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Examining knowledge and skills of Interior Design Students in Kuwait from Global Design Firm Perspective

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Abstract:

The interior design profession has been evolving and changing over time. The purpose of this study was to investigate whether interior design students in Kuwait possess compliant knowledge and skill areas sought by global design firms. The methodology of this research consists of two areas: measuring students' knowledge and examining student's design skills. A self-administered questionnaire was distributed to senior interior design students at the College of Basic Education (CBE) in Kuwait and one of the southwestern universities in the United States. In order to examine design students' skills, senior design projects were collected and evaluated by six jurors, using an online survey, who determined whether interior design students are graduating with the skill levels expected from entry-level interior designers in the United States. Students' projects were attached to the project evaluation sheet, and practitioners were asked to evaluate them based on specific guidelines. The findings of the study illustrated that interior design students at CBE possessed deficiencies in ten design skills that were not compliant with what is expected from entry-level interior designers. Nevertheless, they met the average expected skill level in one design area. Four design skill areas were not evaluated since they were not demonstrated in the selected design projects. Further, there are nine design knowledge areas in which design students possess deficiencies. Nevertheless, they showed acceptable knowledge levels in three design knowledge domains. Educational implications and suggestions for improving the interior design education in Kuwait are discussed.

Keywords:

*Interior Design Education
Design Knowledge
Design Skills*

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Introduction

In a globalized world, the interior design profession has been evolving and changing over time. Through decades, the literature has proven that design employers have different competencies, attributes, and characteristics expectations from entry-level interior designers (Baker & Sondhi, 1989; Douthitt & Hasell, 1985; Hernecheck, Rettig, & Sherman, 1983; Myers, 1982; Scarton, 2012) due to the advancement of technology and the improving body of knowledge of the profession. Not only does the design profession change and evolve over time, but so does the interior design accreditation guidelines

produced by the Council for Interior Design Accreditation (CIDA). Thus, there is an increasing need to examine interior design students' knowledge and skills to make sure that they meet the expected competencies sought by the labor market. Due to lack of an interior design accreditation body to evaluate interior design education in Kuwait, the design competencies expected from entry-level designers have not been investigated. Several studies conducted in Kuwait employed international education and practice standards as models of their areas (Abdullah, 2003; Alansari, 2012; Al-Hassan, 2010; Al-Hassan & Dudek, 2008; Mahmeed, 2011).

Purpose and Significance

The purpose of this cross-sectional study is to investigate whether interior design students in Kuwait hold compliant knowledge and skill areas sought by global design firms. Unlike other countries, Kuwait does not have an interior design accreditation body that sets the standards for interior design programs. As the globe becomes a small village, it is crucial that interior design students in Kuwait become able to practice overseas and in global design firms in their countries. Providing interior design students with the expected knowledge and skills that international design firms seek would make them not only globally competitive graduates, but also fit for entry-level position in those firms. In the United States, CIDA sets the standards that interior design programs must follow when seeking accreditation.

This study will help bridge the gap which exists regarding the level of preparedness of interior design students in Kuwait for the national as well as global markets. Second, this study is expected to have a significant impact on helping the interior design faculty in Kuwait find out the deficiencies existing in knowledge and skills of their students in comparison with competencies sought by global design firms. To date, this study is the only one assessed students' actual interior design knowledge and skill levels since previous research conducted among other populations measured participants' self-reported and perceived knowledge and skills (Abdullah, 2003; Al-Hassan & Dudek, 2008; Lee, 2005). Since CIDA does not offer accreditation services for interior design programs outside North America, except for Virginia Commonwealth University in Qatar, following the methodology developed in this study would help interior design programs to assess their students' status based on certain CIDA guidelines. Thus, the study would significantly inspire interior design programs outside North America or non-accredited CIDA programs in North America to examine their students' actual interior design knowledge and skill levels based on CIDA expectations.

For the purpose of this study, several definitions were adopted. Knowledge is defined as "information or understanding of facts gained through study, investigation or experience" (Merriam Webster Dictionary, 2015). Skill is "the ability to do something that comes from training, experience, or practice" (Merriam Webster Dictionary, 2015). An Entry-level employee is one who is at the beginning stage of a job category.

Competency is the knowledge and skills that a practitioner illustrate at a proficiency level (Business Dictionary, 2014). Competent is defined as having the necessary skills and ability for doing something successfully (Merriam Webster Dictionary, 2015).

Review of Literature

Due to the limited number of large domestic architectural and interior design firms in Kuwait, many international design firms have been working in the country. Unlike other countries, Kuwait does not allow global design firms to practice and bid on a contract without having a local design firm or Kuwaiti citizen architects. So, global design firms subcontract or associate with Kuwaiti architects. Since Kuwait has particular building codes, regulations, needs, culture, and heritage, it is important that foreign and Kuwaiti architects work side by side in the project. Teaching future interior designers from an international viewpoint can help them achieve the global perspective needed to operate in a multinational firm. "Business and industry issues are increasingly complex due to job performance expectations, diminishing resources, global competition, and ethical considerations" (Frey, 1999, p. 53). Thus, preparing interior design students for the workforce with the knowledge and skills required by global design firms is important not only for creating new jobs but also for the opportunity to experience working with global companies while being in their home country.

Required Competencies and Attributes of Entry-Level ID Professionals

There are several areas of knowledge and skills of which competency is expected from entry-level interior designers. Scarton (2012) aimed to bridge the gap between the interior design education and entry-level employees based on the knowledge and skills in professional areas sought by design professionals in the United States. The data was collected among the top interior design firms in the United States. Scarton (2012) asserted that the knowledge and skills addressed by CIDA standards are highly sought by global design firms.

Previous research conducted by Baker & Sondhi (1989) utilizing The Foundation for Interior Design Education Research (FIDER, later known as CIDA) guidelines and the National Council for Interior Design Qualification (NCIDQ) exam areas for the evaluation of students' knowledge and skills. The study showed that the top design firms illustrated the importance of competencies, which involve problem solving, communication skills,

design concept, spatial composition, space planning, conceptualizing, design process, and programming, respectively. Similarly, in their study, Hernecheck et al. (1983) adopted FIDER guidelines for examining the expected competencies from entry-level interior designer. The researchers found that space planning, furniture arrangement and color theory skills were the top important areas of competency, followed by the technical and skills competencies of line drawing, freehand sketching, and technical drawing. The findings of the study also indicated several areas that need to be addressed in the design curricula, including history of architecture and perspective drawing.

Interior Design Program Preparation

Examining how well design education prepares interior designers for practice is vital to bridging the gap between education and practice. Tarver (2013) conducted a study among interior designers who had graduated from CIDA-accredited programs to find out their perceptions of their preparation to practice. Participants indicated the need for improvement in the design curricula regarding several areas, including use of software programs, budgeting, production of construction documents, use of specifications, and collaboration with other professionals such as architects and engineers. Therefore, it is important to assess the satisfaction of the alumni with their education to bridge the gap between education and practice.

Interior Design Educational Standards

CIDA is a non-profit organization in North America that aims to set standards for accredited interior design programs. CIDA aims to bridge the gap between interior design practice and interior design education by preparing proficient entry-level designers to enter the national market. As of 2014, CIDA has established 16 standards that all interior design programs in North America must meet in order to seek accreditation. These standards are based on acquisition of the knowledge and skills that entry-level designers must demonstrate in their projects and works (CIDA, 2014). As CIDA only provides services for interior design programs in North America, the only design department that is accredited by CIDA in the Middle East is the branch of Virginia Commonwealth University in Qatar.

Interior Design Education in Kuwait

In the state of Kuwait, there are only two main programs focusing on interior design: the Interior Design Department at the College of Basic Education (CBE) and the Interior Architecture Department at Kuwait University. Other than that,

Box Hill College in Kuwait provides an associate degree in interior design for female students only. The interior design department at CBE is under the transformation of going under the School of Applied Arts at Jaber Al-Ahmad University. The Interior Design Department, established in the 1980s, is the first and currently the only design program in Kuwait that offers a bachelor's degree for both male and female interior design students. The first interior design department in Kuwait plays a pivotal role in providing interior design instructors and practitioners in the national market. Thus, the following question was developed:

RQ: Do interior design students at the College of Basic Education in Kuwait possess the knowledge and skills that global design firms seek from entry-level interior designers?

Research Methods

A non-experimental, descriptive, quantitative approach was adopted for this study, involving a one-shot measurement of knowledge and skill levels. The study used the knowledge levels of students graduating from a university in the United States to serve as the baseline for comparison of Kuwaiti students. The literature review shows quantitative approach was employed in other similar studies (Baker & Sondhi, 1989; Douthitt & Hasell, 1985; Hernecheck et al., 1983; Myers, 1982; Scarton, 2012). The methodology of this research consists of two areas: measuring students' knowledge and examining student's design skills. All of the instruments used were consisting of close-ended questions.

Measures

Knowledge Questionnaire

The knowledge questionnaire was formulated by adopting design knowledge areas from CIDA guidelines and Scarton's (2012) study through employing questions from section one in the NCIDQ exam, which is Interior Design Fundamentals Exam (IDFX). Scarton's (2012) study examined the latest sought competencies from global design firms from entry-level interior designers. The following steps were used to develop the knowledge questionnaire. The highly sought design knowledge areas by the Top 200 interior design firms across the United States as reported in Scarton (2012) were retrieved. Then, the researcher adopted an IDFX exam model from Ballast's (2013) book. A validation testing was conducted through structured interview to include questions that are related to CIDA guidelines.

As a result, questions that are practice-based don't meet Kuwait's construction guidelines, building systems, building codes; and don't comply with CIDA standards were eliminated by the advisory

of a panel of five interior design faculty members. Also, the validation testing was conducted to check whether the questions adopted from Ballast's (2013) book match the knowledge areas that the study intends to evaluate. As a result, 29 education-based questions, representing 12 interior design knowledge domains, were included in the knowledge questionnaire. Finally, a pilot testing was conducted among a group of Art Education students in Kuwait to in order to check the readability of the questions and answers. To maximize the validity of the questionnaire, the instrument was examined by a panel of five interior design educators to ensure the appropriateness of the questions and statements.

Skill Instruments

Two instruments were developed to measure students' design skills, expected skill survey and project evaluation sheet. The expected skill survey aimed to evaluate the skill levels expected from an entry-level interior designer, and the project evaluation sheet intended to evaluate interior design students' skills based on their projects. Both of the instruments employed 15-items, adopted from CIDA guidelines (CIDA, 2014), using 10-point Likert Scale. The expected skill survey to evaluate every design skill expected from an entry-level interior designer ranged (1 = Not-proficient, 10 = Proficient), while the project evaluation sheet assessed every design skill by scale (1= Incompetent; 10 = competent) with a not available choice if the skill area in not evident in the design project. Both of the skill instruments were tested and validated by conducting a pilot study to assess their clarity and readability.

Participates

Two purposive samples consisted of senior interior design students at the CBE and one of the Southwestern universities in the United States. Senior design students were expected to have completed the design core courses and be ready to serve in the workforce. The first sample consisted of forty one (n= 41) respondents at the CBE in Kuwait. Almost half (49 %) of the respondents were males (n = 20) and slightly over half (51%, n= 21) were females. Participants' ages ranged between (21) and (33) years old, with a mean age of (25.12) years old. The second sample included twenty-four (n = 24) senior interior design students in the United States. A total of twenty-three (n = 23) of the participants were female, while one participant (n = 1) was male. Students' ages ranged between (21) to (27) years old, with a mean age of (23.63) years old. Six professional interior designers (n = 6), who

served as judges, were selected using the snow-ball sampling technique, participated in taking the two skill instruments. The panel of six jurors had work experience between 7 to 22 years in the interior design profession. All of jurors hold NCIDQ certifications. Their individual specialties included residential, commercial and corporate interior design. They hold degrees in Masters of Arts (MA), Masters of Science (MS) and Masters of Fine Arts (MFA) in Interior Design. Their current positions included senior interior designers, and design project managers in interior design firms. Three of the jurors have worked as adjunct professors at CIDA accredited interior design programs.

Data Collection and Analysis

Knowledge Questionnaire

A self-administered questionnaire was distributed to both samples in the spring of 2015. The questionnaire was administered in classes at the departments of interior design with the aid and facilitation of the design instructors. The data was collected by the first researcher, who was not part of teaching those design courses, which resulted in securing a very high response rate of %100. The data was analyzed by checking the correct or wrong answers in each knowledge area. Then, the frequencies and percentages of answers for each knowledge area were shown, indicating the average number of correct and incorrect responses. To achieve the objectives of the study, the percentage of correct answers of the survey within each knowledge area, and Z-test to compare two sample proportions were used. Statistical Package for the Social Sciences (SPSS) was employed to analyze the data using descriptive statistics.

Skill Instruments

Interior design practitioners participated in taking the two skills instruments. Judges were sent an email with a link that guided them to a Qualtrics Survey. Potential participants were asked to take the expected skill evaluation survey, first, then they were guided to evaluate students' projects. Along with the project evaluation sheet, six senior interior design projects, out of 41 design projects, were selected randomly from the courses attendance sheets, and attached for evaluation. Each design project was evaluated by two interior design jurors and the mean value of the evaluation was calculated. The data was analyzed by showing the mean value for each skill item in the expected skill survey and project evaluation sheet to determine whether interior design students in Kuwait hold the average expected skill levels for an entry-level interior designer or not.

Findings

Design Knowledge

The findings illustrated that interior design student at the CBE in Kuwait had lower interior design knowledge in nine (9) knowledge domains than students in the United States. Those design knowledge were: 1) Interaction of Color and Light, 2) Universal Design Needs, 3) Indoor Air Quality, 4) Social and Cultural Perspectives 5) Design Principles, 6) Acoustical Design, 7) Materials and Products 8) Construction Drawings 9) Furniture Selection. However, equal knowledge level was reported between the two samples in one knowledge area that is Color Principles, Theories

and Systems. Nevertheless, interior design students in Kuwait had higher level of knowledge than student in the United States in Ergonomics and Thermal Design (see Table 1).

Both of the interior design samples had significantly different knowledge levels in two areas. The researcher set the significance level at ($p < .05$). Interior design students at the CBE had significantly lower levels of knowledge in the areas of the Interaction of Color and Light ($Z = -3.25$, $p = .001$), and Universal Design Needs ($Z = -2$, $p = .040$). However, no significant difference was reported in the other ten design knowledge domains.

Table 1. The percentages of correct answers in each knowledge area for students in Kuwait and the U.S.

Knowledge Domains	Students in Kuwait	Students in the U.S.
Interaction of color & light	34%	73%
Universal Design Needs	20%	40%
Indoor Air Quality	20%	37%
Social and Cultural Perspectives	37%	50%
Design Principles	21%	35%
Acoustical Design	50%	61%
Various Materials and Products	23%	33%
Construction Drawings	67%	77%
Furniture Selection	37%	39%
Color Principles, Theories & Systems	58%	58%
Ergonomics	37%	31%
Thermal Design	20%	4%

Design Skills

The findings indicated that there are ten design skill areas in which interior design students in Kuwait performed lower than the average expected skill levels from entry-level interior designers. Those design skills included: 1) selecting furnishings and fixtures that are appropriate in scale for the spaces being designed, 2) producing 2-D design solutions, 3) using computer design software, 4) selecting and applying color in design solutions, 5) producing furniture and fixture layouts, 6) making an informed decision of materials, 7) designing luminaires and lighting sources, 8) designing

historical precedents to inform design solutions, 9) applying international building codes, and 10) implementing Universal Design principles.

Nevertheless, participants met the average expected skill level in one design area, which was designing an appropriate spatial layout (see Table 2). Four design skill areas were not evaluated since they were not available in the selected design projects: 1) Producing 3-D Design Solutions, 2) Generating Multiple Design Solutions, 3) Defining Design Goals, Objectives, and Problems, and 4) Expressing Design Ideas through Sketches (see Table 3).

Table 2. Difference between expected skill level and mean scores obtained.

Interior Design Skill Areas	Projects' Evaluation Mean	Expected Skill Level Mean
Designing Appropriate Spatial Layout.	6.83	6.5
Using Computer Design Software.	2.67	8
Applying International Building Codes.	2.67	5.5
Universal Design Principles.	3.67	6.33
Making Informed Selection of Materials.	4.00	6.5
Selecting and Apply Color in Design Solutions.	6.58	8.5
Designing Historical Precedents to Inform Design Solutions.	4.00	5.67

Interior Design Skill Areas	Projects' Evaluation Mean	Expected Skill Level Mean
Designing Luminaires and Lighting Sources.	4.25	5.83
Selecting Furnishings and Fixtures that are Appropriate in Scale.	6.67	7.33
Producing 2-D Design Solutions.	6.42	7
Producing Furniture and Fixture Layouts.	5.92	6.5

Table 3. Design skills that were not demonstrated in any student project

Interior Design Skill Areas	Expected Skill Levels
Generate Multiple Design Solutions.	7.83
Produce 3-D Design Solutions.	7.5
Express Design Ideas Through Sketches.	7.5
Define The Design Goals, Objectives, and Problems.	6.67

Discussion

The findings of this study suggest the need to improve the interior design curricula at the College of Basic Education (CBE) for the purpose of making its graduates competitive interior designers at the entry-level in the global market. For the purpose of this discussion, the knowledge section is classified here into two sections, based on the proportion of correct responses. Knowledge areas scoring below fifty percent (50%) are considered weak areas in need of considerable improvement, while those scoring fifty percent (50%) and higher are considered fair knowledge domains. While the fifty percent line may seem arbitrary, which is the case; it is adopted as one way of determining where to concentrate limited resources, in terms of money, educators' time and efforts, to improve Kuwaiti interior design education.

Considerable improvements are warranted in the weak knowledge areas, and lesser level of investment in the fair knowledge domains. Similarly, design skills that met the average level expected from entry-level interior designers (as determined from the expert survey) were considered complaint skill areas, or areas in which what is expected from global design firms' perspectives has been addressed. Recommendations for improvement and/or incorporation/inclusion are made here for other relevant skills that were not evident in the design projects.

Based on the finding of the study, nine design knowledge areas felt below the expected knowledge level, attaining less than 50%, were: 1) Interaction of Color and Light, 2) Universal Design Needs 3) Indoor Air Quality, 4) Social and Cultural Perspectives, 5) Design Principles, 6) do you mean Selection or Choice of Materials and

Product, 7) Furniture Selection, 8) Ergonomics, 9) Thermal Design. According to Scarton (2012), those design knowledge areas are highly sought by design employers in entry-level interior designers in big design firms. Moreover, those knowledge areas are integral parts of CIDA standards to be integrated into accredited Interior Design programs in North America (CIDA, 2014). This shows the necessity to emphasize those design knowledge domains when revising the curricula. More importantly, interior design educators in Kuwait should focus on improving the two significantly lower knowledge domains: the Interaction of Color and Light; and Universal Design Needs. Nevertheless, faire knowledge areas scored 50% and higher, need no more than minimal improvement.

The findings showed that only one design skill area, which is designing appropriate spatial layout, met the expected skill level for entry-level interior designer sought by design employers. This skill area needs no more than minimal improvement. Also, the article presented ten design skills felt below the average expected skill level for entry-level interior designers in the global market, which illustrates where interior design educators should focus on when revising the program curricula in Kuwait.

As indicated in CIDA (2014), entry-level interior designers are expected to apply effectively those measured design skills. Furthermore, based on Scarton's (2012) study, those design skills are highly sought by design employers from interior designers. In fact, several of those measured interior design skills have been expected from interior designers through decades (Baker & Sondhi, 1989; Douthitt & Hasell, 1985; Hernecheck et al., 1983; Myers, 1982). Interestingly, the findings of the study illustrated

the deficiencies in both the knowledge and skill levels of interior design students in Kuwait in the area of Universal Design. This interesting finding expressed the validity of the knowledge research questionnaire.

Four design skills were not evaluated in those selected senior interior design projects since they were not evident. Those design skills are producing 3-D design solutions; generating multiple design solutions; defining design goals, objectives, and problems as well as expressing design ideas through sketches. One possible explanation for the lack of illustrating those areas in students' projects is that students may not have been asked to produce them in their course work. Thus, the interior design program should require incorporating those four design skills in the studio course work. A suggestion for interior design educators at the College of Basic Education is to require interior design students to incorporate design sketches into their design project boards or produce design drawing books that incorporate all of the process design work.

Conclusion

As the industry expands its international services, the need for more comprehensive interior design education and better qualified graduating students should to be reconsidered. This emphasizes the importance for preparing interior design students based on what is sought in the global market. With the increase of foreign architecture and design firms working in the Middle-East, interior design educators would face the challenge to prepare their graduates based on the design employers' expectations.

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