

Research on the profession ethics of designers from different backgrounds

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Abstract

With the rapid development of design industry in recent years, much attention has been paid to the professional ethics in the industry. This research aims to explore the recognition of designers from different backgrounds towards professional ethics and try to classify the characteristics of it. In this study, Descriptive Statistics, One-way ANOVA, Regression Analysis and Cluster Analysis were used to discuss the results of the questionnaire. Finally, the results showed that differences between academic qualifications and professional categories may affect designer's professional ethics recognition. Meanwhile, this study, based on the research results, divides the cognition of profession ethics into four categories, each of which has its own unique characteristics. It is hoped that the results of this study can effectively promote the cultivation of designers' profession ethics, and improve the establishment of relevant profession ethics courses in design education.

Key words: ethics, designers, One-way ANOVA, Regression Analysis

Introduction

Looking at today's society, professional ethics plays a pivotal role in any profession. Freeman once argued that professionals with moral outlook, when facing ethical problems, would think systematically, which shows the significance of professional ethics [1]. At present, much moral behavior research or study have already been carried out in many occupations. As a result of the ABET accreditation criteria EC 2000, professional ethics education has been incorporated into the undergraduate course of engineering. [2-4]. Reybold and Halx also has used drama as a medium to discuss ethics, focusing on student affairs. In addition, extensive ethical research has been carried out in medicine, [6-7]. Professional ethics-related courses have been implemented in universities around the world for decades, but some scholars reckon that professional ethics problems have not been well solved [8]. Inventing a method to accurately measure employee's professional ethics awareness is a topic worthy of studying, just because it can effectively help us find problems of professional ethical behavior more actively.

To sum up, in this study, the author, who aims at discussing the cognitive situation of designers with different backgrounds about profession ethical behavior and trying to explore and find out the cognition difference of all kinds of designers from the following aspects, such as majors, educational

backgrounds and occupations, has made a questionnaire--the Professional Ethics Behavior Questionnaire for Designers by consulting a large number of documents. Moreover, previous participants were classified through experimental results, with each category being analyzed, so as to offer guidance for future relevant professional ethics and behavior curriculum planning. It is hoped that the results of this study can be used for reference in professional ethics and behavior education for design majors. On the other hand, the research method used in this study can provide a methodological basis for similar professional ethics research.

Ethics Behavior of Designers

This study collected rules and regulations on the professional ethics of designers among international design associations and official organizations. Thereafter, by means of literature analysis, it will explore whether there are different opinions or whatever characteristics on professional ethics in these areas. The theoretical basis of this research will be concentrated on the these associations or organizations, which set various standards for professional ethics. In this study, identification and standards of professional ethical behavior of designers were discussed by studying eight international organizations, including the ICOGRADA (International Council of Graphic Design Associations), the ICSID (International Council of Societies of Industrial Design), the IFI (International Federation of Interior-Designers), the IDSA (Industrial Designers Society of America), the ASID (American Society of Interior Designers), the AIGA (American Institute of Graphic Arts), and the DIA.(Design Institute of Australia)

After the Literature Analysis and KJ-Induction Method are used, this study has sorted out eight kinds of professional ethics of designer, which are: designer for: C1-Client and Employer (10 items); C2-Other Designers (10 questions); C3-Salary (7 questions); C4-Occupation (9 questions); C5-Reputation and Publicity (3 questions); C6-the Public (3 questions); C7-Society and Culture (4 questions); C8-Responsibility to Environment(2 questions), a total of 48 professional ethics rules questions. The results of this part are made into the main content of questionnaire.

Research process and results

In this study, the author used the detailed rules of professional ethics of designers summarized by literature discussion as a questionnaire, which will include the following

four parts: (1) different background attributes; (2) the moral cognition of designers on C1, C2, C3, C4, C5, C6, C7 and C8; (3) Since this research mainly discusses professional ethics of designers, and designer's understanding to the content of the profession, can be regarded as a simple concentration of the design of professional ethics.

Therefore, the C4 cognition item in the questionnaire was taken as a dependent variable, and the other 7 cognition as self-variables. According to the hypothesis, the seven items in the professional ethics behavior scale graph for designers should have significant predictive ability for C4; (4) According to the difference of the 8 items in the Professional Ethics Behavior Questionnaire for Designers, the characteristics of them can be found and the subjects can be grouped.

In order to establish the reliability and validity of the Professional Ethics Behavior Questionnaire for Designers, a pre-test was conducted in this study. A total of 58 pretest questionnaires were issued, and 42 valid questionnaires were obtained after excluding invalid questionnaires. There were 48 questions, which were answered by Likert's five-stage scale method. Subjects were asked to complete the questionnaire based on their subjective feelings, after which SPSS was used to analyze the results. Aiming to effectively control the number of questions in the questionnaire, this study would improve the test level of identification, and delete the items if the significant value is less than 0.01. Statistical results showed that there are 31 questions in the questionnaire after exclusion, and the Cronbach α value of the overall questionnaire was 0.938, reaching more than 0.7, indicating that the reliability of the scale was rather convincing.

After modifying the results of the pre-test feedback, the formal questionnaire was divided into two parts: the first part was the background information of the subjects; the second part was the questionnaire items of designer's professional ethics and behavior, which are divided into: the designer's cognition to C1-C8, a total of 31 questions. The subjects of this questionnaire are all those who have received professional design education at or above senior high school and vocational school. Overall, 93 questionnaires were sent out, with an

Experimental period of two months. After eliminating 25 invalid questionnaires, 68 questionnaires were obtained and the recovery rate of valid questionnaires was 73%. In the next study, we would analyze and discuss various issues and research hypotheses based on the data collected from the Professional Ethics Behavior Questionnaire for Designers.

A. Descriptive Statistics of Professional Ethical Behavior Cognition of Designers

There are eight parts of cognition in Professional Ethics Behavior Questionnaire for Designers. The average and standard deviation are shown in Table 3.14. In general, the average of the questionnaire result is 4.1832 and the standard deviation is 0.44258, which shows that questionnaire takers have a high degree of recognition for the questionnaire. Among them, the average of C2, C8, and C 4 is higher, which means participants have strong recognition of these three kinds of cognition. The average number of C5 is lower (3.9191) which infers that the participants recognition degree of C5 is smaller.

B. The Analysis between Participant's Backgrounds and Professional Ethics Behavior Scale Table for Designers based on ANOVA Method.

In this study, we will discuss the differences of C1-C8 items in the Professional Ethics Behavior Questionnaire for Designers according to the background variables of the subjects. Under the requirement that statistics should reach significant level ($P < 0.05$), one-way ANOVA was used to discuss in sequence. In the research, participants' background variables with significant statistical value ($P < 0.05$) were listed, wit One-way ANOVA being used to analyze the variables. There were two background variables, namely educational background and professional background.

B.1 Educational Background

After One-way ANOVA analysis, it was found that there was a significant difference in the public cognition of C6. Then it was known by later comparison that (Scheffe method), in designer's cognition to C6, the cognitive degree of questionnaire takers who have a master degree is stronger than those with a bachelor degree, as shown in Table 1.

Table 1.

One - way ANOVA							
C1	C2	C3	C4	C5	C6	C7	C8
F=	F=	F=	F=	F=	F=4.017*	F=	F=
1.236	1.083	0.830	1.825	1.497		0.964	0.572
Scheffe method							
—	—	—	—	—	"Graduate" is higher than "Undergraduate".	—	—

Note : ** $P < 0.01$ 、* $P < 0.05$

In order to find out more details of the difference, this study then tested designer's cognition of C6-the Public (i.e. Q23-25 in the scale) by using subject's educational backgrounds as variables. After One-way ANOVA analysis, it was found that there was a significant difference in the educational background variables between the subjects and Question 25 of C6 ($P < 0.05$). (Q25, I should use professional knowledge and skills to enrich human well-being, especially health and safety) The cognitive level of graduate students was stronger than that of undergraduate students, as shown in the table.

B.2 Professional Background

After one-way ANOVA analysis, the study found that there were significant differences in the participants' professional background variables regarding their cognition to C6.-the Public and C8-Responsibility to Natural Environment in the Professional Ethics Behavior Scale Table.($P < 0.05$) Then it was concluded by later comparison(Scheffe Method) that in item C6, the degree of cognition of industrial design subjects was higher than that of visual communication and other subjects. In C8, which is about designers responsibilities, the industrial design subjects' degree of cognition was stronger than that of visual communication and other design subjects, as

shown in Table 2.

Table 2.

Single Factor Variance Analysis of Professional Background and Professional Ethics Behavior Scale Table

One - way ANOVA							
C1	C2	C3	C4	C5	C6	C7	C8
F=	F=	F=	F=	F=	F=	F=	F=
2.701	0.466	0.037	2.576	1.885	F=4.723*	2.304	F=3.491*
Scheffe method							
—	—	—	—	—	***	—	***

Note : **P<0.01、*P<0.05

***"Industrial design" has a higher degree of recognition than "visual communication" and "other designs".

In order to find out more details of the difference, this study examines designer's cognition to C6-the Public and C8-Responsibility to Natural Environment (Q23-25 and Q30-31 in the scale) based on subject's professional backgrounds. By one-way ANOVA analysis, this study has found that there are significant differences in subjects' professional background variables for Q25 in C6 and Q30, 31 in C8.(P < 0.05) By later comparison, it has been concluded that (Scheffe method), in Q25 (Q25, I should use professional knowledge and skills to enrich human well-being, especially health and safety), questionnaire takers, whose professional backgrounds are industrial design, have a stronger degree of recognition than those with visual communication backgrounds. On the other hand, in the Q30, (Q30, I should devote myself to the sustainable use of natural resources and the protection of the ecosystem), subjects with industrial design background agrees more than those with visual communication background.

C. Regression Analysis of Designer's Professional Ethics Behavior Cognition

This study holds the view that designer's cognition to C4-Occupation (i.e.Q14-20 in the questionnaire) should be regarded as a simple concentration of the designer's professional ethics and have a certain degree of representativeness. In Pearson's Correlation Analysis, the correlation coefficients between the cognition to C4 and that to other items are also relatively close. Therefore, in the part of Regression Analysis, this study would use designer's cognition to C4 as a dependent variable, and use designer's cognition to the remaining seven items as self-variables (predictive variable) to carry out the Regression Analysis of Designer's Professional Ethics Behavior Cognition.

Before establishing multiple regression equations, collinearity diagnosis is necessary. From the multiple Regression Analysis Table of designer's professional ethics behavior questionnaire, we know that the VIF value is between 1.445 and 2.843, indicating that there is no collinearity between predictive variables (self-variables) and dependent variables. According to this standard, there is no collinearity between C4-Occupation and seven other cognition items, as shown in Table 4.

Table 3.

Multiple Regression Analysis of Designers Professional Ethics Behavior

Predictive variable	Original β coefficient	Standardized β coefficient	t value	VIF
C1	0.31	0.301	3.002**	2.112
C8	0.189	0.245	2.540*	1.951
C6	0.191	0.22	2.024*	2.472
C5	0.106	0.123	1.236	2.085
C7	0.084	0.093	0.796	2.843
C3	0.059	0.074	0.892	1.445
C2	0.022	0.028	0.291	1.994

Note : **P<0.01、*P<0.05

By observing Table 5, predictive variables can explain that the designer's cognition to professional ethical behavior is 68.1%, and F value has reached the significant level of P < 0.05, which means, the seven predictive variables have predictive ability for designer's recognition to professional ethical behavior(C4-Occupation). From the value of β (standardized β coefficient), we have found that the order by importance is: C1-Client and Employer(β = 0.301), C8-Responsibility to Natural Environment(β = 0.245), C6-the Public(β = 0.220), C5-Reputation and Publicity(β = 0.123), C7-Society and Culture (β = 0.093), C3-Salary (β = 0.074), C2-Other Designers (β = 0.028). The formula of predicting the Professional Ethics Behavior Questionnaire for Designers is: recognition degree of designer's professional ethics behavior (Occupation) =0.301 x (Client and Employer) +0.245 x (Responsibility to Natural Environment) +0.220 x (the Public) +0.123 x (Reputation and Publicity) +0.093 x (Society and Culture) +0.074 x (Salary) +0.028 x (Other Designers)

Table 4.

Explanatory Analysis Table of the Professional Ethics Behavior Questionnaire for Designers

	Multiple correlation coefficient (R)	Jugement coefficient (R2)	Adjusted coefficient of determination (R2)	F value
Predictive variable	0.845	0.714	0.681	21.403**

Note : **P<0.01、*P<0.05

D. Cluster Analysis of Research Participants Sample

In this study, there were 68 valid samples in total. In order to explore whether different sample groups have different cognitions to designer's professional ethical behavior, Cluster Analysis would be used in this chapter to cluster all the 68 participants, and the characteristics of each group would be judged by statistical data.

In the research, 68 participants were divided into four clusters by Hierarchical Cluster Analysis, which could be referred to as Figure 3.3. Thereafter, the similarities among cluster members or the differences between them were found, as well as their characteristics, which are shown in the Figure. As for the 4 clusters, they were recorded as P1, P2, P3 and P4.

D.1 P1 Type Analysis

There are 20 people in this cluster, with the characteristics of participants in this group being that they have a high degree of cognition for any kinds in the Professional Ethics Behavior Questionnaire for Designers, at an average of between 4.4000 (C5-Reputation and Publicity) and 4.8500 (C8-Responsibility to Natural Environment). And by the maximum value, we can also find that among all the 8 kinds of cognition, there are people who fully agree the cognition.(5 points) Thus, these characteristics represent participants' high recognition of the content of the Professional Ethics Behavior Questionnaire for Designers.

D.2 P2 Type Analysis

This cluster has 40 people, the largest number in all 4 clusters. The characteristics of in this group are that the degree of recognition of the eight kinds of cognition in the questionnaire was very close to the average of all the participants (68), ranging from 3.8375 (C5-Reputation and Publicity) to 4.2750 (C2-Other Designers). Therefore, their views, to some extent, also represent the identification degree of the majority of people to the Professional Ethics Behavior Questionnaire for Designers.

D.3 P3 Type Analysis

There are four people in this cluster with the characteristics being that their recognition degrees to the questionnaire is lower than that of most of the participants. The average value is between 2.6250 (C2-Other Designers) and 3.5825 (C6-the Public). The data has shown that they have the lowest recognition of C2 because they may be more concerned about themselves on power and benefits than their counterparts or peers.

D.4 P4 Type Analysis

This cluster also has four people and the characteristics of this group are as follows: C2. Designers' cognition, their level of perception to the other seven ethical items is relatively lower than most of the questionnaire takers except for C2-Other Designers, and the its average is between 3.000 (C5-Reputation and Publicity) and 4.1250 (C2-Other Designers). This shows that people in this group have a slightly lower degree of recognition except for the cognition of C2, but it also suggests that this people in this cluster are highly concerned about the design group (elders, peers, younger generations) and may be willing to make contributions to help their partner in the industry.

Conclusion and Suggestion

Through a large number of literature discussions and summaries, this study sorts out the professional ethics rules for designers based on eight cognitive norms, and has produced tby combining the study of personal information in 6 aspects.

In this study, by literature review, the professional ethics rules of designers has been sorted out, and a Professional Ethics Behavior Questionnaire for Designers has been produced. Eventually, the research result has been studied thoroughly through a series of methods, such as Descriptive

Statistics, ANOVA Analysis, Pearson Correlation Analysis, Regression Analysis and Cluster Analysis. From the research result, we can easily find that it is vital to know the other ways of promoting the ethical sense of designers except for the cultivation on them. Furthermore, graduates with bachelor degree or technical school certificates have lower level of professional ethical cognition than those with master degree, which indicates that the majority of design educators in tertiary education need to think about how to cultivate and enhance students' professional ethics and behavior identity in the teaching process.

References

- [1] N. Freeman, "Professional ethics: A cornerstone of teachers' pre-service curriculum". *Action in Teacher Education.*, 2000, Vol. 22, pp. 12–18.
- [2] ABET. "Criteria for accrediting engineering programs: Effective for reviews during the 2014–2015 accreditation cycle". 2013. Retrieved from <http://www.abet.org>
- [3] J. Cruz, and W. Frey, "An effective strategy for integrating ethics across the curriculum in engineering: An ABET 2000 challenge". *Science and Engineering Ethics.*, 2003, Vol.9, pp. 543–568.
- [4] L. Bucciarelli, "Ethics and engineering education". *European Journal of Engineering Education.*, 2008, Vol. 33, PP. 141–149.
- [5] E. Reybold, and M. Halx, Staging Professional Ethics in Higher Education: a Dramaturgical Analysis of "Doing the Right Thing" in Student Affairs. *Innovative Higher Education.*, 2018, Vol. 43, pp. 273-287.
- [6] I. Brassington, "On the Relationship between Medical Ethics and the Law". *Medical Law Review.*, 2018, Vol. 26, PP. 225-245.
- [7] J. Cooper, "Organs and organisations: Situating ethics in organ donation after circulatory death in the UK". *Social Science & Medicine.*, 2018, Vol. 209, PP. 104-110.
- [8] D. Hartner, "What Is the Proper Content of a Course in Professional Ethics?" *Teaching Philosophy.*, 2018, Vol. 41, PP. 151-173.
- [9] ICOGRADA, ICSID, & IFI, Model Code of Professional Conduct for Designers. 1987. Retrieved from <http://www.ifiworld.org/index.cfm?GPID=33>
- [10] ICSID, Professional Ethics ICSID Code of Professional Ethics. 2008. Retrieved from <http://ingles.duoc.cl/sl/ethics/pdf/Professional.pdf>
- [11] IDSA, Code of Ethics. 2008. Retrieved from <http://www.idsa.org/absolutenm/templates/?a=57&z=0>
- [12] ASID, ASID Code of Ethics and Professional Conduct. 2006. Retrieved from <http://www.asid.org/find/ASID+Code+of+Ethics+and+Professional+Conduct.Htm>
- [13] AGDA, Code of Ethics. 2008. Retrieved from <http://www.agda.com.au/about/code>
- [14] DIA, Code of Ethics. 2008. Retrieved from <http://www.design.org.au/content.cfm?id=35>