

The Attitudes of Students in a College Course of Arts under Instructional Multimedia- An Investigational Study

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Abstract: *The purpose of this study is to investigate the attitude of the college fresher who receive a digital instructional design module for the Visual Arts Unit of the Visual Communication course. The digital content instructional CD-ROM is developed through the following steps of the ADDIE Instructional Design Model: Analyze Design, Develop, Implement, and Evaluate.*

Keywords: Attitude, Motivation, ADDIE Instructional Design Module

1. INTRODUCTION

Researchers (Morrison, 2011; Szeto 2010; Lee, Tseng and Chen 2012; Marrance, 2013) have suggested that art instructors create their own digital instructional tools to build a critical and interactive link between instructors and students to increase student motivation to learn the arts. Digital content-based instructional materials assist students to learn the arts better on an individual basis through applications, such as recording one's individual learning schedule and learning process. Thus, using digital content and new technology tools in teaching the visual arts has gradually become not only the trend, but also the standard at many universities.

2. THE INSTRUCTIONAL DESIGN MODULE

The digital content instructional design module in the Visual Arts Unit of the Visual Communication course is developed by Macromedia Flash with a CD-ROM-based format that consists of e-text, text-related images, two-dimensional images, three-dimensional images, PowerPoint slides, graphic design software, and music, as well as test questions. The digital content instructional CD-ROM is developed through the following steps of the ADDIE Instructional Design Model: Analyze, Design, Develop, Implement, and Evaluate. ADDIE Instructional Design Model consists of simple step methodologies that can be utilized for integrating new technology into creation courses (Gagné, Briggs, & Wager, 2011)

The ADDIE Instructional Design Model comprises the following contents.

2.1 The Analyze Phase

The subjects of this study are the freshers who take the Visual Communication class at a target department in a private university in southern Taiwan. The instructional goals and objectives are included in this phase in order to consider the needs of the subjects. Five instructional goals and thirteen objectives are included in this Macromedia Flash MX tutorial CD-ROM (Table 1). The instructional goals are focused on students' knowledge of forms: such as the definitions of forms, two-dimensional forms, three-dimensional forms and sculpture, and spatial relations. According to Gagné, et al., (2011), instructional objectives need to be reached by students and should be emphasized in the instructional material design. The instructional objectives for this research are focused on the students' abilities to explain and develop three-dimensional forms and sculpture that the students have transformed from two-dimensional forms.

Table 1: Goals and Objectives for the Instructional Design Module

Goals	Objectives
Goal 1: Students will understand the definitions of forms.	a. Students will be able to explain the concept of dots. b. Students will be able to explain the concept of lines. c. Students will be able to explain the concept of surfaces. d. Students will be able to explain the concept of forms.
Goal 2: Students will understand two-dimensional forms.	a. Students will be able to distinguish different forms of two-dimensional forms. b. Students will be able to identify the differences between two-dimensional forms and three-dimensional forms.
Goal 3: Students will understand three-dimensional forms and sculpture.	a. Students will be able to distinguish different forms of three-dimensional sculpture. b. Students will be able to identify the differences between two-dimensional forms and three-dimensional forms. c. Students will be able to develop three-dimensional forms transformed from two-dimensional forms.
Goal 4: Students will understand the usage of spatial relations in 3D forms making.	a. Students will be able to identify the connections between two-dimensional forms and three-dimensional objects. b. Students will be able to define the size, distance, and order of objects in relation to the real world.
Goal 5: Students will understand digital sculpture.	a. Students will be able to identify the different media of sculpture making. b. Students will be able to develop digital sculpture transformed from two-dimensional and three-dimensional forms.

2.2 The Design Phase

Concept Map of the Visual Arts Unit in Porposed Macromedia Flash MX Tutorial

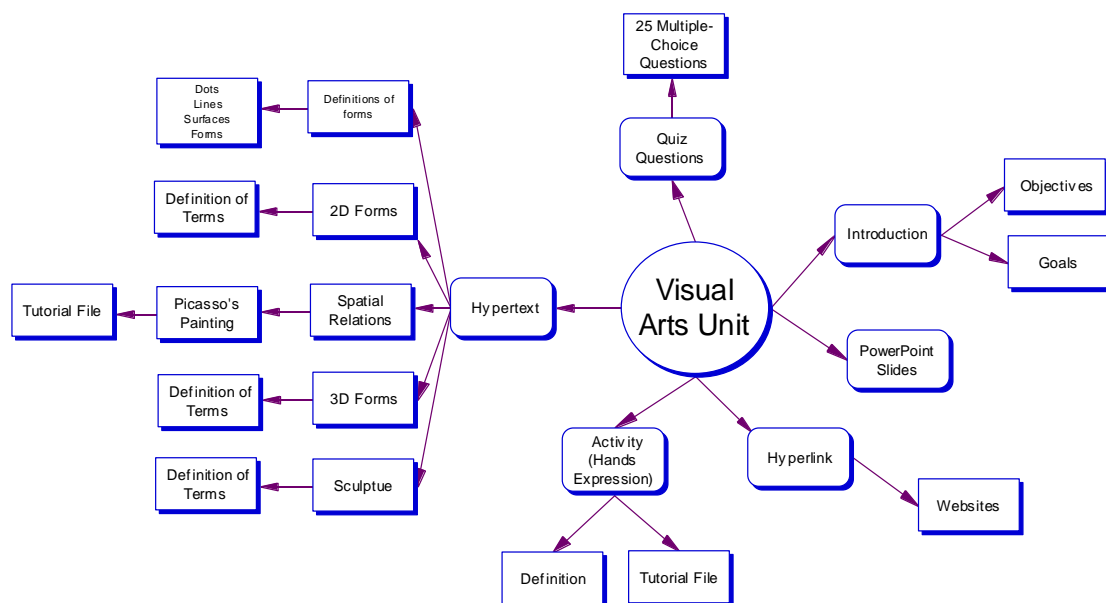
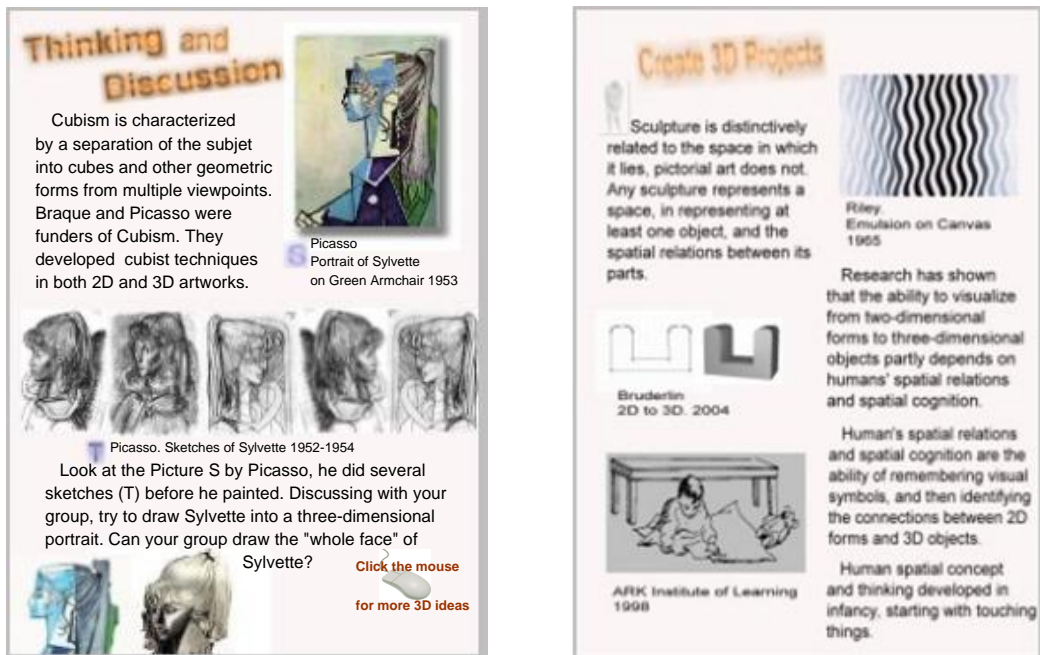


Figure 1: Concept Map of the Visual Arts Unit

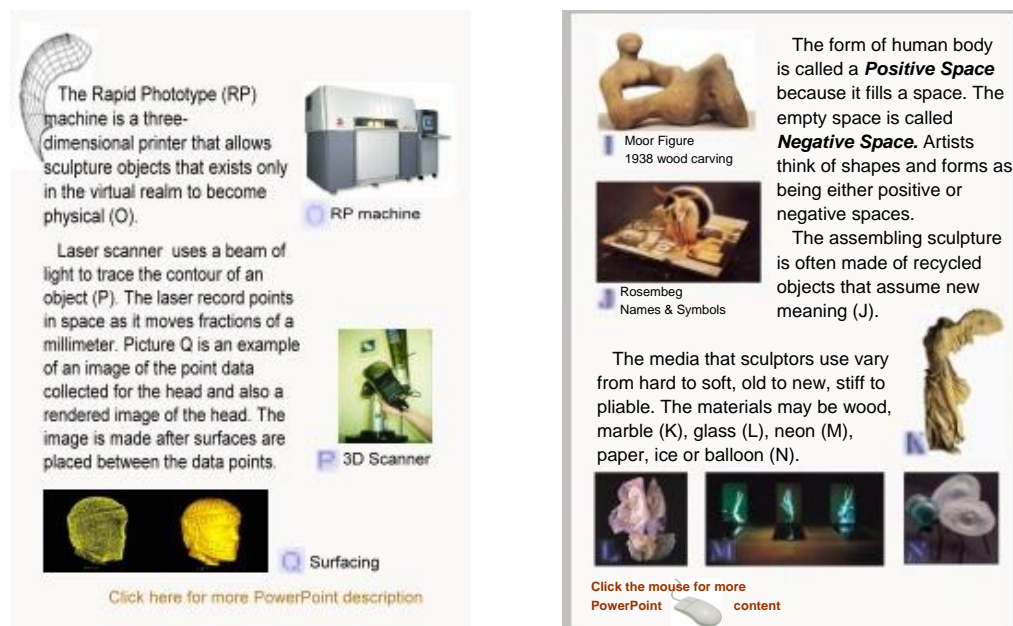
The researcher has developed a concept map (Figure 1) and flowcharts on Inspiration 7.5 to guide and incorporate the ideas of digital instructional content at this stage. The flowcharts developed and depended upon the concepts, goals, and objectives of this study (Gagne, et al., 2011). The SMEs reviewed the flowcharts to ensure the sequences of instructional sections are in appropriate order.

2.3 The Development Phase

The researcher has developed a “digital textbook” (Figures 2-5) on CD-ROM using Macromedia Flash software consisting of e-text, text-related images and animations, PowerPoint slides, art software, and music, as well as test questions. The SMEs reviewed the instructional CD-ROM to ensure the content relating to the textbook and it met its educational purpose (Figure 6). The instructions are also developed at this stage.



Figures 2 and 3: Pages of the Digital Textbook



Figures 4 and 5: Pages of the Digital Textbook

Instructional CD-ROM Evaluation

Visual Arts Assessment

Please read each statement carefully and rate your level of agreement with each of the statement. Thank you.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. The look of the program is aesthetically pleasing.				
2. The navigation through the program is simple to understand.				
3. The use of button is clear.				
4. The content is related to the textbook.				
5. The content is consistent and is harmonious.				
6. The content is interesting and engaged the learner.				
7. The sound is good quality.				
8. The organization of this CD-ROM enhances the learner's experience.				
9. Overall, this CD-ROM meets its educational purpose.				
10. Do you have any additional comments or suggestion?				

Signature: _____

Date: _____

Figure 6: *The Instructional CD-ROM Evaluation Reviewed By SMEs*

2.4 The Implementation Phase

The participants of this study are the freshers who have taken the Visual Communication class at a target university. Students are selected from a group of one intact class, totaling seventy-two students (N = 72). The students received the CD-ROM instructional module. The researcher was involved in the instruction and directly taught this unit. Thus, the researcher did not need to present any tutorial for this unit.

2.5 The Evaluation Phase

At this stage, the researcher has examined how the digital textbook works. The students have answered an attitude survey about visual arts learning after the instruction. The survey data are described under the descriptive statistics. This analysis is done using SPSS 13.0.

3. ATTITUDINAL SURVEY

The purpose of this research is to ask the students who have received the three-dimensional visualization module to describe their attitudes toward arts learning, for the Visual Arts Unit of the Visual Communication course in the college during the beginning of the year. The researcher has developed a four-point Likert-type survey with 20 questions about attitude concerning learning arts (Figure 7,8).

Survey of Attitudes about Arts Learning

The purpose of this survey is to examine attitudes about arts learning.
Thank you for your corporation.

Class Code		Student Code	
1		A	
2		B	
		F	
		0	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	

A. Background Information
Direction: Please use a no.2 pencil to fill the appropriate response space for each question.

1. What's your gender?
 Male Female

2. Have you taken any art course in high school? (not other than "High School Art" course)
 Yes No

3. How far is it from your residence to Leader University?
(approximately measured in kilometer)
 0-25 km 101-200 km Other _____
 26-100 km 201-300 km

4. What is your favorite art (activity)? (you may selected more than one)
 photography act(play/drama) music computer
 dance painting/drawing movie Other ____

6. Are you currently taking any art course outside of Leader University?
(If your answer is Yes, please continue answering next question, if your answer is NO, please go question 7.)
 Yes No

6. Please write the reason why are you currently taking any art course outside Leader University.

7. Within the past three months have you gone to any public arts events?
 Yes No

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B. Attitudes About Arts Learning (Sculpture Unit)
Direction: Please use a no.2 pencil to fill the appropriate response space for each question.

8. I feel this course has added to my knowledge of art.
 strongly agree agree disagree strongly disagree

9. I feel that this instruction helped me to make connection between 2D and 3D artwork.
 strongly agree agree disagree strongly disagree

10. I feel that this instruction has added to my understanding of spatial relations.
 strongly agree agree disagree strongly disagree

11. I feel that this instruction has helped me to understand the definitions of sculpture.
 strongly agree agree disagree strongly disagree

12. I feel that this instruction has improved my ability to create 3D artwork.
 strongly agree agree disagree strongly disagree

13. I feel that this instruction has helped me to appreciate sculpture.
 strongly agree agree disagree strongly disagree

14. I feel that this instruction has helped me to appreciate the arts.
 strongly agree agree disagree strongly disagree

15. I feel that this instruction has helped me to solve art problems.
 strongly agree agree disagree strongly disagree

16. I feel that this instruction has improved my ability to work with others.
 strongly agree agree disagree strongly disagree

17. I feel that this instruction has made me more creative.
 strongly agree agree disagree strongly disagree

18. I feel that the instructor has provided sufficient quality to art materials during the course.
 strongly agree agree disagree strongly disagree

19. The teaching materials in this class were of value to me as a student.
 strongly agree agree disagree strongly disagree

20. I have enjoyed the class.
 strongly agree agree disagree strongly disagree

Thank you for taking time to complete this survey.

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Figures 7 and 8: Survey Questions

The survey data of the demographic section (survey items 1-7) are analyzed using descriptive statistics from SPSS 13.0 software. The survey data of the attitudinal section (survey items 8-20) are also analyzed using descriptive statistics to examine the students' attitude about visual arts learning after the instructional period. The rationale for the absence of a pre-test attitudinal survey stems from the researcher view that freshmen level students taking a Visual Communication class would have a similar attitude towards arts. The researcher did not use any statistical manipulation (e.g., ANOVA, T-test, etc.) on the attitude survey, as there is no pre-survey before the instruction

is commenced. Thus, the data from the survey, in the form of descriptive statistics, is used to examine the students' attitudes toward arts learning after the instructional period.

The first section of the analysis of the survey responses describes demographic information. The participants of the Survey of Attitudes About Visual Arts Learning are 72 college freshers who took the Visual Communication class in the Department of Information Communication at a target university in Tainan City, Taiwan. The student ratio of male to female is 1:0.8. The gender distribution of the 72 subjects (Table 1) is composed of 56% (40) males and 44% (32) females.

Table 1: Gender Distribution

Male	Female	Total
40	32	72

The second section of the analysis of the survey responses describes art attitude and is shown in Tables 2 and 3 (survey items 8-20). As stated, the instrument is a four-point Likert-type survey with 20 questions designed by the researcher, Survey items 8 to 20 are about attitudes concerning visual arts learning. Subjects are asked to rate from 4 to 1 (4 = strongly agree; 3 = agree; 2 = disagree; 1 = strongly disagree) to report their attitudes towards visual arts learning after the instruction.

Items for part 1 (items 8-14) of the descriptive analysis of attitude about visual arts learning are listed below.

- 8. I feel this course has added to my knowledge of art.
- 9. I feel that this instruction helped me to make connection between 2D and 3D artwork.
- 10. I feel that this instruction has added to my understanding of spatial relations.
- 11. I feel that this instruction has helped me to understand the definitions of sculpture.
- 12. I feel that this instruction has improved my ability to create 3D artwork.
- 13. I feel that this instruction has helped me to appreciate sculpture.
- 14. I feel that this instruction has helped me to appreciate the arts.

Table 2: Descriptive Analysis Of Attitude About Visual Arts Learning: Part 1(Items 8-14) N=72

Scaled Responses	Item Number						
	8	9	10	11	12	13	14
4 (Strongly Agree)	52	54	56	56	56	56	56
3 (Agree)	20	14	16	16	16	16	16
2(Disagree)	0	0	0	0	0	0	0
1 (Strongly Disagree)	0	0	0	0	0	0	0
Mean	3.72	3.81	3.78	3.78	3.78	3.78	3.78
SD	.45	.40	.42	.42	.42	.42	.42
Median	4	4	4	4	4	4	4

Table 3: Descriptive Analysis Of Attitude About Visual Arts Learning: Part 2(Items 15-20) N=72

The Attitudes of Students in a College Course of Arts under Instructional Multimedia- An Investigational Study

Scaled Responses	Item Number					
	15	16	17	18	19	20
4 (Strongly Agree)	48	50	56	58	52	64
3 (Agree)	22	22	16	14	20	8
2(Disagree)	2	0	0	0	0	0
1 (Strongly Disagree)	0	0	0	0	0	0
Mean	3.64	3.69	3.78	3.81	3.72	3.89
SD	.54	.47	.42	.40	.45	.32
Median	4	4	4	4	4	4

The data in Table 2 show a highly positive attitude for survey items 8-14 with mean scores ranging from 3.72 to 3.78. The mean value on items 10, 11, 12, 13 and 14 are equal to the highest score (3.78). This is composed of 78% (28) subjects who rated items 10-14 as a 4 (strongly agree) and 22% (8) rated them 3 (agree). No students rated items 8-14 as a 2 (disagree) or a 1 (strongly disagree). The median for all survey items (8-14) is 4, indicating that 50% of the students responded strongly agree to each of the questions, again, indicating a highly positive attitude.

Items for part 2 (items 15-20) of the descriptive analysis of attitude about visual arts learning are listed below.

- 15. I feel that this instruction has helped me to solve art problems.
- 16. I feel that this instruction has improved my ability to work with others.
- 17. I feel that this instruction has made me more creative.
- 18. I feel that the instructor has provided me with sufficient quality to art materials during the course.
- 19. The teaching materials in this class are of value to me as a student.
- 20. I have enjoyed the class.

In comparison to the data revealed in Table 2, Table 3 also shows a highly positive attitude for survey items 15-20 with mean scores ranging from 3.64 to 3.89. The mean value of item 20 is the highest (3.89), in which 89% (32) of respondents rated this item as a 4 (strongly agree) and 11% (4) rated it as a 3 (agree). One student rated item 15 as a 2 (disagree). It asked if the instruction had helped subjects to solve learning problems. No students rated items 16-20 as a 2 (disagree) or a 1 (strongly disagree) in Table 17.

Table 4 shows the mean score (3.77), standard deviation (.43) and median rate (4) on the attitudinal survey within the whole group. The mean score of 3.77 from all subjects is well above the agree level (rate 3). The median of 4 reveals a strongly satisfied attitude of the students' towards visual arts.

Table 4: Descriptive Analysis of Attitude about Arts N=72

Mean	3.77
Standard Deviation	.43
Median	4

Figure 9 shows the means among each attitude survey item (items 8-20). The highest mean of the attitude survey items is on item 20 (3.89) with 4 (11%) subjects rating it 3 (agree) and 32 (89%) subjects rating it 4 (strongly agree). It asked if the subjects had enjoyed the class. The lowest

mean of the attitude survey items is on item 15 (3.64) with 1 (3%) subject rating it 2 (disagree), 11 (31%) subjects rating it as a 3 (agree), and 24 (56%) subjects rating it as a 4 (strongly agree). It asked if the instruction had helped subjects to solve art problems. Survey items 10, 11, 12, 13 and 14 are rated the same, with a mean of (3.78).

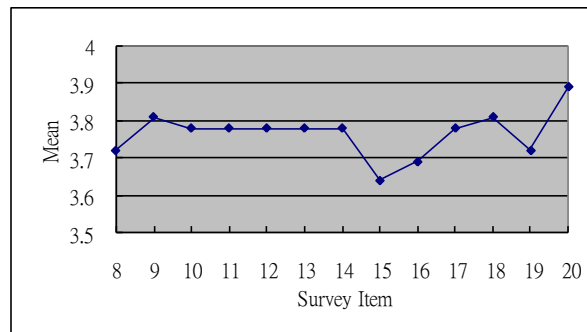


Figure 9: Means among Each Attitude Survey Item

4. CONCLUSION

As stated, the participants of the study are college freshers who took the Visual Communication class in the Department of Information Communication at a target university. The students are trained in digital multimedia design and are taught how to apply digital multimedia design to different fields, such as animation, Chinese painting, graphic design, advertising, and computer programming. Thus, one factor might be the subjects are familiar with using technology in the classroom. According to the survey data, it is believed that to transform the printed textbook into a digital content format provided learners with a more effective and interactive learning experience. The use of technology gave the students greater control of their learning, increased their motivation to explore and discover, and played a major role in helping them reach new heights of achievement in the class.

The researcher in this study has developed a “digital textbook” on CD-ROM using Macromedia Flash software for the group. The interface consists of e-text, text-related images and animations, PowerPoint slides, art software, and music, as well as test questions. This result is in consensus with the reasearch from Kitsantas and Dabbagh(2010); it indicated that one of the important contributions digital content made in higher education is how it changed students’ learning styles and learning attitudes to be more positive.

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