

DEVELOPMENT OF A MODEL AND INSTRUMENT FOR COMPETENCY ASSESSMENT OF GRAPHIC DESIGN GRADUATES IN MALAYSIA: A CONCEPTUAL FRAMEWORK

Wong Shaw Chiang¹
Muhammad Zaffwan Idris²
Tan Wee Chuen³

^{1,3} Faculty of Design, Raffles University Iskandar (RUI), Malaysia. Email: ¹wongshawchiang@raffles-university.edu.my, ³tanweechuen@raffles-university.edu.my

² Faculty of Art, Computing and Creative Industry, Universiti Pendidikan Sultan Idris (UPSI), Malaysia. Email: zaffwan@fskik.upsi.edu.my

Accepted date: 18-11-2018

Published date: 11-03-2019

To cite this document: Chiang, W. S., Idris, M. Z., & Chuen, T. W. (2019). Development of A Model and Instrument for Competency Assessment of Graphic Design Graduates in Malaysia: A Conceptual Framework. *International Journal of Education, Psychology and Counseling*, 4(24), 54-68.

Abstract: *The competencies of graphic design graduates are always a concern for design educators and industry professionals. However, limited evidence has been offered by past studies on the existence of a set of competency standards for new entrants to graphic design profession. Also, there seems to exist a very few studies on the tool used to measure the graduates' competency levels that can be found from the literature review. This paper intends to describe a conceptual framework used to develop a model and instrument for competency assessment of graphic design graduates in the context of Malaysia. The conceptual framework described in this paper will include the factors that constantly affect the competencies (knowledge, skills, personal traits, self-concept, and motives) of graphic design graduates.*

Keywords: *Competency Model, Measurement Instrument, Competency Assessment, Graphic Design Graduate, Standards of Practice*

Introduction

Graphic design discipline has gained increasing popularity in Malaysia. According to Ong (2017), the number of design students increased annually between year 2000 to 2010, from 8,000 to 10,000 each year. It is anticipated that the number will increase in the years to come. As a result, growing number of higher educational institutions in Malaysia establish their design faculties in recent years (Ong, 2017). This phenomenon has contributed to the prevalence of

graphic design graduates in the workforce. Among the famous institutions that provide design education are The One Academy, Raffles University Iskandar, Lim Kok Wing University of Creative Technology, Multimedia University, Dasein Academy of Arts, Malaysia Institute of Arts, and so forth. However, design educators and industry professionals in Malaysia constantly express their concerns over the issue of graphic design graduates' competencies (Debbie, 2011). They pointed out that the competency levels of the graduates fail to meet the expectations in the real world (Lim, 2015).

In global context, similar concerns are also expressed by a number of design educators, writers, and industry professionals (e.g., Adu, 2015; Cheung, 2012, 2016; Heller, 2005; Hsieh, Guan, & Wu, 2010; McCoy, 1997). They argued that there is a mismatch between what are taught at university and what are expected in professional design practice. Several factors may have led to the mismatch between 'supply' and 'demand' of graphic design graduates. First, graphic designers' job domain and activities have dramatically changed in modern society (Bennett, 2006; Davis, 2005; Harland, 2011) but the design and delivery of graphic design curricula have been considered too slow to catch up to the changes (American Institute of Graphic Design (AIGA) & National Schools of Art and Design (NASAD), 2010; Davis, 2015; Marks, 2015; Swanson, 2004). Consequently, design graduates are ineffectively and inefficiently trained for the competencies required in the practice (Cheung, 2012, 2016). Second, there is a lack of an agreement in terms of what 'graphic design' consists. Graphic design field is an 'identity crisis' as it is termed in different titles, such as 'communication design', 'visual art', and 'visual communication' (McCoy, 1990). This has created difficulties in establishing a 'standard' to guide the teaching and learning processes of graphic design at university level (Bridges, 2013). Third, there are too many things for design students to learn. It is questionable if a typical four-year graphic design programme is able to sufficiently prepare them for the challenges in the 21st century (Heller, 2005b, 2015b).

Some design disciplines in Malaysia, such as architectural and interior design, have developed professional standards for their respective university programmes to follow in order to govern the quality of new entrants to the professions (Lembaga Arkitek Malaysia (Board of Architects Malaysia), 2017). It is unfortunate, however, that such professional standards cannot be found in graphic design discipline (Chiang, Idris, & Chuen, 2018). In other words, graphic design graduates do not require professional qualification for the right to practice in the profession, and therefore anyone can claim to be a graphic designer, including those who are 'informally trained' (Chiang, Idris, & Chuen, 2019). As a result, the professional status of graphic designers in Malaysia remains low in comparison to other design professions (Debbie, 2011). Yet, up to the best notice of the researchers, there is no easy and effective way to determine the competency levels of graphic design graduates for effective work performance in professional design practice. Therefore, there is a need to establish a set of profession's competency standards to guide the design, development, and delivery of graphic design curricula at the university, and there is also a need to develop a valid and effective instrument to measure the competency levels of graphic design graduates.

Literature Review

Current Trends in Design Industry

As the technology and business environment continue to advance, AIGA (2015b) posed six major trends for the industry professionals and design educators to consider in their practices.

These trends redefine the role of design in a wider and more tactical context. They are briefly discussed as follows.

Wide and Deep: Meta-Disciplinary Study and Practice

Graphic design is a living organism that actively interacts with other disciplines (Littlejohn & Davis, 2010). Designers must be exposed to knowledge and skills from multiple disciplines and apply them in daily practice (AIGA, 2015b). These disciplines, should include, but not limit to: natural science, humanities and liberal arts, social and behavioral sciences, technology and engineering, creative and applied arts, and human professions and services (Friedman, 2012). The mastery of knowledge and skills from different disciplines ensures a more effective and efficient collaboration between designers and other specialists in design process (McDermott, Boradkar, & Zunjarwad, 2014).

Expanded Scope: Scale and Complexity of Design Problems

Aside from creating compelling visuals, graphic designers are required to think critically, intellectually, strategically, creatively, and innovatively in order to solve a vast number of problems (Muratovski, 2016). These problems are usually “nested within increasingly complex social, technological and economic systems and address people who vary in their cognitive, physical and cultural behaviours and experiences” (AIGA, 2015b). Designers are to play more complex role, i.e., to propose effective solutions, in tangible or intangible forms of experiences or strategy, in order to contribute meaningfully to social, sustainable, and economic development (Muratovski, 2016) .

Targeted Messages: A Narrow Definition of Audiences

AIGA (2015b) highlighted that the message delivery process will “shift from mass communication to more narrow definitions of audiences”. This shift requires designers to understand the preferences, cultural behaviors, and experiences of different groups of audiences in greater depth. Designers must be capable of identifying the most appropriate channel to engage with their audiences from different perspectives to gain empathy more effectively (Adu, 2015).

Break Through: An Attention Economy

Attention economy views human attention as a ‘scarce economic resource’. It concerns primarily with the management of information (Berman & McClellan, 2002). According to AIGA (2015b), attention economy should be considered in communication design, information design, experience design, and service design process. Designers must be able to grab and sustain individual’s attention in an environment overloaded with information but pressed for time (Berman & McClellan, 2002). To add value to in the services and solutions is the key in this process (Adu, 2015).

Sharing Experiences: A Co-Creation Model

A number of studies (e.g., Akama, 2008; Fischer, 2000; Sanders, 2000; Steen, de Koning, & Pikaart, 2004) had highlighted the significance of the interaction between designer and user. These studies examined the way in which the end users can involve more dynamically in design process. They developed ‘generative tools’, such as paper prototypes, drawing, mind mapping, storyboards, dialogue, and playful games, to trigger end users’ emotion and expression, and to enable them to share meaningful feedback to enrich the solutions, products, and services (Sanders, 2000, p. 4). In other words, users can now join designers, become co-authors and co-creators in any design activities (Akama, 2008).

Responsible Outcomes: Focusing on Sustainability

Discomfort feeling is growing among people about some of the undesirable trends in the modern society: pollution, climate change, inequality, poverty, and greater tension between human and technology. This, in turn, calls for “different design processes, methods and tools, as well as new breeds of designers with different competencies” (Gardien, Djajadiningrat, Hummels, & Brombacher, 2014, p. 119). Designers must work intensively with relevant stakeholders to produce ethically fair, commercially viable, sustainable, and responsible solutions (AIGA, 2015b).

These six major trends, in short, dramatically shape the job domain and activities of graphic design practice. They reveal the long-term challenges for studio in design industry in recruiting and developing their teams, as well as for higher education institutions in designing and delivering curricula.

Contemporary Graphic Designers’ Job Domains and Activities

Contemporary graphic designers’ job domain and activities are in a state of constant change. The long-recognized responsibilities of graphic designers are to select and organize textual content and visual elements in different media (Cezzar, 2017) in order to deliver ideas and messages creatively and strategically (Ambrose & Harris, 2011; Bestley & Noble, 2016; Frascara, 2004). The key function of graphic design is to “persuade, inform, identify, motivate, enhance, organize, brand, rouse, locate, engage, and carry or convey many levels of meaning” to a specific group of audience (Landa, 2014, p. 1). From the design of a single business card to a whole series of brand identity system, or from a company’s website to the print and digital advertisements of an integrated advertising campaign, graphic design works can take place at any scale and happen in an instant or over a long period of time (Cezzar, 2017). There are many different specializations in graphic design (Heller & Fernandes, 2004). A graphic designer can specialize in branding and identity design, corporate communication design, editorial design, illustration, information design, interactive or experience design, motion graphics, packaging design, promotional design and advertising, typographic design to name just a few (Landa, 2014).

However, the scope and impact of graphic design today are expanding as a result of the progression in technology and business environment. Graphic design, as highlighted by Marks (2015), has become a “richly diverse field that continues to evolve” (p. 18). Simultaneously, the level of ambiguity and sophistication of graphic designers’ job domain and activities is increased (Davis, 2008; Harland, 2016). Graphic designers are required to play a wide array of roles within the industry (Bennett, 2006; Dziobczenski & Person, 2017; Dziobczenski, Person, & Meriläinen, 2018). As evident in AIGA (2014) and Australian Graphic Design Association (AGDA) (2012), new job roles such as ‘web-based rich media and motion graphics developer’, ‘web content strategist’, ‘user experience designer’, ‘social media or online community manager’, ‘mobile app developer’, ‘information architect’, ‘mobile interface designer’, ‘strategy director or design strategist’, and so forth can be found on their websites. The job descriptions range from marketing to creative services professionals, including print and interactive designers, market researchers, copywriters, content strategists, and more. Just like other fields of design (Buchanan, 2001; Valtonen, 2005), graphic designers are also required to involve in non-design areas such as business strategy, innovation management, and service design (Davis, 2005).

The job domain and activities of graphic designers have been clarified in various design textbooks and research reports (e.g., Ambrose & Harris, 2011; Bennett, 2006; Cheung, 2016; Heller, 2005a, 2015a). For example, Newark (2008) identified 26 components of graphic design. These components can be further classified into five major areas: (1.) alphabets; (2.) typography; (3.) images; (4.) tools; and (5.) disciplines. According to Newark (2008), area (1.) to (3.) are the essential components that used by graphic designers to communicate meaning or messages visually, area (4.) is the technical tools or technologies used by graphic designers to produce design, and area (5.) refers to the outcomes that produced by graphic designers such as logos, print media, web materials, and so forth. Similarly, Van der Waarder's (2009) study suggested three key job activities comprise of graphic design practice, which are: (1.) selection of appropriate visual elements; (2.) organization of the elements to form specific outcomes to attain visual goals; and, (3.) evaluation of the usability and marketability of the outcomes against specific visual goals.

Nevertheless, Harland (2011) noted that “the traditional domains of typography, illustration, photography, and print, while contributing significantly to graphic design, are inadequate terms for describing what graphic design is, and what graphic designers do” (p. 22). He argued that contemporary demands for graphic designers require a new perspective to look at the field. To Harland (2011), graphic design is a “unified thinking and doing activity that involves idea generation, image creation, word interpretation, and media realization” (p. 22) for various essential dimensions. These dimensions are: communication, commerce, industry, culture, and society. Among these five dimensions, society is the most significant dimension for graphic design because it covers the rest of the other dimensions. Harland (2011) highlighted that graphic design should be viewed as “a tool for social, cultural, and economic development” instead of “a craft for commerce” (p. 34). This is to mean that graphic designers are capable of impacting various facets of people's life and many dimensions in the society by using their expertise.

Cheung (2016) studied the domain of professional knowledge required by graphic designers in Hong Kong. In his study, he collected data from graphic design graduates, employers in design industry, and design educators by using mixed method approach. These respondents, in short, arrived at a consensus that: “A professional designer is knowledgeable and performs well in both internal and external environment” (p. 34). In other words, aside from possessing design related knowledge and skills, contemporary graphic designers must collaborate intensively with experts from other disciplines in design process.

This body of literature, in brief, indicates that designers are no longer pure decorators, craftsmen, or stylists (AIGA, 2015b; Muratovski, 2016). Instead, they are expected to play a wide range of roles and responsibilities at different positions within the industry (Bohemia, 2002; Dziobczenski et al., 2018; Kang, Chung, & Nam, 2015). They can work as functional experts in the processes of developing new products or as strategic leaders in business organizations (Ravasi & Lojacono, 2005; Valtonen, 2005). Several studies also suggested that designers can work with business organizations in many ways (Jevnaker & Bruce, 1998) and that the perceived value and contribution of designers can be determined by who they are working with (Valencia, Person, & Snelders, 2013).

Graphic Design Graduates' Competencies: International and Local Perspectives

In collaboration with Adobe since 2006, AIGA (2015a) had been working hard to shed light on what graphic design practice will be like in the future. Consequently, they identified several

competencies that will need to be acquired by future graphic designers, which are the ability to: develop meaningful visuals to solve various communication problems; select and use suitable tools and technology for specific production requirements; respond to audience contexts that shape design decisions; be flexible, nimble and dynamic in practice; deliver design rationale for proposed solutions confidently and logically; work in a global environment; interact effectively in interdisciplinary teams; understand issues related to different contexts for design; and apply ecological and ethical concepts in design process (AIGA, 2015a). AIGA (2015a) highlighted that these competencies should be considered by graphic design related programmes providers at higher education level when they plan, design, develop, and implement their curricula as in order to empower graphic design graduates to meet the needs and demands of the future.

A number of studies (e.g., Adu, 2015; Bridges, 2013; Cheung, 2016; Dharavath, 2003; Dziobczenski & Galeotti, 2017; Dziobczenski et al., 2018; Hsieh et al., 2010; Wang, 2006; Wilson, 2014) were conducted to determine the underlying attributes required by graphic design graduates for successful job performance. Wang (2006) had identified 66 significant competencies, 63 desirable competencies, 12 most important competencies for graphic design curriculum development and delivery at university level, and 20 most needed competencies for employment as perceived by design educators and industry professionals in Kansas and Missouri. These competencies could be classified into design-, soft skills-, technical-, and computer-related dimensions. According to Wang (2006), technical dimension is among the most important as compared to other competency dimensions. Similarly, Bridges' (2013) study intended to find out the skills, content knowledge, and tools needed in a graphic design programme in order to prepare graduates for the challenges in the 21st century. The top five most important competencies her findings uncovered are: (1.) apply the basic principles of graphic design aesthetics; (2.) perform graphic design creatively; (3.) apply the concepts of typography; (4.) exhibit interpersonal skills; and (5.) write clearly, concisely, and correctly. The top most needed tools include: (1.) Adobe Creative Suite; (2.) Microsoft Office; (3.) sketchbooks; (4.) Adobe Dreamweaver; and (5.) printers.

Adu's (2015) study suggested that employers in design industry expect graduates to be multi-skilled. Apart from being able to perform technical tasks, graphic design graduates must possess up-to-date industry knowledge, understanding of the changing nature of work, time management skills, relevant work experience, communication skills, problem-solving skills, a wide range of knowledge of other disciplines, technology literacy, teamwork and leadership skills, and personal traits (e.g., emotional intelligence, self-respect, self-usefulness, and confidence) in order to be competitive in real world practice. Dziobczenski and Galeotti (2017) evaluated the significance of 25 skills for graphic designers to perform proficiently within the Brazilian industry in order to enhance graduates' employability. They organized these skills in four groups: (1.) conceptual design skills (briefing skills, business skills, concept design skills, idea generation skills, market trends skills, problem-solving skills, and research skills); (2.) project management skills (client relationship skills, leadership skills, presentation skills, project management skills, and teamwork skills); (3.) software skills (2D software, 3D software, coding skills, Office skills, and web development software); and (4.) technical design skills (3D modeling skills, illustration skills, layout skills, motion design skills, photo manipulation skills, photography skills, production skills, and typography skills) (Dziobczenski & Galeotti, 2017).

In Malaysia, students who receive formal design education are also required to meet certain competency levels before they officially graduate. The Malaysian Qualifications Agency (MQA, 2013) is an accrediting body of academic programmes and qualifications of higher educational institutions. All design programmes, including graphic design, must include eight significant domains of learning outcomes as determined by MQA (2013) in order to govern the quality of design graduates. The learning outcome domains are: (1.) knowledge; (2.) practical skills; (3.) social skills and responsibilities; (4.) values, attitudes and professionalism; (5.) communication, leadership and team skills; (6.) problem solving and scientific skills; (7.) information management and lifelong learning skills; and (8.) managerial and entrepreneurial skills (MQA, 2013).

MQA (2013) also offers a comprehensive description on the ‘general’ aims of different levels of design study for higher education providers in Malaysia. These aims can be considered as the different competency levels required by design graduates based on different academic qualifications. While diploma graduates are required to master “related broad-based knowledge, advanced skills, entrepreneurship, creativity and innovation, visual expression and communication in Art and Design to contribute towards the creative industry” (MQA, 2013, p. 7), Bachelor’s Degree graduates are expected to acquire “relevant in-depth knowledge, multi skills, critical thinking skills, creativity and innovation in specialized and interdisciplinary areas of studies, contextual understanding, entrepreneurship and professionalism, which contribute towards the creative industry and the visual culture” upon the completion of specific design programme (MQA, 2013, p. 7).

In recognition of the significance of competency for superior job performance, the Department of Skills and Development and Ministry of Education in Malaysia have developed a skill standards development project, which is called National Occupational Skills Standard (NOSS). The established skill standards define the required employment level as well as competency level by employees in the industry in the context of Malaysia (Department of Skills and Development, 2013). There are seven job competency areas required by graphic designers in NOSS document, including: (1.) layout design; (2.) colour concept design; (3.) typography design; (4.) image manipulation; (5.) graphic illustration; (6.) final artwork confirmation; and (7.) computer software and hardware troubleshooting. Graphic designers are also expected to have particular core abilities (e.g., apply thinking skills and creativity, prepare report and instructions, convey information and ideas to people, manage and improve performance of individuals, provide consultation and counselling, develop and maintain team harmony and resolve conflicts, facilitate and coordinate teams and ideas, allocate work, implement project / work plans, and inspect and monitor work done and / or in progress) and social skills (e.g., communication skills, conceptual skills, interpersonal skills, multitasking and prioritizing, self-discipline, teamwork, learning skills, leadership skills, patience, respect, meticulous, and punctuality) to deal with non-design tasks successfully (Department of Skills and Development, 2013). In other words, the higher education providers in Malaysia must produce graduates who can perform effectively in these job competency areas with related abilities and skills in order to meet the basic workplace demands.

Development of Competency Model and Instrument for Competency Assessment

Two approaches are commonly used in human resource management practice in competency model development (Lucia & Lepsinger, 1999). The first is a ‘start-from-the-scratch’ approach. In this approach, comprehensive interviews and observations are conducted with high performers in order to gain insights into the ‘critical incidents’ that contribute to superior work

performance of a specific job or profession. The strength of this approach is that it can collect specific competencies that highly related to the job or profession, but it requires a great amount of time and resources. The second is an ‘off-the-shelf’ approach based on existing models. As validated model can be used in this approach, a significant amount of time and resources can be reduced. However, the deficiency is that the uniqueness of a specific job or profession may not be able to capture effectively by using this approach. Lucia and Lepsinger (1999) highlighted that for a newly competency model to be used effectively, “it must be shown to have face validity (that is, the competencies described in the model must make sense to those performing the job) and it must be validated as a predictor of successful performance (that is, the competencies must be demonstrated by the top performers in the job)” (p. 93). Campion et al. (2011) suggested that a competency model’s memorableness and communication can be reinforced by means of suitable visuals, diagrams, or related graphical elements. It is recommended that a model should look as simple as possible and focus only on the core competency areas.

There are numerous benefits of competency-based assessment (Potgieter & Van der Merwe, 2002). It can be used in the selection process of new entrants to the job, internal promotion, development of existing employers (Van der Merwe, 2002). However, a truly valid and reliable competency-based assessment strategy is highly beneficial to not only the professions, but also to the whole community (Suhairom, Musta’amal, Amin, & Johari, 2014). Gonczi (1994) stated that under a competency-based assessment system, assessors judge whether an individual has attained specific pre-determined criteria listed in the competency standards based on the collected evidence from the performances. Gonczi, Hager, and Athanasou (1993) defined competency-based assessment as (p. 23):

assessment of a person’s competence [competency] against prescribed standards of performance. Thus, if a profession has established a set of, say, entry level competency standards, then these details the standards of performance required of all new entrants to that profession. Competency-based assessment is the process of determining whether a candidate meets the prescribed standards of performance, i.e. whether they demonstrate professional competence [competency]...

Both Emat (2005) and Greenstein (2012) provided similar description that competency-based assessment is a process to collect evidence and make judgment on the competency levels of individuals while performing work-related tasks based on pre-determined standards. Competency-based assessment is perceived to have higher levels of inherent fairness by individuals because it focuses on the behavior and actual job output instead of personality or other cultural factors (Potgieter & Van der Merwe, 2002).

Several methodologies are noted in the development of competency-based assessment measures (Nicholson, Griffin, Gillis, Wu, & Dunning, 2012). Bashook (2005) focused more on psychometric properties in the development of an effective and efficient competency assessment. He pointed out that the ultimate goal for each assessment during training or in practice is to measure an individual’s competencies, including knowledge, skills, abilities, personal traits or performance, as accurate as possible (Bashook, 2005). In this sense, accuracy refers to the results from the assessment are reliable and valid to predict or indicate the performance of an individual (Suhairom et al., 2014).

Nevertheless, previous studies provide little evidence on the existence of such assessment instrument for graphic design graduates. There seems to exist a very few studies on the instrument for competency assessment of graphic design graduates that can be found from the literature review. Thus, the following section describes a conceptual framework used to develop a model and instrument for competency assessment of graphic design graduates in the context of Malaysia.

The Proposed Conceptual Framework

The proposed conceptual framework is developed by adapting and integrating two well-established generic competency models. The first model is *Model of Effective Job Performance*, which was developed by Boyatzis (1982). As shown in **Figure 1**, in this model, Boyatzis (1982) argued that effective action or performance will happen when three critical components are in correspondence with each other. These three components are: organisational environment, job demands, and an individual's competencies. In other words, ineffective action or performance will occur if any one or two of those components are inconsistent.

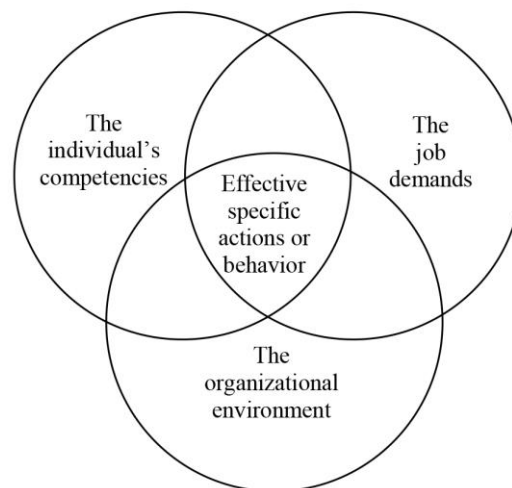


Figure 1: A Model of Effective Job Performance developed by Boyatzis (1982).

According to Boyatzis (1982), an individual's competencies can be referred to the knowledge, skills, and attitudes (KSAs) that a person display while working on specific given job tasks. They are the most essential characteristics that empower a person to complete those tasks. The job demands are the requirements, activities, scope, and content of the job that guide the behaviours and actions of the person. The organisational environment covers the strategies, aims and goals, and policies of particular organisation as well as the external context of work (Boyatzis, 1982).

The second model is *The Iceberg Model* and *The Onion Model* (as shown in **Figure 2**), which were established by Spencer and Spencer (1993). According to them, there are five types of competency characteristics: motives, traits, self-concepts, knowledge, and skills. These characteristics can be arranged based on their degree of visibility and centralness to personality. While knowledge and skills are more visible and relatively surface; self-concept, traits, and motives tend to be hidden, deeper, and central to personality. This means that knowledge and skills are relatively easier to develop and train than self-concept, traits, and motives (Spencer & Spencer, 1993).

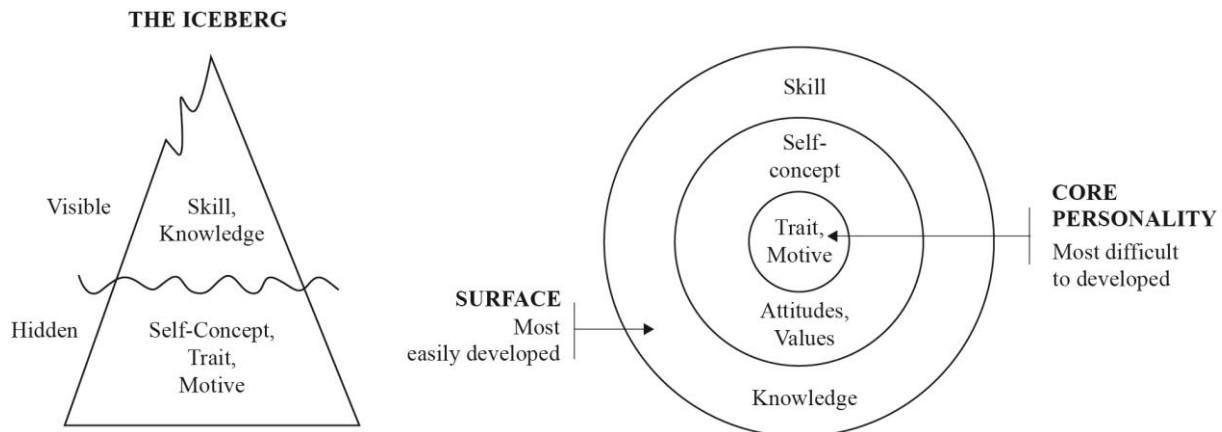


Figure 2: The Iceberg Model and The Onion Model Developed by Spencer and Spencer (1993)

The proposed conceptual framework for the development of a competency assessment model and instrument for graphic design graduates is illustrated in **Figure 3**. Following Boyatzis’s (1982) suggestion, in this conceptual framework, graphic design graduates’ competencies are identified as being consistent with current trends in design industry as well as current job demands. In other words, this framework recognizes the importance of the current trends as well as job demands in the development of the most relevant competencies for graphic design graduates to function effectively in constantly changing world. Current trends refer to the external factors that shape the context for the practice of design. Such trends are usually driven by the emerging technological, social, cultural, and economic issues, practices, and developments. Job demands, on the other hand, refer to the internal factors that directly shape the required competencies to deal with the given job tasks. They are the general functional requirements of the job. These two factors will be considered while identifying the competencies to be included in the model and instrument.

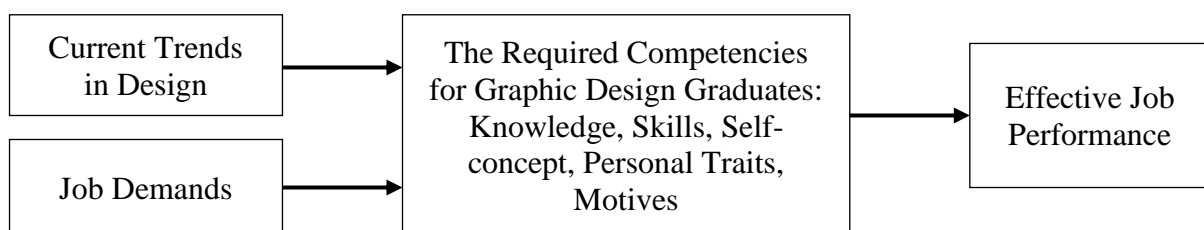


Figure 3: The Proposed Conceptual Framework for The Development of a Model and Instrument for Competency Assessment of Graphic Design Graduates.

As previously noted, competencies are individuals’ characteristics of that allow them to perform appropriate specific actions or behaviours. They indicate the ability that individuals bring to the job (Boyatzis, 1982; Spencer & Spencer, 1993). When the responsibilities of the job to produce the desired results require the demonstration of specific actions or behaviours, individuals draw from inner resources for the ability to perform (Vathanophas & Thai-ngam, 2007). In this conceptual framework, the required competencies of graphic design graduates are broken down into five major domains based on the Spencer and Spencer’s (1993) interpretation of competency. They are knowledge, skills, self-concept, personal traits, and motives. More

specifically, knowledge is the understanding and awareness that a person possesses in certain aspects that are crucial for handling assigned job tasks; skills are the abilities of a person to perform the assigned tasks; traits are the attributes or qualities of a person in responding to situations or circumstances; self-concept is the belief that a person look at him or herself which usually refers to attitudes, values, or self-image; and motives are the motivation or reason that drives a person to behave and act in particular ways consistently in order to achieve certain goals (Spencer and Spencer, 1993).

Effective job performance is the outcome of mastery of the required competencies. Effective job performance is the attainment of specific results required by the job through those competencies while being able to fit to the current trends as well as the job demands in professional design practice.

Conclusion

In brief, the present study describes a conceptual framework used to develop a model and instrument for competency assessment of graphic design graduates. The development of such model and instrument will bring a shared vocabulary to relevant stakeholders with respect to the standards of performance required of all graphic design graduates as well as an effective means to measure their levels of competency, specifically in the context of Malaysia. Accordingly, the effectiveness and efficiency of the educational and employability process of graphic design discipline can be enhanced (Adu, 2015). Continuous growth of design knowledge is important to develop the discipline and to differentiate the scope and content of designers' work from other professionals' work (Horváth, 2007). It is hoped that the development of such model and instrument can contribute to this growth of knowledge and serve developments of design in both academia (Dorst, 2008; Valencia et al., 2013) and practice (Conley, 2004, 2007), particularly in graphic design discipline.

References

- Adu, A. (2015). *Graduate employability: The link between design education and the graphic design industry*. Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.
- Akama, Y. (2008). *The tao of communication design practice: Manifesting implicit values through human-centred design*. RMIT University.
- Ambrose, G., & Harris, P. (2011). *The fundamentals of creative design* (2nd ed.). Lausanne, Switzerland: AVA Publishing SA.
- American Institute of Graphic Design (AIGA). (2015a). Designer of 2015 Competencies. Retrieved October 1, 2017, from <http://www.aiga.org/designer-of-2015-competencies/>
- American Institute of Graphic Design (AIGA). (2015b). Designer of 2015 Trends. Retrieved October 1, 2017, from <http://www.aiga.org/designer-of-2015-trends>
- American Institute of Graphic Design (AIGA) & National Schools of Art and Design (NASAD). (2010). General education and professional undergraduate programs in graphic design. AIGA & NASAD.
- Bashook, P. G. (2005). Best practices for assessing competence and performance of the behavioral health workforce. *Administration and Policy in Mental Health*, 32(5–6), 563–592. <https://doi.org/10.1007/s10488-005-3265-z>
- Bennett, A. (2006). *Design studies: Theory and research in graphic design*. New York: Princeton Architectural Press.

- Berman, S. J., & McClellan, B. E. (2002). Ten strategies for survival in the attention economy. *Strategy & Leadership*, 30(3), 28–33. <https://doi.org/doi.org/10.1108/10878570210697513>
- Bestley, R., & Noble, I. (2016). *Visual research: An introduction to research methods in graphic design* (3rd ed.). New York, NY: Bloomsbury.
- Bohemia, E. (2002). Designer as integrator: reality or rhetoric? *The Design Journal*, 5(2), 23–34. <https://doi.org/10.2752/146069202790718549>
- Boyatzis, R. E. (1982). *The competent manager: A model for effective performance*. New York: John Wiley & Sons, Inc.
- Bridges, A. W. (2013). *Identification of perceived 21st century graphic design skills, content knowledge, and tools needed in an effective university-level graphic design program. ProQuest Dissertations and Theses*. Retrieved from <https://search.proquest.com/docview/1429501618?accountid=29391>
- Buchanan, R. (2001). Design research and the new learning. *Design Issues*, 17(4), 3–23. <https://doi.org/10.1162/07479360152681056>
- Butler, J. (1995). *The process for effective graphic design curriculum development*. University of Wisconsin-Madison.
- Campion, M. A., Fink, A. A., Ruggeberg, B. J., Carr, L., Phillips, G. M., & Odman, R. B. (2011). Doing competencies well: Best practices in competency modeling. *Personnel Psychology*, 64(1), 225–262. <https://doi.org/10.1111/j.1744-6570.2010.01207.x>
- Cezzar, J. (2017). What is Graphic Design? Retrieved October 12, 2017, from <https://www.aiga.org/guide-whatishgraphicdesign>
- Cheung, B. P. S. (2012). Double 'Blind Spots' of the academia and design industry. Hong Kong.
- Cheung, B. P. S. (2016). Professional graphic design knowledge in Hong Kong: from graduate to professional. *Communication Design*, 4(1–2), 21–40. <https://doi.org/10.1080/20557132.2016.1275476>
- Chiang, W. S., Idris, M. Z., & Chuen, T. W. (2018). What makes an undergraduate graphic design education valuable? *Journal of Education and Social Sciences*, 11(1), 73–82.
- Chiang, W. S., Idris, M. Z., & Chuen, T. W. (2019). Is graphic design being taken seriously as a profession? *Journal of Arts and Social Sciences*, 3(1), 1–9.
- Conley, C. (2004). Leveraging Design's Core Competencies. *Design Management Review*, 15(3), 45–51. <https://doi.org/10.1111/j.1948-7169.2004.tb00171.x>
- Conley, C. (2007). Educating Designers for Broad Roles in Organizations. *Design Management Review*, 18(3), 10–17. <https://doi.org/10.1111/j.1948-7169.2007.tb00208.x>
- Davis, M. (2005). Raising the bar for higher education. In S. Heller (Ed.), *The education of a graphic designer* (2nd ed., pp. 13–18). New York: Allworth Press.
- Davis, M. (2008). Why do we need doctoral study in design? *International Journal of Design*, 2(3), 71–79.
- Davis, M. (2015). Interdisciplinarity and the education of the design generalist. In S. Heller (Ed.), *The education of a graphic designer* (3rd ed., pp. 20–29). New York: Allworth Press.
- Debbie, G. S. S. (2011). *A nation's visual language: Nation branding and the visual identity of contemporary malaysia*. Nottingham Trent University.
- Department of Skills and Development. (2013). National Occupation Skills Standard (NOSS) for graphic design (printing technology): Level 3. Kuala Lumpur: Department of Skills and Development.
- Dharavath, H. (2003). Importance of technical competencies in the graphic communications technology curriculum as perceived by the graphic communications industry and

- educators. *Journal of Industrial Technology*, 19(2), 1–7. Retrieved from <http://www.atmae.net/jit/Articles/dharavath031003.pdf>
- Dorst, K. (2008). Design research: a revolution-waiting-to-happen. *Design Studies*, 29(1), 4–11. <https://doi.org/10.1016/j.destud.2007.12.001>
- Dziobczenski, P. R. N., & Galeotti, A. A. R. (2017). Preparing design students for the market: An initial investigation on the required knowledge and skills for graphic designers in Brazil. *The Design Journal*, 20(sup1), S1241–S1249. <https://doi.org/10.1080/14606925.2017.1352653>
- Dziobczenski, P. R. N., & Person, O. (2017). Graphic designer wanted: A document analysis of the described skill set of graphic designers in job advertisements from the United Kingdom. *International Journal of Design*, 11(2), 41–55.
- Dziobczenski, P. R. N., Person, O., & Meriläinen, S. (2018). Designing career paths in graphic design: A document analysis of job advertisements for graphic design positions in Finland. *Design Journal*, 6925, 1–22. <https://doi.org/10.1080/14606925.2018.1444874>
- Emat, Y. (2005). *Pendidikan teknik dan vokasional di Malaysia*. Selangor, Malaysia: IBS Buku Sdn. Bhd.
- Fischer, G. (2000). Shared understanding, informed participation and social creativity: Objectives for the next generation of collaborative systems. *Designing Cooperative Systems*, (November), 3–16.
- Frascara, J. (2004). *Communication Design, Principles, Methods and Practice*. New York: Allworth Press.
- Friedman, K. (2012). Models of design: Envisioning a future design education. *Visible Language*, 46.1(2), 132–153.
- Gardien, P., Djajadiningrat, T., Hummels, C., & Brombacher, A. (2014). Changing your hammer: The implications of paradigmatic innovation for design practice. *International Journal of Design*, 8(2), 119–139. <https://doi.org/10.1111/j.1948-7169.2011.00139.x>
- Gonczy, A., Hager, P., & Athanasou, J. (1993). *The development of competency-based assessment strategies for the professions*. Canberra: AGPS.
- Gonczy, A. G. (1994). Competency based assessment in the professions in Australia. *Assessment in Education: Principles, Policy & Practice*, 1(1), 27–44. <https://doi.org/10.1080/0969594940010103>
- Greenstein, L. (2012). *Assessing 21st century skills: A guide to evaluating mastery and authentic learning*. Thousand Oaks, CA: SAGE Publications.
- Harland, R. (2011). The dimensions of graphic design and its spheres of influence. *Design Issues*, 27(1), 21–34. https://doi.org/10.1162/DESI_a_00054
- Harland, R. (2016). *Graphic Design in Urban Environments*. Bloomsbury Academic.
- Heller, S & Fernandes, T. (2004). *Becoming a graphic designer: A guide to careers in design* (3rd ed.). New Jersey: John Wiley & Sons, Inc.
- Heller, S. (2005a). *The education of a graphic designer*. (S. Heller, Ed.), *Choice* (2nd ed., Vol. 43). New York: Allworth Press.
- Heller, S. (2005b). Too many grads or too few competencies? The design school dilemma. Retrieved January 3, 2018, from www.aiga.org/too-many-grads-or-too-few-competencies-the-design-school-dilemma
- Heller, S. (2015a). *The education of a graphic designer* (3rd ed.). New York: Allworth Press.
- Heller, S. (2015b). What this country needs is a good five-year design program. In S. Heller (Ed.), *The education of a graphic designer education of a Graphic Designer* (3rd ed., pp. 209–211). New York: Allworth Press.
- Horváth, I. (2007). Comparison of Three Methodological Approaches of Design Research. *International Conference on Engineering Design, ICED 07*, (7), 28–31.

- Hsieh, S.F., Guan, S.S., & Wu, C. L. (2010). The study on competency of graduating students being major in graphic design. *The International Journal of Learning*, 17(9), 389–401.
- Jevnaker, B. H., & Bruce, M. (1998). Design alliances: The hidden assets in management of strategic innovation. *The Design Journal*, 1(1), 24–40. <https://doi.org/10.2752/146069298790225190>
- Kang, H. J., Chung, K. W., & Nam, K. Y. (2015). A competence model for design managers: A case study of middle managers in Korea. *International Journal of Design*, 9(2), 109–127.
- Landa, R. (2014). *Graphic design solutions* (5th ed.). Boston, MA: Wadsworth Cengage Learning.
- Lembaga Arkitek Malaysia (Board of Architects Malaysia). (2017). Graduates architects. Retrieved November 15, 2017, from <http://www.lam.gov.my/>
- Lim, B. (2015). A discussion on creativity and design education in Singapore and Malaysia. *Journal of Research in Humanities and Social Sciences*, 3(2), 56–61.
- Littlejohn, D., & Davis, M. (2010). *Report for the 2010 AIGA Research Grant*.
- Lucia, A. D., & Lepsinger, R. (1999). *The art and science of competency models*. San Francisco, CA: Jossey-Bass.
- Malaysian Qualifications Agency (MQA). (2013). Programme Standards: Art and Design. Kuala Lumpur: Malaysian Qualifications Agency.
- Marks, A. (2015). A design core for the twenty-first century. In S. Heller (Ed.), *The education of a graphic designer* (3rd ed., pp. 17–19). New York: Allworth Press.
- McClelland, D. C. (1998). Identifying competencies with behavioral-event interviews. *Psychological Science*, 9(5), 331–339. <https://doi.org/10.1111/1467-9280.00065>
- McCoy, K. (1990). American graphic design expression. *Design Quarterly*, 148(148), 3. <https://doi.org/10.2307/4091231>
- McCoy, K. (1997). Education and professionalism or what's wrong with graphic design education. In *How We Learn What We Learn Conference*. New York.
- McDermott, L., Boradkar, P., & Zunjarwad, R. (2014). Interdisciplinarity in design education: Benefits and challenges. In *IDSIA Education Symposium 2014*.
- Muratovski, G. (2016). *Research for designers: A guide to methods and practice*. London: SAGE Publications.
- Newark, Q. (2008). *What is graphic design?* Mies, Switzerland: Rotovision.
- Nicholson, P., Griffin, P., Gillis, S., Wu, M., & Dunning, T. (2012). Measuring nursing competencies in the operating theatre: Instrument development and psychometric analysis using Item Response Theory. *Nurse Education Today*, 33(9), 1088–1093. <https://doi.org/10.1016/j.nedt.2012.04.008>
- Potgieter, T. E., & Van der Merwe, R. P. (2002). Assessment in the workplace: A competency-based approach. *SA Journal of Industrial Psychology*, 28(1), 60–66. <https://doi.org/10.4102/sajip.v28i1.31>
- Ravasi, D., & Lojaco, G. (2005). Managing design and designers for strategic renewal. *Long Range Planning*, 38(1), 51–77. <https://doi.org/10.1016/j.lrp.2004.11.010>
- Sanders, E. B. (2000). Generative tools for co-designing. In *Collaborative Design* (pp. 3–12). London: Springer.
- Spencer, L. M. & Spencer, S. M. (1993). *Competence at work: Models for superior performance*. New York: John Wiley & Sons, Inc.
- Steen, M., de Koning, N., & Pikaart, A. (2004). Exploring human centred approaches in market research and product development: three case studies. In *Proceedings of the conference on Dutch directions in HCI* (pp. 1–4). ACM. <https://doi.org/10.1145/1005220.1005244>

- Suhairom, N., Musta'amal, A. H., Amin, N. F. M., & Johari, N. K. A. (2014). The development of competency model and instrument for competency measurement: The research methods. *Procedia - Social and Behavioral Sciences*, 152, 1300–1308. <https://doi.org/10.1016/j.sbspro.2014.09.367>
- Swanson, G. (2004). Graphic design education as a liberal art: Design and knowledge in the university and the “Real World.” *Design Issues*, 10(1), 53–63.
- Valencia, A., Person, O., & Snelders, D. (2013). An in-depth case study on the role of industrial design in a business-to-business company. *Journal of Engineering and Technology Management*, 30(4), 363–383. <https://doi.org/10.1016/j.jengtecman.2013.08.002>
- Valtonen, A. (2005). Six decades – and six different roles for the industrial designer. *Nordes Conference, In the Making, 30-31st May*.
- Van der Merwe, R. P. (2002). Psychometric testing and Human Resource Management. *SA Journal of Industrial Psychology*, 28(2), 77–86. <https://doi.org/10.4102/sajip.v28i2.52>
- Van der Waarder, K. (2009). On graphic design: Listening to the reader? Retrieved November 15, 2017, from https://lectoratenakvstjoost.files.wordpress.com/2010/04/kvdw_listeningtothereader.pdf
- Vathanophas, V. & Thai-ngam, J. (2007). Competency Requirements for Effective Job Performance in The Thai Public Sector. *Contemporary Management Research*, 3(1), 45–70. <https://doi.org/http://dx.doi.org/10.7903/cmr.49>
- Wang, S.-Y. (2006). *Identification of the significant competencies in graphic design*. University of Missouri-Columbia.
- Wilson, R. G. (2014). *Curriculum & course design: Preparing graphic design & visual communication students*. Iowa State University.