Investigating Creativity in Graphic Design Education from Psychological Perspectives

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ABSTRACT

The role of creativity in graphic design education has been a central aspect of graphic design education. The psychological component of creativity and its role in graphic design education has not been given much importance. The present research would attempt to study 'creativity in graphic design education from psychological perspectives'. A thorough review of literature would be conducted on graphic design education, creativity and its psychological aspects. Creativity is commonly defined as a 'problem solving' feature in design education. Students of graphic design have to involve themselves in the identification of cultural and social elements. Instruction in the field of graphic design must be aimed at enhancing the creative abilities of the student. The notion that creativity is a cultural production is strengthened by the problem solving methods employed in all cultures. Most cultures regard creativity as a process which leads to the creation of something new. Based on this idea, a cross-cultural research was conducted to explore the concept of creativity from Arabic and Western perspective. From a psychological viewpoint, the student's cognition, thinking patterns and habits also have a role in knowledge acquisition. The field of graphic design is not equipped with a decent framework which necessitates certain modes of instruction; appropriate to the discipline. The results of the study revealed that the psychological aspect of creativity needs to be adequately understood in order to enhance creativity in graphic design education.

1.0   Introduction

The field of graphic design is mainly divided into two main phases i.e. identification of the problem and finding a solution to the problem. The initial phase involves analytical engagement of graphic designers and stresses on the abilities that a graphic designer must possess Buchanan, (1990). On the other hand,

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the solution finding phase requires graphic design students to focus on different requirements and skills in a creative manner.

1.1   Background

The present research aims to investigate *'Creativity in Graphic Design Education from Psychological Perspectives'*. Hence, the term creativity would be discussed in the context of graphic design education and the psychological aspect in creativity. It order to adequately study 'creativity' in graphic design education; it is vital that different facets of creativity are discussed. Graphic design is a creative field and requires

Figure 1: Established facts about the problem

students to think out of the box (Williams, R. (1961). Creativity is regarded as a function which varies from culture to culture. Barnard, M. (2005). In the field of graphic design, creativity encompasses an individual's problem solving activities Buchanan, (1990).

1.2   Idea and purpose of the study

An idea has been adopted to conduct the study as the role of creativity in graphic design education from psychological perspective which has not gained much attention. A thorough review of literature covers different aspects of creativity to examine the complex process of creativity.

The psychological aspect of creativity has long been discussed with respect to creativity. The present study aims to understand 'creativity in graphic design education from a psychological perspective'. Psychological theories would be discussed with respect to creativity and the role an individual's psyche plays in creativity and graphic design education. The following some of the objectives of the present study.
- To thoroughly understand creativity in the context of graphic design education
- To investigate creativity from a psychological perspective
- To identify the role of culture, cognition and learning in the field of graphic design

1.3   Uniqueness and importance of the study

The study has highlighted the uniqueness and importance by focusing on the psychological elements involved in creativity enhancement and graphic design education. The techniques and systems through which the teachers induce creative abilities in the students of graphic design have been discussed.

1.4   Creativity in graphic design education

In a broader context, creativity is considered as a cultural production. A number of scholars i.e. Buchanan, (1990) Williams, R. (1961). Wolff, J. (1981)and Barnard, M. (2005). Barnard (2005) asserted that creativity is a product of an individual's experiences. Creativity tends to take place when an individual's personal values interact with stimuli in the surrounding world. Creativity is an extension of cultural experiences, which evolve out of cultural norms and traditions.

In the field of graphic design, creativity refers to the problem solving abilities of students. The issues in design are often regarded as creative problems (Buchanan, R. (1990). Therefore, problem solving involves finding solutions and appropriate resolutions to problems at hand. The field of graphic design is quite diverse and often requires designers to gain knowledge on different cultures for projects. Hence, creativity implies to the problem solving abilities of graphic designers.

The study has incorporated quantitative content analysis approach. This approach has assisted to understand the creativity as graphic design education from the psychological perspective. The

approach has been found logical as all themes were established from the information collected. The findings of the study has not supported the null hypotheses and concluded that the psychological attributes are involved in the education of creativity and graphic designing. The teachers also provide support to the students of graphic design.

2.0   Literature Review

2.1   Graphic designing

Understanding creativity in the context of graphic design is a complex process. The basic understanding of graphic design involves manipulation of visual clues i.e. type, text and pictures. It involves the application of artistic abilities influenced by external and internal factors. The goal of graphic design education is to induce intuitive and conscious efforts aimed at creating meaningful order (Cheow, Y. (2006).

The prime nature of graphic design education is enhancing creative thinking abilities of students. Graphic design education involves exploration of lines, colors and shapes. Hence, the core essentials of the discipline are aimed at improving the aesthetic sense of students. It is the time to develop concepts and devise solutions in greater depth, once the problem has been identifying. This might means to communicate ideas to others, including the ideas of simplicity as a condition for a better design. A graphic designer must look into the idea generation process as in graphic design, idea is a process. Links with other ideas are generally determined by the means of evaluating and gathering evidences of connection (Kansrirat, T., & Kiattikomol, P. (2016).

2.2   Students of graphic design

The field of graphic design is a broad area of study. Students are taught a variety of courses in packaging, advertising, publication and visual-communication for a period of four years. It should be noticed that graphic designers are talented people who are continuously involved in the development of signage, displays and typographies. They communicate designs in different forms.

Pibernik, J., Milcic, D. and Bota, J. (2010) argued that graphic designers, *"… are delegated with the responsibility for the context and content of design messages"* (p. 1). They are also responsible for the manner in which the developed material is perceived by the audience. Hence, graphic designers need to be competitive, creative and specialists in producing quality material.

2.3   Socio-cultural perspectives of creativity

Creativity has long been studied with respect to culture. Across the globe, different cultures have varying perspectives on creativity. Hence, the value of creativity is relative to culture. The purpose of the present study remained focused on investigating how culture perceives creative abilities and the role of psychology in creativity; primarily in the field of graphic design.

Al-Khalefa (1999) explained a cross-cultural study as a *"… scientific research on the cultural and social forces which shape human behavior"* (p. 29). Al-Khalefa (1999) suggested in the study that *"there exist a continuous need to explore the cross cultural and indigenous elements of creativity"* (p. 21). Similarly, (Al-sulaiman, N. (2009) It has been assumed that *"studying the cultural and environmental factors are vital to understanding the expressions of creativity and its impact on creative thinking development"* (p. 3).

2.4   Differences in creativity

Some researchers believe that creativity is a diverse concept and varies from culture to culture. For instance, Lubart (1990) claimed that *"the 'Western' concept of creativity is quite different from the*

'Eastern' concept of creativity" (p. 56). He further asserted that a predominant 'Western' definition of creativity relies on the product; while in Eastern cultures creativity is regarded as a process of self-growth (ibid. p.56). Lau, K. (2009) Lau (2009) asserted *that "individuals who live in individualistic societies are i.e. Europe and America tend to be more creative than the indigenous people in Eastern countries"* (p. 166).
Lubart, T. (1990) argued that *"the Oriental definition of creativity has not focused on innovation"* (p. 41). Dineen, R. and Collins, E. (2004) highlighted their perspective by asserting that *"the Chinese society is closely knitted and values orthodox principles in a collective fashion"* (p.1). Lubart (1990) argued, *"Creativity is regarded as a state of personal fulfillment in some Eastern perspectives"* (p. 340).

On the contrary, despite the argument that Eastern cultures tend to be less creative than their Western counterparts; it is difficult to draw a distinction between creative people from diverse cultures. It is vital to understand the cultural and contextual factors when attempting to understand creativity. The idea of creativity in a specific society cannot be completely understood without developing a thorough understanding of its culture.

Previously, cultural comparisons have highlighted the social and cultural differences in the context of graphic design. As a consequence, it is believed that a shared perspective on creativity is agreed on by both communities. In the Western countries, design is a process and involves an application of innovation and technology. According to Barnard, M. (2005). And Williams, R. (1961). it is regarded as *"a 'perception', which takes place through a passive reception of the material world"* (p. 46).

A study has been carried out by Laing, S., & Masoodian, M. (2016). which showed that the graphic designers access the visual imagery by collecting it as a part of their process design. It also focused on the impact of such material on the techniques of ideation and creative output, which is unclear. The effect of supplying images on the creative output on an ideation phase has been studied with eighteen graphic design students. The results have demonstrated that there was a minimal measurement effect on the creativity of design output according to the ratings of study clients and judges. Positive benefits have been reported from the availability of visual images during the design process.

2.5   Western Vs eastern cultures

The Western idea of creativity in graphic design education primarily differs in content when compared to Eastern societies and principles. In the earlier section of the paper, it was argued that graphic design education is aimed at fostering creativity among students. Williams, R. (1961). believed that "Creativity and practical activities tend to be in a mutual interdependence within the social structures of the society. Similarly, Williams, R. (1961). believed that 'creativity' can be experienced in the societal, cultural and human learning experiences.

Based on the above discussed idea of creativity, the perspective that creativity is a cultural phenomenon serves as a major influence in the present investigation. It capitalizes on the Western modes of expressing creativity as a problem solving feature. Specifically, creativity in the field of graphic design education serves only as an approach to solve the problems on hand. Barnard (2005) asserted that *"... creativity could be appropriately thought of as a mere cultural production and advancements in the field of graphic design are examples of cultural production"* (p. 169). In Liberal Arts and Graphic Design, experiences are visually produced, reproduced, communicated and challenged. As a consequence, the Western idea of creativity is a little different.

2.6   Research hypotheses

The following are the research hypotheses based on the research design.

H_{01}: The psychological elements are not involved in creativity enhancement and graphic design education.

H_{01A}: The psychological elements are involved in creativity enhancement and graphic design education.

H_{02}: The teachers do not make creative abilities in the students of Graphic Design.

H_{02A}: The teachers make creative abilities in the students of Graphic Design.

3.0   Methodology

3.1   Research methodology

A number of scholars i.e. Jankowicz, D. (2000). Jankowicz, D. (2000). Jankowicz, D. (2000). and Yin, R. (2009). argued that the process of selecting a research approach should be based on the proposed research questions and must take place after a careful consideration of the aims and objectives of the research. Commonly, two main approaches are used in research i.e. inductive and deductive. Deductive approaches tend to address questions which have been developed to test a certain hypothesis. Under a deductive approach, researchers often develop a hypothesis and attempt to explain the outcomes of the research.

3.2   Quantitative analysis

A quantitative analysis approach is one of the primarily investigation tool for post positivist claims for the growth of knowledge. It is used for cause and effect thinking, observations test the theories and for different measurements in order to conclude research question and hypotheses statement.

In the present investigation, a quantitative content analysis method was used. A deductive approach was best suited to understand 'creativity in graphic design education from a psychological perspective'. The best suited methods of analyses were developed to adequately categorize firsthand information in to different themes and categories Zhang, Y. and Wildemuth, B. (2009) **Error! Reference source not found.**The research was deductive because all the categories and themes were generated from the collected information. This approach is used to develop a hypothesis based on research question, underlying theory, and then a research strategy is used to test the developed hypothesis.

4.0   Analysis

4.1   The cultural account of 'creative design'

It is often argued that the Western concept of creativity is not quite different from Non-Western perspectives. For instance, the business and technological contexts do not have an impact on the perceived definition of creativity i.e. problem solving activities. The Western and Eastern cultures have a number of differences i.e. cultural, economical and social. For instance, a continuous shortage of qualified graphic design graduates has had a negative impact on graphic design education in the Middle East. This has primarily resulted from a lack of interest on part of the region's government, industrial and private sectors.

Mostly, the graphic designers working in the Middle East have acquired their education from the developed world i.e. United States and United Kingdom. Hence, the field of graphic design has not been researched properly in the context of creativity and education. Barnard, M. (2005). further asserted that *"teachers continue to function with an unexamined idea of creativity and would continue to misinterpret creativity; if proper research is not conducted in this regard"* (p.170).

4.2   Relevance of the field

The field of graphic design education is commonly associated to creativity. Jungpyo[1], H., Sukyoung[1], J., & Dongmin[1], C. (2007). suggested that *"Designing involves creating a model which can only be achieved*

by capitalizing on creative thinking" (p. 2). Similarly, Williams, A, Ostwald, M. and Askland, H. (2010)Williams, A, Ostwald, M. and Askland, H. (2010)Williams, A, Ostwald, M. and Askland, H. (2010) also believed that design education is influenced by creativity. Graphic designers attempt to find 'creative' methods to improve their everyday functions. Creativity in the context of graphic design education has a direct influence on the generation of ideas (ibid, 2010: p.14). Hence, creativity in the field of graphic design is a problem solving process. The Western concept of creativity is not quite different from Eastern perspectives. There could be differences in content, but the form remains the same.

4.3 Creativity in psychological perspectives

Psychological research on creativity was initiated and encouraged by the renowned psychologist Guilford, J. P. (1988) in the 1950s. Guilford, J. P. (1988) developed a number of tools in order to assess an individual's creative thinking abilities. Guilford, J. P. (1988)Guilford, J. P. (1988)Guilford primarily discussed the divergent and convergent views on creativity. A similar definition has also been put forward by other psychologists i.e. Torrance, E. P. (1962). , Rosenman Rosenmand Gero (1993) .

Mental health experts have studied 'creativity' from both cognitive and neurological perspectives. The focus of psychologists has also focused on personality traits. In order to explore creativity from different perspectives, a number of theories have been put forward.

A number of psychologistsGuilford, J. P. (1988)Guilford, J. P. (1988) i.e. Amabile, T. (1982), Guilford, J. P. (1988)Gardner, J. (1993)Guilford, J. P. (1988)Guilford, J. P. (1988)Guilford, J. P. (1988)Guilford, J. P. (1988)Guilford, J. P. (1988) and Sternberg, R. (ed.), 2006) believed that creativity comprises of characteristic qualities and the individual's mentality. P**Error! Reference source not found.** (2000) believed, *"Psychometricians should study the personality traits of creative people and attempt to study the underlying patterns"* (p. 306). The positive traits in creative people include personal energy, an attraction to novelty and complexity and a tolerance for ambiguity. Cheow, Y. (2006)Cheow, Y. (2006) argued that *"a number of personality characteristics are associated with creative people"* (p. 5). Most of the scholars in the field of psychology believe that creative people can generate a number of ideas and have a broader spectrum of thinking.

Creative thinkers have a distinct approach to view issues differently. They make use of insight and intuition and offer creative solutions. Several researchers i.e. Cheow, Y. (2006) have highlighted the common attributes of creative individuals:
- Creative people are responsive to innovative ideas
- They are able to draw a clear distinction in the differences and similarities in phenomenon
- Have the ability to draw unlikely connections
- Are motivated to take risks
- Have an intelligent mind and exquisite problem solving abilities
- Creative people are hard work
- Continually seek challenges and adventure
- Have an inborn ability to capitalize on ideas
- Can adapt to strict work regimens and circumstances Recognizing opportunities and possibilities
- Have a flair for finding order in troubled situations

4.4 Role of cognition and mental processes in creativity

Amabile, T. (1982) has given the field one of the most simple and complete framework on creativity. Amabile was a firm believer that creativity arises from three vital components: 1) Expertise, which is a combination of an individual's knowledge and skills 2) creative-thinking skills, which allow people to

understand problems 3) motivation, which is the intrinsic passion which forces an individual to change or do something.

Expanding on Amabile's idea, Adams, K. (2005). asserted that most theories tend to hypothesize that the sources of creativity could be categorized under the model put forward by Amabile. Based on this model, expertise is an important feature and forms the core foundation for all creative work.

According to the DTI Economics Papers (2005), Amabile, T. (1982) in this theory asserted that everyone can learn the techniques to become creative i.e. trying something counter-intuitive (DTI Economics Papers. (2005). Similarly, "task motivation is an intrinsic self-motivation which is achieved by gaining pleasure from indulging in creative activities. The external motivating factors tend to induce encouragement i.e. recognition and reward DTI Economics Papers. (2005).

It should be realized that earlier studies have attempted to look into the creative characteristics of individuals. These approaches have deviated from the environmental elements which assist students in being more creative. For instance, if creative individuals are believed to be inherently impulsive, undisciplined and non-conformist, then it would not be possible for educators to find ways enhance student creativity. Hence, it should be noticed that all attributes cannot be associated with creative people.

The psychological characteristics of creative people are vital to understanding the cognitive processes among creative minds. However, it is not appropriate to regard creativity as a mere phenomenon. Following the essentials of Amabile's theory, a graphic design teacher should transfer the required knowledge and skill set to induce creative thinking among students. Hence, the proposed elements of creativity could help creative graphic designers in improving their communication skills (Barnard, M. (2005).

4.5   Graphic design curriculum which promotes creativity

The curriculum of any discipline should be aimed at serving the core principles of the subject. Creativity is a central component in graphic design education. Hence, curriculum of graphic design must focus on the development of cognitive abilities aimed at inducing creativity. It should be noticed that most models proposed in curriculums cannot be generalized and vary from discipline to discipline. Rather, a broad array of essentials which are subject-specific should be encouraged and implemented in classrooms to enhance the creative potential of graphic design students. For example, a conceptual combination of classes aimed at stimulating convergent thinking and skills should be introduced in graphic design education.

The imaginative thinking of students must be prioritized in classroom teaching. The curriculum in graphic design education should be developed in a manner that it motivates students to work in groups and indulge in problem solving activities. The application of divergent-thinking exercises and open-ended challenges are also recommended in graphic design education. The curriculum should seek to develop the cognitive potential of design students so that they can capitalize on their learning in other courses.

Recently, workshops are introduced in graphic design education. These workshops are aimed at exploring the creative talents of students and to increase their knowledge on the contemporary methods in graphic design education. The workshops have proven to be effective in increasing an understanding of design and the core components of the discipline.

4.6   Strategies to foster creativity

In the study of graphic design, the role of teachers is of paramount importance. Several models have been put forward which suggest strategies to be used in graphic design instruction. Peter Lyman asserted, "The key issue in innovation is not the adaption of technology neither it is the implementation of pedagogical models, but lies in the content and method of instruction. Or, in other words, it is not the institute, but the ability and method of teacher which ensures graphic design education (Lyman, cited in Harley, D., Matkin, G. and Goldstein, M. (2002).

Design teachers play an integral role in encouraging their students to become reflective, active, and independent learners. It is believed that teachers should encourage reflective practices among their studentsPereira, A. M. S., & Silva, C. (2001 (Pereira, A. M. S., & Silva, C. (2001, September)Pereira, A. M. S., & Silva, C. (2001 with proper instruction in schools and universities, students learn in a collaborative manner and are able to enhance their reflective skills. The aim of teachers should be to develop flexible learning environment which can offer varied learning experiences (ibid, 2001: 4). A conducive environment to learning instigates student reflection on social and political problems. In a broader context, an ideal environment for learning should promote risk-taking, independence and risk-taking (Cole, D. G., Sugioka, H. L., & Yamagata-Lynch, L. C. (1999).

4.7   Personal characteristics of students

Students of graphic design play a major role in improving their creative abilities by acquiring the thinking patterns and creative abilities of creative people. Cheow, Y. (2006) suggested that *"Students must acquire not only the technical knowledge, but also the interpersonal skills of their teachers"* (p. 18). The teachers of graphic design must engage with their students on different levels. Cheow, Y. (2006) believed that *"it is important for teachers to identify and distinguish the traits which are associated with creativity i.e. boldness, flexibility and innovation"* (p. 9). It serves as an effective method to expand the learning avenues of graphic design students. The personal characteristics of an individual are of prime importance in assessing their level of creativity (ibid., 2008, p.5).

Comparatively, it is quite easy for creative people to generate varying thoughts and ideas. They are also equipped with the ability to view the world differently and rely on their intuition and insight to find solutions.

4.8   Enhancing creative abilities of students

Cheow, Y. (2006) asserted that the role of graphic design teachers is to inspire curious minds and to recognize their talents. From a psychological perspective, teachers can adopt a number of strategies to enhance their student's cognitive abilities:
- Teachers can encourage out of the box thinking
- Train their students on drawing connections between different ideas and to assess differences and similarities between them
- Improve their dimensional thinking and observations
- Teaching students on practicing analysis and empathy
- Encouraging positive thinking among students
- Foster a continuous "What if?" approach

Personal Development of Students

A student's personal development plays a major role in the enhancement of creativity among students. Dineen, R. and Collins, E. (2004) asserted that *"Successful teachers in terms of creativity enhancement themselves are creative thinkers and self motivated"* (p. 2). They tend to work as a model for their students. Such teachers are focused at giving their complete attention to their students and strive to enhance their learning potential. The modes of teaching are quite conducive to the fulfillment of a student's creative potential."

The mode of teaching involves recognizing student's achievement and continuously making attempts to foster their creativity. "The anticipation of reward is a vital component in encouraging students to think creatively" (Lau, K. (2009) . It further inundates the importance of motivating students for personal development.

5.0 Results

This study is used to evaluate the both phases in the field of the graphic designing. For that purpose a quantitative approach is used to analyze the outcomes generated by the collected data set. In this research, a deductive approach is used to find the results of the stated hypothesis.

5.1 ANOVA

Analysis of variance is used to conclude the research hypotheses separately. It is generated according to the stated research questions.

Table 1: ANOVA [b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.860	4	.465	.359	.836[a]
	Residual	56.916	44	1.294		
	Total	58.776	48			

a. Predictors: (Constant), personal development, contents of the creative graphic design course, development of the design process, develop student creative characteristics
b. Dependent Variable: Psychological attributes

From table 1, the significance F value is 0.359.The p-value is greater than the predefine level of significance. So, researcher fails to reject the null hypothesis and as a researcher, the null hypothesis is not rejected and concludes that the psychological elements are involved in creativity enhancement and graphic design education.

In order to analyze the teachers make creative abilities in the students of Graphic Design, the researcher used the F-stat to conclude the underlying research hypothesis.

Table 2: ANOVA [b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.048	4	1.262	.173	.951[a]
	Residual	320.299	44	7.280		
	Total	325.347	48			

a. Predictors: (Constant), personal development, Cognitive abilities, Teaching methods for problem solving, develop student s cooperative skills
b. Dependent Variable: contents of the creative graphic design course

From table 2, the value of F-stat is 0.173.The p-value is greater than the predefine level of significance. So, researcher fails to reject the null hypothesis and as a researcher, the null hypothesis is not rejected and concludes that the teachers make creative abilities in the students of Graphic Design.

6.0 Conclusion

The present study aimed to study "creativity in graphic design education from psychological perspectives'. From the review of literature, it can be ascertained that creativity is a vital component in graphic design education. The field of graphic design requires students to engage in problem solving activities and make use of their aesthetic sense for the development of designs. The study followed a qualitative approach to explore the topic. A review of relevant studies on the topic and the qualitative assessment made in the present investigation clearly indicate that education in graphic design is multi-

faceted. The purpose of graphic design education should rest in enhancing the creative abilities of students and in teaching them the required skills to make creative judgments. The collected information was thoroughly analyzed and was assessed with respect to the purpose of the study.

From the above results, the study does not support the stated null hypotheses. The results show the involvement of the psychological attributes in the education of creativity and graphic designing. Conversely, it is also concluded that in the development of creative skills in the student the teachers provide support to their students. The inferences drawn in the analysis section clearly reveal that the curriculum of graphic design education needs to be improvised. Teachers and education boards cannot afford to continue teaching with the orthodox modes of instruction. Technology and innovation need to be incorporated in teaching graphic design students. The present study highlighted the importance of the psychological aspect of graphic design education and creativity. From the analysis section, it is evident that the creative abilities of students need to be enhanced. More than textbook learning, the students of graphic design must be equipped with the processes involved in giving physical form to ideas. More research is needed on the psychological aspect of graphic design education and creativity. If teachers are well aware of the processes involved in design education then a brighter future can be ensured for students in the field of graphic design.

6.1   Policy implication

- The present study can be implemented on managing and organizing the Graphic design curriculum.
- The study could be helpful to develop creativity among the students and finding new ideas for personal development, being a part of graphic design education.
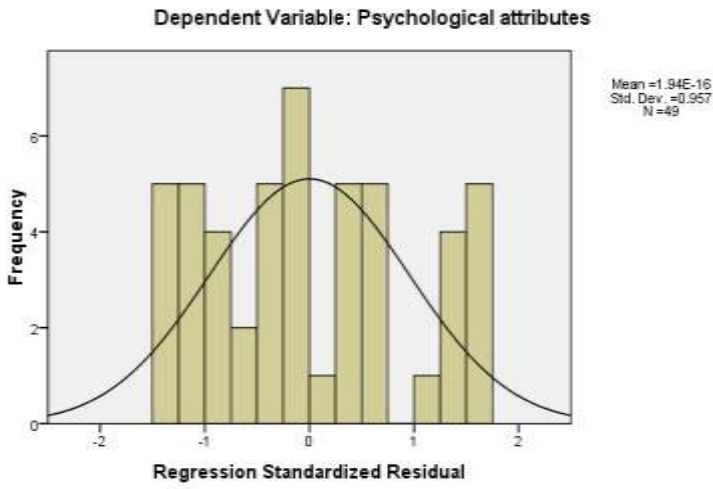
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Appendices

Histogram

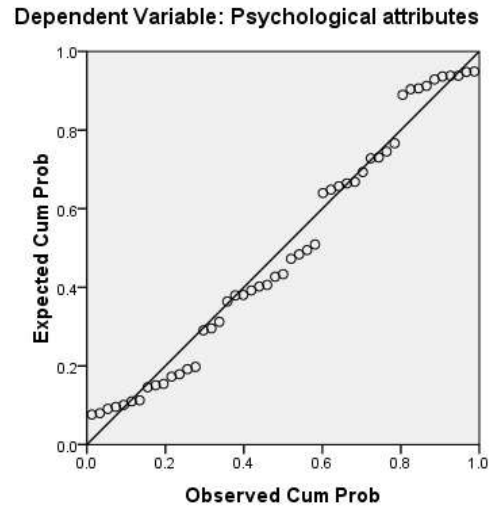Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Psychological attributes

Dependent Variable: Psychological attributes

Mean =1.94E-16
Std. Dev. =0.957
N =49

Chart 1:

(please refer to published guidelines)

C9. Involves use of radiation   Yes* ☐   No ☑

(please refer to published guidelines). Investigators should contact the University's
Radiological Protection Officer before commencing any research which exposes participants
to ionising radiation – e.g. x-rays).

C10. Involves use of hazardous materials   Yes* ☐   No ☑

(please refer to published guidelines)

C11. Assists/alters the process of conception in any way   Yes* ☐   No ☑

C12. Involves methods of contraception   Yes* ☐   No ☑

C13. Involves genetic engineering   Yes* ☐   No ☑

*** If you have answered 'Yes' to any of the above please submit a full
application to the Ethical Advisory Committee**

Section D: Observation/Recording

D1. Does the study involve observation and/or recording of participants?

Yes ☐ No ☑   **If No**, please go to Section E

If Yes,

D2. Will those being observed and/or recorded be informed that the observation
and/or recording will take place?   Yes ☐ **No*** ☐

* Please submit a full application to the Ethical Advisory Committee

Section E: Consent and Deception

E1. Will participants give informed consent freely?

Yes ☑   If **yes** please complete the **Informed Consent** section below.

No* ☐   *If **no**, please submit a full application to the Ethical Advisory
               Committee.

> *Note: where it is impractical to gain individual consent from every participant, it is
> acceptable to allow individual participants to "opt out" rather than "opt in".*

Informed Consent

E2. Will participants be fully informed of the objectives of the investigation and all
details disclosed (preferably at the start of the study but where this would interfere
with the study, at the end)?   Yes ☑   **No*** ☐

E3. Will participants be fully informed of the use of the data collected (including,
where applicable, any intellectual property arising from the research)?

Yes ☑   **No*** ☐

E4. For children under the age of 18 or participants who have impairment of
understanding or communication:

- will consent be obtained (either in writing or by some other means)?

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Yes ☐   No* ☐   N/A ☑

- will consent be obtained from parents or other suitable person?

Yes ☐   No* ☐   N/A ☑

- will they be informed that they have the right to withdraw regardless of parental/ guardian consent?   Yes ☐   No* ☐   N/A ☑

E5. For investigations conducted in schools, will approval be gained in advance from the Head-teacher and/or the Director of Education of the appropriate Local Education Authority   Yes ☐   No* ☐   N/A ☑

E6. For detained persons, members of the armed forces, employees, students and other persons judged to be under duress, will care be taken over gaining freely informed consent?   Yes ☐   No* ☐   N/A ☑

* Please submit a full application to the Ethical Advisory Committee

Deception

E7. Does the study involve deception of participants (ie withholding of information or the misleading of participants) which could potentially harm or exploit participants?

Yes ☐   No ☑ If **No**, please go to Section F

If yes,

E8. Is deception an unavoidable part of the study?   Yes ☐   No* ☐

E9. Will participants be de-briefed and the true object of the research revealed at the earliest stage upon completion of the study?   Yes ☐   No* ☐

E10. Has consideration been given on the way that participants will react to the withholding of information or deliberate deception?   Yes ☐   No* ☐

* Please submit a full application to the Ethical Advisory Committee

Section F: Withdrawal

F1. Will participants be informed of their right to withdraw from the investigation at any time and to require their own data to be destroyed?   Yes ☑   No* ☐

* Please submit a full application to the Ethical Advisory Committee

Section G: Storage of Data and Confidentiality

Please see University guidance on Data Collection and Storage

G1. Will all information on participants be treated as confidential and not identifiable unless agreed otherwise in advance, and subject to the requirements of law?

Yes ☑   No* ☐

G2. Will storage of data comply with the Data Protection Act 1998?

(Please refer to published guidelines)   Yes ☑   No* ☐

G3. Will any video/audio recording of participants be kept in a secure place and not released for use by third parties?   Yes ☑   No* ☐

G4. Will video/audio recordings be destroyed within six years of the completion of the investigation?   Yes ☑   No* ☐

G5. Will full details regarding the storage and disposal of any human tissue samples be communicated to the participants?   Yes ☑   No* ☐

* Please submit a full application to the Ethical Advisory Committee

Section H: Incentives

H1. Have incentives (other than those contractually agreed, salaries or basic expenses) been offered to the investigator to conduct the investigation?

          Yes† ☐   No ☑   †If **Yes**, Please provide details below

H2. Will incentives (other than basic expenses) be offered to potential participants as an inducement to participate in the investigation?

          Yes† ☐   No ☑   †If **Yes**, Please provide details below

If you have selected one of the answers above marked with an † please provide additional information on how you intend to manage the issues (please continue onto a separate sheet if required), then submit this checklist to the Secretary to the EAC:

Section I: Work Outside of the United Kingdom

G1. Is your research being conducted outside of the United Kingdom?

          Yes ☑   No ☐

If **Yes**, you may need additional insurance cover/clearance for your research.

If, having completed this checklist, you will be making a full application to the EAC this issue will be checked for you as a part of the process. If however you do not need to complete a full application please contact Hiten Patel (H.Patel@lboro.ac.uk).

Section I: Declarations

Checklist Application only:

If you have completed the checklist to the best of your knowledge without selecting an answer marked with an * or †, your investigation is deemed to conform with the ethical checkpoints and you do not need to seek formal approval from the University's Ethical Advisory Committee. Please sign the declaration below, and lodge the completed checklist with your Head of Department or his/her nominee.

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Declaration
I have read the University's Code of Practice on Investigations on Human Participants. I confirm that the above named investigation complies with published codes of conduct, ethical principles and guidelines of professional bodies associated with my research discipline.   *Please sign below*

Checklist with additional information to the Committee:

If, upon completion of the checklist you have **ONLY** selected answers which require additional information to be submitted with this checklist (indicated by a †), please ensure that all the information is provided in detail and send this checklist to the Secretary to the EAC.

Full Application Needed:

If on completion of the checklist you have selected one or more answers which require the submission of a full proposal please download the relevant form from the Committee's web page.

A copy of this checklist, signed by your Head of Department should accompany the full submission to the Ethical Advisory Committee.

Signature of Responsible Investigator   S.T. Dunn

Signature of Student (if appropriate)

Signature of Head of Department or his/her nominee

Date   04.08.2010

Advice to Participants following the investigation
Investigators have a duty of care to participants.

When planning research, investigators should consider what, if any, arrangements are needed to inform participants (or those legally responsible for the participants) of any **health related (or other) problems previously unrecognised in the participant**. This is particularly important if it is believed that by not doing so the **participants well being is endangered**. Investigators should consider whether or not it is appropriate to recommend that participants (or those legally responsible for the participants) seek qualified professional advice, but should not offer this advice personally. Investigators should familiarise themselves with the guidelines of professional bodies associated with their research.

SUR [Interview No 4]

Sample group : Graphic design lecturers and educators (Oman)

عينة الدراسة: مدرسين التصميم والتصميم الجرافيكي بالكليات الحكومية والخاصة بسلطنة عُمان

The questions الاسئلة	Question Type نوعية السؤال
Is 'creativity' either important or real in the creative industries? هل الإبداع مهم أو حقيقي في مجالات التصميم والفنون بشكل عام؟	Yes or No نعم أو لا نعم
If the answer to the previous question was 'Yes' do you believe that creativity be encouraged or taught? آذا كانت اجابتك بنعم للسؤال أعلاه، هل تعتقد أن الابداع ممكن أن يُشجع أو يُدرس؟	Yes or No نعم أو لا نعم
Can creativity be enhanced? هل بالإمكان تطوير الإبداع؟	Yes or No نعم أو لا نعم
How do you recognise the creativity within graphic design discipline? كيف بإمكانك أن تدرك وتلاحظ الإبداع في مقررات التصميم الجرافيكي ، أو التصميم بشكل عام؟	Open-ended question سؤال مفتوح
What are the techniques that can foster creativity in graphic design students? ماكل التقنيات التي تعتقد بانها قد تحفز الإبداع لدى دارسي التصميم الجرافيكي؟	Open-ended question سؤال مفتوح
What are the pedagogical strategies that can be used by lecturers to foster the creativity within their students? ما هي الإستراتيجيات والطرق التربوية التي يستطيع مدرس التصميم الجرافيكي استخدامها لتطوير إبداع الطلبة؟	Open-ended question سؤال مفتوح
What should a graphic design curriculum contain to promote creativity? ما الذي يجب أن يحتوبه منهج التصميم الجرافيكي لكي يطور ويحفز الإبداع لدى دارسي التصميم الجرافيكي؟	Open-ended question سؤال مفتوح
Do you think creativity can be assessed within graphic design discipline? هل تعتقد بان الإبداع يمكن أن يقاس ويُقيم في مقررات التصميم الجرافيكي ؟	Yes or No نعم أو لا نعم
Are you utilizing any framework, in your pedagogy, to assess students' creativity? هل تستخدم إطار تقييمي معين لقياس إبداع الطلبة؟	Yes or No نعم أو لا نعم
Do you think criterion-referenced test can assess creative outcome of graphic design students? هل تعتقد بان "اختبار محكي المرجع" قد يصلح لقياس الإنتاج الإبداعي لدى دارسي التصميم الجرافيكي ؟ ملاحظة/ لمزيد من المعلومات حول هذا الاختبار اطلع على الصفحة التالية	Yes or No نعم أو لا نعم
Do you think is it important to teach graphic design students by both analogue and digital education systems? Or you think technology is enough, for enhancing creativity of those students? هل تعتقد أنه من المهم تدريس طلبة التصميم الجرافيكي بإستخدام طرق التدريس التقليدية كالقص واللصق اليدوي وبإستخدام الأدوات الرقمية المعاصرة، أم تعتقد بأن الانظمة الرقمية كافيه لوحدها لتطوير إبداع هؤلاء الطلبة؟	Open-ended question سؤال مفتوح

لسه لا دوات والجسدات والاشاء من مميز وبتضيف أحيانا هـــبة للطلاب لا تتوفر لدى تعامله فقط مع لا يخة ليكترية . وذلك فاهمية مهمة لتقييم لأدوأة وأحـام الـ Finishing لا ما يضيف للعمل لقأمني مزيدنا لقيمة.

معلومات شخصية Personal Information

What is your name? الأسم (Optional)	What is your age? السن (Optional)	What is your gender (Optional) الجنس
............*m.....*........	.......سنة ٥٢	M ✓ F
What is your country? الدولة .... السودان	What is your institute? المعهد الذي تدرس فيه حاليا كلية.. (جمعي).. (تطبيقية / بلسعد)	How many years you have experience in teaching graphic design? عدد سنين الخبره في تدريس التصميم الجرافيكي أو التصميم بشكل عام ....٢......

ماريتها المجال التعليمي خلال فترتين ٥ أكثر سم ١٠ ساعات في تطاع في تطاع جامعة ربطاع خاص وطلاب

إختبار محكي المرجع

إختبار يقيس ما يعرفه الطلاب وما يستطيعون أداءه في ضوء محك (Criterion) محدد ومعتبر ، وليس في ضوء مستوى أداء مجموعة من الطلاب أدوا الاختبار نفسه مثل Norm- referenced test. الاختبارات محكية المرجع شائعة الاستخدام في التعليم العام. الهدف من الاختبارات المحكية المرجع هو تقرير أي من الأهداف أتقنها الطالب . يقدم هذا النمط من الاختبارات للمعلمين تغذية راجعة عن مدى تقدم الطلاب الدراسي نحو الأهداف التعليمية المعلنة. وعادة ما تغطي هذه الاختبارات وحدات تدريسية صغيرة لها علاقة مباشرة بما تم تدريسه. عند تصحيح هذا النوع من الاختبارات يحدد المعلمون درجة معينة (Cut-off score) بحيث يصنف كل من تجاوزت درجته هذه الدرجة بأنه حقق درجة الإتقان (Mastery) (أي إتقان تعلم المحتوى). معظم الاختبارات الوطنية المعروفة في الولايات المتحدة تعد اختبارات محكية المرجع. في هذا النمط من الاختبارات من الممكن أن يحقق كل الطلاب الدرجة القصوى إذا حققوا كل المعايير المطلوبة لهذه الدرجة.

المصدر Source

• مكتب التربية العربي لدول الخليج ، مصطلحات التقويم والقياس (الاختبارات والامتحانات)، http://www.abegs.org/Aportal/Article/ShowDetails?id=647.تاريخ التصفح: ٢٦ مارس ٢٠١١