Are they ready yet: Architecture Graduates Employability Skills from Employers' Perspective

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Abstract

This paper reports on a study exploring the perspective of employers on architecture graduates' employability skills during their employment. The study employed a survey research methodological approach. A total of 85 employers completed the survey. The findings of the study revealed that among the four employability skills dimensions measured, the communication skills dimension was scored highest, (M = 3.69, SD = 0.78), this was followed by career-related and teamwork skills (CTW) (M=3.64, SD=0.732), technical skills dimension (TECH) (M=3.52, SD=0.79) and the lowest total mean (M=3.41, SD=0.84) was reported for critical thinking skills (CT). The study elucidates that employer value graduates' communication skills; however, they expected the graduates to demonstrate a range of other essential skills that include critical thinking, problem-solving, leadership and profession-related skills such as construction and structure that is essential to develop and build their design. Consequently, the study suggests for the HEI to unlock the existing curriculum, adopt the work-based learning (WBL) approach which allows greater partnership with employers and exposure to the real-life project, to develop the essential employability skills that employers value.

Keywords*: Architecture; Employability skills; Work-based learning, Graduates, Employer*

1.0 INTRODUCTION

Historically, academic success has always been used as a measure of assessing the graduates' potential and employment by stakeholders (Roth & Bobko, 2000). Additionally, hard skills were emphasized as the only requirement for employment, James & James (2004). However, this has become a point of contention wherein there is increasing demand for fresh graduates to have acquired a set of generic qualities and skills for practice (Hager & Holland, 2006), as graduates cannot secure employment with merely technical skills alone (James & James (2004). The skills and capabilities needed to succeed in the present-day knowledge-focused economy differ from those of the past. In securing their jobs, graduates are required to have a set of hard and soft skills. The combination of these abilities is also referred to as skills in employability and has a huge influence on job results (Rosenberg, Heimler & Morote, 2012).

1.1 Graduate Capabilities

Fernandez-Chung et al. (2014) refers to graduate employability skills as essential attributes that make up the values, personality, experience and skills to meet employers' future needs and interests. Employability skills relate to "the ability of the student to get (and retain and develop in) a job after graduation and are associated with concerned 'with enhancing the students' attributes (skills, knowledge, attitudes, and abilities)" and eventually "empowering the student as a critical life-long learner" Harvey (2001). National Graduate Employability Blueprint 2012-2017 states that HEIs are required to prioritize the needs of business and take full responsibility for preparing students to meet the requirements of the workplace (Ministry of Education, 2012). Many higher education institutions have attempted to integrate soft skills as graduate attributes into the curriculum (Moreau & Leatherwood, 2006; Nair, Patil, & Mertova, 2009).

1.2 Employability Skills: Broad Spectrum

The skills and attitudes that employers seek in graduates are not met by graduates as it varies from what is taught by the HEIs and acquired by the graduates (Jackson & Chapman, 2012; Rohaizat Baharun, 2012). Malaysian graduates lack imagination, competitiveness, are not imaginative and have low communication skills (Zaharim et al., 2009). Employers were of the view that graduates were not prepared to meet the difficulties and challenges of the working world (Freudenberg, Brimble & Cameron, 2011). Industrial demand will not be addressed as long when there is no definite specification of graduate capabilities or the requirements of employees are not defined (Ministry of Higher Education, 2012) and this gap in terms of ensuring the quality workers must be addressed by continuous advancement of skills and should be implemented contextually. (Yee, C. W., Shukri, S. M., Aminuddin, A. M. R., & Awaluddin, Z. L., 2021; Jackson, Sibson & Riebe, 2013)

Findings from the annual survey in 2018 by Jobstreet.com unveiled a repeated pattern (survey in 2017) in the perception of the employers of fresh graduates. The study revealed that the majority (79%) of the employers reported that graduates were of 'average' quality in employability, whilst 13% had negative perception indicating graduates were of 'bad' quality and only 8% reported them as good quality. Additionally, it reported that employers were more concerned with graduates' attitudes and skills over academic qualifications (Balakrishnan, 2019; Morshidi Sirat 2012). The employers indicated that graduates had a poor appearance, attitude, or appearance (58%), poor English language order (52%) and poor communication skills (49%) (Balakrishnan, 2019).

According to Sparks & Waits (2011), understanding these industry needs, the higher education institutions could therefore take the lead in delivering the necessary occupational skills when disseminating knowledge. More specifically, skills such as critical thinking, problem-solving and creativity and innovation are some of the 'must-haves' among the graduating students. Ramli et al. (2013) and Ranasinghe and Herath (2011) suggested that graduates could learn leadership, problem-solving and self-management skills by the end of their studies. Most employers claim that new graduates cannot think objectively and creatively, address challenges or write well (White, 2013).

1.3 Employability skills: Architecture

As a professional discipline, architecture requires the students to learn sufficient skills and knowledge to support the practice during their studies. With regards to this, RIBA (2011) graduate attributes express that "Part 1 will be awarded to students who know the context of the architect and the construction industry, and the professional qualities needed for decision making in complex and unpredictable circumstances" (p. 8). Barrett (2019) report commented that by not creating the variety of expertise needed to satisfy the demands of the industry, the architecture profession has failed to build on its critical capabilities. The absence of collaboration between practice and institution contributes to the gap between the expectations of practice and graduate attributes in architectural education (Tan, Y. E., & Razif, F. M., 2020; Wallis, Whitman, & Savagem, 2005). Abdul Karim et al., (2012) stressed that the main function of HEIs is to produce a skilled and knowledgeable workforce who can function with minimal guidance but also contribute effectively to the hiring organizations. Padil Suhaili et al., (2015) commented that students should acquire the skills in universities to reduce the gap between the industries' expectations and graduates' employability skills (p. 125).

Practitioners prefer to recruit students and graduates who also have practical abilities (Williamson, 2008: p. 608). Secondary reviews on communication skills in architecture education revealed that architecture schools have struggled to teach students communication skills (Shukri, S. M., Manteghi, G., Wahab, M. H., Amat, R. C., & Ming, W. H., 2018; Weko, 2011). For students, regardless of the discipline of their study, the capacity to think objectively and analytically is important. Maina and Daful (2017) reported that students lack the capacity for synthesis and analysis in undergraduate Architecture courses. Hanapi and Nordin (2014) conducted a study on Malaysian graduates and found that lack of technological knowledge and low employability skills among graduates were found to be the factors that contributed to the issue of unemployment (p. 1057).

The Skills Survey Report (2014) by RIBA reported that more than 80% of employers agreed that graduates do not have the essential work-related skills to practice architecture and lacked the knowledge to construct what they designed and over 75% of employers agree that architecture students during their studies can spend more time studying in practice. A study by Salleh, Yusoff, Harun, and Memon (2015) reported that Malaysian Architect employers prioritize communication and presentation skills in English followed by teamwork skills. A study among architecture graduates by Shukri, S. M., Wahab, M. H., & Jamala, N. (2021) and Shannon (2012) reported that sound CAD and teamwork skills are the most highly regarded disciplinary skills by employers followed by communication, problem-solving, technical, and lifelong learning skills. According to Savage, Davis, and Miller (2009), employers emphasize critical thinking skills in new graduates. The results of a study in Singapore on architectural engineering contractors revealed problem-solving skills are essential in assessing the performance of employees (Ling, 2002). Falk (2012) stated that Employers place considerable value on the teamwork capacity of graduates (p. 4). Nicol and Piling (2005) argued that instead of training students as team players, architecture education tends to build individual stars (p. 6). Myatt (2012) reported that most employers opinioned that young employees do demonstrate a lack of leadership skills.

To develop teamwork skills in architecture students, work-based learning (WBL) exercise with specific meaning and problems that typically involve teamwork brainstorming and producing a solution is optimal. Jann (2010) claimed that real-life ventures in architecture education as part of teaching and learning leads to the creation of collaborative strategies, communication skills and all other practices that are critical and important to future architects. (p. 19). WBL offers a solution to close the distance between learning and employability and is particularly valuable in maximizing the outcomes of skills such as problem-solving and student comprehension of the field of work (Murtza, M. H., Shukri, S. M., Taib, I., & Aziz, A.,2021; Jackson, 2014).

1.3.1 The Study Gap

In the Malaysian context, there is an abundance of employability skills related studies in other areas with very little architectural education. The gap for this study was thus identified as examining the views of employers of architecture graduates concerning their (graduates) employability skills. A study of this nature is essential as it provides insight into the areas

in which graduates fail to meet the job market requirement. These are the areas that architecture schools may assume they have addressed in their curricula, but not adequately. The limitation of this study is that the data was obtained from employers of architecture graduates from one private institution only as such, findings may not be generalizable.

2.0 METHODOLOGY

The study used a quantitative approach using a survey questionnaire. The questionnaire was developed based on the graduate attributes and employability skills using a 5–point Likert-style scale in which the number "5" indicated strongly agreed (SA) and "1" the strongly disagreed (SD). The respondents are professional architects who have employed graduates from the HEI identified from the HEI's Placement Centre database. Two experts validated questions from the survey. The survey contains two (2) sections, A and B with the former being demographic questions and section B consists of questions related to architecture graduate employability skills and completed by a total of 85 employers completed the survey. Using the Statistical Package for Social Studies (SPSS) v. 25, the obtained data were analyzed. Descriptive statistical analysis (mean scores and standard deviations) was used to interpret and describe the obtained data.

3.0 RESULT AND DISCUSSION

The mean scores were categorized into three (3) basic levels of interpretation when discussing the data; 1.00 to 2.33 as low, 2.34 to 3.66 as moderate, and 3.67 to 5.00 as high (Husain, 2012). The result shows that total mean scores are moderate for all the employability dimensions except for the communication skills (COM) dimension (See table 1). The COM skills dimension was reported with a high total mean score of (M = 3.69, SD = 0.78), this was followed by career-related and teamwork skills (CTW) (M=3.64, SD=0.732), technical skills dimension (TECH) (M=3.52, SD=0.79) and the lowest total mean (M=3.41, SD=0.84) was reported for Critical thinking skills (CT). The results for the COM dimension contradict the findings by Weko (2011), Zaharim et al. (2009) and Salleh et al. (2015). On the other hand, the results for CT corresponds with White (2013). Though the total mean score for CT is within the moderate level, it still raises a concern as CT is one of the skills most regarded by employers in graduates (Savage, Davis, & Miller, 2009).

Table 1. Results of the graduate employability skills analysis during their employment

		Mean (M)	Std. Deviation (SD)	Level
A.	***Career-related and team works skills (CTW)***	**3.64**	**0.73**	
1	Has leadership skills	3.44	1.09	Moderate
2	Teamwork skills	3.96	0.76	High
3	Knows their role as part of a team	3.76	0.89	High
4	Successfully resolves conflicts with others	3.45	1.06	Moderate
5	Confident in solving real-life and decision making	3.39	1.15	Moderate
B	***Critical thinking skills (CT)***	**3.41**	**0.84**	

6	Uncover the root cause of a problem	3.34	1.04	Moderate
7	Generate alternative solutions to a problem	3.44	0.99	Moderate
8	Able to develop practical solutions	3.40	0.97	Moderate
9	Apply problem-solving strategies across a range of areas	3.34	1.02	Moderate
10	Evaluate information in achieving a project objective	3.40	0.92	Moderate
11	logical thinking in problem-solving	3.53	0.91	Moderate
C	***Communication Skills (COM)***	**3.69**	**0.78**	
12	Communicate effectively using verbal skills (English).	3.79	0.93	High
13	Listens during a conversation. /discussion	3.99	0.76	High
14	Communicates effectively using writing skills.	3.58	0.97	Moderate
15	Argue effectively for a particular alternative or idea.	3.36	1.07	Moderate
16	Present works using appropriate drawing tools	3.79	0.86	High
17	Confidence to present his /her works verbally	3.66	0.92	Moderate
D	***Technical Skills (TECH)***	***3.52***	***0.79***	
18	AutoCAD 2D software	3.82	0.83	High
19	Building Information Modelling for Architecture (BIM)	3.49	1.07	Moderate
20	Basic materials and construction understanding	3.35	1.08	Moderate
21	Basic structural understanding	3.69	2.39	High

For the first employability dimension measured CTW, the employers scored highest for teamwork skills (M = 3.94, SD = 1.06), the employers reported that graduates are aware of the nature of the profession that requires every member to know their role as part of a team. This result concedes with Falk (2012) that employers seek graduates with teamwork skills and it contradicts the opinion by Nicol and Piling (2005) that architecture schools are producing individual stars rather than team players. The finding can be reasoned as a result of the inclusion of a maximum of 40% of group works within the continuous assessment component across the architecture programme. The employers' mean scores were the lowest (M=3.39, SD=1.145) for graduates' competency in solving real-life issues with adequate knowledge, ability to resolve conflicts with others which is also among the lowest score (M = 3.45, SD = 0.109) and employers highlighted on the lack of leadership skills among graduates (M = 3.44, SD = 0.109), this finding concedes suggestions by Myatt, (2012).

As for the critical thinking skills (CT) dimension, the employers' means scores were within the moderate level for all the items measured. The highest mean score was for logical thinking in problem solving (M = 3.53, SD = 0.91) and lowest on graduates ability to uncover the root cause of a problem (M= 3.34, SD= 1.041) and problem-solving strategies skills (M = 3.34, SD= 1.02). These findings coincide with findings by Maina and Daful (2017) whilst contradicting the finding by Ling, (2002). The graduates' ability to face real-world problems can be enhanced by adapting suggestions by Jann (2010) and (Jackson, 2014) by incorporating practice as part of learning during university studies in enhancing these critical skills.

The communication skills (COM) dimension was scored the highest by employers consistent with findings by Shannon (2012). The employers opinioned that graduates listening during a conversation or discussion have the most obvious skills (M=3.99, SD=0.764) demonstrated by the graduates, followed by their presentation skills their work using appropriate drawing tools (M=3.79, SD=0.86) and oral communication using English (M=3.79, SD=0.927). The employers reported the lowest mean score on graduates writing skills in English (M = 3.58, SD = 0.968) and effective argumentative (M=3.36, SD=1.07). In general, the finding for the COM skills dimension shows that graduates from the studied HEI are trained to meet the architecture industry expectation as reported by Salleh, Yusoff, Harun, and Memon (2015).

The Technical skills (TECH) dimension that relates to the hard skills relevant to the architecture profession was scored at a moderate level (M=3.52, SD= 0.79). The employers scored highest for the graduate's ability to use AutoCAD 2D software (M = 3.82, SD = 0.833) and the mean score was lowest (M= 3.35, SD = 1.07) for basic construction and structural understanding and followed by basic building materials understanding (M=3.69, SD=2.396). The employers highlighted that graduates' competency in using Building Information Modelling for Architecture (BIM) is lower than (M=3.49, SD=1.06) than their CAD skills. These findings suggest that the graduates are equipped with the appropriate CAD skills necessary to secure and perform in their employment, conquering with Shannon (2012) and Hanapi and Nordin (2014). However, the lower score for BIM does suggest for the HEI emphasize newer technologies that are emerging in the industry, and the need for graduates to keep up with emerging technology and to be able to take advantage of suitable technologies to support their employers. Though Building Information Management (BIM) is not a skill that all employers are seeking currently, preparing the graduates with the notion that BIM would eventually replace CAD in eminent architecture courses (Almawaldi, M. K., & Sharif, R., 2020; Shannon 2012). The lower scores for graduates' understanding of building materials, construction and structure concur with findings by RIBA (2014) that raises a concern for HEI as the employers are concerned with students' practical skills as posited by Williamson (2008).

4.0 CONCLUSION

These findings evidence that there is a great concern for the universities to prepare the graduates to meet the industry exception, particularly in improving their employability skills and equipping them with necessary work experience. In general, the results on employability skills suggest that the view of employers of graduates' employability skills are generally at a moderate level. The employers scored high for graduates' soft skills, the COM dimension and

followed by CTW, TECH and CT dimensions at a moderate level. The study shows that employers value graduates for having good communication skills, however, graduates are also expected to demonstrate a range of other abilities, including critical thinking, problem-solving, leadership and discipline-related skills such as construction and structure that is essential to develop and build their design. The study revealed employers are concerned with the moderate development of work-related skills among graduates in their undergraduate training. The study highlights the importance of and needs for HEIs to stress upon graduates' employability skills development to meet industry and employers' expectations. Consequently, the study would like to emphasize that employers believe that exposure to work during university study can assist in developing the employability skills that the employers of the industry look for in fresh graduates. Therefore, work-based learning (WBL) advocated by Jackson 2014 and Jann 2010 paves a solution for the HEIs and employers to work together to provide students with valuable experience and skills. HEIs and employers must continue to support and broaden the opportunities for students to access WBL experience and integrate soft skills in the syllabuses specifically in the assessments. Employability skills are preferred to be acquired by graduates during their undergraduate studies hence, HEIs should unlock the existing curriculum, allowing greater partnership with employers. To develop skills that employers value, architecture undergraduates need to be introduced to real-life projects through work placements and to build their competitiveness, the universities should build a strong relationship with the employers.

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