

**A LOOSE PRINCIPLE FOR SABAH FOLKTALES
ANIMATED CHARACTER DESIGN: ADOPTION
OF KANSEI APPROACH**

TEDDY MARIUS SOIKUN

**FACULTY OF COMPUTING AND
INFORMATICS
UNIVERSITI MALAYSIA SABAH
2019**



UMS
UNIVERSITI MALAYSIA SABAH

**A LOOSE PRINCIPLE FOR SABAH FOLKTALES
ANIMATED CHARACTER DESIGN: ADOPTION
OF KANSEI APPROACH**

TEDDY MARIUS SOIKUN

**THESIS SUBMITTED IN FULFILLMENT FOR
THE DEGREE OF
DOCTOR OF PHILOSOPHY**

**FACULTY OF COMPUTING AND
INFORMATICS
UNIVERSITI MALAYSIA SABAH
2019**



UMS
UNIVERSITI MALAYSIA SABAH

UNIVERSITI MALAYSIA SABAH

BORANG PENGESAHAN STATUS TESIS

JUDUL: A LOOSE PRINCIPLE FOR SABAH FOLKTALES ANIMATED CHARACTER DESIGN: ADOPTION OF KANSEI APPROACH

IJAZAH: DOKTOR FALSAFAH (TEKNOLOGI MULTIMEDIA)

Saya **TEDDY MARIUS SOIKUN**, Sesi **2013-2019**, mengaku membenarkan tesis Doktorat ini disimpan di Perpustakaan Universiti Malaysia Sabah dengan syarat-syarat kegunaan seperti berikut:-

1. Tesis ini adalah hak milik Universiti Malaysia Sabah
2. Perpustakaan Universiti Malaysia Sabah dibenarkan membuat salinan untuk tujuan pengajian sahaja.
3. Perpustakaan dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi.
4. Sila tandakan (/):

SULIT

(Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA RAHSIA 1972)


TERHAD

(Mengandungi maklumat TERHAD yang telah ditentukan oleh organisasi/badan di mana penyelidikan dijalankan)

TIDAK TERHAD

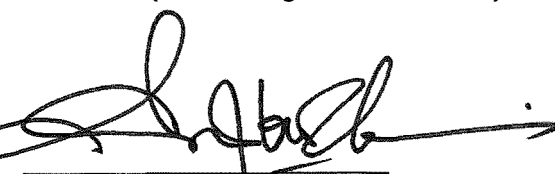


TEDDY MARIUS SOIKUN
DI1311002T

Disahkan Oleh,

MUHAMMAD MOHD. JOHAN @ JACKLYNE
PUSAT PUSTAKAWAN
UNIVERSITI MALAYSIA SABAH

(Tandatangan Pustakawan)

Tarikh : 23 September 2019



(Prof. Madya Dr. Ag. Asri Ag. Ibrahim)
Penyelia Utama

(Dr. Carolyn Salimun)
Penyelia Bersama



UMS
UNIVERSITI MALAYSIA SABAH

DECLARATION

I hereby declare that the material in this thesis is my own except for quotations, excerpts, equations, summaries, and references, which have been duly acknowledged.

23 September 2019

.....

Teddy Marius Soikun
DI1311002T



CERTIFICATION

NAME : **TEDDY MARIUS SOIKUN**

MATRIX NO : **DI1311002T**

TITLE : **A LOOSE PRINCIPLE FOR SABAH FOLKTALES
ANIMATED CHARACTER DESIGN: ADOPTION
OF KANSEI APPROACH**

DEGREE : **DOCTOR OF PHILOSOPHY
(MULTIMEDIA TECHNOLOGY)**

VIVA DATE : **21ST MARCH 2019**

CERTIFIED BY

1. MAIN SUPERVISOR

Associate Prof. Dr. Ag. Asri Ag. Ibrahim

Signature

2. CO-SUPERVISOR

Dr. Carolyn Salimun

Signature



ACKNOWLEDGMENT

First and foremost, I would like to thank the almighty God, whose many blessings have made all of this possible and made me who I am today. I would like to express my sincere gratitude to my advisor Associate Prof Dr. Ag Asri Ag Ibrahim for the continuous support of my study and related research, for his patience, motivation, and immense knowledge and not forgetting my co-advisor Dr. Carolyn Salimun. Their guidance had pushed and helped me in all the time of research and writing of this thesis.

Besides my advisors, I would like to thank the rest of the Faculty of Computing and Informatics, especially the Dean, Prof Dr. Abdullah bin Gani, Post Graduate Committee Dr. Muzaffar Hamzah, Associate Prof. Dr. Rayner Alfred, Dr. Lau Hui Keong and the rest of the faculty members for their advice and words of encouragement. Also, the Dean of UMS Postgraduate, Prof. Dr. Hjh. Arsiah Bahron and staff of UMS Postgraduate, not forgetting Prof. Dr. Ismail Ibrahim, ex Dean of Faculty of Humanities, Arts and Heritage and Dr. Marsitah Mohd Radzi current Dean of FKS, and support staff for their ever-supportive advice and encouragement for the completion of this writing. Also, to Universiti Malaysia Sabah for whom I am indebted for the financial and career support and to everyone that had taken part in this study, thank you very much.

Last but not least, I would like to thank my lovely wife, Dulce Milus Majawit for putting up with me, for the love and support, my children: Treyvon, Declan and Darla for being my strength and push factor in the completion of this thesis. Also, to My parents Marius Soikun and Florence Chin for their love, support and prayers, and my brothers and sisters for supporting me spiritually throughout the writing of this thesis and life in general.

Teddy Marius Soikun
23 September 2019



ABSTRACT

In the folktale-based animation character design domain, the word 'appeal,' carries substantial weight. Many designers were familiar with the principles of 'appeal' as one of the essential elements. 'Appeal' can be defined as anything intriguing that draws and maintains attention. "Whereas the live-action actor has charisma, the animated character has appeal" (Thomas & Johnston, 1995). Related research focused on the technicality, which made animation character design 'appeal' rarely touched. The vague understanding and subjective nature of 'appeal' together with low supporting literature and comprehensive information had made it difficult to achieve. Local Folktales based animation also presents poor acceptance. The research aims to investigate the factor of 'appeal' through popular animation character designs. The 'appeal' information obtained from the popular animation character design is used to provide supporting methodology and literature to the animation character design domain. The research aims to develop loose principles of design to achieve 'appeal' that provides understanding, assistance, and knowledge to design new folktale-based animation character design. The research framework adopts the Kansei Engineering (K.E) method with the addition of art and design theories to further enhance the artistic effort. By using Qualitative Content Analysis (QCA), firstly, the research utilizes QCA to select seven (7) folktales based Japanese animation specimens from hundreds of animations from 1990-2015 significant with folktales traits. Japanese animation was chosen on its popularity ground through empirical research. Thirty-Six (36) animation characters determined by using the QCA and matrix system. The research produces twenty-five (25) design elements. Sixty (60) Viewer's Impression Words (VIW) determined through the use of formalistic and visual semiotic analysis (FVSA) through ten (10) expert's impressions. From the FVSA analysis, a measurement tool consists of sixty (60) VIW Semantic Differential (SD) scale questionnaires were distributed 100 evaluation subjects from the researcher University. The results from the measurement activity were analyzed using multivariate analysis to understand the 'appeal' factor. The loose principles called Animation Character Design Appeal Principles (ACDAP) were then proposed from the measurement. ACDAP was used as a loose rule of design to create new Sabah's folktales-based animation character by selected animators, and the new animation character designs were compared with existing Sabah's animation characters design to justify the proposed ACDAP. The ACDAP managed to assist animators in designing new Sabah's folktales-based animation characters. Results obtained showed improvements in the structure of 'appeal' in the new design. The method had provided a way to understand the principle of 'appeal' embedded in existing popular animation. It also had helped the research to devise a new loose principle to achieve 'appeal.' The methodology used in this research and the proposed ACDAP had been proven to provide understanding, assistance, and knowledge in the folktales-based animation character design domain. Although the size of the research might not reflect the whole animation domain, However, it laid some foundations in the process of understanding and applying 'appeal' in animation character design.



ABSTRAK

PRINSIP LONGGAR BAGI REKABENTUK KARAKTER ANIMASI CERITA RAKYAT SABAH: ADAPTASI PENDEKATAN KANSEI

Dalam domain animasi cerita rakyat, perkataan 'appeal', membawa maksud yang besar. Bagi juruanimasi, 'appeal' membawa maksud sesuatu yang menarik dan mampu mengekalkan perhatian. Bagi Pelakon ianya dikenali sebagai karisma, manakala animasi ia dikenali sebagai 'appeal' (Thomas & Johnston, 1995). Penyelidikan karakter banyak memberi tumpuan kepada aspek teknikal, yang membuatkan 'appeal' dalam reka bentuk watak animasi jarang disentuh. Kurang kefahaman dan sifat subjektif 'appeal' dan maklumat komprehensif yang kurang menjadikannya sukar untuk dicapai. Animasi cerita rakyat tempatan juga kurang diterima di Malaysia. Penyelidikan ini bertujuan menyiasat faktor 'appeal' melalui reka bentuk watak animasi yang popular. Maklumat 'appeal' yang diperoleh daripada reka bentuk watak animasi popular digunakan untuk menghasilkan metodologi dan literatur sokongan. Ia juga bertujuan untuk membangunkan prinsip reka bentuk 'loose' untuk mencapai 'appeal' yang memberikan pemahaman dan pengetahuan dalam merekabentuk watak animasi. Rangka kerja penyelidikan ini menggunakan pendekatan kaedah Kansei Engineering (K.E) dengan penambahan teori seni untuk meningkatkan lagi kefahaman artistik. Dengan menggunakan Analisis Kandungan Kualitatif (QCA), Penyelidikan ini memilih tujuh (7) spesimen animasi Jepun dari beratus-ratus animasi dari tahun 1990-2015 yang signifikan dengan ciri-ciri cerita rakyat. Animasi Jepun dipilih berdasarkan popularitinya melalui penyelidikan empirikal. Tiga puluh enam (36) karakter animasi ditentukan dengan menggunakan QCA dan system matriks. Penyelidikan ini menghasilkan dua puluh lima (25) elemen reka bentuk. Enam puluh (60) Viewer's Impression Words (VIW) ditentukan melalui penggunaan analisis formalistik dan semiotic visual (FVSA) melalui sepuluh (10) animator dan ahli akademik. Dari analisis FVSA tersebut, 'measurement tool' yang terdiri daripada enam puluh (60) kuadran skala Diferensial Semantic (SD) telah diedarkan kepada satu ratus (100) responden daripada Universiti penyelidik. Hasil daripada aktiviti ini ia dianalisis dengan menggunakan analisis 'multivariate' bagi memahami faktor 'appeal'. Prinsip 'loose' yang dipanggil Prinsip 'appeal' Reka Bentuk Animasi (ACDAP) kemudian dicadangkan dari aktiviti tadi. ACDAP digunakan sebagai peraturan reka bentuk yang 'loose' untuk merekabentuk watak animasi berasaskan cerita rakyat Sabah yang baru oleh animator terpilih. Reka bentuk watak animasi yang baru dibandingkan dengan reka bentuk watak animasi Sabah yang sedia ada untuk mewajarkan ACDAP. ACDAP berjaya membantu animator dalam merekabentuk watak animasi. Hasil yang diperoleh menunjukkan peningkatan dalam struktur 'appeal'. Kaedah ini telah menyediakan satu cara untuk memahami prinsip 'appeal' yang terkandung di dalam karakter animasi popular. Metodologi yang digunakan dalam kajian ini dan ACDAP yang dicadangkan juga dibuktikan mampu untuk memberikan pemahaman dan pengetahuan dalam domain reka bentuk watak animasi berdasarkan cerita rakyat. Walaupun saiz penyelidikan ini mungkin tidak mencerminkan seluruh domain animasi, Namun, ia dilihat dapat meletakkan beberapa asas dalam proses pemahaman dan penerapan 'appeal' dalam reka bentuk karakter animasi.

TABLE OF CONTENTS

	Page
TITLE	i
DECLARATION	ii
CERTIFICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
<i>ABSTRAK</i>	vi
LIST OF CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xii
LIST OF ABBREVIATIONS	xv
LIST OF APPENDICES	xvi
CHAPTER 1: INTRODUCTION	1
1.1 Overview	1
1.2 Problem Statements	2
1.3 Research Objectives	7
1.4 Research Questions	9
1.5 Theoretical Research Framework	11
1.6 Hypothesis	13
1.7 Research Scope and Limitations	13
1.8 Significance of the Study	16
CHAPTER 2: LITERATURE REVIEW	
2.1 Overview	18
2.2 Principles of Animation	20
2.3 Appeal	21
2.4 Appeal in Animation Character Design	25
2.5 Character Design	27
2.6 Animation Character Design and Drawing	30
2.7 Psychology and Affective in Animation Character Design	31
2.8 Visual Semiotics and Formalistic Theories	32
2.9 Formalistic and Visual Semiotics Analysis	38



2.10	Formalistic Approach in Japanese Animation Character Design	38
2.11	Semiotics Analysis of Animation Character Design	39
2.12	Questionnaires Design based on Visual Semiotics and Formalistic theories	44
2.13	Japanese Anime Pop Culture	49
2.14	Definition of Anime	50
2.15	Japanese Anime Popularity	52
2.16	Adopting Kansei Engineering Theory in Animation Character Design	56
2.17	Kansei Engineering Approach in Non-Tangible Products	59
2.18	Kansei Engineering	61

CHAPTER 3: METHODOLOGY

3.1	Overview	70
3.2	Theoretical Development and Research Framework	73
3.3	Collection of Specimens (Animation Samples)	74
3.4	Specimen Synthesis	74
3.5	Preparation and Analysis of the Specimen	74
3.6	Folktale Motifs and Metaphors in the Selected Animation Specimens	81
3.7	Animation Character Design Selection Through Qualitative Content Analysis (QCA)	82
3.8	Measurement Tool Development	98
3.9	Recruitment of the FVSA evaluation Subjects	99
3.10	Viewer's Impression Words (VIW) Selection	100
3.11	Kansei Engineering Approach to Keywords Development	101
3.12	Selection of Viewer's Impression Words by Experts/ Animators Using the FVSA Questionnaires	110
3.13	Viewer's Impression Words (VIW) Checklists	114
3.14	Selection of The Evaluation Subjects	117
3.15	Viewer's Impression Measurement	118
3.16	Proposed Animation Character Design Appeal Principle	118
3.17	ACDAP Validation/ Experimental Study for the	

Proposed Animation Character Appeal Principle (ACDAP)	118
3.18 Conclusion	119
CHAPTER 4: DATA ANALYSIS & RESULTS	120
4.1 Overview	120
4.2 Formalistic and Visual Semiotics Analysis	120
4.3 Appeal Factors through Viewer’s Impressions Measurement	122
4.4 The concept of Appeal in Animation Character Design	124
4.5 Partial Least Squares (PLS) Analysis	132
4.6 Evoking ‘Appeal’ Principles from Selected Japanese Folktale-Based animation Character Design	138
4.7 Proposing Animation Character Design Appeal Principles (ACDAP)	139
4.8 Method to Validate the ACDAP	145
4.9 Animation Character Prototype Development	146
4.10 The ‘Appeal’ Factor Measurement	153
4.11 Data Analysis & Results	155
4.12 Conclusion	162
CHAPTER 5: CONCLUSION AND FUTURE RESEARCH	
5.1 Overview	163
5.2 Discussions	164
5.3 Research Implications	167
5.4 Findings	169
5.5 Research Challenges and Limitations	171
5.6 Future Work	172
BIBLIOGRAPHY	174
APPENDICES	190



LIST OF TABLES

	Page
Table 1.1 Malaysian Animation Production Cost VS Ticket Sales	5
Table 3.1 Japanese Animations from 1990-2015	77
Table 3.2 Control Criteria of Initial Specimen	78
Table 3.3(a) Selected Japanese Animation Consistent with Folktale Content	78
Table 3.3(b) Selected Japanese Animation Consistent with Folktale Content	79
Table 3.3(c) Selected Japanese Animation Consistent with Folktale Content	80
Table 3.3(d) Selected Japanese Animation Consistent with Folktale Content	81
Table 3.4(a) Qualitative Content Analysis on Design Elements	84
Table 3.4(b) Qualitative Content Analysis on Design Elements	85
Table 3.4(c) Qualitative Content Analysis on Design Elements	86
Table 3.4(d) Qualitative Content Analysis on Design Elements	87
Table 3.4(e) Qualitative Content Analysis on Design Elements	88
Table 3.4(f) Qualitative Content Analysis on Design Elements	89
Table 3.4(g) Qualitative Content Analysis on Design Elements	90
Table 3.5(a) Animation Character Matrix Sample and Scores	93
Table 3.5(b) Animation Character Matrix Sample and Scores	94
Table 3.6 Characters Included from 7 Selected Japanese Animation	95
Table 3.7 Character Classification	96
Table 3.8(a) Final Selected Animation Characters	97
Table 3.8(b) Final Selected Animation Characters	98
Table 3.9 Participants (Experts) Selection	100
Table 3.10(a) Theories and Relation to the Keywords Sample	103
Table 3.10(b) Theories and Relation to the Keywords Sample	104
Table 3.11(a) Adjectives, Nouns, and Verbs Related Principles of Animation, Principles of Character Design, Art Theories,	



Perception Theories, and Emotion	105
Table 3.11(b)Adjectives, Nouns, and Verbs Related Principles of Animation, Principles of Character Design, Art Theories, Perception Theories, and Emotion	106
Table 3.11(c)Adjectives, Nouns, and Verbs Related Principles of Animation, Principles of Character Design, Art Theories, Perception Theories, and Emotion	107
Table 3.11(d)Adjectives, Nouns, and Verbs Related Principles of Animation, Principles of Character Design, Art Theories, Perception Theories, and Emotion	108
Table 3.11(e)Adjectives, Nouns, and Verbs Related Principles of Animation, Principles of Character Design, Art Theories, Perception Theories, and Emotion	109
Table 3.12(a)Selected Viewer’s Impression Words (Adjectives, nouns and verbs from the FSVA Questionnaires	113
Table 3.12(b)Selected Viewer’s Impression Words (Adjectives, nouns and verbs from the FSVA Questionnaires	114
Table 3.13 Experimental Study Research Instrument	119
Table 4.1 Table leading to the selection of Viewer’s Impression Words (VIW)	121
Table 4.2 Instruments and Equipment	122
Table 4.3 The Keiser Meyer Olkin (KMO) and Barlett’s Test	124
Table 4.4 Total Variance Explained for Human Male: Eyes	125
Table 4.5 Total Variance Explained for Human Male: Faceshape	125
Table 4.6 Total Variance Explained for Human Male: Hairstyle	126
Table 4.7 Rotated Component Matrix for Human-Male:	127
Table 4.8 Rotated Component Matrix for Human Male: Faceshape	128

Table 4.9	Rotated Component Matrix for Human Male: Hairstyle	129
Table 4.10	Factors and Variables for Human-Male: Eyes	130
Table 4.11	Factors and Variables for human-Male: Hairstyle	130
Table 4.12	Factors and Variables for human-Male: Face-Shape	131
Table 4.13	Partial Least Squares Calculation	133
Table 4.14	Correlation Coefficient for Human-Male: Eyes Score	134
Table 4.15	Correlation Coefficient for Human-Male: Face-Shape Score	135
Table 4.16	Correlation Coefficient for Human-Male: Hairstyle Score	136
Table 4.17(a)	Human Male: Eyes 'Appeal' Proposed Principles Sample	137
Table 4.17(b)	Human Male: Eyes 'Appeal' Proposed Principles Sample	138
Table 4.18	Sample of Design Element with Character Reference for Human Male: Eyes	139
Table 4.19(a)	Type of Animation and Characters (Existing Sabah Folktale-Based Animation Character)	147
Table 4.19(b)	Type of Animation and Characters (Existing Sabah Folktale-Based Animation Character)	148
Table 4.20(a)	Newly Designed Animation Characters Based on ACDAP	149
Table 4.20(b)	Newly Designed Animation Characters Based on ACDAP	150
Table 4.20(c)	Newly Designed Animation Characters Based on ACDAP	151
Table 4.21	Male Character Design Comparison Sample	152
Table 4.22	Female Character Design Comparison Sample	153
Table 4.23	Mystical Creature Design Comparison Sample	153

LIST OF FIGURES

		Page
Figure 2.1	Character Design Process	29
Figure 2.2	Saussure’s Model of the Sign	34
Figure 2.3	Peirce’s Semiotic’s Triangle	35
Figure 2.4	Iconic, Indexical and Symbolic	45
Figure 2.5	Visual Semiotic Analysis: Adopted From De Sausure’s Semiotic Model	46
Figure 2.6	FSVA Questionnaires Design with Visual Semiotics and Formalistic Approach	48
Figure 2.7	Tree Structure Concept (Mazda Miata Kansei) The Process of Kansei Engineering Type I	63 54
Figure 2.8	Structure of KES	64
Figure 2.9	Collaborative Kansei Designing System	68
Figure 3.1	The Research Process	72
Figure 3.2	The Qualitative Content Analysis Coding Approach in Identifying Valid Specimen	92
Figure 3.3	Formalistic and Visual Semiotic Analysis (FVSA) Questionnaires Sample	111
Figure 3.4	Formalistic and Visual Semiotic Analysis (FVSA) Questionnaires Sample	112
Figure 3.5	Sample of the SD Scale Checklists	115
Figure 3.6	Sample of the SD Scale Checklists	116
Figure 4.1	The Measurement Procedure	122
Figure 4.2	ACDAP Mind Mapping Easy Access Human-Male Eyes Sample	140
Figure 4.3	ACDAP Mind Mapping Easy Access Human-Male Face-Shape Sample	141
Figure 4.4	ACDAP Mind Mapping Easy Access Human-Male Eyes Hairstyle	142
Figure 4.5	The Comparison Method	146
Figure 4.6	5 Points Semantic Differential (SD) Scale ACDAP Character Checklist for PCA	154
Figure 4.7	5 Points Semantic Differential (SD) Scale ACDAP	

	Character Checklist for PCA	155
Figure 4.8	Viewer's Impressions Words PC Loading for Human- Male	156
Figure 4.9	Viewer's Impressions Words PC Loading for Human- Female	156
Figure 4.10	Appeal Factor PC Loadings for Existing Sabah's Folktale based Animation Character	157
Figure 4.11	Appeal Factor PC Loadings for New Sabah's Folktale Based Animation Character	158
Figure 4.12	PC Loadings for All Characters	158
Figure 4.13	'Appeal' Matrix System	161

LIST OF ABBREVIATIONS

FVSA	-	Formalistic and Visual Semiotics Analysis
PLS	-	Partial Least Squares
KW	-	Kansei Words
VIW	-	Viewer's Impression Words
FA	-	Factor Analysis
PCA	-	Principle Component Analysis
KE	-	Kansei Engineering
FMCG	-	Fast Moving Consumer Goods
KE Type I	-	Kansei Engineering Type I
KES	-	Kansei Engineering Type II: Engineering System
ACDAP	-	Animation Character Design Appeal Principles
CGI	-	Computer Generated Imagery
P2P	-	Peer to Peer
KE Type IV	-	Kansei Engineering Type IV: Mathematical
SD Scale	-	Semantic Differential Scale
UX	-	User Experience Design
QTI Type 1	-	Quantification Theory Type I

LIST OF APPENDICES

	Page
Appendix A: Sample of animation character matrix and the score value for each animation character from the seven (7) selected folktale-based animation	190
Appendix B: Characters included from 7 selected Japanese Animation	197
Appendix C: Formalistic and Visual Semiotics (FVSA) Questionnaires Sample 31 of 82	217
Appendix D: Viewers Impression Words (VIW) Questionnaires SD Scale (18 of 324)	250



CHAPTER 1

INTRODUCTION

1.1 Overview

Plenty of efforts have been made to produce or create animation characters based on folktales. Projects by Cohen (2010) the secret of Kells, and Peters (2018) Disney's folk stories are examples of them. However, many productions have failed to attract viewers. In the local animation industry, one big-budget animated production called Oh La La failed to attract viewers because of the lack of quality in design aesthetics (Arshad, Kim, & Manaf, 2018). To make animation character attractive, Thomas & Johnston (1995) suggested that animators should follow the twelve (12) principles of animation. The principle that deals mostly on animation characters are 'appeal.' According to Surtees (2019), the secret to having a successful character is to make it believable, and many processes are involved in achieving 'appeal.' To create animation character designs on folktales that incorporated 'appeal' in its design needed a thorough understanding of the meaning of the word. The in-depth understanding of 'appeal' will help designers to create more believable characters. To understand the whole process of animation and study its whole traits would require much time ("Traditional animation," 2019). Therefore, the research will only investigate animation character's principle of 'appeal,' to understand 'appeal' in animation character design and to achieve 'appeal' in designing new animation characters. Discussions on animation character 'appeal,' especially that involves folktales animation were few; hence, it is essential to do so to support this study. To reach the animation character 'appeal,' the study on viewers' impressions should be pursued. Animation character design is a product just like any other tangible products that require positive impressions before the decision to view it.

To achieve 'appeal' in animation character design, it needs systematical ways. The research proposes that it requires a method that can translate the viewer's impressions to understand 'appeal.' The nearest method is Kansei Engineering, which has been developed in Japan for the past few by Emeritus



Professor Dr. Mitsuo Nagamachi. It is used to incorporate the feelings and impressions of the audience in the creation of products.

This thesis proposes to understand how folktales-based animation character design could be made appealing to the viewers and at the same time, enhance their interest in watching such animation. It is also to identify 'appeal' as well as design theories embedded in selected popular folktales-based animation. The hidden 'appeal' factor from existing popular animation could be the answer in understanding and achieving the desired factors of the principle. This research also proposes a method that can be used to grasp the viewer's impression and translate it as a basis to create new local folktale animation character designs that 'appeals.' In conclusion, the approach of Kansei Engineering in folktales animation character is hopefully to continuously develop and integrated with the adopted method to progress in the animation industry, generally.

1.2 Problem Statements

Problem statement presents the description of issues currently existing, which needs to be addressed in this study. The issues provide the context needed for the research and generate the questions, in which the research will answer throughout this study. The word 'appeal' often presents misunderstanding to designers and at the same time, an important principle in animation character design. The problem statements in this study associate the principle of 'appeal,' character design, and folktale-based animation. Below is the detailed description of the statements.

a. The vague understanding of the principle of 'Appeal' to designers and animators

The twelve principles of animation state that 'appeal' is one of the most important principles (Thomas & Johnston, 1995). The word is frequently misinterpreted to suggest cuddly bunnies and soft kittens. To designers and animators, it meant anything that a person likes to see, quality of charm, pleasing design, simplicity, communication, and magnetism (Williams, 2002). For an animation to be successful in conveying messages and receive decent viewership, it must contain the principle of appeal (Punsvik, n.d.). The 'appeal' in animation character could be the 'attraction' factor in getting more viewers and fans to relate to the animation character (K stuff,

2008).

'Appeal' is a perplexing principle to define as it is based on a personal character attractiveness (Walker, 2013). Walker also said that it is entirely subjective on the viewer's point of view and personal opinion as to what makes it as visually pleasing. He further adds that it is the character's visual qualities that get the viewer's attention during storytelling, and characters that are monotonous in terms of design and that are more generalized are far less exciting. With its ambiguity and subjectivity, it can be quite a challenge especially for beginners to design a memorable and suitable character, in where, when it comes to the early process of character design, a lot of mixed information and ideas from media, cultural background, popular trends and the attempt to add originality to a cliched character will come into mind (Yuen, Tarique Azam, & Ang, 2015).

Citing a study on web design using Kansei Engineering, in which the design elements, principles, and theories bares similarities to animation character design, Lokman (2010), said in realizing the concept in terms of Web site appearance, designers often misunderstand the description provided by users or user advocates, who in turn do not really understand the concept that they actually want. Animators and producers often face the same problem with concepts and themes wanted by the audience. She further adds, designers possibly come out with the specification by their intuition and creativity.

b. Low supporting literature and comprehensive information in the field of character design

According to Iuri (2009), the low number of supporting literature and comprehensive information in the field of character design presents a setback for designers and animators trying to find thorough information on the character design process, since having in-depth knowledge and understanding of it presents the beginning of the creation of expertise in the field. The activity in designing characters for computer animation demands a great deal of complex problem solving and combining aspects from the story, subjective ideas and abstract visual elements such as lines, shapes, and colors in order to generate a character that can be understood and believable (Attafe, 2007).

Although the information on character design and appeal are available through books and online resource, they usually focused on the techniques or style of specified productions and technical 'how to' (Iuri, 2009). Iuri further adds that whereas art books usually reveal process of character design but rarely touch on the complete process of making a character 'appeal' except for the artistic side of the drawing process, for instance on how to draw eyes that appeal.

To get a good animation character design, the one that appeals and attractive is the one that believable, memorable, and perfect for the story it was in. However, according to Iuri, he further mentioned that for the time being, there are no effective formulas to achieve the outcome and the approach taken by different animators and designers are varying between them. Designers will design according to their personal preferences, background and experiences in where, they will take into consideration their cultural background, existing and precedent studies as well as popular trends and ideas. The difficulty in creating appealing animation characters has similarities elsewhere like in Malaysia, students will design animation characters based on their experience due to the exposure from media, and most of the influence can be seen from anime and Disney (Yuen et al., 2015). Creating unappealing characters as part of any project could cause the failure of the project or production and at the very least, a negative response from the viewer (Tharib, 2013). Walker (2013) mentioned how there are various ways but no definite answers on how to achieve appeal in animation characters. Walker further adds, for now, it depends on estimation without having sufficient information on what is 'appealing.' Failure in an animation production is prone after a massive amount of investment.

c. Poor acceptance of folktale based animation in Malaysia

Most animation on folktales would get a low rate of numbers of viewers for some reason. The first folktales-based animation from Malaysia to be shown in cinema entitled 'Silat Lagenda' cost Rm 5 million to produce (Manah, 1998). Manah adds, however, the animation production only received RM 142 thousand in ticket collection. Manah also said that the folktales based Malaysian animation entitled Cheritera, which told a story on Iban folktale which is the Moon Princess and the King of the Sun with bits of other stories such as the buffalo and the mouse deer, with a

production budget of RM 1 million it only managed to receive around 2 thousand ringgit in ticket sales. 'Putih' with a story based on Malay folktales is an adaptation of the classic Malay folklore Bawang Putih Bawang Merah that is considered as a Malay version of Cinderella, gross in about 400 thousand with a budget of RM 2.21 million ("Filem Animasi Malaysia," n.d.). It can be seen that from these three big-budget folktales based animation, they did not fare well in the local market and did not manage to penetrate the international market. Among the reason for the poor performance was character design appeal, and the quality of the whole animation, storyline, and marketing strategy (Utusan Online, 2015). Citing a case from India, particularly on folktale animation, Sharma (2012) points, a lot of Indian animated content lacks an appealing narrative," Which is the identical case with folktales worldwide. India is one of the technology-advanced countries in the creative industry with rich content on folktales. She also said that animation companies, draw their plots from mythology: Ramayana in 1992, Hanuman in 2005, Krishna in 2006, and Luv Kush in 2010. Most folktales animation production is so focused on instilling values and moral tale until they forget that the foundation of any folktale animation is about affecting human emotions and she further said that almost none of the animated films have been successful (Sharma 2012).

Table 1.1: Malaysian Animation Production Cost VS Ticket Sales

Malaysian Animation Film	Production Cost	Ticket sales
1 Silat Lagenda (1998)	RM 5,000,000	RM 142,000
2 Cheritera (Sept 2001)	RM 1,000,000	RM 2,000
3 Putih (Okt 2001)	RM 2,210,000	RM 400,000
4 Budak Lapok (2007)	RM 2,590,000	RM 161,000
5 Seafood (Mac 2012)	RM 12,000,000	RM 2,360,000
6 War of the World- Goliath (Nov-2012)	RM 15,000,000	RM 280,000
7 Bola Kampung the Movie (2013)	RM5,700,000	RM 610,000

Source: Filem Animasi Malaysia. (n.d.)

d. Less awareness of folktales within the younger generation

Folktales are told from generation to generation, passed as a form of verbal stories, and it usually is a tale about people, life, animals, spirits, and fairy tales. Sometimes it carries morals and life values. In the past feudal period, Malay folktales move through generations orally and were documented recently in writing forms. It contained stories or narrative literature where it incorporated local situations, characters, and situations. The folktales were treated as a source of entertainment in the olden days. However, it is threatened with extinction as less awareness can be seen, especially with the younger generation (Amirudin, 2017). As stated by Saleem (2012) the reflection of folktales similarly in animation bears the responsibility of highlighting the underlying message and functions through its tales of legends and mythologies to make the receiver perceive the story as a symbol, a function that it has been performing from the times of oral tradition. Saleem further adds, creating folktale animations carry a distinctive weight and the aim of shaping and guiding young minds and perpetuating socio-cultural anxieties remains the same. Saleem also said that the responsibility of the storyteller has shifted from the shoulders of the elders in the family to the gadgets of modern society.

e. Local animation character design quality and 'appeal.'

The animation scenario in Malaysia paints a slightly different picture. Some research blames the aspects of animation education as the main cause of less quality animation (Fadli Abdullah & MD Sidin Ahmad Ishak, 2010). According to Koay (2010), Hassan Muthalib stated that a lot of animation production house complained that animation graduates are only trained on animation technology and are less knowledgeable on basic animation, storytelling, cinematography, acting, and editing.

Koay also adds that the father of Malaysian animation Hassan Muthalib points out that local film animators today are so engrossed with how their work looks visually, that they forget how to convey a good story. Animators and educators teach only the technique and software and forget the other important basic things to make an animation appeal. He further adds, "But they forgot that the technique is about sending the story across. A good technique or research method to create folktale based animation must be developed to at least improve the initial animation making process such as how to achieve appeal in character drawing, to attract viewers and

BIBLIOGRAPHY

- Adachi, R. 2012. *A Study of Japanese Animation as Translation: A Descriptive Analysis of Hayao Miyazaki and Other Anime Dubbed Into English*. Universal-Publishers.
- Adelabu, O. S., Yamanaka, T., & Moalosi, R., 2013. *Towards Kansei Evaluation of African Product Design*. *ResearchGate*, 12(2), 135–144.
<https://doi.org/10.5057/ijae.12.135>
- Almagro, L. M., & Martorell, X. T. 2012. *Statistical Methods in Kansei Engineering: a Case of Statistical Engineering*. Wiley Online Library.
- Artacho-Ramirez, MA, Diego-Mas JA, Alcaide-Marzal J, 2008. *Influence of the Mode of Graphical Design Representation on the perception of Product Aesthetic and Emotional features: An Exploratory Study*. *Int J Ind Ergon*
- Amirudin, Z, 2017. *Discovering Strong 2d Character of Pak Pandir (Anatomy)*. Retrieved from <http://www.academia.edu/13195029/Discovering> Strong 2d Character Of Pak Pandir Anatomy
- Angier, N, 2006. *The Cute Factor*. *The New York Times*. Retrieved from <https://www.nytimes.com/2006/01/03/science/the-cute-factor.html>
- Arkinson, D, n.d. *Animation Notes Contents*. Retrieved February 12, 2018, from http://minyos.its.rmit.edu.au/aim/a_notes/anim_contents.html
- Arshad, M. R., Kim, H. Y., & Manaf, A. A. 2018. *Character Pleasantness in Malaysian Animated Cartoon Characters*. *SHS Web of Conferences*, 53. Retrieved from https://www.shs-conferences.org/articles/shsconf/pdf/2018/14/shsconf_ichss2018_02004.pdf
- Ashwin, C, 1984. *Drawing, Design, and Semiotics*. *Design Issues*, Vol. 1, No. 2 (Autumn, 1984), Pp. 42-52, 42–52.
- Attafe, J. 2007. Effective Character Design. *Imagine FX*. Retrieved from <https://judithatafe.files.wordpress.com/2013/05/character-design-tutorial->



from-website-with-my-notes.pdf#page=3&zoom=auto,-82,310

- Baggaley, J. P. 1985. Design of a TV Character with Visual Appeal for Preschool Children. *Journal of Educational Television*, 11(1), 41–48.
<https://doi.org/10.1080/0260741850110106>
- Bancroft, T. 2016. What is Character Design? Character Design Defined. Retrieved June 1, 2018, from <http://taughtbyapro.com/what-is-character-design/>
- Barthes, R. 1964. *Rhetoric Of The Image*. In eds. Evans, Jessica & Hall, Stuart (1999). *Visual Culture: The Reader*. London, Sage Publications.
- Becker, J., & Libmann, H.-J. (1973). *Inhaltsanalyse - Kritik einer sozialwissenschaftlichen Methode. Arbeitspapiere zur politischen Soziologie 5*. München: Olzog.
- Berger, J. 1990. *Ways of Seeing [WAYS OF SEEING] By Berger, John (Author) Dec-01-1990 Paperback*. Penguin Books.
- Blair, P. 1949. *Advanced animation*. Foster.
- Blake, R. 2014. Why Graphic designers are not As Pretentious As You Think. *Articles from Roberto Blake*. Retrieved from <http://robertoblake.com/articles/?p=2517>
- Braembussche, A. V. den. 2009. *Thinking Art: An Introduction to Philosophy of Art*. © 2009 Springer Science + Business Media B.V.
- Brenner & Robin. 2007. ANIME'S BRAVE NEW WORLD. *Richland Library*, 132(12), 46–49.
- Brown, S. T. 2006. *Cinema Anime; Critical Engagement with Japanese Animation*. New York; Palgrave Macmillan.
- Carter, C. 2016. *Animated Mise en scène and Aesthetic Harmony: An Expansion of the Traditional Principles of Animation to 3D Computer Animation*. Queensland University of Technology, Film, Screen, Animation Creative Industries Faculty.
- Chandler, D. 2007. *Semiotics: The Basics*. Routledge Taylor & Francis Group, London

& New York.

Chapman, C. 2018. The Principles of Design and Their Importance. Retrieved May 29, 2019, from Toptal Design website: <https://www.toptal.com/designers/ui/principles-of-design>

Chapman, M., Ostwald, M. ., & Tucker, C. 2004. Semiotics, Interpretation, and Political Resistance in Architecture, Contexts of Architecture. *The 38th International Conference of Architectural Science Association ANZAScA 2004, Launceston, Tasmania.*

Chen, C. J., Chuah, K. M., & Teh, C. S. 2010. Bridging the Emotional Divide in Instructional Design: A Kansei Perspective. In M. Iskander, V. Kapila, & M. A. Karim (Eds.), *Technological Developments in Education and Automation* (pp. 173–177). Retrieved from <http://libra.msra.cn/Publication/13287831/bridging-the-emotional-divide-in-instructional-design-a-kansei-perspective>

Chen, C.-C. 2018. *International Conference on Kansei Engineering & Emotion Research 2018 Programme Book.*

Cholodenko, A. (Ed.). 2011. *The Illusion of Life II: More Essays on Animation.* Sydney N.S.W., Australia : [London: University of Washington Press.

Cohen, K. 2010. "The Secret of Kells" - What is this Remarkable Animated Feature? Retrieved April 2, 2019, from Animation World Network website: <https://www.awn.com/animationworld/secret-kells-what-remarkable-animated-feature>

Craig, T. 2000. Japan Pop! Inside the World of Japanese Popular Culture. New York: M.E Sharpe.

Cresswell JW, Plano Clark VL, 2011. Designing and conducting mixed-method research.2nd Sage; Thousand Oaks, CA.

DiscoverDesign. 2018. DiscoverDesign Handbook. Retrieved May 29, 2019, from DiscoverDesign website: /handbook

- Dizikes, P. 2013. Why are Japanese cartoons a global hit? Retrieved July 8, 2015, from MIT News website: <http://newsoffice.mit.edu/2013/the-soul-of-anime-0129>
- Eberle, K. 2015. Animation Styles: What Makes Anime Unique [News]. Retrieved May 7, 2019, from Show Me The Animation website: <http://showmetheanimation.com/features/animation-styles-what-makes-anime-unique/>
- EduAdvisor. n.d. Digital Animation Course in Malaysia. Retrieved May 29, 2019, from EduAdvisor website: <https://eduadvisor.my/digital-animation/>
- Edwards, P. 1989. The problem of Aesthetic. *The Encyclopedia of Philosophy*, 1. Retrieved from <http://web.csulb.edu/~jvancamp/freedom4.html>
- Ekstrom, H. 2013. How Can a Character's Personality be Conveyed Visually, through Shape? *Game Design and Graphics*.
- Ellison, C. 2013. Why Is It So Difficult to Make Cute Cartoon Characters? Retrieved June 1, 2018, from <https://www.cartoonbrew.com/ideas-commentary/why-is-it-so-difficult-to-make-cute-characters-81160.html>
- Enns, J. T. 2003. *Gestalt Principles of Perception*. Encyclopedia of Cognitive Science, London: Nature Publishing Group.
- Essays, U. 2013. Aesthetic Qualities Of New And Old Animations Film Studies Essay. Retrieved June 17, 2018, from UKEssays website: <https://www.ukessays.com/essays/film-studies/aesthetic-qualities-of-new-and-old-animations-film-studies-essay.php>
- Fadli Abdullah, & MD Sidin Ahmad Ishak. 2010. Pembangunan Sektor Animasi di Malaysia: Pendidikan dan Latihan Animasi di Institusi Pengajian Tinggi Awam. *Jurnal Pengajian Media Malaysia Jilid 12, 12(2)*, 69–82.
- Filem Animasi Malaysia. n.d. Retrieved April 24, 2017, from Filem Kita website: www.filemkita.com

Folklore. 2018. In *Wikipedia*. Retrieved from

- <https://en.wikipedia.org/w/index.php?title=Folklore&oldid=841210633>
- Fukunaga, N. 2006. Those anime students; Foreign language literacy development through Japanese popular culture. *Journal of Adolescent & Adult Literacy*, 206–222.
- Glebas, F. 2012a. *The Animator's Eye: Adding Life to Animation with Timing, Layout, Design, Color, and Sound* (1 edition). Waltham, MA: Focal Press.
- Glebas, F. 2012b. *The Animator's Eye: Adding Life to Animation with Timing, Layout, Design, Color, and Sound* (1 edition). Waltham, MA: Focal Press.
- Gould, S. J. n.d. A Biological Homage to Mickey Mouse. Retrieved June 7, 2018, from <https://faculty.uca.edu/benw/biol4415/papers/Mickey.pdf>
- Harun, A., Abd Razak, M. R., & Abd Muthalib, H. 2010. "Hikayat Sang Kancil" Revisited: A Formalistic Perspective of the First Made in Malaysia Cartoon Animation. Retrieved April 15, 2015, from http://www.academia.edu/6627148/_Hikayat_Sang_Kancil_Revisited_A_Formalistic_Perspective_of_the_First_Made_in_Malaysia_Cartoon_Animation
- Hassan, A. M. 2000. Sang Kancil - Ke Mana Kau? Film Animasi di Era Globalisation - Masa Depan dan Cabaran. *Minggu Sastera Kebangsaan, Dewan Bahasa Dan Pustaka, Kuala Lumpur*.
- Hassan, N. A., Sallehuddin, I., & Norazira bt Abd Aziz, N. 2016. Study on Anime and Its Impacts Among University Students. *Prosiding Persidangan Antarabangsa Sains Sosial Dan Kemanusiaan*, 2, 387.
- Hoare, J. 2017. Semiotics in Animation. *Medium.com*. Retrieved from <https://medium.com/@joshhoare/semiotics-in-animation-e8178750c272>
- Impression | Synonyms of impression by Oxford Dictionaries Thesaurus. 2019. Retrieved May 15, 2019, from Oxford Dictionaries | $\%{\text{language}}$ website: <https://en.oxforddictionaries.com/thesaurus/impression>
- Ishihara, S., Nagamachi, M., & Ishihara, K. 2008. Analyzing Kansei and Design Elements Relations with PLS. *Lund University, Campus Helsingborg*.

- Iuri, L. 2009. *Framework for Development of Schemata in Character Design for Computer Animation* (The Ohio State University). Retrieved from https://etd.ohiolink.edu/rws_etd/document/get/osu1245432626/inline
- Jenkins, H. 1992. *Textual Poachers, Television Fans and Participatory Culture, Studies in Culture and Communication*. New York & Routledge.
- K stuff, J. 2008. *Disney Principles 4 - Appeal 1* -. Retrieved from <http://johnkstuff.blogspot.com/2008/12/disney-principles-appeal-1.html>
- Kee, M. C., Chwen, J. C., & Chee, S. T., 2008. Kansei Engineering Concept in Instructional Design: A Novel Perspective in Guiding the Design of Instructional Materials. Retrieved November 24, 2014, from http://www.academia.edu/828162/Kansei_Engineering_Concept_in_Instructional_Design_A_Novel_Perspective_in_Guiding_the_Design_of_Instructional_Materials
- Keiko Ishihara. 2010. Psychophysiological Methods. In *Industrial Innovation. Kansei/Affective Engineering* (Vols. 1–2, pp. 39–50). Retrieved from <http://dx.doi.org/10.1201/EBK1439821336-5>
- Khalis, F. M., & Mustafa, N., 2017. Cultural Inspirations towards Malaysian Animation Character Design. *Malaysian Journal of Communication*, 33.
- Khong, K. W. (n.d.). *Attractions in Anime: An Exploration of Anime Popular Cultural Practices of Malaysian Youth*.
- Kim, J., Lee, J., & Choi, D., 2003. Designing emotionally evocative homepages: an empirical study of the quantitative relations between design factors and emotional dimensions. *International Journal of Human-Computer Studies*, 59(6), 899–940. <https://doi.org/10.1016/j.ijhcs.2003.06.002>
- Kim c. et al. 2011. Evaluation of Customer Impressions using Virtual Prototypes in the Internet Environment. *Int J Ind Ergeon*
- K-Kissey, J. 2005. Kadazandusun Cultural Association | Sabah Folklore, Legends, and

- Superstitions. Retrieved January 1, 2015, from <http://kdca.org.my/archives/67>
- Koay, A. 2010. Archives | The Star Online. Retrieved November 20, 2014, from <http://www.thestar.com.my/story/?file=%2F2010%2F5%2F24%2Flifeliving%2F6296930&sec=lifeliving>
- Konishi, S., & Venturini, M., 2007. Articulating the Appeal. *Pixar Technical Memo#07-12, Pixar Animation Studio.*
- Konnikova, M. 2014, June 25. How “Frozen” Took Over the World. Retrieved December 22, 2014, from The New Yorker website: <http://www.newyorker.com/science/maria-konnikova/how-frozen-took-over-the-world>
- Kress, G., & Leeuwen, T. van. 2006. *Reading Images: The Grammar of Visual Design* (2 edition). London: Routledge.
- Kunz, S. 2012. *The role of Drawing in Animated Films.* Retrieved from http://www.academia.edu/2352327/The_role_of_Drawing_in_Animated_Films
- Lasseter, J. 1987. Principles of Traditional Animation Applied to 3D Computer Animation. *Computer Graphics, SIGGRAPH*, 35–44.
- Lévy, P. 2013. Beyond Kansei Engineering: The Emancipation of Kansei Design. Retrieved November 27, 2014, from International Journal of Design website: <http://www.ijdesign.org/ojs/index.php/IJDesign/article/view/1097/581>
- Li, A. A. Q. 2015. The Appeal of Japanese Anime. Retrieved June 24, 2019, from New Cultural Analyst website: <https://newculturalanalyst.wordpress.com/2015/04/09/the-appeal-of-japanese-anime/>
- Lindgaard, G. 2007. Aesthetics, Visual Appeal, Usability, and User Satisfaction: What Do the User’s Eyes Tell the User’s Brain? *Australian Journal of Emerging Technologies and Society.*

- Lindgaard, G., Dudek, C., Sen, D., Sumegi, L., & Noonan, P. 2011. An Exploration of Relations Between Visual Appeal, Trustworthiness, and Perceived Usability of Homepages. *ACM Trans. Comput.-Hum. Interact.*, 18(1), 1:1–1:30. <https://doi.org/10.1145/1959022.1959023>
- Lockner, D., & Bonnardel, N., 2014. Emotion and Interface Design: How to Measure Interface Design Emotional Effect? *KEER2014. Proceedings of the 5th Kansei Engineering & Emotion Research; International Conference; Linkoping; Sweden*. Retrieved from http://www.ep.liu.se/ecp_article/index.en.aspx?issue=100;article=005
- Lokman, A. M. 2010a. Design and Emotion: The Kansei Engineering Methodology. *Design and Emotion: The Kansei Engineering Methodology*, 1(1).
- Lokman, A. M. 2010b. Kansei/Affective Engineering and Web Design. In *Industrial Innovation. Kansei/Affective Engineering* (Vols. 1–2, pp. 227–251). Retrieved from <http://dx.doi.org/10.1201/EBK1439821336-9>
- Lokman, A. M., Harun, A. F., Md. Noor, N. L., & Nagamachi, M., 2009. Website Affective Evaluation: Analysis of Differences in Evaluations Result by Data Population. In M. Kurosu (Ed.), *Human-Centered Design* (Vol. 5619, pp. 643–652). Retrieved from http://link.springer.com/10.1007/978-3-642-02806-9_75
- Lokman, A. M., Nor Laila, M. N., & Nagamachi, M. 2008. *Kansei structure and visualization of clothing websites cluster*. 1–8. <https://doi.org/10.1109/ITSIM.2008.4631547>
- Lu, A. S. 2008. The Many Faces of Internationalization in Japanese Anime. *Animation*, 3(2), 169–187. <https://doi.org/10.1177/1746847708091893>
- MacWilliams, M. W., & MacWilliams, M. W., 2014. *Japanese Visual Culture: Explorations in the World of Manga and Anime: Explorations in the World of Manga and Anime*. Routledge.
- Maitra, L. 2007. From Oral tradition to digital media- Folklore in West Bengal.

- Retrieved November 19, 2014, from
http://www.academia.edu/442965/From_Oral_tradition_to_digital_media-_Folklore_in_West_Bengal
- Mamaghani, N. K., Dalir, A., & Soleimani, B., 2014. Designing Watch by Using Semiotics Approaches. *International Conference on Kansei Engineering and Emotion Research*. Retrieved from
http://dqi.id.tue.nl/keer2014/papers/KEER2014_152
- Mamaghani, N. K., Rahimian, E., & Mortezaei. 2014. Kansei Engineering Approach for Consumer's Perception of the Ketchup Sauce Bottle. *INTERNATIONAL CONFERENCE ON KANSEI International Conference on Kansei Engineering and Emotion Research*. Retrieved from
http://dqi.id.tue.nl/keer2014/papers/KEER2014_55
- Mamat, R., Eriko, Y., Hussin, S., & Tajuddin, F. 2012. Anime Viewing Among Secondary School Students in Malaysia. *Global Media Journal-Malaysia Edition, 2(2)*. Retrieved from <http://www.gmj-me.upm.edu.my/UPLOAD/006.pdf>
- Manah, R. 1998. Silat Legenda Merintis Penerbitan Animasi. *Utusan Online*. Retrieved from
http://ww1.utusan.com.my/utusan/info.asp?y=1998&dt=0625&pub=Utusan_Malaysia&sec=Hiburan&pg=et_05.htm
- Marghani, V.G.R.E., Silva, F.C. da, Knapik, L., & Verri, M.A 2013. Kansei Engineering; Types of This Methodology. In *Emotional Engineering vol 2 (pp. 127-147)*. Retrieved from https://.Springer.com/chapter/10.1007/978-1-4471-4984-2_9
- Mattesi, M. 2008. *Force: Character Design from Life Drawing*. CRC Press.
- Mayring, P. 2000. Qualitative Content Analysis. *Forum: Qualitative Social Research, 1(2)*. Retrieved from
<http://utsc.utoronto.ca/~kmacd/IDSC10/Readings/Readings/text%20analyses/CA.pdf>
- Meng, Xiangrui. 2013. *"Scalable Simple Random Sampling and Stratified*

- Sampling" (PDF)*. Proceedings of the 30th International Conference on Machine Learning (ICML-13): 531–539.
- Mclean, T. 2014. Toons Dominate Japan's Box Office in 2013. Retrieved January 2, 2015, from Animation Magazine website: <http://www.animationmagazine.net/features/toons-dominate-japans-box-office-2013/>
- Miller, F. P., Vandome, A. F., & John, M. 2010. *12 Basic Principles of Animation*. VDM Publishing.
- Minguez-Lopez, X. 2014. Folktales and Other References in Toriyama's Dragon Ball. *Animation*, 9(1), 27–46. <https://doi.org/10.1177/1746847713519386>
- Mohd Yusoff, M. D. 2014. Visualizing Peran in Makyung as 3D Animated Character. *Proceeding of the Social Sciences Research ICSRR 2014 Kota Kinabalu, Sabah*, 465–474.
- Moreno, L. 2014. The Creation Process of 2D Animated Movies. Retrieved June 1, 2018, from http://www.edubcn.cat/rcs_gene/treballs_recerca/2014-2015-02-4-TR_baixa.pdf
- Mounsey, B. 2010. *Holistic Character Design*. Retrieved from <https://design.tutsplus.com/articles/holistic-character-design--vector-3538>
- Nagamachi, M. 1999. *Kansei Engineering: the implication and applications to product development*. 6, 273–278. <https://doi.org/10.1109/ICSMC.1999.816563>
- Nagamachi, M. 2001. Workshop 2. *Kansei Engineering, International Conference on Affective Human Factors Design, Singapore*.
- Nagamachi M, 2002. Kansei Engineering as a Powerful Consumer-Oriented Technology for Product Development. *Appl Ergon* 33.289-294
- Nagamachi, M. 2010a. *Kansei/Affective Engineering*. CRC Press.
- Nagamachi, M. 2010b. Kansei/Affective Engineering and History of Kansei/Affective Engineering in the World. In *Industrial Innovation. Kansei/Affective Engineering* (Vols. 1–2, pp. 1–12). Retrieved from <http://dx.doi.org/10.1201/EBK1439821336-2>

- Nagamachi, M. 2010c. Methods of Kansei/Affective Engineering and Specific Cases of Kansei Products. In *Industrial Innovation. Kansei/Affective Engineering* (Vols. 1–2, pp. 13–29). Retrieved from <http://dx.doi.org/10.1201/EBK1439821336-3>
- Nagamachi, M., & Lokman, A. M. 2010. Hybrid Kansei Engineering. In *Industrial Innovation. Innovations of Kansei Engineering* (Vols. 1–2, pp. 97–105). Retrieved from <http://dx.doi.org/10.1201/EBK1439818664-7>
- Nagamachi, M., Tachikawa, M., Imanishi, N., Ishizawa, T., & Yano, S. 2008. A Successful Statistical Procedure on Kansei Engineering Products. 11th QMOD Conference. Quality Management and Organizational Development Attaining Sustainability From Organizational Excellence to Sustainable Excellence.
- Nagata, K. 2010. "Anime" makes Japan superpower. The Japan Times Online. Retrieved from <http://www.japantimes.co.jp/news/2010/09/07/reference/anime-makes-japan-superpower/>
- Napier, S. J. 2001. *The Fifth Look: Western Audiences and Japanese Animation. Anime from Akira to Princess Mononoke: Experiencing Contemporary Japanese Animation.* Urban Media Comics.
- Napier, S. J. 2005. *Anime from Akira to Howl's Moving Castle: Experiencing Contemporary Japanese Animation (Second Edition, Revised edition).* New York: Palgrave Macmillan Trade.
- O Connor, D. 2018. Twenty-one principles of animation |. *Angry Animator.* Retrieved from <http://www.angryanimator.com/word/2018/04/23/21-principles-of-animation/>
- Okuyama, Y. 2015. *Japanese Mythology in Film: A Semiotic Approach to Reading Japanese Film and Anime.* Lexington Books.
- Omar, M. A. M., & Ishak, M. S. A. I. 2014. *Understanding Malaysian Animation Characteristics: A structuralist-semiotic Analysis on Malaysian Animation*

- Series. *Jurnal Pengajian Media Malaysia*, 16(1). Retrieved from http://jpmm.um.edu.my/filebank/published_article/7273/03_JPMM14_1.pdf
- Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. 1957. *The Measurement of Meaning*. University of Illinois Press.
- Panteion University, Athens, Greece, & Skarpelos, Y. 2015. Towards a Visual Semiotics?://doi.org/10.24308/iass-2014-042
- Parsa, A. F. n.d. Visual Semiotics: How Still Images Mean? Interpreting still images by Using Semiotics Approaches. Retrieved from <http://akademik.maltepe.edu.tr/~osmanurper/g%F6rselimajy%F6n/visual%20semiotics%20how%20still%20images%20mean.pdf>
- Peters, L. 2018. The Real-Life Stories Of These 12 Disney Princesses Are Much Stranger Than You Realized. Retrieved April 2, 2019, from Bustle website: <https://www.bustle.com/p/12-famous-fairytale-princesses-the-real-stories-folktales-actual-history-that-inspired-them-8554483>
- Pilling, J. 2001. *Animation: 2D and beyond*. Crans-Près-Céligny ; RotoVision ;
- Piscopo, S. 2007. Animatic Magazine: how to make a character appealing. Retrieved February 28, 2018, from <http://animaticmag.com/anitech9.html>
- Poitras, G. 2000. *Anime Essentials: Everything a Fan Needs to Know*. Stone Bridge Press.
- Price, S. 2001. Cartoons from Another Planet: Japanese Animation as Cross-Cultural Communication. *Journal of American & Comparative Cultures*, 24(1–2), 153–169. https://doi.org/10.1111/j.1537-4726.2001.2401_153.x
- Punsvik, S. n.d. Principles of Animation Applied to Design: Making Meaningful Casualities That are Clear, Believable, and Engaging. Retrieved from https://www.ntnu.edu/documents/139799/1270604448/TPD4195_article_sindre_punsvik.pdf/2aaa99d3-1872-4fbc-aea5-42944de2b5ba
- Purfill, R. 2003. *JRR Tolkien: Myth, Morality, and Religion*. Ignatius Press.
- Reid, M. 2019. The seven principles of design. Retrieved May 8, 2019, from the

- 99designs website: <https://99designs.com/blog/tips/principles-of-design/>
- Reider, N. T. 2005. Spirited Away: Film of fantastic and evolving Japanese folk symbols. *Film Criticism*, 29(3), 4.
- Rich, Tofugu. 2015. Anime's Great Deception – The Difference Between Anime and Cartoons. Retrieved June 5, 2018, from Tofugu website: [https://www.tofugu.com/Japan/anime-vs-cartoons/-](https://www.tofugu.com/Japan/anime-vs-cartoons/)
- Ruh, B. 2012. *Adapting anime: Transnational media between Japan and the United States* (Ph.D., Indiana University). Retrieved from <http://search.proquest.com.ezproxy.ums.edu.my/docview/1022038906/citation/1152ECC44EBA42F5PQ/1?accountid=44242>
- Rummel, R. 1970. *Applied Factor Analysis*. Evanston, IL: Northwestern University Press.
- Saleem, fazeena. 2012. Telling tales: Preserving the tradition of storytelling. Retrieved November 19, 2014, from <http://thepeninsulaqatar.com/plus/cover-plus/210876/telling-tales-preserving-the-tradition-of-storytelling>
- Schütte *, S. T. W., Eklund, J., Axelsson, J. R. C., & Nagamachi, M. 2004. Concepts, methods, and tools in Kansei Engineering. *Theoretical Issues in Ergonomics Science*, 5(3), 214–231. <https://doi.org/10.1080/1463922021000049980>
- Schütte, S. 2005. *Engineering Emotional Values in Product Design: Kansei Engineering in Development*. Dept. of Mechanical Engineering, Univ., Linköping.
- Schütte, S., & Eklund, J. 2001. An Approach to Kansei Engineering- Methods and Case Study on Design Identity. *Proceedings of Conference on Human Affective Design, (Singapore: Asean Academic Press, London)*.
- Schütte, S., & Eklund, J. 2005. Design of Rocker Switches for Work-Vehicles—an Application of Kansei Engineering. *Applied Ergonomics*, 36(5), 557–567. <https://doi.org/10.1016/j.apergo.2005.02.002>
- S.Dai, A. 2008. Big Storms in Modern China. *Animation Magazine*, (November 2008).

- Retrieved from www.animationmagazine.com
- Sekeroglu, G. K. 2012. Aesthetics and Design in Three Dimensional Animation Process. *Procedia Social and Behavioral Sciences*, 51, 812–817.
- Semiotics | The Theories of Visual Communication. n.d. Retrieved April 9, 2015, from <https://convergingideaskib207.wordpress.com/tag/semiotics/>
- Sharma, E. K. 2012. Trouble in Toonistan. Retrieved February 18, 2014, from Business today in website: <http://businesstoday.intoday.in/story/indias-animation-industry-woes/1/184593.html>
- Snitkjær, C. 2019. Animated Thoughts. Retrieved June 22, 2019, from Animated Thoughts website: <https://christinesnitkjaer.com/2019/03/teach-yourself-appeal.html>
- Solomon, C. 2008. A Revealing Anime Flashback. *Animation Magazine*. Retrieved from www.animationmagazine.net
- Staff, A. 2016. 5 Essentials Elements for Creating Appealing Characters. *Artella*. Retrieved from <https://artella.com/index.php/2016/05/24/144857918261/>
- Stallings, F., Wright, H., & Sakurai, M. 2008. *Folktales from the Japanese Countryside*. Libraries Unlimited.
- Surtees, N. 2019. Pixar’s lessons in Design Thinking. Retrieved May 23, 2019, from Nadia Surtees website: <http://www.nadiasurtees.com/thoughts/pixar-design-thinking>
- Taylor, R. 1999. *The Encyclopedia of Animation Techniques*. Oxford; Boston: Focal Pr.
- Terra, S. C. L., & Metoyer, R. A. 2004. Performance Timing for Keyframe Animation. *Proceedings of the 2004 ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, 253–258. <https://doi.org/10.1145/1028523.1028556>
- Tharib, S. 2013. *An Investigation Into the Uncanny Character Design, Behaviour, and Context*. Bournemouth University.
- The Star. 2017, February 26. Oscar-nominated film The Red Turtle has no dialogue. *Star2.com*. Retrieved from

<https://www.star2.com/entertainment/2017/02/26/oscar-nominated-film-the-red-turtle-has-no-dialogue/>

- Thomas, F., & Johnston, O. 1995. *The illusion of life: Disney animation*. Hyperion.
- Tominaga, M. 2002. *Globalization and Japanese animation: Ethnography of American college students* (Ph.D., University of Pennsylvania). Retrieved from <http://search.proquest.com/docview/251138848>
- Tomos, Y. 2013. *The Significance of Anime as a Novel Animation Form, Referencing Selected Works by Hayao Miyazaki, Satoshi Kon, and Mamoru Oshii*. Aberystwyth University, Department of Theatre, Film, and Television Studies.
- Traditional animation. 2019. In *Wikipedia*. Retrieved from https://en.wikipedia.org/w/index.php?title=Traditional_animation&oldid=891540104
- Tsukamoto, H. 2006. *Manga Matrix: Create Unique Characters Using the Japanese Matrix System*. New York; Tokyo: Harper Design.
- Turkcan, B. 2013. Semiotic Approach to the Analysis of Children's Drawings. *Educational Sciences: Theory & Practice*, 1(13), 600–607.
- Utusan Online. 2015. Punca Siri Animasi Hilang. Retrieved February 24, 2018, from Utusan Online website: <http://www.utusan.com.my/rencana/utama/punca-siri-animasi-hilang-1.51644>
- Vincent, S. 2017. Creating appealing characters. Retrieved June 8, 2018, from <http://stevevincent.info/index.html>
- Wahab, J. A., Anuar, M. K., & Farhani. 2012. Global Media Product and Construction of "Japanese Identity": A Case Study Of Anime on Malaysian Television. *Jurnal Komunikasi Malaysian Journal of Communication Jilid 28(2): 1-19, 28(2)*, 1–19.
- Walker, J. E. 2013. *An appeal in Animated Character Design: Concepts and History* (The Savannah College of Art and Design). Retrieved from <http://ecollections.scad.edu/iii/cpro/app?id=8320237758904394&itemId=10>

01588&lang=eng&service=blob&suite=de

- Wells, P. 2002. *Animation – Genre and Authorship*. London; New York: Wallflower Press.
- White, M. D., & Marsh, E. E. 2006. Content Analysis: A Flexible Methodology. *Library Trends*, 55(1), 22-23-34-45.
- Williams, R. (2002). *The Animator's Survival Kit* (Second Edition edition). London: Faber & Faber.
- Yamato, E., Krauss, S., Tamam, E., Hassan, H., & Osman, M. N. 2011. It is Part of Our Lifestyle: Exploring Young Malaysians' Experiences with Japanese Popular Culture. *Keio Communication Review*, (33). Retrieved from <http://www.mediacom.keio.ac.jp/publication/pdf2011/12YAMATO.pdf>
- Yokota, M., & Hu, T. G. 2013. *Japanese Animation: East Asian Perspectives*. Univ. Press of Mississippi.
- Yokum, T. 2014. Fred's 14 Points of Animation & Additional 12. Retrieved June 20, 2019, from Fred's 14 Points of Animation and Additional 12 website: <https://tyokum01.wordpress.com/2014/03/24/freds-14-points-of-animation-additional-12/>
- Yong, A. G., & Pearce, S. 2013. A Beginner's Guide to Factor Analysis: Focusing on Exploratory Factor Analysis. *Tutorials in Quantitative Methods for Psychology*, Vol.9(2), 79–94.
- Yong, J. W., Michael, S. M., & Jie, W. 2011. Aesthetics and the Online Shopping Environment: Understanding Consumer Responses. *Journal of Retailing*, 87(1), 46–58.
- Yuen, M. ., Tarique Azam, N. ., & Ang, K. 2015. SCAMPER for Character Design, Unique Zoo Creature. *Springer Science+Business Media Singapore*, (O.H Hassan et al. (eds.), (i-al. CADER 2014),)