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What is sought from graphic designers? A first thematic analysis of job offers for graphic design positions in the United Kingdom

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Abstract: An empirically grounded understanding about which knowledge and skills that are sought from designers is missing for a number of professional subfields of design. This gap in research challenges i) design educators in planning their educational offerings and ii) design practitioners and students in articulating their contribution to clients and future employers. In this paper, we study the references that are made to knowledge and skills in job offers for graphic designers in UK. Based on a first thematic analysis of 1,406 job offers, we distinguish four main knowledge areas for graphic designers in terms of i) operational design skills, ii) process management skills, iii) technical design skills and iv) software skills. We note that expertise in 2D software, teamwork, project planning and administration, creativity and aesthetic as well as detailing and production emerge as the most frequently mentioned skills across the offers.

Keywords: graphic design; design expertise; design education; United Kingdom.

1. Introduction

Questions about what knowledge and skills that are needed to work as a designer haunt both academic and practitioners of design. For academics, beliefs about the current and future skills set of designers inform educational developments and research programs in design. For professionals, the personal skill set of a designer is the foundation upon which design services are built. It also forms the reasoning upon which individual designers pursue personal and professional development. Still, an empirically grounded understanding about what knowledge and skills that are sought from designers is missing for a number of professional subfields of design.

In this paper, we report the first findings from a systematic review of job offers for graphic design positions in the United Kingdom (UK). Job offers represent written manifestations of what is sought from professionals; produced to the needs of an employee rather to those of a researcher (Todd, Mckeen & Gallupe, 1995). In thematically analysing 1,406 job offers, we set out to map what knowledge and skills that are referenced by companies in seeking graphic design expertise.

Knowledge about the requested skill set of designers forms an important step for the advancement of design in both academia (see e.g. Dorst, 2008; Valencia, Person & Snelders, 2013) and practice (see e.g. Conley, 2004; 2007). As stated by Horváth (2007), a continuous growth of knowledge in design is required both to establish the discipline as well as to help differentiate the work of designers from that of other professionals. The overarching goal of our study directly adds to this growth of knowledge. In general, over the last decades, design research has increasingly come to stimulate educational and professional developments in a number of design disciplines; perhaps most prominently in engineering design and industrial design (for historical overviews of these developments, see e.g. Andreasen, 2011; Horváth, 2007). When it comes to developments in graphic design, the position of research has been less prominent. As noted by Logan (2006, p. 332), 'There is hardly any domain-focused research on graphic design' and only 'little research on professional aspects of graphic design'. At the same time, the field of graphic design has been critiqued for having evolved without sufficient theoretical reflection (Frascara, 1988), lacking a strong research agenda (Bennett, 2006) and working with diverse methods and conclusions (Tan, Melles & Lee, 2009). Educators in design may accordingly benefit from our findings in bridging the gap between theory and practice; contrasting our initial findings with their educational activities and potentially surface discrepancies between their educational offerings and the expectations of those hiring graphic designers (see e.g. Lewis & Bonollo, 2002).

2. The required knowledge and skill set of a designer

The knowledge and skills of designers – as externalizations of expertise in design – frequently emerge in discussions on design. In short, expertise in design is often explained in relation to particular practices for problem-solving which differentiates the work of designers from those of other professionals (see e.g. Cross, 2004; Dorst, 2015). Following this line of reasoning, the knowledge and skill set of designers is also, to varying degrees, presented as different and/or unique to those of other professionals. Perhaps most visibly, design organizations often point to the special nature of designers' work in promoting the value of design to industry (see e.g. CBD, 2014; Design Council, 2005; Ramlau & Melander, 2004).

Bringing a design professional to a development team is one of the initial steps towards deepening the integration of design within an organization (Topalian, 1986). However, it is not without problems. In the words of Valencia et al. (2013, p. 380), 'The broad scope of design implies that designers can provide a variety of benefits for companies. The strategic challenge facing managers is to carefully consider their particular interest in design, in order

to profit from it most effectively.' To this end, knowledge about the requested skill set of designers is of relevance for both designers and their managers in determining what graphic designers potentially could 'do and deliver' within an organization. Past research shows that the requirements are broad on the knowledge and skills set of designers. For example, Lewis and Bonollo (2002) found that industry professionals referenced a multitude of different design process skills – including skills in task clarification, concept generation, evaluation and refinement, detailed design and communication of results – when evaluating product development work of design students. Studies also suggest that designers play a number of different roles within companies (Bohemia, 2002; Dickson, Schneier, Lawrence & Hytry, 1995; Yeh, 2003) and that managers in different functional areas of a company profit differently from the skill set of designers (Valencia et al. 2013).

Based on interviews at manufacturing companies in the UK, Perks, Cooper and Jones (2005) developed a general taxonomy of roles for design in new product development, including references to the requested skill set of designers. In relation to the first (and perhaps most rudimentary) role for design – 'design as functional specialism' – they (p. 120) conclude that the focus is on 'deploying a set of traditional design skills. These include aesthetics, visualization, and technical skills.' In relation to the second (and somewhat more advanced) role for design – 'design as part of multifunctional team' – they (p. 121) pinpoint that the focus is on 'the interfacing skills to interact and to communicate with other functions. These enhance understanding of other functional perspectives, which allows the designer to elicit and to interpret other functional information for his or her own purposes.' In relation to the third (and most advanced) role for design – 'design as new product development (NPD) process leader' – they (p. 122) conclude that the designers need to posses hold a broader set of skills in relation activities not traditionally associated with design such as research and business. Moreover, 'as designers begin to lead the NPD effort, a new set of process management skills are generated which encompasses skills to negotiate, to motivate, and to persuade. Finally, in order to carry out their new [leadership] role effectively, designers are honing internal marketing skills (such as persuasion, motivation, and relationship management).'

All in all, past studies on the value of design for companies suggest that a varied skill set is important for designers when working in companies but that managers struggle in pinpointing the expertise of designers. Research on job offers for design positions also points to that a varied knowledge and skill set is sought by employers. In analysing 265 job offers for industrial designer positions in China and Taiwan, Yang, You and Chen (2005) found that skills in varied areas such as software, language and creativity were the most frequently sought by companies. Similar, based on a sample of predominantly job offers in the United States, Ramírez (2012) found that subject (design) skills in colours, material, manufacturing methods, etc. together with computer literacy, team work and creativity were among the most frequently requested skills from industrial designers.

That said, the concept of design covers a range of professional practices and there are different qualifications to operate as a designer in different fields. For example, as

summarized by Buchanan (2001, p. 8), graphic designers and industrial designers have traditionally been occupying themselves with different areas of design; graphic designers with '*symbolic and visual communication*'; industrial designers with '*material objects*'. As a result, how research on the skill set of designers in general and industrial designers in particular translates into the field of graphic design is hard to predict, as few (if any) prior study has set out to empirically investigate what knowledge and skills that are requested from graphic designers in practice. Hence, in deepening our understanding about 'professional aspects of graphic design' (Logan, 2006, p. 332), we set out to address the following research question:

> *What knowledge and skills are companies referencing in advertising*
> *for graphic design positions?*

3. Method

As a component of a larger research project on the graphic design profession, we are currently analyzing job offers (advertisements) published on online recruitment platforms to research what knowledge and skill set companies seek from graphic designers. As noted by Todd et al. (1995, p. 19), job offers are devised to attract professionals with high qualifications and strong fit to the needs of a company. To this end, job offers represent a natural data source, which has not been generated for the specific purposes of a study (Ritchie, Lewis, Nicholls & Ormnston, 2013). Job offers have been used to study the requirements placed on professionals such as information system specialists (e.g Todd et al. 1995), librarians (e.g. Choi & Rasmussen 2009; Gallivan, Truex & Kvansny, 2004; Kennan, Cole, Willard, Wilson & Marion, 2006) and webmasters (Wade & Parent, 2002). In design, as exemplified earlier, (online) job offers have been used to study the qualifications on new university graduates in industrial design (Ramírez, 2012) and what general and professional skills companies seek from industrial designers more generally (Yang et al. 2005).

3.1 Sample

In studying what companies seek from graphic designers, we have purposefully sampled online job offers for positions in the UK to acquire an 'information-rich' data set for our study (Patton, 1990, p.169). The quality (excellence) of British design has been reaffirmed in several cross-national studies (see e.g. DesignTaskForce 2003; Moultrie & Livesey, 2009). Graphic design is no exception, with a number of British design studios and universities being renowned internationally. Hence, in grounding our study in job offers for positions in UK, we have set out to study the requested knowledge and skill set for graphic designers in a national context where the general industry understanding about design is comparatively well developed.

Similar to past studies on the requested skill set of industrial designers (Ramírez, 2012; Yang et al., 2005), we collect job offers for our study from online recruitment platforms (websites). In discussion with industry professionals, we have decided to cover both established (generic) job search portals and (specialized) design websites with dedicated job

sections. The job search portals include LinkedIn (www.linkedin.co.uk), Indeed (www.indeed.co.uk) and Monster (www.monster.co.uk). The specialized design websites include Brand Republic (www.brandrepublic.com) and Design Week (www.designweek.co.uk).

To date, we have collected job offers for graphic designers from the websites over a period of five weeks (8th June – 8th July, 2015). Once a week, using the advanced search function on the websites, we located job offers for graphic designers through a series of keyword searches. First, for each site, we searched for job offers with the term 'graphic designer' in the job title. Second, recognizing that the job title for graphic designer can be more diverse, we also searched for jobs with the term 'designer' in the job title and 'graphic design' in the job description. Following this procedure, we collected an initial set of 3,456 job offers for further analysis. Job offers frequently are published for prolonged periods on recruitment websites. Hence, although our data collection took place over a period of five weeks in June and July, our final sample also includes job offers published in March, April and May.

3.2 Data refinement

During data collection, it soon became clear that the same job offer could be published multiple times on the same website and/or simultaneously be published on different websites. Moreover, in the cases a human resource (HR) company was listed as responsible for a recruitment, the same job title could be be found on positions in different companies. Thus, we used a combination of manual and automatic procedures to remove duplicate job offers from our data set. First, in downloading the individual offers from the different websites, we removed those offers that were published by the same (non HR) company under the same job title. Second, we used anti-plagiarism software (Novus Scan) to systematically compare the content of each offer with those of the other offers in our sample.

Professionally trained graphic designers can pursue careers in a multitude of fields not necessarily related to graphic design. Further, formal training does not form a prerequisite to work as a graphic designer. Hence, with an interest to map the requests placed on graphic design positions, we refined our data set further by only including the job offers where the title contained the word 'graphic', such as 'graphic designer', 'graphic design intern', etc. Following the data refinement procedure described above, our initial sample of 3,456 job offers were reduced to 1,406 unique job offers for further analysis.

3.3 Data analysis

As a first step in our analysis, we used thematic analysis to establish reoccurring themes about what knowledge and skills that are referenced in the job offers. We pursued thematic analysis for two main reasons. First, with few conceptual and empirical studies addressing the work practices of graphic designers, there is little in the literature to directly guide our study. Second, with job offers from a number of different companies to analyse, we are challenged to identify commonalities across a diverse set of job offers written by a multitude

of authors. Under such conditions, thematic analysis is often well suited to identify patterns (themes) (Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006) and to reduce and analyse significant amount of data without losing context (Mills, Durepos & Wiebe, 2009).

In establishing our themes, we pursued a mixture of inductive and deductive coding where themes about the requested knowledge and skills from graphic designers emerged from the job offers (Braun & Clarke, 2006; Mills et al., 2009). We began by familiarizing ourselves with our data by reviewing job offers for different types of positions and from different types of companies (Braun & Clarke, 2006). Next, we established an initial set of themes by randomly selecting a subset of job offers (40%), mapping the requested knowledge and skills through in-vivo coding. This first set of themes were then used to deductively code all the collected job offers in a process where we iteratively refined and edited (added and merged) individual codes and categories. We ended the analysis by reviewing the codes and categories associated with each theme. This procedure helped us to produce an initial set of categories delineating the main knowledge and skills that were requested from graphic designers in the job offers.

4. Results

The final sample of offers presents a rich source of data on the labour market conditions facing graphic designers. Besides statements on the knowledge and skills that employers seek from graphic designers, job offers also include information about topics such as the hiring organisation and its practices, the intended contribution of applicants and what formal requirements that an ideal candidate should fulfil in applying for a position.

In terms of contemporary practices for graphic design, a duality between designers participating in the production of both digital and physical outcomes is clearly visible in our sample of offers. In relation to the former, job titles include terms such as 'digital', 'web' and 'UX/UI'. In relation to the latter, job titles include terms such as 'marketing', 'packaging' and 'print'. Requests for (complementary) expertise and experience in (digital) technology and business are also reoccurring in the main body of text for a number of offers. In relation to expertise in digital technology, we found references to everything from coding and web development to digital marketing and search engine optimization. In relation to more general business expertise, we found statements clarifying that an ideal candidate should be able to work in areas such as marketing, branding, strategic planning, etc.

A division between designers participating in the production of both digital and physical outcomes is also visible in the intended domain of work for the positions. In specific, we found statements that applicants should work in (a) physical domains such as print design, packaging design (including the design of point of sales material), and retail (spatial) design as well as (b) digital domains such as interface design and motion graphics (including animation).

We found statements that applicants should hold (generic) expertise in design and/or designing in a number of offers. Job offers also frequently included statements that

applicants should display intrinsic motivations in terms of being 'self-driven', being 'professional' and having a 'passion for design'. Several job offers also included reference to knowledge and skills such as 'eye for design' and 'excellent/good (graphic) design skills' for which the specific (intended) meaning was hard to decipher. Hence, as a first step in our analysis, we focus our report on *descriptive* statements about the requested knowledge and skills of applicants; excluding also statements which were non pre-requisites for a position.

Following the data analysis procedure outlined earlier, we distinguished four main themes about the requested knowledge and skills of graphic designers (see figure 1): i) operational design skills, ii) process management skills, iii) technical design skills and iv) software skills. Below, we include direct citations from the job offers in reporting on the foundational text behind each theme.

4.1 Operational design skills

Across a large share of the job offers, we distinguished requests for operational design skills in terms of the ideal applicant holding work expertise to participate and contribute to different types of production (development) activities. In particular, creativity and aesthetic skills were sought in more than half of the studied offers. Moreover, expertise in detailing and post-production as well as in idea generation and concept development were frequently found in the offers. Requests for applicants holding process understanding, briefing skills, design research skills and presentation skills were also relatively common. Requests for problem-solving skills and expertise in user- and market-research were found in a smaller subset of offers.

- *Briefing skills* - 'Attend regular meetings to discuss <u>creative briefs </u>and ideas'; 'Ability to <u>understand a brief'</u>; 'Translating clients needs into <u>creative briefs'</u>.
- *Creativity and aesthetic skills* - '<u>Think creatively</u> and develop new design concepts, graphics and layouts'; '<u>Think outside the box</u>'; '<u>Creative flair</u>, originality and a <u>strong visual sense'</u>.
- *Design research skills* - 'A drive to keep up-to-date with <u>current trends and technologies</u>'; 'Under<u>standing of the latest trends </u>and their role within a commercial environment'; 'You will be <u>trend aware</u>'; 'Advanced knowledge - and ability to apply <u>up-to-date design practices'</u>.
- *Detailing and production skills* - 'Understanding of <u>print production</u>, materials and packaging techniques'; '<u>Preparing artwork files for print</u>'; '<u>Liaising with printers</u>'.
- *Idea generation and concept development skills* - '<u>Develop concepts</u> in response to briefs'; '<u>Strong conceptual</u> creative design skills'.
- *Presentation skills* - 'Must be confident in <u>presenting creative concepts</u> in the form of boards in face-to-face meetings with the client'; 'Ability to clearly <u>communicate ideas to the creative team'</u>.
- *Problem-solving skills* - 'The ability to grasp project needs and <u>consider practical solutions</u>'; 'Exceptionally creative <u>problem solving abilities'</u>.

- *Process understanding skills* - 'Taking full responsibility of projects <u>from concept to execution</u>'; 'developing <u>creative concepts through to final delivery</u>'; 'Managing the whole print process <u>from concept to delivery</u>'.
- *User - and market - research skills* - 'Creation and administering of user tests in focus groups'; 'Conduct user research and evaluate user feedback of use of the product'.

4.2 Process management skills

In addition to distinguishing requests for operational design skills, we also noted a number of requests for more general process management skills in the job offers. In specific, similar to past studies on the required skill set of designers in other professional subfields of design (see e.g. Dickson et al., 1995; Perks et al. 2005), these requests revolved around applicants holding interpersonal skills to interact with team colleagues, plan and administrate multiple projects, manage team members as well as initiate and develop client relationships. Requests for teamwork as well as project planning and administration skills were most frequent.

- *Client relationship skills* - 'Be <u>client facing</u> with excellent relationship building skills and customer service'; '<u>Attend external client meetings</u> as and when required'; 'Ability to <u>liaise directly with clients</u>'.
- *Project planning and administration skills* - 'Strong organizational skills and ability to work on several projects at the same time is desired'; 'Ability to prioritize your workload'; 'Ability to estimate timelines and deliver to tight deadlines.'.
- *Teamwork (interpersonal) skills* – 'Excellent interpersonal and team working skills'; 'A strong team worker'; 'Ability to communicate effectively with staff at all levels'.
- *Team management skills* - 'You will be responsible for helping to <u>oversee a team of designers</u>'; 'Act as a <u>mentor to junior members of the team</u>'.

4.3 Technical design skills

We found that a number of the job offers directly referenced this type of work by asking for technical design skills and the practical work expertise needed to produce print and digital outcomes. As a form of expressive design work (Person, Snelders & Schoormans, 2012), the requested expertise of graphic designers was found across the whole production process from technical skills suitable for idea and concept generation to detailing and post-production. The most frequently requested technical design skill was in terms of visual coordination and possessing the knowledge needed to work with brand and styles guidelines. Technical expertise in traditional graphical design domains including layout and composition, typography and photography were also found in a number of offers. Expertise in photo manipulation, illustration and 3D modelling was also sought in a smaller subset of offers.

- *3D modelling skills* - 'Working knowledge of <u>modelling</u>'; '<u>3D rendering and illustration</u>'.
- *Digital photo manipulation skills* - 'Strong understanding of <u>colour correction and image constraints</u>'; 'Assist in <u>photographic editing</u>'.
- *Illustration skills* - 'Demonstrating <u>illustrative skills</u> with rough sketches'; '<u>Ability to illustrate</u> using traditional mediums'; 'Strong <u>illustration skills</u>'.
- *Layout and composition skills* - 'An incredible eye for design, <u>colour and composition</u>'; 'Very strong graphic <u>and visual design skills</u>'.
- *Photography skills* - 'To undertake or manage photography shoots when required'; 'Advanced knowledge of Photography'.
- *Typography skills* - 'Have a typographic eye and knowledge of typesetting and formatting'; 'Familiar with typography and selecting fonts'.
- *Visual coordination skills* - 'Ability to take art direction and <u>follow established styles</u>'; 'being able to <u>work within brand guidelines</u>'; 'Experience of creating and working <u>within style guidelines</u>'.

4.4 Software skills

In relation to a number of the technical design skills above, we also noted requests for software skills across many offers. In fact, a working knowledge in software tools (and/or software packages) emerged to be the most frequent sought skill from graphic designers with a large share of the offers including requests for expertise in 2D software for photo editing, vector graphics, desktop publishing and so forth. In particular, references to Adobe Creative Suite and/or the individual programs included in it (Photoshop, Illustrator, InDesign, etc.) were found in a large part of the offers. In addition to expertise in 2D software, a number of offers also included requests for expertise in office software, web development system and software as well as animation and motion software. A smaller subset of offers also made reference to expertise in 3D software.

- *2D software skills* - 'Full working knowledge of <u>Adobe CS6</u>'.
- *3D software skills* - 'Knowledge of 3D Studio Max, Sketch Up or similar 3D modelling software'.
- *Animation & motion software skills* - 'Video Production (<u>Premier Pro)</u>'.
- *Office software skills* - 'Using Pc based project support software - such as <u>PowerPoint, Excel and MS Word</u>'.
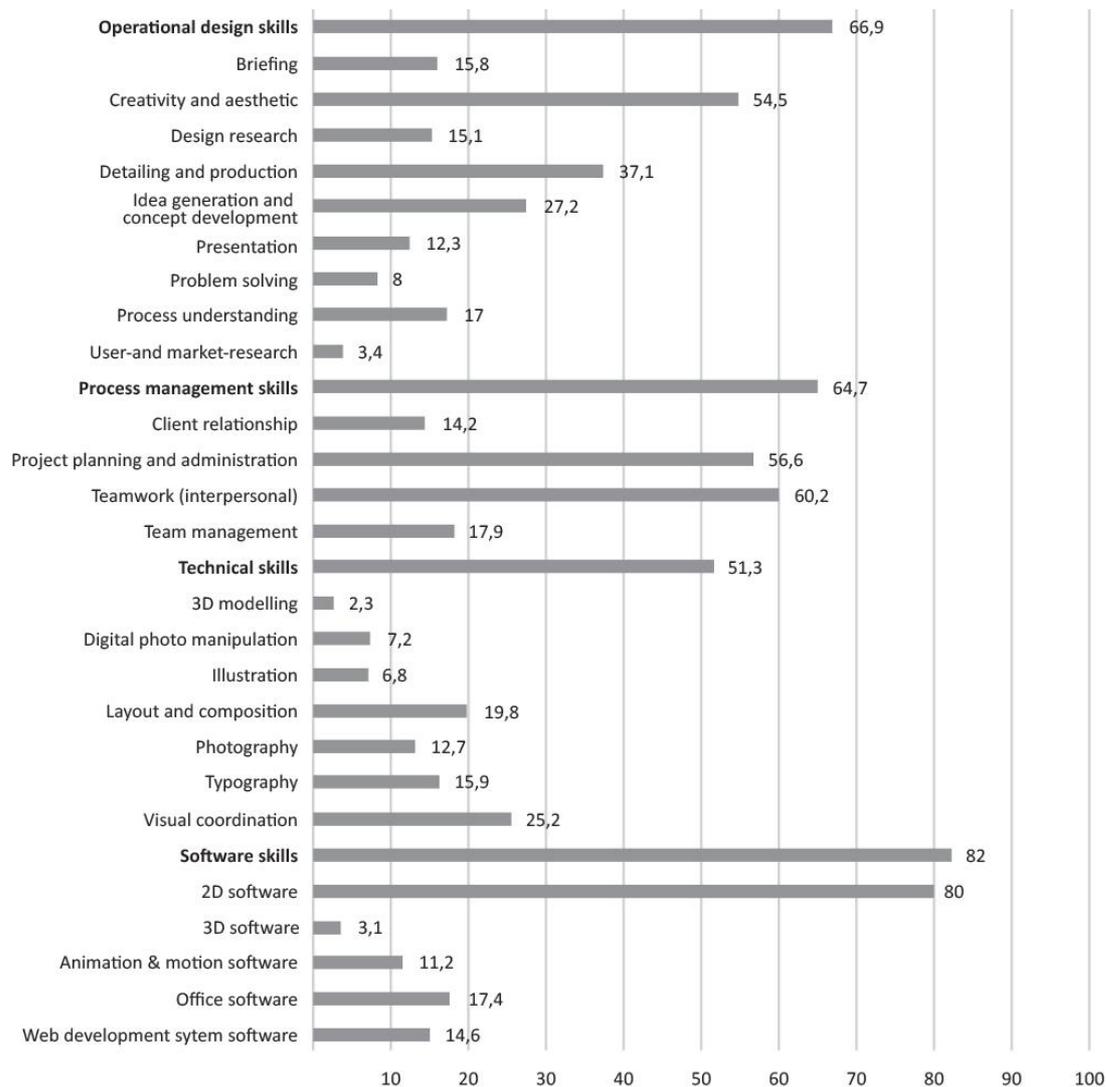- *Web development system and software skills* - 'Familiarity with <u>content manage websites and CMS systems</u>'.

Skill	Value
Operational design skills	66,9
Briefing	15,8
Creativity and aesthetic	54,5
Design research	15,1
Detailing and production	37,1
Idea generation and concept development	27,2
Presentation	12,3
Problem solving	8
Process understanding	17
User-and market-research	3,4
Process management skills	64,7
Client relationship	14,2
Project planning and administration	56,6
Teamwork (interpersonal)	60,2
Team management	17,9
Technical skills	51,3
3D modelling	2,3
Digital photo manipulation	7,2
Illustration	6,8
Layout and composition	19,8
Photography	12,7
Typography	15,9
Visual coordination	25,2
Software skills	82
2D software	80
3D software	3,1
Animation & motion software	11,2
Office software	17,4
Web development sytem software	14,6

Figure 1: Overview of the knowledge and skill referenced in the studied job offers

5. Discussion

Academics and practitioners of design can use our mapped knowledge areas in advancing their understanding about the professional domain of graphic design and in comparing the requested skill set of graphic designers with those of designers in other professional domains. For example, as companies seek complementary contributions and outcomes from graphic and industrial designers (Borja de Mozota, 2003), our initial findings provide a reference in seeking commonalities and differences between different types of designers.

Similar to past studies on the required skill set of designers in general (Yang et al., 2005) and industrial designers in particular (Ramírez, 2012) our findings point to how graphic designers operate with a broad and varied skill set. Overall, we have so far distinguished 26 skills across our four knowledge areas. Educators of design may profit from our list of skills in locating new areas for educational and industry developments in graphic design.

However, in doing so, it is important to remember that formal education may not be a prerequisite to operate as a graphic designer. A degree in graphic design was only requested in a third of the studied offers. Moreover, it is important to remember that what designers promote and strive for is not always the same as the reasons for which companies seek the expertise of designers (for a related case in industrial design, see Bohemia, 2002). To this end, the relationship between education and practice is not trivial and it is important to recognize the interests of different parties. In specific, the five most mentioned skills in our study – 2D software skills, teamwork skills, project planning and administration skills, creativity and aesthetic skills as well as detailing and production skills – predominantly sits in relation to what in past studies has been framed in terms of 'design as a functional specialism' (Perk et al., 2005, p. 120). Design educators and professionals often strive for a more strategic position for designers.

5.1 Limitations and suggestions for future research

An empirically grounded understanding about which knowledge and skills that is sought from designers is missing for a number of professional subfields of design, including graphic design. In fact, graphic design has so far only received cursory treatment by scholars in design with few empirical studies addressing the 'professional aspects of graphic design' work (Logan, 2006, p. 332). To this end, our study of job offers for graphic design positions and the initial themes delineated in this paper address an important gap in research on design. That said, we recognize a number of challenges in progressing forward with our research, which also may be of interest to scholars of design more generally.

First, in seeking to study a varied and mature position of graphic design in industry, we intentionally sampled job offers from the UK to understand what knowledge and skills companies seek from graphic designers. The quality of British design has been reaffirmed in several cross-national studies (see e.g. DesignTaskForce, 2003; Moultrie & Livesey, 2009). However, studies on (industrial) design (Yeh, 2003) suggest that national differences exist in what knowledge and skills companies seek from designers. To this end, future studies should address a different national context for graphic design work in expanding on our findings. Moreover, collecting data over a longer period would bring insights about how the requested skill set potentially changes over time in different national contexts.

Second, our analysis was based on a single source of data: job offers. We relied on the description made by companies in order to attract 'better' candidates to their open positions. We recognize that adding different data could further our analysis, providing a more layered understanding about how job offers represent the requested skill set of graphic designers. As a response, we invite both professionals and educators to comment and expand on our findings to further understand what is being written by companies when recruiting graphic designers and how it potentially relates to professional and educational developments in the field.

Third, as a first empirical review of the knowledge and skill set of graphic design, we focused our analysis on job offers with the word 'graphic' in the title. However, professionally trained

graphic designers also find jobs in other areas. For example, our data set suggests that graphic designers also operate under job titles such as 'UX Designer' and 'Web designer'. Future studies could accordingly address a broader sample of job offers in exploring the implications of different professional domains on the work practices of graphic designers. In addition, as noted by previous scholars (e.g. Buchanan, 2001), designers in different fields have different professional interests and contribute to companies in a multitude of ways. We therefore end this paper by recognizing a need for more empirical research on graphic design and how the skill set of graphic designers potentially compare to those in other sub-fields of design.

6. References

Andreasen, M. M. (2011). 45 Years with design methodology. *Journal of Engineering Design*, *22*(5), 293–332.

Bennett, A. (2006). *Design studies: theory and research in graphic design*. Princeton Architectural Press.

Bohemia, E. (2002). Designer as integrator: reality or rhetoric? *The Design Journal*, *5*(2), 23–34.

Borja de Mozota, B. (2003). *Design management: using design to build brand value and corporate innovation*. Skyhorse Publishing Inc.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Buchanan, R. (2001). Design Research and the New Learning. *Design Issues*, *17*(4), 3–23.

CBD. (2014). *Diagnostic Review of Design in Brazil*. Retrieved from http://tinyurl.com/oex72gq

Choi, Y., & Rasmussen, E. (2009). What Qualifications and Skills are Important for Digital Librarian Positions in Academic Libraries? A Job Advertisement Analysis. *Journal of Academic Librarianship*, *35*(5), 457–467.

Conley, C. (2004). Leveraging Design's Core Competencies. *Design Management Review*, *15*(3), 45-51.

Conley, C. (2007). Educating Designers for Broad Roles in Organizations. *Design Management Review*, *18*(3), 10–17.

Cross, N. (2004). Expertise in design: An overview. *Design Studies*, *25*(5), 427–441.

Design Council. (2005). *Design index: The impact of design on stock market performance*. London: Design Council.

DesignTaskForce. (2003). *Success by Design: A Report and Strategic Plan: New Zealand Trade and Enterprise.*

Dickson, P., Schneier, W., Lawrence, P., & Hytry, R. (1995). Managing design in small high-growth companies. *Journal of Product Innovation Management*, *12*(5), 406–414.

Dorst, K. (2008). Design research: a revolution-waiting-to-happen. *Design Studies*, *29*(1), 4–11.

Dorst, K. (2015). *Frame innovation: Create new thinking by design*. MIT Press.

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis : A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods*, *5*, 80–92.

Frascara, J. (1988). Graphic Design: Fine art or social science? *Design Issues*, 18–29.

Gallivan, M. J., Truex, D. P., & Kvasny, L. (2004). Changing patterns in IT skill sets 1988-2003. *ACM SIGMIS Database*, *35*(3), 64–87.

Horváth, I. (2007, August). Comparison of three methodological approaches of design research. In *International conference on engineering design, ICED*, *7*, 28-31.

Kennan, M. A., Cole, F., Willard, P., Wilson, C., & Marion, L. (2006). Changing workplace demands: what job ads tell us. *Aslib Proceedings*, *58*, 179–196.

Lewis, W. P. & Bonollo, E. (2002). An analysis of professional skills in design: implications for education and research. *Design Studies*, *23*(4), 385–406.

Logan, C. D. (2006). Circles of practice: educational and professional graphic design. *Journal of Workplace Learning*, *18*(6), 331–343.

Mills, A. J., Durepos, G., & Wiebe, E. (Eds.). (2009). *Encyclopedia of case study research* (Vol. 2). SAGE Publications.

Moultrie, J., & Livesey, F. (2009). *International design scoreboard: initial indicators of international design capabilities*. IFM Management Technology Policy, University of Cambridge. Design Council. United Kingdom.

Patton, M. Q. (1990). *Qualitative evaluation and research methods.* SAGE Publications.

Perks, H., Cooper, R., & Jones, C. (2005). Characterizing the role of design in new product development: An empirically derived taxonomy. *Journal of Product Innovation Management*, *22*(2), 111–127.

Person, O., Snelders, D., & Schoormans, J. (2012). Reestablishing Styling as a Prime Interest for the Management of Design. *Interdisciplinary Approaches to Product Design, Innovation, & Branding in International Marketing (Advances in International Marketing)*, *23*, 161–177.

Ramírez, M. (2012). Employability Attributes for Industrial Design Graduates. In *5th International Conference of Education, Research and Innovation*, 2462–2471.

Ramlau, U. H., & Melander, C. (2004). In Denmark, Design Tops the Agenda. *Design Management Review*, *15*(4), 48–54.

Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (Eds.). (2013). *Qualitative research practice: A guide for social science students and researchers*. SAGE Publications.

Tan, S., Melles, G., & Lee, N. (2009). Graphic designers' activities during the conceptual design phase of client-initiated projects. *Art, Design & Communication in Higher Education*.

Todd, P. a., McKeen, J. D., & Gallupe, R. B. (1995). The Evolution of IS Job Skills: A Content Analysis of IS Job Advertisements from 1970 to 1990. *MIS Quarterly*, *19*(1), 1.

Topalian, A. (1986). The documentation of corporate approaches to design management to share experience and improve performance. *Engineering Management International*, *4*(1), 51–60.

Valencia, A., Person, O., & Snelders, D. (2013). An in-depth case study on the role of industrial design in a business-to-business company. *Journal of Engineering and Technology Management*, *30*(4), 363–383.

Wade, M. R., & Parent, M. (2002). Relationships Between Job Skills and Performance : A Study of Webmasters. *Relationships Between Job Skills and Performance : A Study of Webmasters*, *18*(3), 71–96.

Yang, M. Y., You, M., & Chen, F. C. (2005). Competencies and qualifications for industrial design jobs: Implications for design practice, education, and student career guidance. *Design Studies*, *26*(2), 155–189.

Yeh, W.-D. (2003). The Demand and the Evaluation of the Industrial Design Profession from the Industries. In *The 6th Asian Design Conference*, 14–17.

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