HUES OF YOU: A 2D INTERACTIVE ANIMATED SHORT FILM

 Γ

An Undergraduate Thesis

Presented to the Faculty of the

College of Information and Communications Technology

West Visayas State University

La Paz, Iloilo City

In Partial Fulfillmeπnt

of the Requirements for the Degree

Bachelor of Science in Entertainment and Multimedia

Computing

by

Hilary Ann P. Denura

Ma. Dyzza E. Espino

Dionise Marie F. Loretizo

Nissi Joy A. Mana-ay

Winzee Dawn C. Panunciar

Approval Sheet

HUES OF YOU: A 2D INTERACTIVE ANIMATED SHORT FILM

An Undergraduate Thesis for the Degree

Bachelor of Science in Entertainment and Multimedia

Computing

bу

Hilary Ann P. Denura

Ma. Dyzza E. Espino

Lara Dionise Marie F. Loretizo

Nissi Joy A. Mana-ay

Winzee Dawn C. Panunciar

Approved:

MR. MARK JOSEPH SOLIDARIOS Adviser

DR. JOEL T. DE CASTRO Chair, EMC

DR. MA. BETH CONCEPCION Dean, CICT

June 2023

Acknowledgment

The researchers would like to express their deepest appreciation to the following persons, who in one way or another have made this work possible:

Г

First and foremost, thanks to Sir Mark Solidarios, the researchers' advisor, for his ongoing guidance and support. Even at ungodly hours, Sir Mark remained patient in answering all of the researchers' questions. The researchers would also like to thank Sir Mark for teaching about Unity; the system for this thesis would not exist without Sir Mark's assistance and constant meetings.

Ma'am Christy Villano, for her guidance in animating the thesis;

Ma'am Karen Dumpit, who taught the researchers how to write scripts and animate;

Sir Evan Sumido, for guiding the researchers on the research objectives;

Sir Joel De Castro, for giving the researchers more ideas on what to do with the present research;

Sir Arnel Secondes, for guiding us on what to put on the present paper and how will the researchers upgrade it;

To the researchers' parents, who are constantly encouraging and supporting their children when they are at their lowest:

Г

The researchers would also like to thank Albacete Eye Specialist Clinic and Ibony Ivory Clinic for validating the questionnaires used in this research's evaluation module and lending the researchers their valuable time for an interview on what colorblindness is and how it affects colorblind people.

To those who tested the system and completed the evaluation module, thank you for devoting your valuable time to the researchers.

Finally, thank you to the Almighty God for guiding and providing hope to the researchers. The researchers would not have been able to overcome the difficulties without the help of the Almighty.

Hilary Ann P. Denura

Ma. Dyzza E. Espino

Lara Dionise Marie F. Loretizo

Nissi Joy A. Mana-ay

Winzee Dawn C. Panunciar

June 2023

iv

Denura, Hilary Ann P.; Espino, Ma. Dyzza E.; Loretizo, Lara Dionise Marie F.; Mana-ay, Nissi Joy A.; Panunciar, Winzee Dawn C.; "HUES OF YOU: A 2D INTERACTIVE ANIMATED SHORT FILM". Unpublished Undergraduate Thesis, [Bachelor of Science in Entertainment and Multimedia Computing- Major in Animation], West Visayas State University, Iloilo City, Philippines, June 2023.

Abstract

The present study aimed to create a 2D interactive animated short film that was color-blind friendly. Targeted sampling was used, with 10 colorblind and 10 non-color-blind people participating. The researchers used a usability evaluation questionnaire from a study conducted by Scepanovic, Vujicic, Matijevic, and Radunovic (2015) to measure the interactive multimedia system's positive experience. It was discovered that color-blind people gave the learning and engaging experience and the system's performance generally excellent reviews. According to the results of the system's evaluation module, most respondents believed that the film is color-blind-friendly for all types of color-blindness and that there was a difference between the non-color-blind film and the color-blind film.

V

Table of Contents

 Γ

	Page
Title Page	i
Approval Sheet	ii
Acknowledgment	iii
Abstract	V
Table of Contents	vi
List of Figures	viii
List of Tables	X
List of Appendices	xi
Chapter	
1 Introduction of the Study	1
Background of the Study	1
and Theoretical Framework	
Objectives of the Study	4
Significance of the Study	6
Definition of Terms	7
Delimitation of the Study	10
2 Review of Related Literature	12
Animated Film about Color Blindness	12
Color Correction	13
Color-Blind Accessibility	14

	2D Interactive Story and Animation	16
3	Research Design and Methodology	19
	Description of the Proposed Study	19
	Methods and Proposed Enhancements	21
	Components and Design	27
4	Results and Discussion	36
	Implementation	36
	Results Interpretation and Analysis	51
	System Evaluation Results	54
5	Summary, Conclusions, and Recommendations	62
	Summary of the Proposed Study Design	62
	and Implementation	
	Summary of Findings	65
	Conclusions	67
	Recommendations	70
Re	ferences	72

 Γ

List of Figures

Figure Pa		
1	System Architecture of the Interactive	27
	Animated Short Film	
2	Animation Production Process	29
3	Activity Diagram	33
4	System Life Cycle	34
5	Screenplay of Hues of You	39
6	Screenplay of Hues of You	40
	that is Integrated with the	
	results of the Interview	
7	Character Designs	41
8	Raw Photographs	42
9	Creating Environment Design	43
	Using Adobe Photoshop	
10	Animation in Clip Studio	44
11	Lighting in Photoshop	44
12	Editing Music in Adobe Audition	47
13	Adding Additional Effects in Adobe	47
	After Effects	
14	Editing in Premiere Pro	48

	~~~ <b>4.</b> ~~, ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
1	15 Colorblind Adjustments within	48
	Davinci Resolve	
	16 Interactive System in Unity	49
	17 Coding in Unity	49

#### List of Tables

 $\Gamma$ 

Table		Page
1	4-point Likert Scale Scoring Range	53
2	Results of the Interactive System	54
	Usability Components	
3	Results of the Mobility Components	55
4	Results of the Interactive Components	56
5	Results of the Learning Content Components	57
6	Results of the Components	57
7	Indicates number(%) with Yes	59
	Or No answers	

#### List of Appendices

 $\Gamma$ 

Appendix	Page
A Letter to the Adviser	77
B Letter to the Technical Editor	78
C Letter to the English Editor	79
D Letter to the Thesis Format Editor	80
E Certification for Bookbinding	81
F Letter of Permission for Interview	82
G Letter of Validation	83
H Letter of Permission for Interview 2	84
I Letter of Validation 2	85
J Production Cost Estimate	86
K Activity Diagram	87
L Sample Program Code	88
M Viewer Evaluation Module Questionnaire	89
N Interactive System Evaluation Module	91
O Survey Instrument Validation Scale	93
P Documentation	94
Q Storyboard	95
R Disclaimer	99