



Integration of Communication Matrix for Evaluating Microfilm

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Abstract. With the development of the global economy, the cultural and creative industries have become more and more important. The development of the film and television industry has witnessed a steady growth in recent years. The past pure visual entertainment of film and television works has been transformed into the current spiritual consumption and its core attraction to the audience is its creative ideas. With the increasing popularity of video equipment and availability of video equipment for everybody, the ways for artists' works to stand out lie in the audience's correct cognition of their ideas, which is exactly the topic discussed in this study. This study is one of the film and television art series studies which construct the research framework of film and television animation. It focuses on viewers and tests cognitive differences of film and television professionals in Taiwan and Chinese Mainland and the general audience for the film. Results: (1) The cognition of microfilm by professionals from Taiwan and Chinese Mainland is obviously different. (2) There are some differences among different genders and occupations in the recognition of microfilm. (3) The research framework can be better applied to the audience's evaluation of video works.

Keywords: Microfilm · Cognition evaluation

1 Introduction

In nowadays, the arts are the media which provide powerful and essential means of communication. For every artist was first an amateur [1], thus, artistically literate citizens apply a variety of artistic media, symbols and metaphors to independently create and perform work that expresses their own ideas and communicates their life experience. Social Communication is a relatively new term that has emerged over the last decade. It may appear to be a “new” concept that is a regrouping and re-categorizing of the previously known concepts of social interaction, communication and language. This process is able to respond by analyzing and interpreting the social communications of others. Thinking about art as a process of social communication,

this article intends to understand how the relationship between the artist and the audience is potentially altered in social communication. Therefore, this study proposed a research framework.

The research was designed to take into account the changing nature of social communication, resistance to artwork evaluation and the context for evaluation and impact assessment. It involved the following steps.

- (a) A review of current claims for artistically literate citizens in relation to arts practice and social communication.
- (b) Exploration of the purpose and nature of evaluation and impact assessment.
- (c) Development of an evaluation framework and tools for assessing the impact of artwork.
- (d) Recommendations for development of the framework and evaluation of communication matrix.
- (e) Validation of the communication matrix for evaluating microfilm.

2 Literature Review

Lin pointed out that “any perception on design or product must undergo three basic processes of seeing, understanding and touching.” [2] Yang divides the evaluation of design works into technical layers, meaning layers and strategic layers according to the semiotic principle. The technical layers mainly include media (creative materials) and aesthetic forms (the composition principle of beauty); meaning layers are stories composed of words, sentences; strategic layers consist of persuading position and strategy [3]. Five elements for the success of low-middle budget film success include: get close to life, trigger emotional resonance; strengthen the audio-visual language, create the overall effect; emphasize screenwriter quality, tell good story; cleverly use black humor, highlight the humanistic care; combined with their current situation, implement multiple marketing [4]. In addition, the film’s style tone, character and plot selection, the regional characteristics of the scene, characteristics of the era, the action fulcrum and scene color are also the main factors in the creation of video clips [5]. Story close to life, exaggerated and simple performance style and the rational use of theme song are also important factors in the success of video clips [6]. Video synthesis is to realize the ideal picture and strive to get close to reality as much as possible [7].

Paper concept in the film linguistics does not refer to the work, but refer to the language symbol that constitutes the work and its coding process. The analysis of the film is different from the general work analysis. Instead of exploring the film’s aesthetic characteristics from essentialism or studying the artistic style of a film, it explores the interaction of the image coding and the structural style of this paper [8, 9]. As for a film, the so-called reading and explaining this article means the analysis of the film’s internal system and study the meanings of all the courseware or their potential meaning and find the precise structure in the various intertwined symbols and signs. To read and explain this article, it is necessary to study the composition of a film, learn ideational function of lens group, image structure, sound element, etc. and carry out the detailed correlation study [10].

Film art work is also a kind of aesthetic entertainment or cathartic product, which provides the audience with physical and psychological enjoyment in vision and audition, so that the audience can feel the same way and losing themselves in the work. By providing a virtual scene to arouse the feelings to please the audience, and make the audience’s emotions release and met the aesthetic needs, then the audience finally can obtain spiritual enjoyment and aesthetic pleasure [11]. Film art can give the audience physical enjoyment in audio vision, giving a physical and psychological pleasure through pure form feature. Film art can also play compensatory and catharsis role, that is, the audience’s wish can get compensatory satisfaction under screen influence, while their repressed emotion can get released.

Schmitt suggests that firms can use “aesthetics” and “satisfaction degree” as brand awareness and recognition elements, and also use “aesthetics” to plan and execute strategies as a part of marketing [12]. Cultural creativity contains two elements: culture and creativity. The concept of cultural creativity attempts to incorporate “culture” into commodity. In the commercialization process, “creativity” is regarded as a prerequisite to enhance the value of the commodity. Meanwhile, this can also help create brand recognition [13]. Cai believes that consumer’s taste and aesthetic claims are implied in brand life style and consumer trends [14].

3 Research Method

3.1 Research Framework

In contrast with existing evaluation tools, this is a multi-dimensional tool that places the artist and artistically literate citizen’s values at the core of the matrix. Figure 1 shows the communication matrix which integrated the three dimensions for evaluating microfilm.

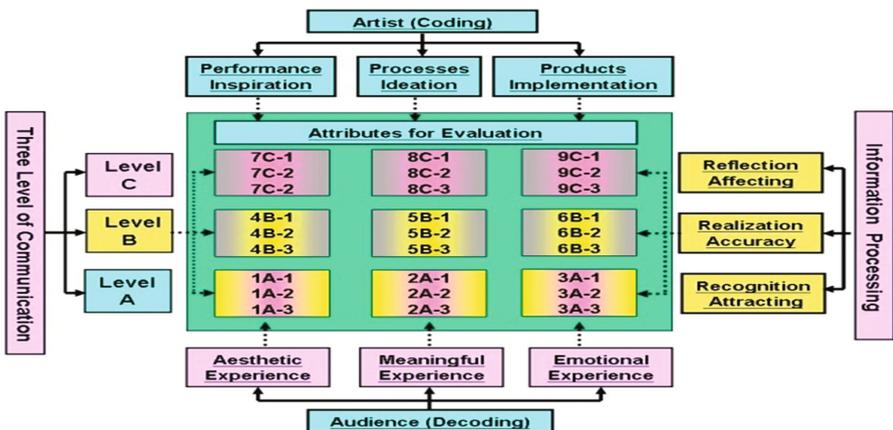


Fig. 1. Communication matrix for evaluating microfilm.

Its first dimension facilitates the identification of the core values involved in any artworks, including performance, process and product. Its second dimension facilitates identification of the related theory that may need to be taken into account in assessing outcome and impact. These include communication theory, mental model and information processing. The third dimension is the flexibility, as the matrix can be adapted to the needs and priorities of the different context of the artist, viewer and artworks. It allows relevant measures and indicators of quality and impact to be identified.

Based on the Fig. 1, how the artist’s performances are conceived, developed, delivered and received, and how the viewer is attracted, accurately understanding the artwork, and affected by the artwork which all need to be studied. Results of this study proposed a set of attributes of communication for evaluating artworks in practices as shown in Fig. 2. For future studies, we need a better understanding of performance, process and product not only for the artist and artworks, but also for the viewer and social communication. While artistically literate citizens have become important issues in the interactive experience between artist and audience, it becomes a key issue in social communication and is worthy for further in-depth study. However, effectiveness of using the proposed communication matrix is still needed to be further enhanced. This can be done by incorporating with more information of best practice in artist’s performance, process and product.

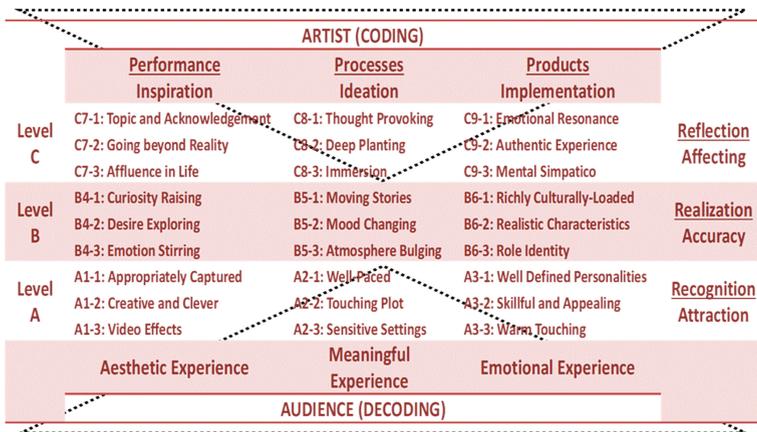


Fig. 2. A set of attributes for evaluating microfilm.

3.2 Questionnaire Design

This research designs the questionnaire by the research framework of the above-mentioned Fig. 2 and is divided into the professional edition and general audience edition. The professional edition separately scores 18 questions to the left and the right separately, plus one question of the degree of preference for the work, adopts the percentage system to give 1 point to the extreme dislike and 100 points to the favorite; the audience give hundred-mark system on the nine questions on the right side

and the most impressive item in the nine questions on the left side will be listed. Questionnaire is filled online. Before filling, the examinee is detailed on the filling instruction of questionnaire. The time for answering the questionnaire is limited for 15 min.

General audience version: <https://goo.gl/forms/Xg4s0KfkhP4MyuB2>

Professional version: <https://goo.gl/forms/3mwB0q2x4dhrGJPf2>

3.3 Audience

A total of 204 professionals and 146 audiences are invited to participate in the test. Among them, a total of 204 professionals are included with 100 persons from Taiwan and 104 from Chinese Mainland, 99 males and 105 females; 59 persons below 20 years of age and 107 persons between 20 to 40 years old, 38 persons above 40; 37 film and television producers, 169 general audience; 15 persons with the degree of junior college, 66 with the degree of bachelor, 123 with the degree of master; 118 persons with professional art background, 86 with other professionals. A total of 146 audience include 70 from Taiwan and 76 from Chinese Mainland; 47 males and 99 females; 71 persons under the age of 20, 38 persons between 20 to 40 years old, 37 persons over the age of 40; 12 film and television producers, 134 general audience; 25 persons with the degree of junior college, 91 with the degree of bachelor, 30 with the degree of master; 69 persons with professional art background, 77 with other professionals.

4 The Results and Discussion

4.1 Analysis of Validity

The reliability analysis of the questionnaire is to discuss the internal consistency of all dimensions of this scale and the impairment of the Cronbach's α coefficient from all dimensions after the deletion of the single item, which is the reference standard for the reliability of the scale. The questionnaire analysis finds that: the Cronbach α coefficient is .956. The total corrections of the assessment dimensions and the content of the single question range from .744-.873, .949-.956 after "deletion of α coefficient". It can be learned that the internal consistency among questions is higher and the setting is reasonable. Through the validity analysis, the KMO coefficient is .923, which has higher value, Sig value is .000 with significant strength and the eigenvalue is 6.728, which can explain the default use of 74.753% variation. The load of each question ranges from .707-.907, commonality ranges from .792-.905.

4.2 Cognitive Differences Between Taiwan and Chinese Mainland

Comparing the cognition of microfilm between professionals and the general audience from Taiwan and Chinese Mainland, taking the two different regions as the dependent variable and the scores as the independent variable, the independent sample t test is conducted. The results are shown in Table 1. It can be seen that both Taiwan and mainland professionals have notable differences in the perception of microfilm and all

the scores are presented as Taiwan more than Chinese Mainland. For sound creation, lens language, visual effects, plotting, and immersion, the two places present significant difference. For rhythm, spatial environment, emotional expression, real experience, mood creation, empathy, spiritual fit, emotional resonance, they present moderately significant differences. The audiences in both places show a significant negative correlation only with the lens language awareness, the scores of which are presented as Taiwan less than Chinese Mainland and the remaining items are not significant.

Table 1. Summary of rating data and comparison with two areas.

	Subjects	N	Total image				Key factors of performance			
			Q	Mean	sd	t value	Q	Mean	sd	t value
Expert	Taiwan	100	A1-1	82.35	12.37	3.35***	A3-1	81.53	14.31	2.54*
	Mainland	104		75.36	16.90			74.64	16.22	
	Taiwan	100	A1-2	84.81	10.71	3.80***	A3-2	82.85	12.60	2.63**
	Mainland	104		78.65	12.35			77.90	14.22	
	Taiwan	100	A1-3	84.32	10.22	3.41***	A3-3	81.44	15.15	3.21**
	Mainland	104		78.21	15.00			75.81	16.52	
	Taiwan	100	B4-1	84.68	10.65	2.92**	B6-1	83.62	12.21	2.97**
	Mainland	104		79.73	13.32			77.52	15.49	
	Taiwan	100	B4-2	85.06	10.71	3.03**	B6-2	83.18	11.06	3.57***
	Mainland	104		80.06	12.76			76.36	15.91	
	Taiwan	100	B4-3	83.86	11.25	3.67***	B6-3	83.46	11.24	3.12**
	Mainland	104		77.47	13.44			78.06	14.50	
	Taiwan	100	C7-1	82.35	12.37	2.79**	C9-1	81.38	11.98	2.98**
	Mainland	104		75.38	16.91			76.95	17.99	
	Taiwan	100	C7-2	77.71	15.23	1.96*	C9-2	81.99	14.62	3.19**
	Mainland	104		74.90	16.01			75.45	14.68	
	Taiwan	100	C7-3	82.55	12.47	2.94*	C9-3	81.34	82.61	2.06*
	Mainland	104		80.20	13.84			76.87	76.64	
Ordinary	Taiwan	70	A1-2	79.37	11.78	-2.02*				
	Mainland	76		83.72	14.06					

*p<.05, **p<.01, ***p<.001

4.3 Differences in the Recognition of Microfilm Due to Gender Difference

Taking gender as an independent variable, various evaluation items of film serves as dependent variables for independent sample t test and the results refer to Table 2. It can be seen that in the professional evaluation, the emotion expression (t = 2.08 **) and performance skills in the technical layer shows a significant difference (t = 1.03 *) and men more than women. There is no significant difference in ratings scores of various factors among the general audiences. It can be seen that in the microfilm cognition, general audience across the strait have less cognitive differences in the genders.

Table 2. Summary of rating data and comparison of different genders.

	Subjects	N	Total image				Key factors of performance			
			Q	Mean	sd	t value	Q	Mean	sd	t value
Expert	Male	99	C7-1	81.38	11.98	2.08**	C7-2	79.77	12.68	1.03*
	Female	106		76.95	17.99			77.63	16.77	

*p<.05, **p<.01

4.4 Differences in the Recognition of Microfilm Due to Occupation Difference

As there is no significant difference in the cognition of microfilm due to different age and academic qualifications, further exploration on the differences in the cognition of the microfilm due to different occupations is conducted. Film and television workers and the general audience serve as an independent variable, various evaluation items of film serves as dependent variables for independent sample t test and the result is shown in Table 3. It can be seen that there are significant differences in the average scores between the performance skills (t = .64 *) and the immersion (t = .45 *), and the film and television workers more than general audiences. The image design of the micro-movie (t = 2.85 *) from audience shows significant differences, and film and television workers more than general audience. There is no significant difference in cognition of other item of microfilm due to occupation differences.

Table 3. Summary of rating data and comparison of different occupations.

	Subjects	N	Total image				Key factors of performance			
			Q	Mean	sd	t value	Q	Mean	sd	t value
Expert	Film workers	34	C7-2	77.15	17.91	.64*	C9-3	80.38	16.06	.45*
	Ordinary audience	170		78.96	14.36			81.50	12.66	
Ordinary	Film workers	12	C7-3	88.00	7.68	2.85**				
	Ordinary audience	134		80.67	15.04					

*p<.05, **p<.01

4.5 Impacts of Factors on the Degree of Preference of the Work

To explore the influence of various elements of microfilm on audience's preference on the work, the technical layer, semantic layer and effect layer serve as predictive variables and work preference serves as dependent variable for multiple regression and the results are shown in Table 4. It can be seen that the general audience's cognition is not significant and the three items of professionals are all significant. The correlation(R) of overall predictive variables and dependent variables is .94, predictive variables and dependent variables (R^2) is 89%. The correlation coefficients of technical level,

Table 4. Impacts of technical layer, semantic layer, effect layer on the degree of preference on the work.

	Dependent variables	Predictive variables	B	β	t value
Expert	Work preferences	A1: Technical layer	.355	.379	8.27***
		B4: Semantic layer	.327	.302	4.93***
		C7: Effect layer	.317	.313	5.74***
R = .942 Rsq = .888 F = 532.566***					

***p<.001.

semantic level, effect level and overall preference are 8.27, 4.93 and 5.74, respectively, which are all positively correlated and reach a significant level of .001.

To further explore the impacts of nine factors on the degree of preference of the work, nine factors including sound creation, lens language and visual effects are used as predictive variables, the degree of preference of the works serve as dependent variables for multiple regression and the results are shown in Table 5. It can be seen that in the comparison of items score and overall preference of professionals, five items are significant. The correlation(R) of overall predictive variables and dependent variable is .94 and the explanatory variance (R²) of predictive variables and dependent variables is 89%. The correlation coefficients of visual effects, plotting, performance skills and overall preference are 4.97, 4.46 and 5.52 respectively, which are all positive correlation, reaching significant correlation level of .001. The correlation coefficients of sound creation, rhythm and preference are 3.17 and 1.98 respectively with .01 and .05 significant positive correlation. Lens language and the overall preference reach -2.51 negative significant correlation.

Table 5. Impacts of various dimensions on the degree of preference on the work.

	Dependent variables	Predictive variables	B	β	t value
Expert	Work preferences	Video effects	.221	.230	4.97***
		Creative and clever	-.155	-.146	-2.51*
		Appropriately captured	.134	.160	3.17**
		Emotion stirring	.259	.261	4.46***
		Curiosity raising	.091	.088	1.98*
		Going beyond reality	.261	.323	5.52***
R = .942 Rsq = .888 F = 170.754***					

*p<.05, **p<.01, ***p<.001

4.6 Impacts Difference of Factors on the Overall Rating of the Work

To explore the difference of influence of technical layer, semantic layer and effect layer on the overall rating of works, the technical layer, semantic layer and effect layer serve as predictive variables, the three overall ratings of the works serve as dependent variables for multiple regression and the results are shown in Table 6. It can be seen that the comparison of each item score and overall score of subjects is significant. The

overall predictive variables and dependent variable reach .001 strong significant correlation, which can well explain the relationship. Under comparison, it can be seen that the effect layer ($t = 14.295^{***}$) is significantly and strongly correlated with the effect overall rating. The semantic layer ($t = 7.951^{***}$) and the effect layer ($t = 6.066^{***}$) are significantly and strongly correlated with semantic overall rating and the technical layer ($t = 4.957^{***}$) and the semantic layer ($t = 5.784^{***}$) are significantly and strongly correlated with the technical overall rating.

Table 6. The impacts of technical layer, semantic layer, effect layer on the overall rating of the three items.

Dependent variables	Predictive variables	B	β	t value
C9: Overall effect evaluation	C7: Effect layer	.835	.840	14.295***
R = .915 Rsq = .838 F = 343.291***				
B6: Overall semantic evaluation	B4: Semantic layer	.510	.577	7.951***
	C7: Effect layer	.313	.378	6.066***
R = .904 Rsq = .818 F = 298.347***				
A1: Overall Technical evaluation	A1: Technical layer	.299	.328	4.957***
	B4: Semantic layer	.461	.477	5.784***
R = .875 Rsq = .765 F = 215.968***				

*** $p < .001$.

5 Conclusions

Due to its dynamic nature, the film and TV works have become the fast-consuming industries. The driving force behind the development of the industry lies in the creativity of new ideas. The film and television artists create the final works by constantly coding and compiling the various elements such as ingenuity and skill and creativity. However, the expression of creativity in film and television works is inseparable from the audiences’ experience of consumption of movies. Only when the audience admits the ideas contained in watching and listening, the value emerges, so the way the film and television artists convey their ideas and the way the audience agrees with the ideas are worth discussing and exploring. In this study, the artist’s creative communication is set as the process of continuous coding. In the process of viewing the works, the audience decodes the elements continuously and discusses the audience’s cognition of the works and attributes of the film and television so as to help the film and television artists to be creative. The results of this study are organized as follows:

- (1) The cognition of film and television works by professionals in different geographical and cultural backgrounds is quite different, while the general audiences’ cognition of works is less obvious.
- (2) There is no obvious difference in cognition among subjects with different qualifications and ages. There are differences between “emotion expression” and “performance skills” among professionals of different genders and male surpasses female. There is no significant difference among general audiences. For professionals

of different professions, the “performance skills” and “immersion” of film and television workers are more significant than that of ordinary profession. For general audiences, the “image design” of film and television workers is more significant than that of ordinary profession.

- (3) The technical layer, semantic layer and effect layer of the research framework have a strong and significant impact on the preference of the film and television works. The score of the three subjects directly affects their preference of the film and television works. Among the nine evaluation elements on the left side of Fig. 2, the six elements of “visual effects”, “plotting”, “lens language”, “performance skills”, “sound creation” and “rhythm” have a significant impact on a subject’s preference.
- (4) Through the subjects’ assessment of the general rating, it can be seen that the technical layer, semantic layer and effect layer in Fig. 1 respectively have a significant impact on the technical overall rating, semantic overall rating and effect overall rating, indicating that the architecture is reasonable and can be verified. At the same time, the scores of technical layer and semantic layer also have a significant impact on the score of technical and semantic overall rating. This also shows that in the cognitive process of film and television works, the subjects interpret the work as a whole and it is difficult to distinguish each one of the element. There is the phenomenon of cross-mixing, which is in line with the features that film and television work sets video, sound, sports and many other elements in one.

The cognition of film and television works is a relatively complicated issue. The influence of the effect layer in Fig. 1 on the overall rating has not been mixed yet and needs to be further verified. In Fig. 2, the specific differences and correlations among the various elements of communication and psychology involved in the process of interpreting video and TV programs and the overall cognition need to be further explored.

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