learning method can improve understanding of subjects as assessed by the average score of 3 student.

2. **Small group trial, this trial was conducted on 9 (nine) students with the following Pre-Test and Post-Test results:**

Students	GRADE			Value of Mean	
	Pre	Post	Final Score	Pre-Test	Post-Test
1	50	70	B		
2	55	87	A		
3	50	75	B+		
4	45	80	A		
5	45	73	B	49,33	78,11
6	45	70	B		
7	50	80	A		
8	52	83	A		
9	52	85	A		

Paired sample test result:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_test	49.3333	9	3.60555	1.20185
	Post_test	78.1111	9	6.37268	2.12423

From the table above the average value before learning is 49,333 with a standard deviation of 1.20185, while the value after learning (Post tet) averages 78,111 with a standard deviation of 2.12

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre_test & Post_test	9	.678	.045

The table above shows that there is a significant relationship between the pre-test and post-test values, which is indicated by the correlation coefficient value of 0.678 and a sig value of 0.045

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre_test - Post_test	-28.77778	4.73756	1.57919	-32.41939	-25.13617	-18.223	8	.000

From the table above, the sig (2-tailed) value is 0.000, whereas in the hypothesis proposed in this study one tail, so that the sig value = 0.000/2 = 0.000 <0.05 the decision to accept Ha rejects Ho, which means that statistically and significantly the average value before learning is smaller than the average value after learning, so it can be concluded that there is an increase in the average value after learning, in other words an effective project-based learning method can improve understanding of subjects as assessed by the average student score.

3. **Field trial I, this trial was conducted on 15 (fifteen) students with the results of the Pre-Test and Post-Test as follows:**

Students	GRADE			Value of Mean	
	Pre T.	Post T.	Final Score		
1	40	75	B+		
2	40	73	B		
3	52	83	A		
4	55	85	A		
5	38	70	B		
6	40	85	A		
7	45	83	A		
8	40	76	B+	44,53	78,13
9	50	83	A		
10	45	83	A		
11	40	73	B		
12	46	73	B		
13	47	70	B		
14	50	83	A		
15	40	77	A-		

Paired sample test results:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_test	44.5333	15	5.34344	1.37967
	Post_test	78.1333	15	5.60442	1.44706

From the table above the average value before learning is 44.5333 with a standard deviation of 1.37967, while the value after learning (Post test) averages 78.133 with a standard deviation of 1.44706

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre_test & Post_test	15	.563	.029

The table above shows that there is a significant relationship between the pre-test and post-test values, which is indicated by the correlation coefficient value of 0.563 and a sig value of 0.029 <0.05

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre_test - Post_test	-33.6000	5.12417	1.32306	-36.43767	-30.76233	-25.396	14	.000

From the table above, the sig (2-tailed) value is 0.000, whereas in the hypothesis proposed in this study one tail, so that the sig value = 0.000/2 = 0.000 <0.05 the decision to accept Ha rejects

Ho, which means that statistically and significantly the average value before learning is smaller than the average value after learning, so it can be concluded that there is an increase in the average value after learning, in other words an effective project-based learning method can increase the average value of students.

4. **Field trial II, this trial was conducted on 31 students with the results of the Pre-Test and Post-Test as follows:**

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_test	41.5484	31	5.26522	.94566
	Post_test	79.5806	31	4.39526	.78941

From the table above, the average value before learning is 41.5484 with a standard deviation of 5.265, while the average value after learning is 79.5806 with a standard deviation of 4.39526. It can be seen from this value that there is an increase in value after learning.

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre_test & Post_test	31	.383	.033

The table above shows that there is a significant relationship between the pre-test and post-test values, which is shown by the correlation coefficient value of 0.383 and a sig value of 0.033 <0.05

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Pre_test - Post_test	-38.03226	5.41285	.97218	-40.01771	-36.04681	-39.121	30	.000

From the table above, the sig value (2-tailed) is 0.000, whereas in the hypothesis proposed in this study one tail so that the sig value = 0.000/2 = 0.000 <0.05 the decision to accept Ha rejects Ho, which means that statistically and significantly the average value before learning is smaller than the average value after learning, so it can be concluded that there is an increase in the average value after learning, in other words an effective project-based learning method can increase the average value of students.
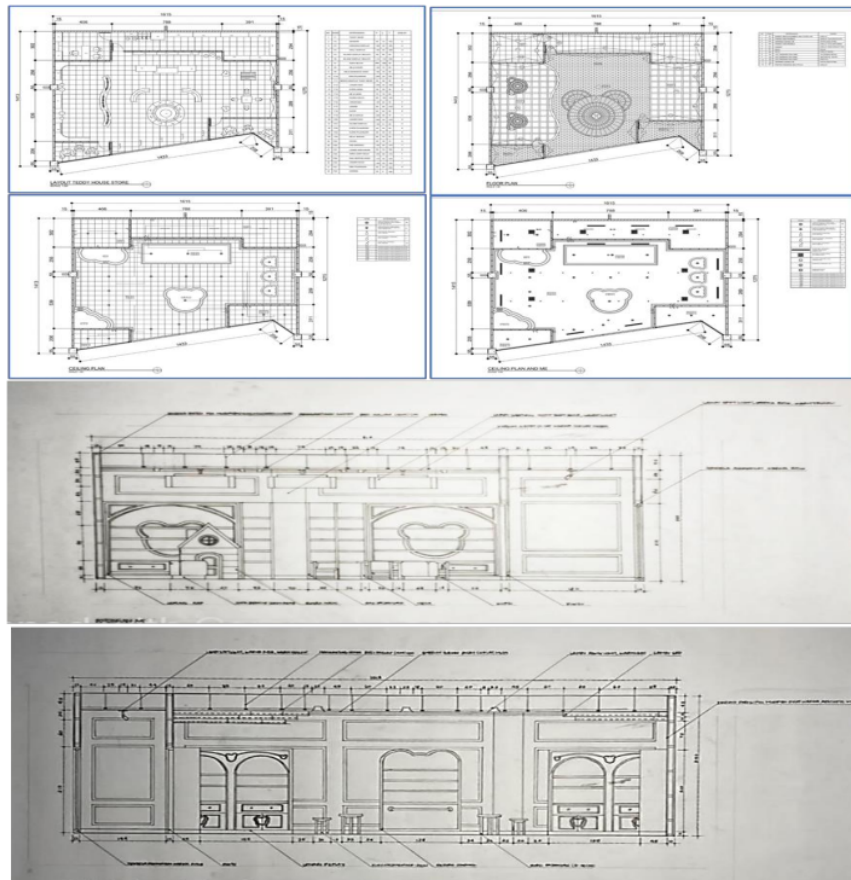
Sample Presentation Bord and Portfolio
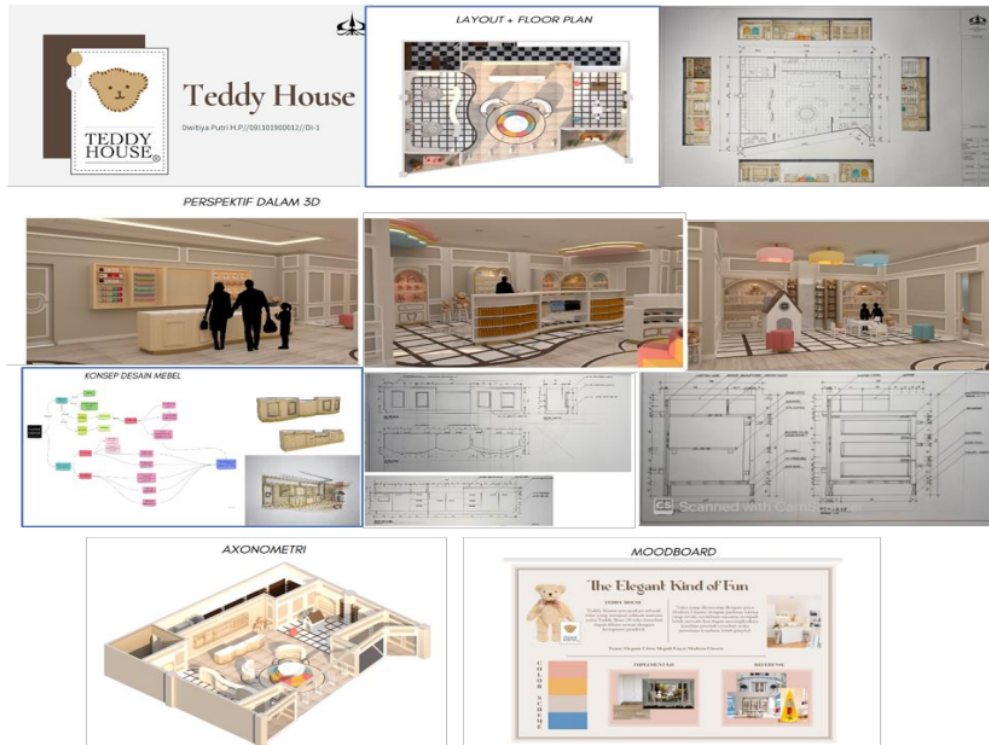Student: Dwitiya Putri H.P//091101900012//DI-1
(Presentation Board)

Portfolio – Working Drawing

Portfolio – Presentation Drawing

CONCLUSION

Based on the results of the experimental stages carried out, the results of the study 'Development of a Project-Based Learning Model for the 'shop & Store' Course, Interior Design Study Program, Faculty of Art and Design – Universitas Trisakti can be concluded that:

1. The results of this study are recommended in the form of products: Textbooks, Lecturer Guidance and Student Guidance.

2. Based on the results of the effectiveness and feasibility test of the product produced through the 't' test, it is stated that the product produced is 'Effective' and 'Decent' and is recommended for use in the Learning Process of the 'shop & store' Course.

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