Readiness to Enter the Workforce: Perceptions of Graphic Design Students Against Market Demands

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Abstract

Studies have revealed that employers of newly hired graphic design graduates are not well prepared. Interestingly, this triggers further research to discover insight to the workforce readiness gap among graphic design students. This present study then sought to explore the perceptions of graphic design students in their quest to enter the workforce in their demand of the market. To that end, an online survey questionnaire was designed and administered to 102 graphic design students enrolled in the final year of their undergraduate degree programme. The study revealed that there are deficits of professional competencies in the area of coding, responsive design and prototyping tools. Meanwhile, graphic design students assessed their creativity, handling deadline and project management competencies as the high. The findings of this study are useful for improving the education and employability of graphic designers as they provide a consistent language to pertinent stakeholders about the requirements for new entrants to the graphic design industry.

Keywords: work readiness, graphic design students, perceptions, employability, market demands

1. Introduction

Globalization, accelerated technological progress, increasing competitiveness, massification of higher education, and digitised economy have all contributed to an increase in the demand for ever-rising labour capacities in a world that is changing swiftly. The shifts in employment structures and skill needs have been caused by this rapid technology advancement. Organizations are searching for employees who are better capable of handling workplace complexity, which has unavoidably led to concerns about the kind of graduates leaving the tertiary education system in Ghana. Increasingly, some companies and government are questioning whether university graduates have the employability skills necessary for entry-level jobs and that will support advancement in their chosen professions (McMurray *et al.* 2016). Employability skills of recent university graduates are a concern for government ministries, university management, employers, graduating students, and other stakeholders due to rising graduate unemployment (Sin & Amaral 2017; Clarke 2018; Flanagan 2018; Small, Shacklock & Marchant 2018a; Suleman 2018; Romgens, Scoupe & Beausaert 2020; Succi & Canovi 2020). Despite the growing interest, majority of employability skill studies have come from industrialized and high-development nations. Previous studies have revealed mismatch between the skills graduates possess and the competencies employers anticipate for their first jobs (DesignSmart Research Project 2008; Ayoubi, Alzarif & Khalifa 2017; Moore & Morton 2017; Osmani *et al.* 2019; Hossain *et al.* 2020).

For the past decades, the higher education sector has struggled with conceptions regarding employability skills of their graduates and what qualities graduates should be bringing to the work environment (Moore & Morton 2017). This has led to an increased focus on practical skills and professional purpose in the higher education curriculum (Bates *et al.* 2019). Bridgstock (2009) argues that universities are under increasing pressure to produce employable graduates as results of rapid evolving labour market demand, particularly with digital and mobile capabilities.

Many agencies and business organisations believe that new graduates are unprepared for the working world (Griffiths *et al.*, 2018; Osmani *et al.*, 2019; Abelha *et al.*, 2020). Studies in the United States (Rosenberg, Heimler & Morote 2012; Qenani, MacDougall & Sexton 2014), Canada (Finch *et al.* 2013), Australia (Prikshat *et al.* 2020), India (Unni, 2016), Bangladesh (Uddin, 2021), China (Su & Zhang 2015), Malaysia (Fahimirad *et al.* 2019; Kenayathulla *et al.* 2019), the United Kingdom (Azevedo *et al.* 2012; McMurray *et al.* 2016), Germany and Italy (Succi & Canovi 2020), Portugal (Sin & Amaral 2017), South Africa (Ngulube 2020), Mauritius (Hardin-Ramanan *et al.* 2020), Nigeria (Nwajiuba *et al.* 2020; Okolie *et al.* 2020) and Ghana (Damoah *et al.* 2021) have revealed a mismatch between the materials students learned at university and the skills required by the labour market.

Globally, higher educational institutions are under pressure to produce graduates who have employable skills. Many higher institutions have responded to the call, although there have been difficulties and inconsistent results. For instance, a study conducted in South Africa revealed that academics were struggling to incorporate employability skills in the curriculum (Mtawa *et al.* 2021). According to a survey conducted in Malaysia by

Fahimirad *et al.* (2019), there is ambiguity about the evaluation of generic abilities in the context of higher education in Malaysia. According to a research conducted in Taiwan, "it is still unclear how to improve teachers' competence to create pedagogy by including employment-related content into the teaching system" (Li *et al.* 2020: p.8). In the UK, a study of students in low socioeconomic level who were taking employability programmes discovered that they had difficulty grasping and utilizing the human and other resources that the training was promoting (Parutis & Howson 2020). As a result, these students were unable to gather and communicate the necessary capitals to employers.

Despite an effort in producing 'rounded' graduates, students encounter problems in articulating their achievements and capacities during graduate recruiting (Jackson & Edgar 2019). Additionally, some higher institutions are struggling with balancing the acquisition of employable skills anchored in real-world circumstances (Griffiths *et al.* 2018). The institutional investment in enhancing graduate employability is a journey rather than a destination, and this is apparent. It requires significant institutional learning, resource, and capacity building.

The phenomenon of graduate employability is not different in developing countries like Ghana. Higher education system in Ghana has also seen unprecedented growth in the past years, but there is a significant share of graduates who struggle to find good job. Unemployment is one of the key challenges on the job market in Ghana. Statistics from the National Labour Commission shown that there were about 700,000 unemployed graduates in Ghana (Jonah 2011; Biney 2015). Donkor (2014) credits the unemployment situation in Ghana to the fact that most tertiary institutions in Ghana train graduates whose proficiencies do not meet the requirement of employers.

Workforce readiness is an ongoing phenomenon across all levels of education. The importance of workforce readiness has come into the spotlight and several governmental agencies and departments, administrators of higher education, public policies etc. have turned an attention to the issue. As part of broader ongoing workforce readiness, Landrum, Hettich & Wilner (2010) conducted a study of Boise State University Department of Psychology alumni. The participants were evaluated in three categories: level of preparedness at graduation, current level of preparedness in the workplace and current level of competence. Participants ranked self-discipline, teamwork, ability to work without supervision, work independently, ability to perform several tasks at once, problem solving, and meet the needs of customers or clients as the top most preparedness items that were expected in the workplace (Landrum *et al.* 2010).

In the field of graphic design, Opoku, Appiah & deGraft-Yankson (2020) conducted a study in Ghana on the competencies of the present-day graphic designers using job ads. The researchers reported that job in graphic design or commutation design fields also require adaptability and continues learning because the field is rapidly changing with the introduction of new technology with digital and mobile capabilities and new business challenges (Opoku, Appiah & deGraft-Yankson 2020)

The graphic design programme at the Department of Graphic Design, University of Education, Winneba (UEW) seeks to prepare students with the necessary basic and applied skills to be employable and have the best chance for success in the graphic design workforce (Department of Graphic Design, UEW 2021). There may be several reasons for students deciding to enroll in higher education studies. However, in Ghana, the search for high employment opportunities is currently among the main reasons students enroll in higher education and this choice is commonly driven by the demand for social ascension through better employment perspectives. Although preparation for the labour market might not be the only goal of higher education in Ghana, it is certainly one of the major reasons why students come into it, and so it is important that we understand students' perceptions about their preparedness for workforce. Understanding students' perceptions of their own learning emerges as a relevant variable to study the contribution of higher education to the process of the transition from university to the choices a student makes in different settings, in the light of an individual's overall learning, including job placement (Lizzio, Wilson & Simons 2002; Burke, Jones & Doherty 2005; Qenani, MacDougall & Sexton 2014).

There has been quiet a number of studies done on graduate employability in Ghana (Biney 2015; Aboagye & Puoza 2021; Damoah, Peprah & Brefo 2021). To date, no known study has explored the readiness of graphic design students against the labour market requirements. This paper aimed to find out how prepared graphic design students are towards the demands from the industry. This paper is build upon data from study conducted by Opoku, Appiah & deGraft-Yankson (2020) on the competencies of the present-day graphic designer in Ghana. Developing graduate employability starts with understanding the skill needs of employers. Hence, this study was to explore and gain a greater understanding of graphic design students' perceptions of their readiness to enter the work force following their 4-year graphic design programme completion. This was done to determine whether they are aligned with employer expectations.

2. Literature Review
2.1 Graduate Employability Skills
Employability is defined as a person's capacity to find, create, secure and sustain meaningful employment across the professional (Bennett *et al.* 2020). Different phrases are frequently used to referred to employability skills, including generic skills, soft skills, core skills, key skills, key competencies, transferable skills, transversal skills, 21st-century skills, cross-disciplinary skills, life skills, work-ready skills among others (Suarta *et al.* 2017; Kenayathulla, Ahmad & Idris 2019).

Clarke (2018) is of the view that employability is important for both graduates and higher education institutions. Whether graduates attained the knowledge and skills necessary for job success while they are in universities has been questioned by many business employers. Lack of employability skills are often cited as an issue for graduates, employers, as well as government (Webb & Chaffer 2016; Succi & Canovi 2020). Governments and businesses in Ghana expect universities to prepare graduates with transferrable skills that can have an immediate impact to their businesses (Clarke 2018). In order to achieve this goal, tertiary institutions have introduced work-integrated learning initiatives such as internships or work placements that provide students with access to professional experiences in the industry to providing the means to demonstrate employability skills (Clarke 2018). However, Bennett *et al.* (2020) contend that graduates and employers do not believed that academics have sufficient knowledge of what is happening in industry to help graduates make the transition to the workforce. Universities are perceived as failing to take advantage of part-time instructors from industry to help students prepare for careers through curriculum development or career counseling (Bennett *et al.* 2020).

Previous studies from many nations indicated that there are some discrepancies between employer expectations and the skills graduates possess. Employers continue to assert that recent graduates lack the soft skills required to enter the workforce (Moore & Morton 2017; Clarke 2018). According to a studies in the United States, 91% of employers valued soft skills over applicants' degree specialization (Griffiths *et al.* 2018). A discrepancy between what business schools focused on in their curriculum and practitioner demands was revealed by researchers who analyzed curricula of U.S. business schools and company needs; this mismatch was ongoing and becoming increasingly serious in the United States (David *et al.* 2011). Employers' perceptions of whether business students in New Zealand were prepared for the workforce upon graduation were investigated by Hodges & Burchell (2003). Their research discovered that the majority of hiring managers prioritized soft skills when looking for candidates for entry-level jobs and expressed dissatisfaction with the general lack of interpersonal skills among graduates.

A survey of employers across four European countries revealed that graduates have not acquired sufficient levels of soft skills during their time at university (Azevedo *et al.* 2012). According to Abbasi, Ali & Bibi (2018), managers in Pakistan's banking industry expectations for graduates' employability skills were higher than what graduates actually have. Findings from a study of Scottish employers also revealed that when recruiting new business and management, employers value graduates who were trustworthy, dependable, had good communication skills, and were eager to learn (McMurray *et al.* 2016). Succi & Canovi (2020) survey of executives in the UK found out that 54% of employers were satisfied with graduates' technical expertise (i.e., discipline-specific knowledge) but they felt that they lacked soft skills, which contributed to various executives positions unoccupied.

2.2 Competencies of Graphic Designer
A good place to start when mapping the knowledge and skills a graphic designer should possess is to consider the kind of qualifications the industry look for in today's graphic designer. Design competence has been defined as the ability to use a particular set of knowledge, skills, behaviours, and attitudes in response to a problem in a design context (Baarman & Bruijn 2011). Studies have revealed that graphic design graduates are expected to be competent in a very broad area in order to fit into the current dynamic in creative industry. A handful studies had been carried out over the years to determine the fundamental skills graduates needed to function well in graphic design industry (e.g. AIGA 2007; Wilson 2014; Adu 2015; Heller 2015; Bridges 2016; Sørum & Pettersen 2016; Dziobczenski & Person 2017; Dziobczenski *et al.* 2018; Opoku, Appiah & deGraft-Yankson 2020).

Sørum & Pettersen (2016) looked at the qualifications and skills of interactive designers and the expectations among businesses in Bergen, Norway. Based on 31 job offers in both print and digital ads, the study found that the use of software tools and various technologies is prevalent in interactive design jobs, particularly in connection to digital services, websites, and mobile applications. Skills such as creativity, software, subject understanding, problem solving, teamwork, and willingness to learn were among the most frequently required skills from graphic designers in the United States (Ramirez, 2012).

Opoku, Appiah & deGraft-Yankson (2020) studied the required competencies of present-day graphic designer in Ghana. Based on 58 online job advertisements for graphic designers, 83% listed coding skills such as responsive design, UI/UX design, web design, among others as requirement for application. The authors concluded that graphic design firms in Ghana prefer to hire graduates who are technology-driven especially in

designing for interactivity as the industry advances with new dimension of digital media, mainly web design, UX and UI design. These findings require the individual designer to extend their knowledge and skills beyond core graphic design skills to coding, UX design, and UI design (Wilson 2014; Heller 2015; Sørum & Pettersen 2016; Dziobczenski & Person 2017; Dziobczenski et al. 2018; Opoku, Appiah & deGraft-Yankson 2020;).

Certainly, present-day graphic design employers in Ghana have high expectations (Opoku, Appiah & deGraft-Yankson 2020). They are looking for well-prepared and dedicated designers who can work in a wide array of media, including print, digital, and interactive media (Dziobczenski & Person 2017; Opoku, Appiah & deGraft-Yankson 2020; Wong et al. 2021). Various new career paths are offered by the employers including UI/UX designer, interactive designer, creative strategist, digital designer, brand visual designer, marketing content designer, design and marketing experts, communication designer, usability expert, and so forth (Opoku, Appiah & deGraft-Yankson 2020). These new job titles highlight the various roles graphic designers may play in present-day graphic design industry graphic and design graduates must possess a variety of skills in order to launch successful professional careers.

2.3 Digital Graphic Design Practice in Ghana
Technological advancement in graphic design practice has seen graphic design content moving to virtual, powered by sophisticated computer programming language. This phenomenon seems to be having an impact on Ghana's graphic design industry right now. Opoku, Appiah & deGraft-Yankson (2020) believe that designing for interactivity is rising as most businesses in Ghana especially those in the financial sector are using websites and mobile applications with engaging graphic design content to communicate with their customers, cutting down on contact hours at banks.

Globalization such as social media has also impacted graphic design practice. One can post a design challenge on social media platforms and hire someone from another country to design. Because of this phenomenon, the traditional Ghanaian graphic designer must compete fiercely for the same position with graphic designers across the world. According to a 2019 research from the International Finance Corporation (IFC), over 9 million jobs would require coding skills by 2030, cited Ghana as one of the growing key actors in the digital economy (IFC 2019). As more Ghanaians use mobile devices in their daily activities, graphic design is increasingly moving away from traditional print media toward digitally driven media. The graphic design profession is growing in Ghana and new designer titles such as UI designer, UX designer, web designer, etc. are being offered to graphic designers in job listings (Opoku, Appiah & deGraft-Yankson 2020).

2.4 Graphic Design Education and Employability
Preparing students for professional practice has been the primary goal of graphic design education. Graphic design education plays a crucial role on how graduates' position in the job market, because it equips students with the necessary knowledge and skills. The educational background of the designer can have an effect on the amount of remuneration received for the kind of work performed, the number of workload or productivity of work, ability to maintain oneself or find employment (Ionescu & Cuza 2012). For students to start their careers in professional design practice, formal design education is crucial (Davis 2005; Wilson 2014). At the university, students acquire specific skills to a level that are professional-acceptable, and once they graduate, they will be hired based on their competencies to produce designs that are aesthetically pleasing. Muratovski (2016) believes that graphic design graduates would be able to "survive" in the design industry if they are able to creatively and successfully apply their competencies to make a company or product stand out from their competition. Adu (2015) contends that graduates of graphic design in Ghana must exhibit additional skills to increase their employability and land jobs in the graphic design industry. The value of formal graphic design education in preparing students for professional design practice had been the subject of several studies (e.g. Heller 2015; Tovey 2015; Littlejohn 2017; Dziobczenski et al. 2018).

Dziobczenski et al. (2018) discover that less than 35% of companies required job applicants to possess a degree and more than 60% of them needed individuals with specific "years of professional experience" after studying 230 job adverts for graphic design positions from Finland. Cheung (2016) study highlighted that 50% of Hong Kong employers expect design educators to take up the "full responsibility" for educating the graduates. Most employers do not see the sector as a "training ground" for new graduates, and they expect them to be able to satisfy client needs while operating within business constraints as soon as they start working for them (Cheung 2016). Nonetheless, graduates in graphic design are consistently seen as lacking the skills required to be successful in the field. Studies show that despite having completed three to four years of formal education, graphic design graduates lack the competencies required by employers (The DesignSmart Research Project 2008; Hsieh, Guan & Wu 2010; Adu 2015).

Okyere (2017) study confirmed that because university graduates in Ghana usually lacking exposure to the standards of practice in graphic design industry, employer frequently choose to work with graphic designers who have received informal training. In other words, those who have not had professional training in graphic design

can now work as graphic designers, as stated by McWade (2013) "Whether you are ready or not, this modern world has made everyone a designer". According to Cross (2001), everyone has the ability to design. This situation has raised a critical question: what truly makes a formal graphic design education valuable in the modern world? Design educators and higher education institutions must reconsider how they can articulate a broader value of formal education for professional graphic design practice in response to this phenomenon (Dziobczenski *et al.* 2018; Okyere 2017). Given that the graphic design industry is growing in the digital and virtual media, graphic design educators have a difficulty in imparting to students the skills needed for employment (Opoku, Appiah & deGraft-Yankson 2020). Pukelis & Pileičikienė (2012) underscored that though globalization and technological advances have put educational institutions under pressure, the transfer of competencies for the labour market is still a key responsibility of universities. Government organizations and companies expect universities to produce graduates who can have an immediate impact on their businesses (Clarke 2018). Heller (2015) opposes that it is difficult or perhaps impossible to train the graphic designer to acquire all the competencies required of them in today's labour market due to the time-consuming nature of graphic design education.

In order to achieve this goal, several institutions in Ghana have introduced work-integrated learning initiatives such as attachments or internships that offer students access to industry experiences in order to apply their knowledge gained from the classroom in the real world of work and also provide them means to improve their employability (Clarke 2018; Department of Graphic Design, UEW 2021). Bennett *et al.* (2020) argued that businesses and students do not believe academics have the necessary knowledge and expertise of the realities of the modern design industry to help graphic design graduates make the transition to the workforce. In order to help students become job-ready, it is therefore advised that universities take advantage of collaborating with industry practitioners to teach part-time courses or serve as resources persons to support curriculum development or provide career counselling for students (Bennett *et al.* 2020). Dziobczenski *et al.* (2018) suggest that higher educational institutions and design educators must not compromise to design and deliver relevant curricula to effectively and efficiently prepare their students for these new career paths in the professional graphic design practice.

2.5 Theoretical Framework

Richard Voorhees' Conceptual Learning Model was employed as a lens to sought the readiness among graphic design students in terms of competence areas, knowledge and skills, and personal traits. Conceptual Learning Model is a structured approach to learning and evaluation designed to help individuals to acquire knowledge, skills, attitudes, and values, necessary to perform a task to a given standard (Voorhees 2001). Voorhees (2001) suggests a pyramidal structure with four rungs as a conceptual model for educational growth and assessment to describe the abilities of a profession. The first rung refers to personal traits and characteristics that individuals possess and form the foundation for learning a profession. The second rung consists of skills, abilities, and knowledge that are developed through learning experiences in education. The third rung refers to competencies that are derived from integrative learning experiences, where knowledge, skills, and abilities combine to create learning bundles relevant to the task for which they are created. Finally, a demonstration, which is the highest rung, refers to the final outcome that is produced as the result of applying competencies.

This study structured the findings in the Opoku, Appiah & deGraft-Yankson (2020) study in terms of (1) what graphic designer should know (knowledge and skills), (2) what graphic designer should deliver (competence areas), and (3) what personal characteristics graphic designers should have (traits and characteristics) to find out how prepared graphic design students are towards the demands from the industry. Hence, this study was to explore and gain a greater understanding of graphic design students' perceptions of their readiness to enter the work force following their 4-year graphic design programme completion. This was done to determine whether they are aligned with employer expectations.
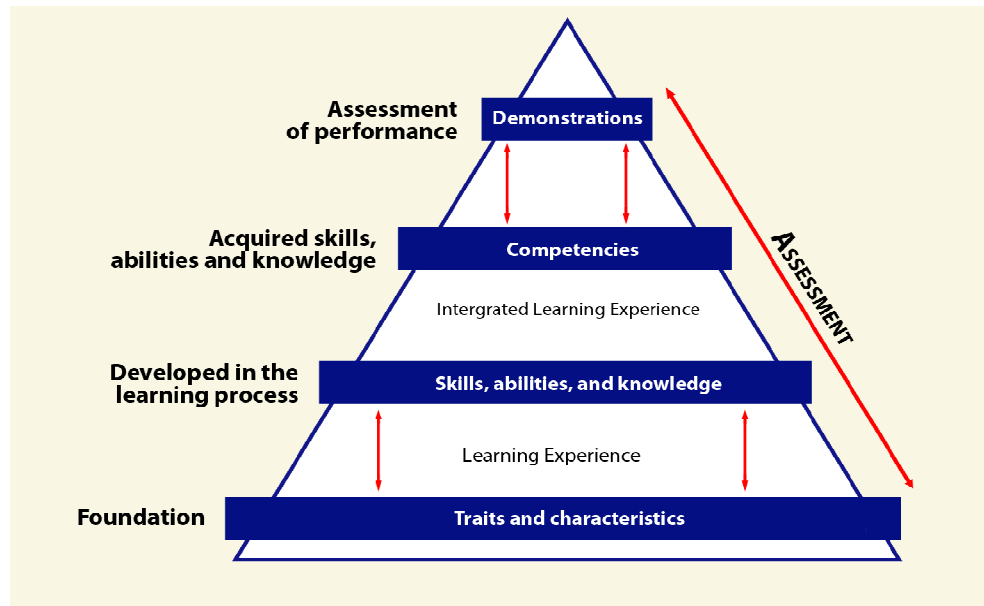
Figure 1: Conceptual learning model pyramid: Voorhees (2001)

3. Methodology

The study was conducted among final year university graphic design students (as current and future employees). The research collected the opinions of final year students on their preparedness for entering the job market. The study was conducted among students of the Department of Graphic Design of the University of Education, Winneba (UEW) at the time of their post-internship seminar presentation in August 2022. The final year students were particularly targeted for the study on the basis that they have gone through the 4-year degree programme and about to enter the workforce. The questionnaire was used to solicit data from the respondents. The items in the survey questionnaire were mostly close-ended questions. To capture respondents' perceptions of preparedness to enter the workforce, respondents were subjected to self-assessment their graphic design competencies using a five-point Likert scale (1 = very poor, 5 = excellent). Likert scales questions have widely been used by several researchers particularly in measuring attitudes and perceptions (Mashenene 2019; Mbise 2015; Schwab *et al.* 2022). The survey instrument was divided into three dimensions according to the findings from Opoku, Appiah & deGraft-Yankson (2020) study (see appendix A). Thus knowledge and skills, design competencies, and personal traits, which were highly demanded from present-day graphic designers in Ghana. The questionnaire was pilot tested before mass distribution to ensure the questions were clear and where necessary correctly rephrased.

The study was conducted in accordance with the ethical principles. The Head of the Department of Graphic Design, UEW was enlightened about the study and approval was given. Participants were assured their data would be collected anonymously and analyzed for the purpose of the study only. The index numbers and names of participants were exempted from the data collected to protect the privacy and ensure anonymity. A sample size of 102 final year students from the Department of Graphic Design, UEW participated in the study. The method of respondent selection was similar to convenient choice since the respondents were included in the sample simply because they were taking their final post-internship seminar presentation exam at that time. The data collected from 102 students was analysed using descriptive statistical including frequencies and percentages in SPSS version 22.

4. Findings

The findings from the survey data in this study are discussed under the following headings: knowledge and skills, competence area and personal traits. Further, the discussion of the results is also based on Voorhees' (2001) conceptual learning model and takes into account the literature that was discussed in the preceding sections.

4.1 Profile of Respondents

With gender being a sensitive issue in today's world, respondents were made to indicate their gender type but were also given the option not to say the gender they belong to if they so desire. Out of 102 respondents who participated in the survey, 77 were male, 24 were female and 1 of the respondents was unwilling to belong either male or female classification of gender. These numbers recorded represent 75.49%, 23.53% and 0.98% respectively. This indicates that the gender gap between males and females in the pursuit of graphic design is

extremely wide. From the perspective of population, the sample of respondents is a representation of students in the Department of Graphic Design, UEW to which the findings could be generalised.

4.2 Knowledge and Skills

What graphic designers need to know in order to function regarding work in the graphic design industry is crucial as it paves the way for developing required skills, abilities and other characteristics to create visually appealing and well-structured design. Participants shared their perceptions on readiness on six parameters related to knowledge and skills, namely " creativity, problem-solving, coding, software tools and prototyping tools". These are awareness of knowledge and skills required for graphic design jobs in Ghana as reported in Opoku, Appiah & deGraft-Yankson (2020) study. More detailed information concerning the numbers and structure of respondents' opinions for their level of preparedness in terms of knowledge and skills is presented in Table 1.

The study also sought to find out the proficiency level of students in terms of creativity. The results of the survey showed that the majority of graphic design students 92 (91.2) are convinced they are prepared creatively to work in the industry. 17 students representing 16.7% rated their creativity skills as " Excellent", 24 (23.5%) rated "Very Good" and 52(51%) rated their creativity proficiency as "Good". Only 9 students representing 8.8% rated their themselves as "Poor". None of the students rated his or her proficiency as " Very Poor".

The study also sought to find out the proficiency level of students in terms of coding. Only few students 3 (2.9%), 6 (5.9%) and 16 (15.7%) felt prepared in terms of coding and rated their proficiency as "excellent", "very good" and "good" respectively. Overwhelming majority of graphic design students 77 (75.5%) felt unprepared and rated their proficiency as "poor" and "very poor".

Moreover, software skills are needed for every graphic design graduate to create commercially and professionally acceptable works. The quality of the design outcomes depends highly on the ability of a designer in performing the required software. Majority of the respondents 54 representing 52.9% acknowledged that they have no difficulties in using design software to create commercial works and therefore rated in proficiency as " Excellent", "Very Good" and "Good". Despite majority possessing software skills, 28 (27.4%) and 20 (19.6%) of the respondents were not skilled to use design software and therefore rated their proficiency as "Poor" and "Very Poor" respectively.

In the problem-solving domain, overwhelming majority of students 14 (13.7%), 21 (20.6%) and 59 (57.8%) acknowledged that they have ability to handle problems and therefore rated their proficiency as " Excellent", "Very Good" and "Good" respectively. Only 9 representing 8.8% of the respondents rated their proficiency as "Poor". None of the students rated his or her proficiency as " Very Poor" as far as problem-solving domain is concern.

Prototypes allow interactive project stakeholders to see how the final project will look early in the project lifecycle. As indicated by Mejia (2018), prototypes bring designers idea to life; it also helps clients to see how their ideas will take shape and most importantly to gather user feedback through usability testing. The study sought to establish how skilled respondents are in the use of prototyping tools for designing interactive contents. Data obtained indicates that more than half of the respondents 54 (52.9%) indicated that they have no idea on how to use the prototyping tool and rated their proficiency as "Poor" and "Very Poor". Few graphic design students 7 (6.9%) and 17 (16.7%) admitted that they know how to use prototyping tools for interactive projects and therefore rated their proficiencies as "Excellent" and "Very Good" and Good respectively. Finally, 24 (23.5%) of students rated their proficiencies in using prototyping tools as "Good".

Table 1: Students' Responses to Knowledge and Skills

Knowledge and Skills	Excellent	Very Good	Good	Poor	Very Poor
Creativity	17 (16.7%)	24 (23.5%)	52 (51.o%)	9 (8.8%)	0 (0%)
Coding	3 (2.9%)	6 (5.9%)	16 (15.7%)	22 (21.6%)	55 (53.9%)
Software Tools	19 (18.8%)	15 (14.7%)	20 (19.6%)	28 (27.4%)	20 (19.6%)
Prototyping Tools	7 (6.9%)	17 (16.7%)	24 (23.5%)	30 (29.4%)	24 (23.5%)
Problem-solving	14 (13.7%)	21 (20.6%)	59 (57.8%)	9 (8.8%)	0 (0%)

Source: Field Data, 2022

4.3 Competence Area

The Competence Areas address what graphic designers should deliver through their work. Participants shared their perceptions on readiness on three parameters related to competence are, namely "responsive design, project management and handling deadlines". As part of assessing graphic design students' preparedness level towards graphic design practice, the study again sought to find out from the students their competencies in terms of designing for interactivity. More detailed information concerning the numbers and structure of respondents' opinions for their level of preparedness in terms of competence area is presented in Table 2.

The ability to create digital content for websites, digital media, and social ads that accommodate all screen sizes as well as other digital platforms is one of the graphic design competencies reported in Opoku, Appiah &

deGraft-Yankson (2020). Respondents were asked to rate their responsive design abilities. Data obtained in Table 2 indicates that none of the respondents rated his/her proficiency as "Excellent". 10 students representing 9.8% rated their ability as Very Good. 19 representing 18.6% rated themselves as Good when it comes to creating interactive assets that accommodate all screen sizes. However, overwhelming majority, 31 representing 30.4% and 42 (41.2%) think they are not well prepared and rated their responsive design abilities as Poor and Very Poor respectively.

Project management refers to the ability of the designer to apply his knowledge, skills, tools, and techniques to manage multiple projects to meet the project requirements. Responding to the question of the ability of design students to manage design projects, out of the 102 responses received, majority of the students 24 (23.5%) and 42 (41.2%) are convinced that their knowledge and skills have prepared them well to manage graphic design projects, and therefore rated their ability as Excellent and Very Good respectively. 22 (21.6%) rated their ability as Good. Surprisingly, none of the respondents rated his or her ability as Very Poor, with few as 14 (13.7%) rated themselves as Poor.

Handling deadline comprises how designers should complete tasks within the time by which graphic design projects must be executed. As to whether graphic design students are able to work to tight deadlines, respondents were asked to rate their ability to work under pressure. The results shows that majority 24 (23.5%) and 32 (31.4%) of the respondents believed they have the capacity to work to meet deadlines, hence rated their ability as Excellent and Very Good respectively while 32 (31.4%) of the respondents rated Good. A minority of 14 (13.7%) doubts their capacity to work under pressure to meet deadline and on that account rated their abilities as Poor and Very Poor.

Table 2: Students' Responses to Competence Area

Competence Area	Excellent	Very Good	Good	Poor	Very Poor
Responsive design	0 (0%)	10 (9.8%)	19 (18.6%)	31 (30.4%)	42 (41.2%)
Project management	24 (23.5%)	42 (41.2%)	22 (21.6%)	14 (13.7%)	0 (0%)
Handling deadlines	24 (23.5%)	32 (31.4%)	32 (31.4%)	11 (10.8%)	3 (2.9%)

Source: Field Data, 2022

4.4 Personal Traits

Personal traits refer to the acquisition of appropriate and observable social behaviours, desires, psychological impulses or emotions in work-related situations that support learning and professional practice. In this current global economy, it is essential to "collaborate productively in large interdisciplinary teams" (American Institute of Graphic Arts (AIGA) 2015), and personal traits are highly important for the graphic design graduates to interact successfully with others. Graphic design students shared their perceptions on readiness on two parameters related to personal traits, namely "Willingness to learn and Teamwork". More detailed information concerning the numbers and structure of respondents' opinions for their level of preparedness in terms of personal trait is presented in Table 3.

As to whether students are willing to learn what is trending within the graphic design fraternity, respondents were asked to rate their ability. Out of the 102 respondents, 41 (40.2%) and 38 (37.3%) indicated that they were willing to learn and therefore rated themselves as Excellent and Very Good respectively. 17 (16.7%) rated themselves as Good. None of the respondents rated his or her ability as Very Poor, with few as 6(5.9%) rated themselves as Poor.

The ability to work together with other individuals in the same organization as a team player to achieve organizational goals is very paramount to most professions. When respondents were asked to rate their personal traits as a team player, 32 (31.4%) of the respondents and 50 (49.0%) of them rated themselves as Excellent and Very Good respectively with 9(8.8%) of the respondents and 10 (9.8%) of them rating themselves as Good and Poor respectively. Only 1(1.0%) respondents rated him/herself as being very poor when it comes to working together with other people in the same firm.

Table 3: Students' Responses to Personal Trait

Personal Traits	Excellent	Very Good	Good	Poor	Very Poor
Willingness to learn	41 (40.2%)	38 (37.3%)	17 (16.7%)	6 (5.9%)	0 (0%)
Teamwork	32 (31.4%)	50 (49.0%)	9(8.8%)	10 (9.8%)	1(1.0%)

Source: Field Data, 2022

5. Discussion of Findings

This study describes the perceptions of readiness to enter the work force among graphic design students following their 4-year graphic design programme completion. This was done to determine whether they are aligned with employer expectations. To understand whether graphic design students are aligned with employer expectations, the study examined data from an online survey distributed to 2022 final year graphic design students to rate their preparedness toward the demand from the industry for professional practice. It is

empirically clear from the results that students have rated both positive and negative towards their preparedness for graphic design practice.

The study highlight three major areas of perceived under preparedness. Graphic design students felt insufficiently prepared in the area of responsive design, coding, and usage of prototyping tools, which employers mostly seek when advertising for graphic design personnel. The results of this study, coupled with the findings of past studies on preparedness of graduates, indicated that graphic design students are not well equipped with the competencies required for practice when they graduate (DesignSmart Research Project 2008). This results also raise the concern of incorporating coding into graphic design educational modules which has been suggested by many graphic design educators (Ciampa 2010; Pannafino 2013; Saunders 2013) in order to help prepare our students in today's digital transformation era where designing for interactivity is taking-over the graphic design industry (Opoku, Appiah & deGraft-Yankson 2020). According to Neves (2017) graphic design was traditionally viewed as a discipline that centred on printing. The contemporary graphic designers are encouraged to place more emphasis on producing digital design in a world that is increasingly digitalised.

Regarding other competencies such as creativity, problem-solving, usage of software, meeting deadline, willingness to learn, etc., it seems that majority of students 87 (85.4%) felt qualified and expected a good transition to work. This result is somewhat different from DesignSmart Research Project (2008) that reported that graphic design student reported lacking competencies such as personal traits. A possible explanation for this results might be because when final year students go for industrial attachment they mostly work with other designers from the industry and skills such as teamwork, meeting deadlines and willingness to learn from professionals are usually seen when they reported back to campus to present on their post industrial attachment. Graphic design students are exposed to the actual world of work by participating in an industrial attachment that requires some type of labour, typically outside the institution. The learner can develop teamwork, communication, research, critical analysis, and problem-solving skills through this form of learning (DGD 2020). Moreover, having an industrial attachment give students the chance to link what they learn in the classroom to the real world of work as well as receiving guidance and hands-on training from both senior designers and supervisors of the attachment organizations.

6. Conclusions and Recommendations

This study has explored and gained understanding of graphic design students' perceptions of their readiness to enter the work force following their 4-year graphic design programme completion. This was done to determine whether they are aligned with employer expectations. Lack of competence is a barrier in the world of work and may lead to low skill jobs, which can then result in job instability and loss of income. It is in the student's best interest that they are provided with skill development that teaches them how to identify and solve problems within the graphic design industry. The job of a graphic designer has become increasingly challenging and important as a result of the development of global communication and advancement of technology. In response to this, the ability of graphic designers to apply their knowledge and skills such as " coding, creativity, problem-solving, software tools, meeting deadlines, willingness to learn, teamwork, responsive design and prototype tools in their day to day working process to solve problems, make sound decision, and generate workable solutions are becoming more important when applying for job in the graphic design industry (Ciampa 2010; Opoku, Appiah & deGraft-Yankson 2020).

It is empirically clear from the results that graphic design students have rated both positive and negative towards their competencies for graphic design practice. On the average, what employers expect from graphic designers in Ghana does not correspond with what design students actually know and how to do. These findings corroborate many aspects of DesignSmart Research Project (2008) report that graphic design students are not well equipped with the competencies required for practice when they graduate.

The competencies such as coding, responsive design and prototyping were considered by participants to be the most poorly developed during their studies, although this finding may be context related as, in Ghana, there is still no tradition of implementation of targeted and intentional measures to develop graphic design career skills in higher education. This confirms that graphic design educators should all be continuing in their efforts to include opportunities for students to develop coding competencies associated with employability during their university courses given the need to ensure that our graphic design graduates are as well prepared for the workplace after graduation as they can be.

The employability skills heightened a new graduate's chances of getting their first job and putting them on a better career path that involves lifelong adaptive learning. Therefore graphic design educators should continue to re-align of education curriculum to reflect the dynamic skill requirements of the industry that are always evolving so that they can better prepare students to meet current societal and industrial demands. Also, potential employer should employ graphic design graduates and provide additional avenues for them to enhance their knowledge and skills through various training such as in-service training, learning on the job, exposure over time, etc. These training can improve their performance and contribute to the growth of design organizations. Again,

graphic design educators should integrate coding focused modules such as HTML, CSS, JavaScript, etc and their application in practical graphic design contexts and invite experts from the industry to deliver guest lecture, seminar or workshop for their students. Lastly, graphic design students should explore coding related courses through online resources, video tutorial and coding platforms to enhance their knowledge and skills.

By highlighting areas of underperformance, the study can inform graphic design educators about specific actions which can be taken in order to better prepare students and to facilitate their transition to professional practice. Through analysis of this research and its implications for future studies, students would be better prepared for the world of work.

This study is not without limitations. The results of this study should be taken cautiously due to some limitations. The study used data from a survey focusing on final year graphic design students from one Ghanaian public university, which means it may not be generalizable to all graphic design students at the other universities. Further similar research in different universities would be useful in order to further explore if variables that contribute to preparedness for work are similar across different universities.

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Acknowledgments

Appendix A

Findings from Opoku, Appiah & deGraft-Yankson (2020) study