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Analysis of Instructional Design Job Announcements (2016)

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ANALYSIS OF INSTRUCTIONAL DESIGN JOB ANNOUNCEMENTS (2016)

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EXECUTIVE SUMMARY

This study reports on the results of a job announcement analysis of ninety-three (93) instructional design jobs. Job announcements were collected five (5) times: three times in September 2016, and twice in October 2016. The job analysis focused on identifying key responsibilities and qualifications for instructional designers across the following industries: Corporate, Government / Military, Health, Higher Education, and Non-Profit. The results are discussed, and also supported and contrasted with a literature review that includes reports on surveyed instructional design professionals to compare and contrast with the job announcements.

The findings of this study are similar to the findings of previous studies: The preponderance of job postings were from work sites in higher education, corporate and health sectors. However, prior studies do not categorize health as a formal industry. I do so in this study, believing that postings within the health sector may be worth studying as distinct category, due to emerging trends specific only to the healthcare industry, such as use of particular technology and requirements for specific certifications. The corporate sector seems to have more variation in responsibilities and qualifications, while the higher education and health industries seem to require more specific expertise.

Aside from the main and well-known skills of instructional design associated with "Design and Development" and "Assessment and Evaluation," other categories have emerged that are equally critical for success. These skills include project management skills, communication and collaboration skills, and technical skills. Furthermore, some studies strongly suggest the need to incorporate authentic, real-world design experiences and development projects into educational programs for instructional designers. Indeed, one major instructional design principle is to simulate the performance context as authentically as possible in the learning environment (Dick and Carey, 2014).

PERSONAL SUMMARY

Marina Raynis is a graduate of UMass Boston's Graduate Program of Instructional Design, for which program she conducted this study.

Marina worked in childhood education before returning to school to focus on adult education and instructional design. She has 13 years of experience designing and developing a variety of curricula that span the industries of K-12, higher education, non-profit, and corporate/technology. Currently, Marina designs and develops interactive and discovery-based eLearning with a focus on video production and motion graphic animation.

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INTRODUCTION

As the instructional design field continues to grow and branch out in a variety of directions, the need for clarity on industry-specific instructional design responsibilities and qualifications continues to grow. Larson and Lockee (2007) strongly support the need for contextualized education in instructional design. Sugar, Brown, Daniels, & Hoard (2011) also endorse focusing on specific industries when they write, "the organizational culture within a corporation is radically different than that which is found within a college or university setting" (p. 30).

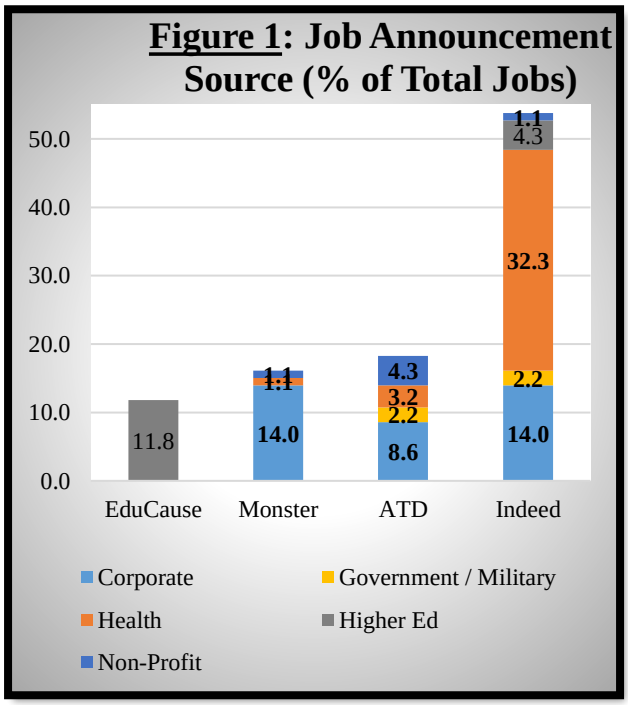
Furthermore, according to Irlbeck (2011), "IDT is changing as a profession … one that is embracing a level of technology proficiency, an awareness of design, and an ability to communicate" (p. 19). Irlbeck (2011) also believes that developing strong problem solving skills is critical in the education of ID professionals. ATD Research (2015) also supports the notion that being able to "think analytically" is an important skill for instructional designers. Furthermore, ATD Research has reported that strong communication and collaboration skills are important. Schwier and Wilson (2010) even establish "professional relationship roles" as a main category in their research. They write: "One of the first issues to become evident was the importance of being able to build productive professional relationships with a variety of individuals and in diverse contexts" (p. 137).

METHOD

For this study, I collected ninety-three (93) job announcements from Monster, Indeed, ATD, and EDUCAUSE and preserved these postings in their original format in a Microsoft Word document before analyzing the postings in Microsoft Excel. I collected job announcements five (5) times: three times in September 2016, and twice in October 2016. By contrast, the research conducted by Sugar, Brown, Daniels, and Hoard (2011) took seven (7) months to complete and analyzed 615 job announcements. Kang & Ritzhaupt (2015) took five months to analyze 400 job announcements.

Collection Dates

Monster:	9/09/2016
ATD:	9/15/2016
EDUCAUSE:	9/20/2016
Indeed:	10/02/2016
Indeed (health):	10/25/2016



To shed light on the results of this study, I conducted a literature review that comprised both other studies of instructional design job postings and reports that analyzed instructional design professionals' insights regarding current and necessary skills and responsibilities.

I found the greatest number of jobs posted on Indeed (53.9%), with Indeed also posting for the widest variety of industries (as shown in Figure 1 in the left column)[1].

Higher Education job postings accounted for 16.1% of total jobs (as shown in Table 3, below)[2]. 11.8% of Higher Education job postings came from EDUCAUSE. Monster and ATD accounted for 16.2% and 18.3% of job postings respectively. Although this study does not include job postings found in LinkedIn, it is worth noting that I found 162 jobs listed there, surpassing the number of postings found on Indeed by a factor of three.

Table 3: Number of Jobs by Industry

Industry	*Total Number of Jobs*	*% of Total Jobs*
Government / Military	4	4.3
Non-Profit	6	6.5
Higher Ed	15	16.1
Corporate	34	36.6
Health	34	36.6

Sugar, Hoard, Brown, & Daniels (2012) found slightly different rates in job postings among industries. Higher rates of job announcements occurred in the corporate (64.4%) and higher education (29.3%) industries, and lower rates of non-profit (0.8%) and government (0.1%) jobs. Health was not a measured industry in the study conducted by Sugar et al. Ritzhaupt, Martin, & Daniels (2010) reported results similar to those of Sugar et al, with 61% of postings from the corporate sector, 31.7% from higher education, 3.9% from government, and 3.4% from K–12 education. This study conducted by Ritzhaupt et al did not include "health" and "non-profit" as measured industries.

[1] For ease of reference, Figure 1 above also appears as Appendix C: Figure 1.
[2] For ease of reference, Table 3 below also appears as Appendix C: Table 3.

For my own study under discussion in this article, I analyzed the jobs posted under the search terms "instructional designer," "trainer" and "learning design." I also identified job posting through automatic job board recommendations based on previous searches. In contrast, Sugar, Hoard, Brown, & Daniels (2012) used additional search terms such as "Curriculum Designer/Developer," "eLearning designer /design specialist," "Human Performance," and "Training Developer." After choosing the ninety-three (93) job announcements included in this current study, I logged the postings in Excel before analyzing each. The job log contained information about each job including the job title, job ID, company, location, geographical region, industry, salary, and job source (as shown in Appendix A: Table 1).

After logging the job announcements, I analyzed the postings in a separate Microsoft Excel worksheet using an emergent theme analysis (a process documented in Appendix B: Table 2). I pasted job announcements into a column labeled "Skill" (Column D) and analyzed one sentence at a time. As a general rule, each cell in Column D contained one sentence of the job announcement. I tagged each item/sentence in each cell with a general, Level 1 category (Column E), and with a more focused, Level 2 sub-category (Column F). When applicable, I also applied a Level 3 or 4 category to an item. When one skill had multiple, applicable categories, I copied and pasted the row, and assigned additional tags to the skill. I also tagged each item (n = 4,277 items) as a responsibility or qualification as originally defined by the job announcement. If the item was a qualification, I also tagged the item as preferred or required.

In order to complete the analysis, I filtered the raw data and sorted according to its Level 1 and Level 2 categories. After sorting, I identified and removed duplicates to ensure each job announcement did not count more than once for any specific category and/or industry. At this point, before counting the items for each category, I reviewed Level 1 and Level 2 categories and revised these categories to ensure accuracy and to avoid redundancy before taking final counts. Subsequently, I counted and separated the data by industry. Finally, I generated charts and tables based on these counts.

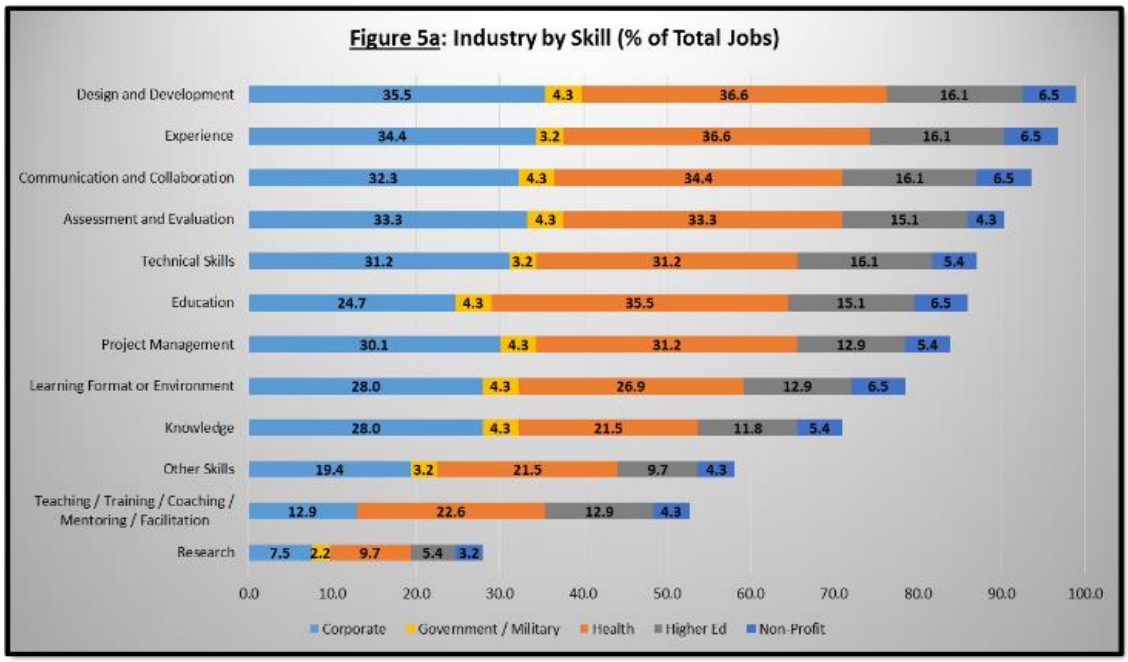
Prior to adopting the analysis methods described above, I attempted to organize and analyze the data using Google Forms before settling on Microsoft Excel. These efforts attempted to mimic the Ritzhaupt, Martin, & Daniels (2010) analysis that used forms developed in Microsoft Access. I developed a google form to analyze the job announcement, basing my analysis on knowledge, skills, and abilities identified in Kang & Ritzhaupt (2015). Ultimately, I determined that this method was insufficient because the very strategy of using a pre-established form contained two weaknesses: First, a pre-established form did not preserve verbiage of the original job announcements in a meaningful way. There was no

simple way to make the analysis transparent by linking the coding to the original content. Secondly, a pre-established form did not allow me to identify emerging trends. Anytime I determined the need to include a new category in the form, I would have to redesign the form, and I would have to re-enter all previous job descriptions to make sure the analysis was updated according to the current form. I repeated this process of revising the form and restarting the coding process three times before I determined that Microsoft Excel was the best application for my analysis. For these reasons, I found Microsoft Excel to be the most appropriate application for my analysis.

Due to the number and variety of charts generated from the data, I have separated the findings into two separate documents: this report and an appendix. The report contains some of the most important charts from the appendix, charts that are central to the discussion, but this report also often refers to charts and tables included only in the appendix.

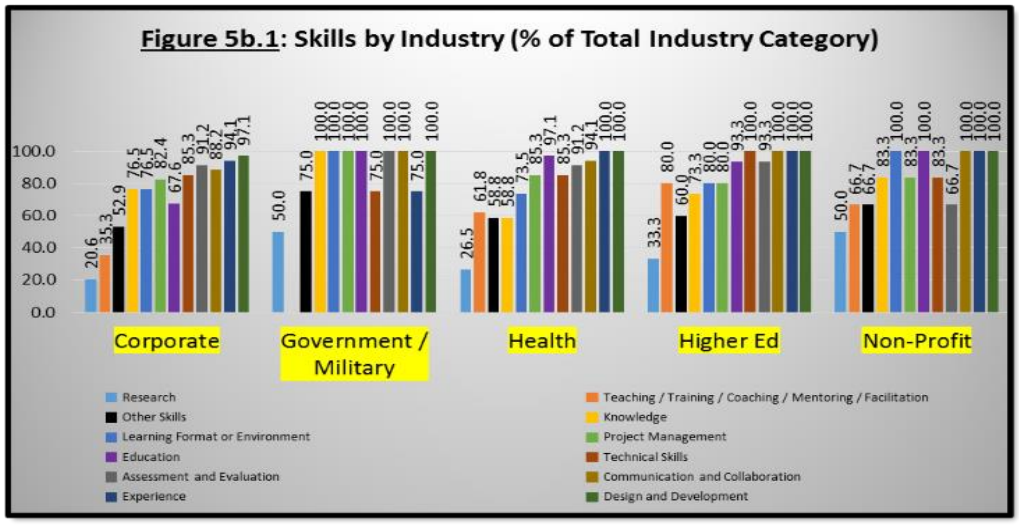
Lastly, since one of the purposes of this study was to investigate instructional design skills across industries as well as across the entire field, I present most data in two ways. The two subsequent charts (Figure 5a and Figure 5b.1) demonstrate this method: While the details of these charts are not important, their overall structure represents the dual analyses I provide throughout this study. One chart (ex. Figure 5a below) finds percentages by dividing counts by the total number of jobs (93 total jobs). Thus, all items have the same denominator across all categories.

Figure 5a



The other chart (ex. Figure 5b.1 below) divides counts by the total number of jobs per industry (34 – Corporate, 34 – Health, 15 – Higher Ed, 6 – Non-Profit, 4 – Government / Military). The denominators in these charts vary across industry. Therefore, charts that represent skills across the entire field of instructional design (and include all industries) look like the chart above, Figure 5a, with bars extending horizontally. Charts that focus on skills by industry look like the chart on the below, Figure 5b.1, with bars extending vertically and organized by industry (highlighted in yellow).

Figure 5b. 1



LIMITATIONS

This study exhibits a number of limitations. First, the job announcements analyzed in this study are confined to approximately a 1-month period. Second, the sample size of the job announcements is relatively small (n = 93). Furthermore, the time available for the processes of logging, entering, and coding the job postings limited the number of postings I analyzed.

Other studies with similar goals, such as Sugar, Brown, Daniels, & Hoard (2011) collected job descriptions for a longer period of time (ex. 7 months) and also had a panel of instructional design professionals help review and revise the categories that the researchers identified.

Another limitation of this study arose in the composition of the job postings. Postings ranged from brief summations to long and detailed compositions. While most postings contained information about responsibilities and qualifications, some had either one or the other, but not both. It is also possible that the number of times a particular qualification or responsibility is mentioned in a job description is related to a skill emphasis for that particular job. However, in this study, I counted each job posting only once for each Level 1 and Level 2 category discussed above. For example, in Figure 5b. 1above, "Research,", "Other Skills", "Learning format or environment," and "Education," "Assessment and Evaluation" are all Level 1 categories. Level 2 categories are found within each Level 1 category, in table and charts such as Appendix L, M, and so forth.

Additionally, as noted by Sugar, Hoard, Brown, & Daniels (2012), job postings reflect idealized descriptions, whereas there is no guarantee that employers will be able to hire candidates who fit these ideals.

RESULTS

JOB TITLES

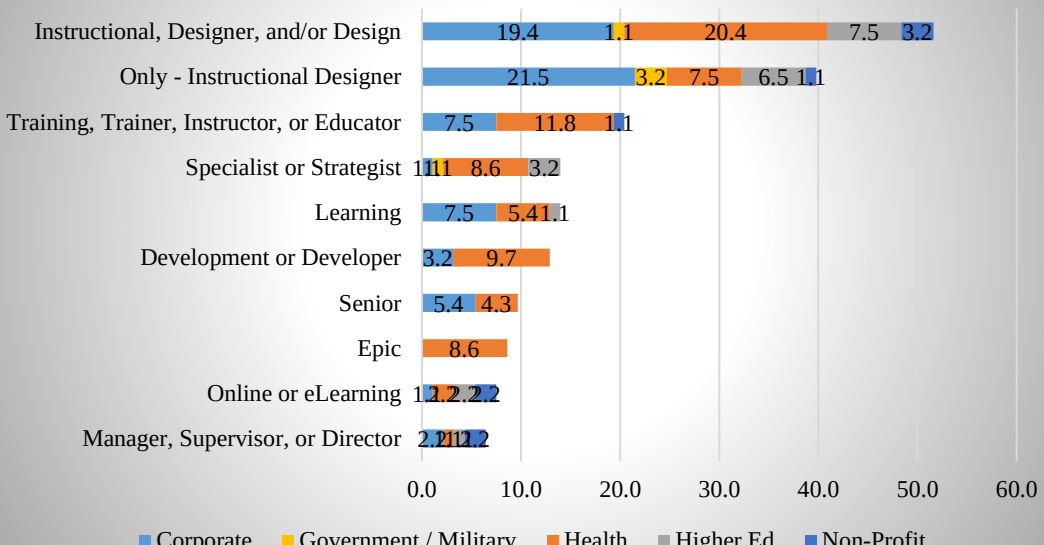
The following word cloud (Appendix D: Figure 2a) depicts the frequency of words occurring in the ninety-three (93) job titles. The words, "Instructional" and "Designer" occurred in 78.5% and 83.9% of job titles, respectively. Words such as "Learning," "Development," "Specialist," and "Trainer" occurred in job titles much less frequently, ranging from frequencies of 9.7% to 12.9%, though the use of these words in titles remains noteworthy due to the possibility that the presence of these terms may signify emerging trends.

The term, "Epic" – as used in reference to a proprietary medical records software -- occurred in 20.6% of thirty-four (34) healthcare jobs examined for this study. Training on Epic applications has become increasingly important due to federal mandates in healthcare passed within the American Recovery and Reinvestment Act of 2009 (111th United States Congress, 2009) focusing on digital record keeping requirements for private and public healthcare providers. As Glaze (2015) reports, "[h]ealth care groups using Epic electronic health records serve 54 percent of patients in the U.S. and 2.5 percent of patients worldwide, as noted by CEO Judy Faulkner at Epic's users group meeting in September (2016)."

Figure 2a: Word Cloud of Job Titles

39.8% of job titles contained only the words "Instructional Designer," and an additional 51.6% of jobs contained the words "instructional", "designer", and/or "design". (For details, see Figure 2b, directly below, also reprinted as Appendix D: Figure 2b).

Figure 2b: Job Title Key Words by Industry (% of Total Jobs)



ATD Research (2015) did its own analysis of instructional design job titles and found that 21.3% of titles were "Instructional Designer," but the leading category of job titles fell under the title of "Other" (36.9%). "Director of Training, Talent Development, HR" came in third at 11.6%. ATD Research sums up the varying titles of an instructional designer as follows:

> The role of an instructional designer is continuously evolving to meet industry demands, and may vary further from organization to organization or by geographic location. The role of an instructional designer may include designer, facilitator, trainer, writer, innovator, evaluator, multimedia developer, editor, and most often, project manager. As a result of these varying duties, instructional designers' titles may be different and therefore often not understood or recognized by those individuals outside the field (p. 6).

Though the term "instructional design" is currently the most popular and has a long standing history, a popular eLearning blogs such as the eLearning Coach (Malamed, 2015) and the eLearning Industry (Da Silva, 2016) suggest that perhaps there is an emergent shift from the term "Instructional Design" to the term "Learning Experience Design," often shortened to the term "LX design." Whitney Kilgore, PhD, the Chief Academic Officer at iDesign, (Kilgore, 2016), also supports this notion when she writes on EdSurge:

> Instructional designers, like web developers in the '90s, historically had expertise in conveying content through a limited set of tools and platforms, such as a learning management system (LMS). LX designers, in contrast, merge design-thinking principles with curriculum development and the application of emerging technologies to help faculty tailor content to student behaviors and preferences. It cuts across disciplines and moves beyond the LMS: LX designers embrace graphic design, multimedia production, research-based standards and social media. They are partners to faculty throughout the program and course development process.

Kilgore (2016) points out that the term "Learning Experience Design" may be more appropriate because it better describes and encompasses current trends in instructional design. One Higher Ed instructional designer respondent to an Intentional Futures Report (2016) observed that faculty in his organization do not have a strong grasp of what instructional design is and think of him (the instructional designer) as "LMS help" (Report, p. 15). The Intentional Futures Report identified a lack of faculty buy-in as the #1 barrier to success for instructional designers working in educational settings. This barrier arises partly through a "lack of understanding about the instructional designer's role and possible contribution" (p. 15). Perhaps abandoning the term "Instructional

Design" can help clarify the role of the instructional designer. That said, it is still challenging to find peer-reviewed, scholarly support for a change in terminology. Furthermore, when one searches using the term "Learning Experience Designer" in job boards, more often than not, the search yields jobs labeled "Instructional Designer." Within all 93 job titles logged for this study, and among all 200 browsed jobs I reviewed in this study, terms similar or identical to "Learning Experience Designer" account for only about 10% of job titles on a high-end estimate. That said, this frequency of occurrence does support the premise that use of the term "Learning Experience (LX) Design" is an emerging trend.

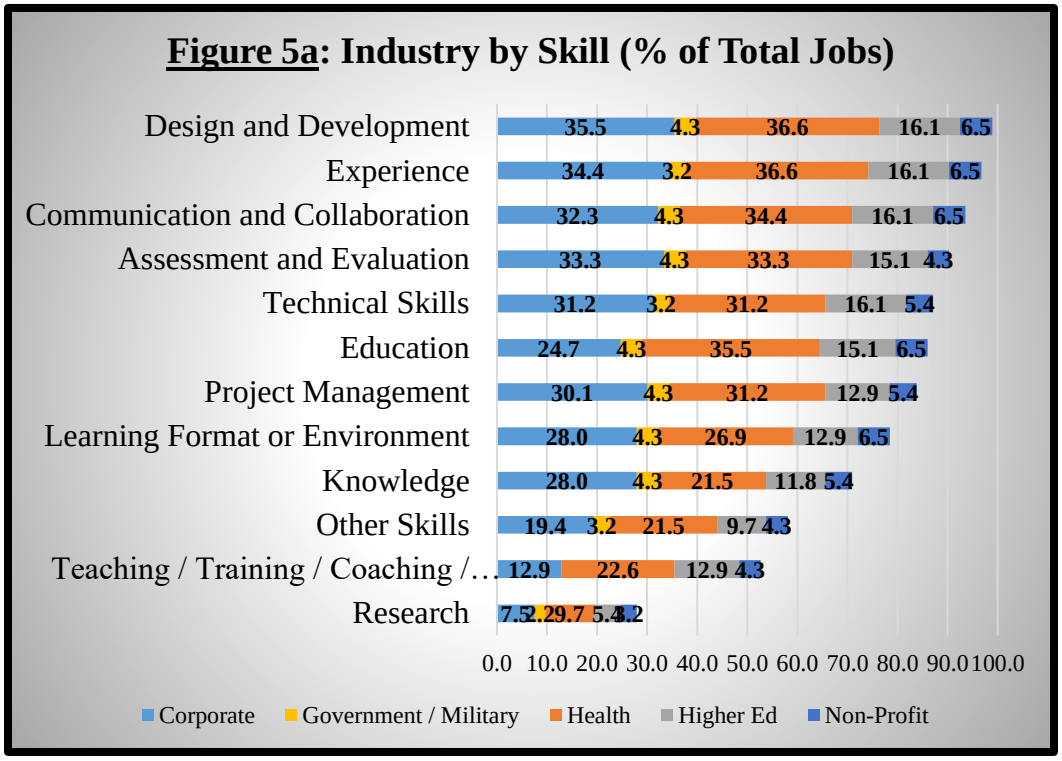
Irlbeck (2011) writes that there is a learning paradigm shift "from what is done with the content toward greater awareness of context and process of learning" (p. 19). She supports this notion by citing Kim, Lee, Merrill, Spector, & van Merriëbboer (2008) who state that, "[teaching and learning are moving] from a content-centric perspective to a user-centric perspective" (p. 19). Certainly, it is empirically evident that the terms "instruction" and "instructional" are content-focused, whereas the term "learning experience" focuses on the involvement of the learner/user. While the differences between the concepts of "instructional design" and "learning experience design" involve more than mere semantics, it remains to be seen whether a term with the longstanding tradition and history of "Instructional Design" will itself require redesign.

SKILLS ACROSS ALL INDUSTRIES IDENTIFIED IN JOB ANALYSIS

In this section, I address the general trends across all the industries identified in the job analysis. When the trends diverged based on industry, additional information is provided. The section that follows contains in depth discussion of ID trends within each industry." At first glance, what strikes the eye immediately is the similar pattern and proportions of industries within each Level 1 category (Design and Development, Experience, etc...). This suggests to me that my choice of categories was appropriate since I was able to apply these categories to my analysis of most of the job descriptions *across all industries*.

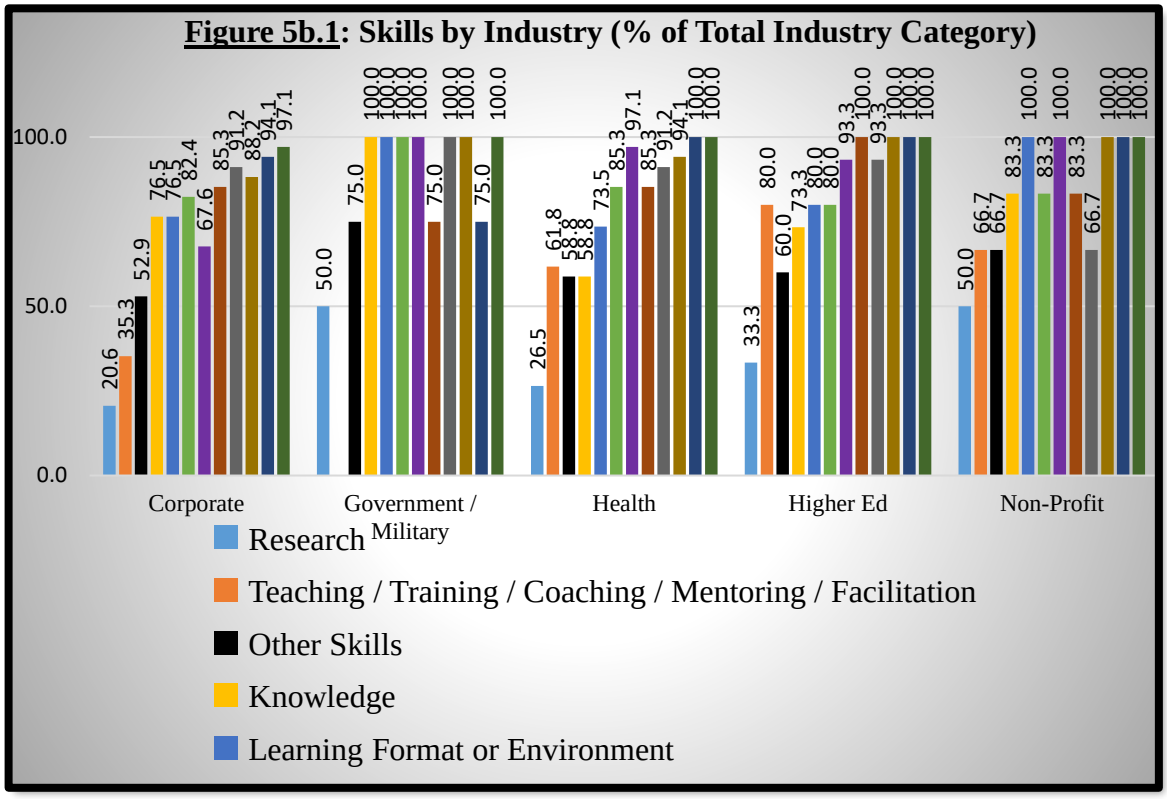
The Level 1 categories are itemized in left hand column of Chart 5a (below). Each of these Level 1 categories comprises the sub-categories that I have termed "Level 2 categories". Therefore, for each Level 1 category, I have provided a more detailed table enumerating the associated Level 2 categories I identified through my analysis of job postings. These tables of Level 2 sub-categories are presented as appendices. For example, the Level 1 category, "Design and Development," contains Level 2 sub categories I have itemized in Appendix R.

An analysis of the Level 1 categories of the data showed that across all industries, 90% or more of job postings identified as necessary responsibilities and/or qualifications "Design and Development" (98.9%), "Experience" (96.8%), "Communication and Collaboration" (93.5%), and "Assessment and Evaluation" (90.3%). Figure 5a, below (and also reprinted as Appendix H: Figure 5a), provides a graphical representation of the data on this high frequency of reference these Level 1 categories of responsibility/qualification.



This study also examines the frequency of occurrence of these categories across one industry at a time. Figure 5b.1, directly below, provides a visualization of data on the relative valuation of skills by industry. (This figure also appears on Report, p. 23 as Appendix H: Figure 5b.1). For most industries, the frequency of reference to these categories averaged 97.2%. However, in the case of postings in the Government/Military industry, the frequency of reference to the need for "Experience" was lower (at only 75%), than was the case for all other industries. while in posting for jobs in the Non-Profit industry requirements for skills/experience in "Assessment and Evaluation" was lower (at 66.7%) than was the case among postings for all other industries. Due to the low rates of job postings from these categories (Government/Military, n = 4; Non-Profit, n = 6),

conclusions drawn regarding trends in these industries should be taken with a grain of salt: However, this provisional finding does suggest the need for further research in this specific area.



"Teaching/training" came up low at 52.7% for all industries combined; nevertheless, Figure 5b.1 shows there is a relatively high standard deviation ($\bar{x}$ = 48.8%, σ = 28.4%) across industries. The percentage of job postings that mentioned "Teaching/Training /Coaching / Mentoring / Facilitation" as a job responsibility ranged from 35.3% to 80% across industries. The highest value, 80%, corresponds to the Higher Education industry, a fact which suggests that these areas of skill/experience constitute primary responsibilities in the Higher Ed industry. This notion is supported by the Intentional Futures Report (2016) which states that "training faculty to leverage technology and implement pedagogy effectively" (p. 3) and "supporting faculty when they run into technical or instructional challenges" (p. 3) are two of four main categories of responsibility identified for instructional designers working in higher education. However, in this UMB report, I have coded these two areas of responsibility differently, using Level 1 categories such as "Teaching/Training…," "Technical Skills," and

"Knowledge" as well coding these two areas in more detailed, Level 2 categories, where applicable. Furthermore, the frequency of occurrence of references to Technical Skills" ranged from 75% (Government/Military) to 100% (Higher Ed) across industries ($\overline{x}$ = 85.8%, σ = 8.1%).

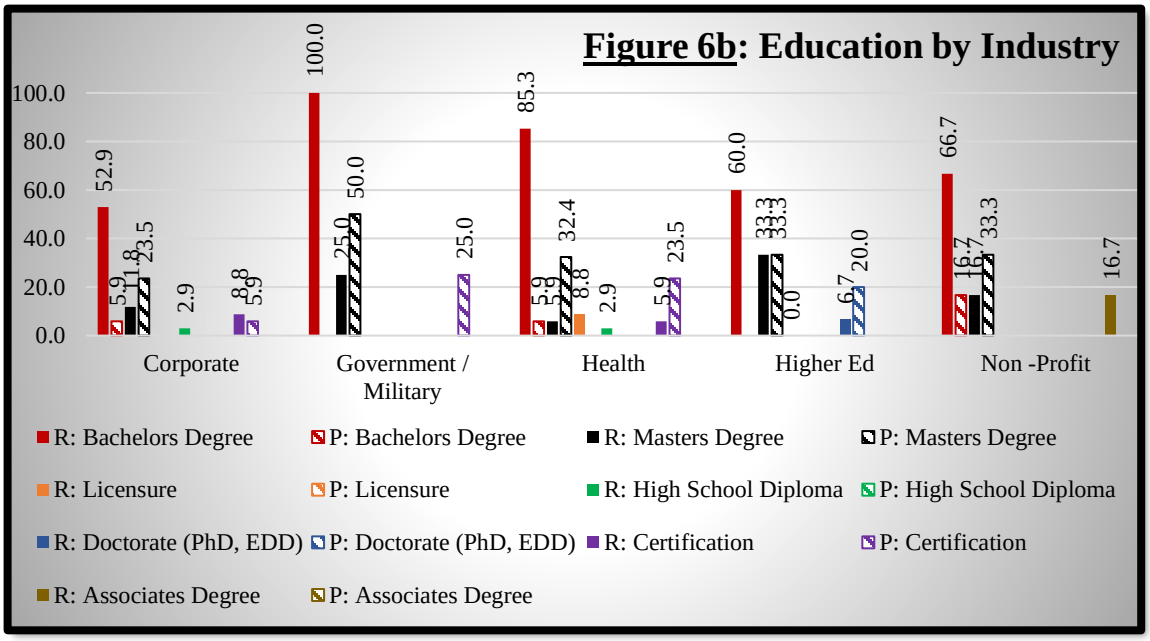
Intentional Futures (2016) identified two other main categories of responsibility for instructional designers working in higher education: "Design" and "Manage" responsibilities (p. 3). These findings align with my own analysis regarding the main categories of areas of responsibility listed in job postings; I found that 98.9% of job postings identified "Design and Development" as a main responsibility or qualification. I also found that 83.9% of postings identified "Project Management" as a responsibility of the job.

It is worth noting that, within the "Design and Development" category (represented visually in Appendix R: Figure 14a), "Content Development" was strongly emphasized among the job postings (89.2%), while "Content Design" (53.8%), "Maintain, Update, Revise Content" (47.3%), and "Develop Successful Learning Strategy" (46.2%) each received only moderate emphasis.[3] The Intentional Futures report (2016) parallels my own findings regarding the degree to which mention of various aspects of strategic planning appear within job postings. Intention Futures reports that 56.19% of instructional designers find this skill "very important" (as documented in Appendix, p. 9). However, ATD Research (2015) values this proficiency slightly higher and ranks abilities to "[i]dentify appropriate learning approach" (p. 11) as one of the top three key activities of instructional design. Differences between findings from ADT Research and Intentional Futures research may reflect differences in the range of industries each organization serves. ATD Research reports on instructional design professionals across all industries, whereas Intentional Futures focuses specifically on instructional design within higher education.

Within the "Project Management" category (tracked in Appendix T: Figure 16a), top responsibilities and skills include "Lead development of processes and initiatives" (41.9%), "Project Management Skills" (35.5%), "Ability to work on multiple projects" (29%), and "Time Management Skills" (28%).

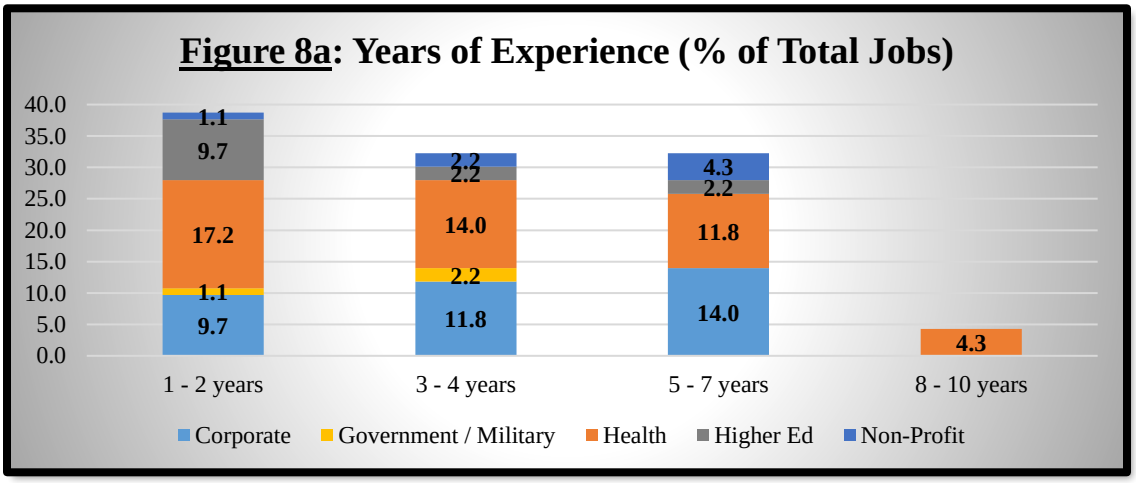
[3] As I interpret my own Level 2 category, "develop successful learning strategy," I find that this category describes the same abilities and skills that ADT categorizes as "strategic planning." Therefore I assume these terms are synonymous and provide a common denominator for comparing data sets.

Additionally, all industries but one had a high percentage of job postings that required a formal education (91.6%, σ = 12.25%). The corporate sector was the outlier (67.6%, as shown on Figure 5b.1). Postings from across all industries tended to require that applicants hold a Bachelor's degree, with the occurrence of this requirement in postings being relatively high compared to most other job requirements ($\overline{x}$ = 73%, σ = 17.3%). (See Figure 6b below, reprinted also as Appendix J.) Job postings across all industries also revealed a moderate hiring preference for holders of Master's degrees ($\overline{x}$ = 27.9%, σ = 8.6%). That said, Intentional Futures (2016) reported that 87% of instructional design professionals surveyed in the higher education industry (*n* = 853) hold a Master's degree, while 32% have earned a PhD. Likely this reflects the fact that instructional design typically is not taught as a discrete discipline / subject matter / college major at the undergraduate level.



The most commonly referenced knowledge areas were "Instructional Design Models and Principles" (40.9%) and "Adult Learning Theory" (39.8%). Knowledge of "Epic applications" (7.5%) were only referenced in postings for positions in the health industry (Appendix P: Figure 12a).

96.8% of job postings referenced the requirement or desire for experience. Requirements for years of experience ranged somewhat evenly across the first three categories (Appendix L: Figure 8a). 38.7% of job postings requested 1 – 2 years of experience, 32.4% of job postings required 3-4 years; 32.3% required 5 – 7 years of experience. Health was the only industry that requested 8 – 10 years of experience. Intentional Futures (2016) reported that "87% of respondents had 3 – 11+ years of experience in instructional design, 57% had 3 – 11+ years of experience teaching in higher education, and 53% have 3 – 11+ years in technology development" (p. 3).



These findings from Intentional Futures (2016) support my findings shown in Figure 8b (Appendix L) that the top requested types of experience were in "Instructional Design" (67.7%), and a particular "Working Environment" (60.2%). The top requested working environments ranged by industry, but provided general information such as "experience in healthcare," "experience in finance," or "experience working in associations."

Experience in "Instructional Technology and/or technical skills" (35.5%) received fewer references in the job postings. Similarly, experience in "Teaching or training" and "Learning format or environment" both received references in 32.3% of job postings. That said, outside the domain of "Experience," technical skills and teaching/training were cited most often.

(As documented in Appendix N: Figure 10a) Top Learning environments referenced were "eLearning or online" and "web-based or virtual" with a combined 91.7%. "Instructor-led" and "classroom-based" were referenced for a combined 46.2%. The desire for skills creating "Interactive" content was referenced

referenced in 24.7% of job postings. Sugar, Hoard, Brown, & Daniels (2012) support these findings when they write, "designing effective online learning should be one of the major curricular goals in graduate programs" (p. 246).

The top referenced technical skills were working with an "LMS, CMS, LCMS" (50.5%), "eLearning Authoring Software" (49.5%), Microsoft Office (47.3%), and "Multimedia Production Tools" (24.7%). All referenced examples of each of these categories can be found in Appendix M, though I will name few here. Some examples referenced in job postings of "LMS, CMS, LCMS" include Absorb, Blackboard, Canvas, Lectora, Moodle, Microsoft Sharepoint, Xyleme, and ACC LCMS. ELearning authoring software referenced in job postings include Adobe Captivate, Articulate Storyline, Techsmith Camtasia, Traincaster, and Dreamweaver. Multimedia production tools ranged from identifying whole suites like Adobe Create Cloud, to requesting specific tools such as Adobe After Effects, Adobe Flash, Adobe Audition, Apple Final Cut Pro, and Audacity.

Within the "Communication and Collaboration" domain, the most highly referenced skill is "Work with diverse constituencies (stakeholders, SME's vendors)" (72%) (Appendix O: Figure 11a). The importance of working with others to achieve success is also supported in the ATD Research report(2015), in Sugar, Hoard, Brown, & Daniels (2012),in Larson & Lockee (2009), and in Schwier & Wilson (2010) to name a few. Other skills in this domain that were less referenced, but still worth mentioning are "written communication skills" (54.8%), "oral communication skills" (53.8%), "collaboration Skills" (39.8%), "work with cross functional team" (38.7%), and "ability to build strong relationships" (31.2%).

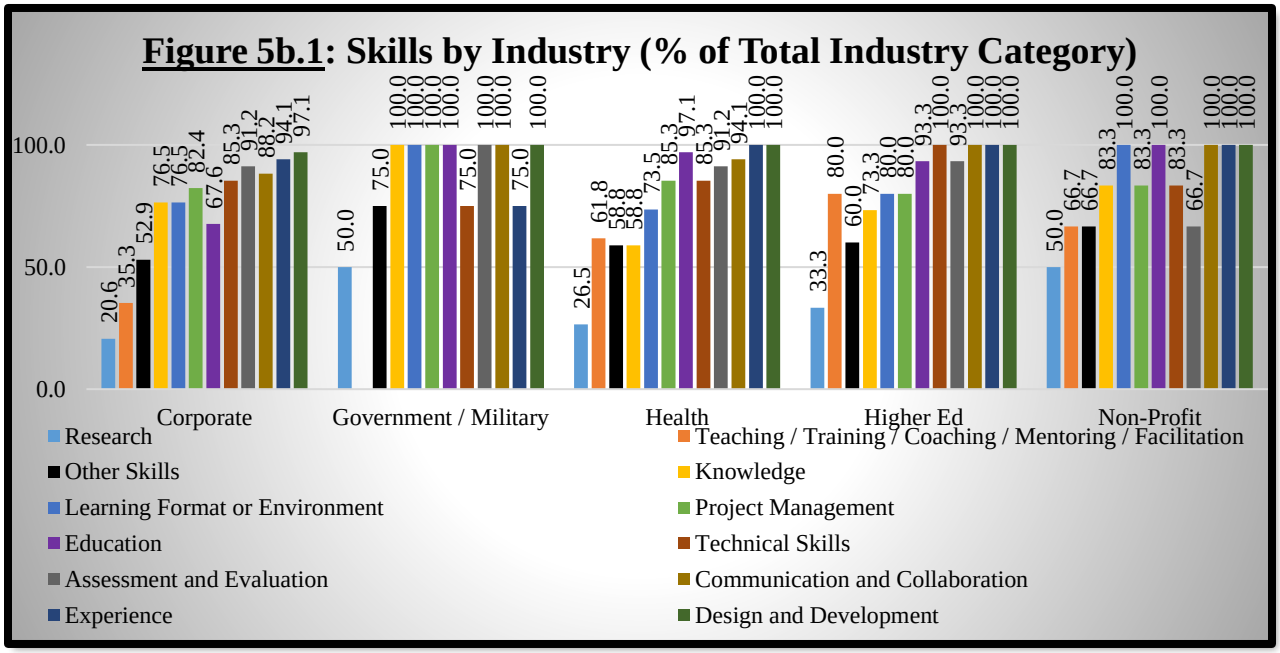
The top categories within the "Assessment and Evaluation" domain (Appendix S: Figure 15a) included "Conduct Needs Assessment," "Evaluate learning solutions' impact and design," and "Ensure instruction meets required standards or requirements." A variety of standards or requirements were referenced, ranging from standards such as Copyright and Fair Use, to accessibility requirements (ADA and section 508), to eLearning standards such as SCORM and AICC. Specific types of standards or requirements can be found in Appendix S.

Top "Other Skills" (Appendix Q: Figure 13a) were "Problem solving skills" (25.8%), "Attention to detail" (20.4%), and "Creative" (17.2%). Irlbeck (2011) supports the importance of problem solving skills when she writes that, "The IDT experts in the profession are beginning to voice the similar refrain that IDT is not about process and procedures, but about creatively solving learning challenges" (p. 20). Irlbeck believes developing the problem-solving skills of IDT professionals improves their higher order thinking as well as aids in working in ill-structured environments in which the majority of the ID work must be accomplished.

SKILLS BY INDUSTRY: CORPORATE, GOVERNMENT / MILITARY, HEALTH, HIGHER ED, NON-PROFIT

Corporate (34 total jobs). The corporate industry placed the most emphasis on "Design and Development" (97.1%), "Experience" (94.1%), and "Assessment and Evaluation" (91.2%) (Appendix H: Figure 5b.1).

The corporate industry also strongly emphasized, though to a slightly lesser degree, "Communication and Collaboration" (88.2%), "Technical Skills" (85.3%), and "Project Management" (82.4%) as necessary competencies for work (Appendix H: Figure 5b.1).



Furthermore, it is worth noting that 76.5% of corporate jobs mentioned a desired type of "Learning Format or Environment." (Specific types can be found in Appendix N: Figures 10a and 10b.) Additionally, though 76.5% of corporate job postings identified certain "Knowledge" as valuable in an instructional design candidate, slightly fewer job postings mentioned a formal "Education" (67.6%) requirement or preference. Larson and Lockee (2010) found that the largest variation in instructional design practice and competency requirements occurs in the corporate environment. This is supported by the findings of my study; I found

that “Education” requirements in the corporate setting (67.6%) are the lowest across all industries. Furthermore, the corporate sector is the only sector in which “Knowledge” (76.5%) was emphasized more than “Education” (67.6%) indicating that corporate industries are more likely to accept alternatives for formal education/degrees if the candidate has developed and demonstrated skills, expertise, or experience.

Among all sectors studied, corporate industries placed the least emphasis on “Other Skills” (52.9%), “Teaching/Training/Coaching/Mentoring/Facilitation” (35.3%), and “Research” (20.6%).

Higher Education (15 total jobs). The Higher Education industry also placed strong emphasis on “Design and Development” (100%), “Experience” (100%), and “Assessment and Evaluation” (93.3%) (Appendix H: Figure 5b.1). In slight contrast to the corporate industry, a higher percentage of higher education job postings included requirements related to “Education” (93.3%), “Technical Skills” (100%), and “Communication and Collaboration” (100%).

Within the category of “Education,” Higher Education was the only industry that required (6.7%) or preferred (20%) a doctorate degree (PhD, EdD) (Appendix J: Figure 6b).

In line with the corporate industry, higher education job postings also moderately emphasized “Knowledge” (73.3%), “Learning Format or Environment” (80%), and “Project Management” (80%).

Additionally, 80% of higher education job postings stated the need for “Teaching/Training…” as a competency as opposed to the 35.3% of job postings from the corporate industry which listed “Teaching/Training” as a primary responsibility. This is in line with findings from the Intentional Futures (2016) report that mentioned teaching/training as one of the main responsibilities of ID’s in the higher education field.

The higher education industry placed the least emphasis on “Other Skills” (60%) and on “Research” (33.3%). These results are similar to my findings regarding postings from the corporate industry on these categories.

Health (34 total jobs). Overall, requirements listed in the health industry job postings have a great deal of congruence with the requirements listed in higher education job postings. In line with corporate and higher education job postings, the health industry also placed strong emphasis on “Design and Development” (100%), “Experience” (100%), and “Assessment and Evaluation” (91.2%) (Appendix H: Figure 5b.1).

Furthermore, a high percentage of Health Industry job postings also valued "Communication and Collaboration" (94.1%) and "Education" (97.1 %), mirroring trends within postings for ID jobs in the higher education industry. Despite the high percentage of postings requiring "Education," only 58.8% of job postings in the health industry identified "Knowledge" as a necessary competency (Appendix H: Figure 5b.1). Upon close inspection of the "Knowledge" and "Education" domains (Appendix P: Figure 12b; Appendix J: Figure 6b respectively), one sees that health job postings referenced instructional design models and adult learning theory less because they required more certifications than other industries (Appendix J: Figure 6b), particularly, health-related certifications.

Compared to the Health industry, a higher percentage of job postings from the Government/Military sector (25%) referenced a preference for certifications; however, the small sample size of the Government/Military industry (*n = 4)* precludes generalizing findings. In contrast, the Health and Corporate industries (*n* = 34 each) both had required certification listings (5.9% and 8.8%, respectively) and preferred certification listings (23.5% and 5.9%, respectively). Examples of the types of certifications can be found in Appendix J (p. 18). In general, the Corporate and Health industries requested the most and widest variety in certifications. These certifications ranged from training certifications such as the CPLP and SHRM, to industry-specific certifications such as Epic (within the health industry).

85.3% of job postings within the health industry required "Technical Skills," a rate less than higher education (100%), but similar to the rate of occurrence in postings for the corporate sector. Similar to the higher education and corporate industries, the health industry also placed moderate emphasis on certain kinds of "Learning Format or Environment" (73.5%) as well as on "Project Management" (85.3%).

Among all industries, the health industry placed the least emphasis on "Teaching/Training" (61.8%), "Knowledge" (58.8%), "Other Skills" (58.8%), and "Research" (26.5%). Similarly, the corporate and higher education industries placed relatively little emphasis on these categories.

Government/Military (4 total jobs). Due to the low number of job postings in this category, it is difficult to analyze this industry properly. That said, all four jobs in this industry required "Design and Development," "Communication and Collaboration," and "Assessment and Evaluation," reflecting findings similar to postings from the other industries. Similar to all industries except corporate, 100% of government/military jobs also identified "Education" requirements. Higher than all industries (with some exceptions in

non-profit), 100% of government/military job postings listed "Project Management," "Knowledge," and "Learning Format or Environment" to be of importance as well.

The government/military industry placed moderate emphasis (75%) on "Other Skills", "Technical Skills," and "Experience."

The government/military industry placed the least emphasis of all industries on "Research" (50%), and "Teaching/Training" (0%).

Non-Profit (6 total jobs). Due to the low number of job postings in this category, it is difficult to analyze this industry properly. That said, the non-profit industry had the most congruence with the higher education industry across categories except in "Learning Format or Environment" (100%) where it scored higher. The non-profit industry also differed from the higher education industry in the categories of "Assessment and Evaluation" (66.7%) and "Technical Skills" (83.3%) where it scored lower.

DISCUSSION

In line with the previous studies cited above, I will discuss job posting trends in the corporate and higher education industries, but I will also discuss the emerging needs in the health industry, a sector not addressed in the previous studies I have cited.

Sugar, Brown, Daniels, & Hoard (2011) observed that differences between the higher education and corporate industries can be distinguished readily. The researchers write that "instructional designers at higher education settings focus on identifying alternative solutions for a particular course whereas instructional designers within a corporate training setting are more customer-oriented" (p. 30).

The researchers also write that differences between the higher education and corporate sectors extend further into technical skills involving the use of authoring tools such as Captivate and Articulate are more prevalent in the corporate industry, whereas managing a LCMS is more prevalent in higher education. This current study supports these findings with 58.8% of job postings in the corporate industry requiring proficiency in eLearning authoring software in comparison to the 33.3% of posting in higher education listing such a requirement. Furthermore, this study also confirms trends in LMS/LCMS/CMS competencies, requested by 73.3% of jobs in higher education, but only 41.2% in corporate. Lastly, my study finds that the health industry has a need for both LMS expertise (41.2%) and eLearning authoring software skills (47.1%).

ATD Research (2015) notes that "the challenges faced by instructional designers are less about technology and more about serving the multitude of varied learners, as well as maintaining momentum and a relationship with the subject matter expert" (p. 5). Yet, consider findings from a question posed by Intentional Futures (2016) to instructional design professionals in higher education inquiring regarding the importance of certain skills/expertise in their current role: The Intentional Futures study reports that 82.29% of respondents indicated that "learning new technologies" is "very important" (Appendix, p. 9). Kim, et al. (2008) suggests that "[a]t the master's level, the emphasis should shift from training students to be users of instructional technology to preparing them to manage, supervise, and inspire those who use instructional technology," as cited by Irlbeck (2011, p. 21).

Schwier and Wilson (2010) also investigated roles undertaken by instructional designers in higher education. These roles focused on four main areas: (1) Professional Relationship Roles, (2) Project Roles, (3) Institutional Roles, and (4) Teaching and Learning Roles. While the title of the study was *Unconventional Roles and Activities Identified by Instructional Designers*, the researchers found that many of the responsibilities reported were still generally considered to be within the greater realm of instructional design. Though the researchers concluded that "instructional designers are expected to have a wider range of skills and abilities than are typically taught in instructional design programs," (p. 145) the researchers also stated that, "an interesting speculation we drew from this investigation was that practitioners of instructional design might be carrying unrealistically narrow definitions of their roles into their careers" (p. 145).

While it is no surprise that "Design and Development" or "Assessment and Evaluation" are part of instructional designers' responsibilities, categories that have shown themselves to be equally important are "Communication and Collaboration," "Project Management," and "Technical Skills." Intentional Futures (2016) also reported that 75.37% of respondents reported that "project management" is "very important" (Appendix, p. 9) and 73.03% of respondents "manage projects" at least once a day (Appendix, p. 8). Sugar, Brown, Daniels, & Hoard (2011) support the notion of the importance of communication and collaboration skills, noting several other studies that drew this conclusion as well. They write, "It is essential that instructional designers and technologists successfully work closely with others on a team and collaborate with clients and subject-matter experts" (p. 245). The researchers believe that identifying ways to "encourage and cultivate" (p. 245) collaboration among instructional design students is "something further to explore" (p. 245)

Experience was also highly valued by all industries. Types of experience ranged from general instructional design and technology foundational knowledge to particular industry experience. Larson and Lockee (2009) offered a variety of educational solutions to provide this type of qualification to students to contextualize their education for different career environments. Julian (2001) writes, "because the field of ID has become so rich and varied in terms of settings in which it is practiced, we can no longer discuss the profession without considerations of the environment of practice" (as cited in Larson and Lockee, 2009, p. 2). The researchers emphasize the importance of incorporating authentic, relevant, real-world experiences.

While "Teaching and Training" seems to be a responsibility more important in the higher education and health industries than in the corporate sector, it still seems to be particularly important overall because some instructional designers believe that "their position is neither understood nor respected" (Schwier and Wilson, 2010, p. 141). Schwier and Wilson further state that, "In order to promote or raise the profile of instructional design, practitioners are required to educate colleagues about the practices and contributions of instructional design" (p. 141).

CONCLUSIONS AND IMPLICATIONS

Schwier and Wilson (2010) write that "[w]hile there is little likelihood that instructional design programs will be able to directly address everything that a new practitioner needs, we suspect that programs that emphasize experiential learning will be successful in introducing instructional designers to authentic problems and contexts and help new practitioners begin to understand the rich and complex careers they are entering" (p. 145). Irlbeck (2011) further supports this point by referencing Jonassen (as cited by Ertmer and Stepich (2005)) when stating that, "ID is a complex, ill-defined skill that is largely (perhaps entirely) dependent on the context in which it is done" (p. 19). Though focusing educational programs on specific industries can educate students on the practices of particular industries, it is also important for students to experience working in different industries. Instructional design students may not know which sector they prefer at the start of their education, but they may be able to choose one once they have some working experience in each.

Sugar, Brown, Daniels, & Hoard (2011) concluded (from a study that investigated multimedia production knowledge and skills required of instructional design professionals in higher education) that it is important for professionals to be educated about overall multimedia production skills and how these skills interrelate to their set of instructional design skills. The researchers further

suggest that case studies that investigate how instructional designers could effectively balance multimedia production and instructional design skills should be developed and used as "instructional tools to teach novice instructional designers best practices in integrating multimedia production skills within an overall instructional design project" (p. 41).

This idea of experiential learning is further supported by Larson and Lockee (2009) who discuss methods for preparing instructional designers for different career environments. They support the need for contextualized instruction such as case studies, professional development workshops, and on- and off- campus opportunities for assistantships and internships, as well as "participation in research communities of practice throughout the student's program of study" (p. 9) and "a tradition of mentoring faculty-to-faculty and faculty-to-student" (p. 9).

Lastly, instructional design portfolios can replace some experience requirements to demonstrate work ability. Portfolios were barely mentioned in job descriptions or in the research literature. Nevertheless, it appears to me that it is important for instructional design students to develop portfolios that demonstrate their work product and ability, although this need has gone largely unnoticed. My own job searches suggest that portfolios are required widely by employers although employer do not often put this requirement into their job postings. Some employers have said (to their applicants) that they won't even look at applications without review of a portfolio. Students may find it helpful to be provided with formal professional development workshops that help students set up their own websites or online portfolios.

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APPENDIX A

Table 1: Ninety-three (93) job announcements were collected from Monster, Indeed, ATD, and EDUCAUSE and preserved in their original format in a Microsoft Word document. The jobs were discovered using the search term "instructional designer". Afterwards, the ninety-three (93) chosen announcements were logged in Excel before they were analyzed. The job log contains information about the job such as the job title, job ID, company, location,

Table 1: Job Log

	A	B	C	D	E	F	G	H	I
1	Job	Title	Company	Location	Geographical Region	Geographical Subregion	Job Type	Industry (General)	Industry (Specific)
2	1	Instructional Designer	Redstream Technology	New York, NY	Northeast	Middle Atlantic Division	Full time, employee	Corporate	Services; Broadcasting, Music, and Film; Computer/IT Services
3	2	Instructional Designer	RMS Computer Corporation	Tampa, FL	South	South Atlantic Division	Full time; temporary/contract/project	Corporate	IT/Software development
4	3	Instructional Designer	Barclays	Henderson, NV	West	Mountain Division	Full time, employee	Corporate	Finance
5	4	Instructional Designer	AT-Tech	Cupertino, CA	West	Pacific division	temporary/contract/project	Corporate	
6	5	Instructional Systems Designer	Leidos	Petaluma, CA	West	Pacific division	Full time, employee	Corporate	National security, health, and engineering
7	6	Sr. Instructional Designer	Amazon Corporate LLC	Seattle, WA	West	Pacific division	Full time, employee	Corporate	Internet Publishing and Broadcasting and Web Search Portals
8	29	Instructional Designer	Clarity Consultants	Saint Louis, MO	Midwest	West North Central Division	Full time; temporary/contract/project	Corporate	Finance
9	30	Instructional Designer	Compass Consulting Group	San Francisco, CA	West	Pacific division	Full time; temporary/contract/project	Corporate	Biotechnology / Pharmaceuticals
10	31	Sr. Instructional Designer	Adobe Systems Incorporated	Seattle, WA	West	Pacific division	Full time, employee	Corporate	Software Publishers
11	32	Instructional Design - Learning Advisor	Apex Systems	Minneapolis, MN	Midwest	West North Central Division	Full time, employee	Corporate	Computer/IT Services
12	33	Sr. Instructional Designer	Highmark Health	Pittsburgh, PA	Northeast	Middle Atlantic Division	Full time, employee	Health	Insurance, Health Services
13	34	Instructional Designer	New Teacher Center	Telecommute	Virtual	Virtual	Full time, employee	Non-profit	Non-profit, K-12
14	35	Designer - eLearning	Compunnel Software Group	Plainsboro, NJ	Northeast	Middle Atlantic Division	Full time, employee	Corporate	Computer Software
15	36	Navy Instructional Designer for Carrier Training Requisition	CSRA	Virginia Beach, VA	South	South Atlantic Division	Full time, employee	Corporate	Security and Surveillance
16	37	Contract Instructional Designer	The Judge Group		Northeast	Middle Atlantic Division	Full time; temporary/contract/project	Corporate	Computer/IT Services
17	7	Senior Learning Designer and Developer	Affiliates Risk Management Services, Inc.	New York, NY	Northeast	Middle Atlantic Division	full time	Health	healthcare
18	8	Instructional Designer	Windwalker Corporation	Potomac, Maryland	South	South Atlantic Division	full time	Government / Military	Government/Regulatory Agency

APPENDIX B

Table 2: After the job announcements were logged, they were analyzed in a separate Excel worksheet. Each job announcement was pasted into a column labeled "Skill" (Column D) and analyzed one sentence at a time. As a general rule, each cell in Column D contains one sentence of the job announcement. Each item/sentence in each cell was tagged with a general, Level 1 category (Column E), and with a more focused, Level 2 sub-category (Column F). When applicable, a Level 3 or 4 category was also applied to an item. When one skill had multiple, applicable categories, the row was copied and pasted, and given additional tags. Each item was also tagged as a responsibility or qualification as originally defined by the job announcement. If the item was a qualification, it was also tagged as preferred or required.

Table 2: Job Analysis – Example of Raw Data

	A	B	C	D	E	F	G	I	J
1	Geographical Region	Industry	JOB ID	ITEM	CATEGORY (Level 1)	SUB-CATEGORY (Level 2)	SUB-SUB CATEGORY (Level 3)	Responsibility or Qualification	Required or Preferred
71	West	Corporate	3	This position is responsible for **developing and deploying** a cutting edge online learning curriculum that will continuously offer self-paced interactive on demand eLearning in our Learning Management System (LMS).	Design and Development	Content Development	Design and Develop Effective Instructional Materials	Overview	
72	West	Corporate	3	This position is responsible for developing and deploying a cutting edge **online** learning curriculum that will continuously offer self-paced interactive on demand eLearning in our Learning Management System (LMS).	Learning Format or Environment	Online		Overview	
73	West	Corporate	3	This position is responsible for developing and deploying a cutting edge online learning curriculum that will continuously offer **self-paced** interactive on demand eLearning in our Learning Management System (LMS).	Learning Format or Environment	self-paced		Overview	
74	West	Corporate	3	This position is responsible for developing and deploying a cutting edge online learning curriculum that will continuously offer self-paced **interactive** on demand eLearning in our Learning Management System (LMS).	Learning Format or Environment	interactive		Overview	
75	West	Corporate	3	This position is responsible for developing and deploying a cutting edge online learning curriculum that will continuously offer self-paced interactive on demand **eLearning** in our Learning Management System (LMS).	Learning Format or Environment	eLearning		Overview	
76	West	Corporate	3	This position is responsible for developing and deploying a cutting edge online learning curriculum that will continuously offer self-paced interactive on demand eLearning in our **Learning Management System** (LMS).	Technical Skills	LMS	Knowledge and skills to operate LMS software	Overview	
77	West	Corporate	3	Engage in **active ongoing research** and maintain a high level of knowledge in eLearning best practices	Research			Responsibility	
78	West	Corporate	3	Engage in active ongoing research and **maintain a high level of knowledge in eLearning best practices**	Knowledge	eLearning Best Practices		Responsibility	
79	West	Corporate	3	Develop and produce content that meets the needs of the US Learning community (currently Collections, Customer Care, and Fraud)	Audience	US Learning Community		Responsibility	
80	West	Corporate	3	Routinely measure and report on key metrics to demonstrate successful implementation of eLearning programs	Assessment and Evaluation	Data analysis (Measure and report on metrics)		Responsibility	
81	West	Corporate	3	Coordinate special projects and perform additional duties as designed	Project Management			Responsibility	
82	West	Corporate	3	Coordinate special projects and perform additional duties as designed	Additional Duties			Responsibility	
83	West	Corporate	3	Risk and Control Objective: All Barclays colleagues have to ensure that all activities and duties are carried out in full compliance with regulatory requirements, Enterprise Wide Risk Management Framework and internal Barclays Policies and Policy Standards.	Assessment and Evaluation	Ensure instruction meets required standards or requirements		Responsibility	
84	West	Corporate	3	High School Diploma	Education	High School Diploma		Qualification	Required
85	West	Corporate	3	**5** years of experience designing and developing creative and innovative on-demand, interactive e-learning programs	Experience	years	5+ years	Qualification	Required
86	West	Corporate	3	5 years of experience **designing and developing creative** and innovative on-demand, interactive e-learning programs	Experience	Learning Format, Environment, or Product	creative	Qualification	Required
87	West	Corporate	3	5 years of experience **designing and developing** creative and **innovative** on-demand, interactive e-learning programs	Experience	Learning Format, Environment, or Product	innovative	Qualification	Required
88	West	Corporate	3	5 years of experience designing and developing creative and innovative **on-demand**, interactive e-learning programs	Experience	Learning Format, Environment, or Product	on-demand	Qualification	Required
89	West	Corporate	3	5 years of experience designing and developing creative and innovative on-demand, **interactive** e-learning programs	Experience	Learning Format, Environment, or Product	interactive	Qualification	Required
90	West	Corporate	3	5 years of experience **designing and developing** creative and innovative on-demand, interactive **e-learning** programs	Experience	Learning Format, Environment, or Product	eLearning	Qualification	Required
91	West	Corporate	3	Bachelor's degree in Instructional Design, Instructional Technology, Education, Training	Education	Bachelors Degree		Qualification	Preferred

APPENDIX C

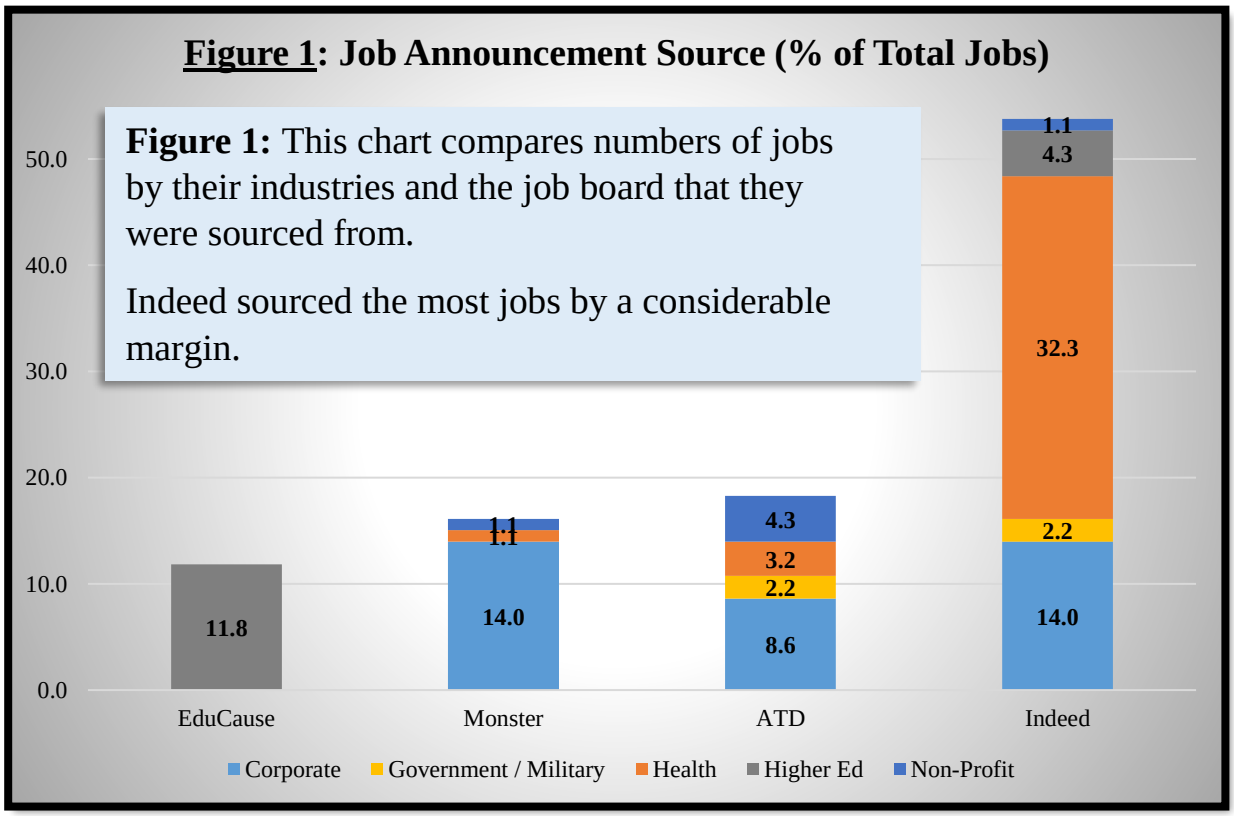


Table 3: Number of Jobs by Industry

Industry	Total Number of Jobs	% of Total Jobs
Government / Military	4	4.3
Non-Profit	6	6.5
Higher Ed	15	16.1
Corporate	34	36.6
Health	34	36.6

Table 3: This chart illustrates the number of jobs announced by industry. The Health and Corporate sectors announced the most jobs (36.6% each), while the Higher Education industry announced fewer jobs (16.1%). The Non-Profit and Government/Military sectors announced the least.

APPENDIX D

Figure 2a: Word Cloud of Job Titles

Figure 2a: The word cloud above depicts frequency of words occurring in the ninety-three (93) job titles. "Instructional" and "Designer" occurred the most often representing 78.5% and 83.9% respectively. Words such as "Learning", "Development", "Specialist", and "Trainer" occurred much less frequently ranging from 9.7% to 12.9%, though still worth noting. The word "Epic" occurred in 20.6% of thirty-four (34) healthcare jobs.

Figure 2b: Job Title Key Words by Industry (% of Total Jobs)

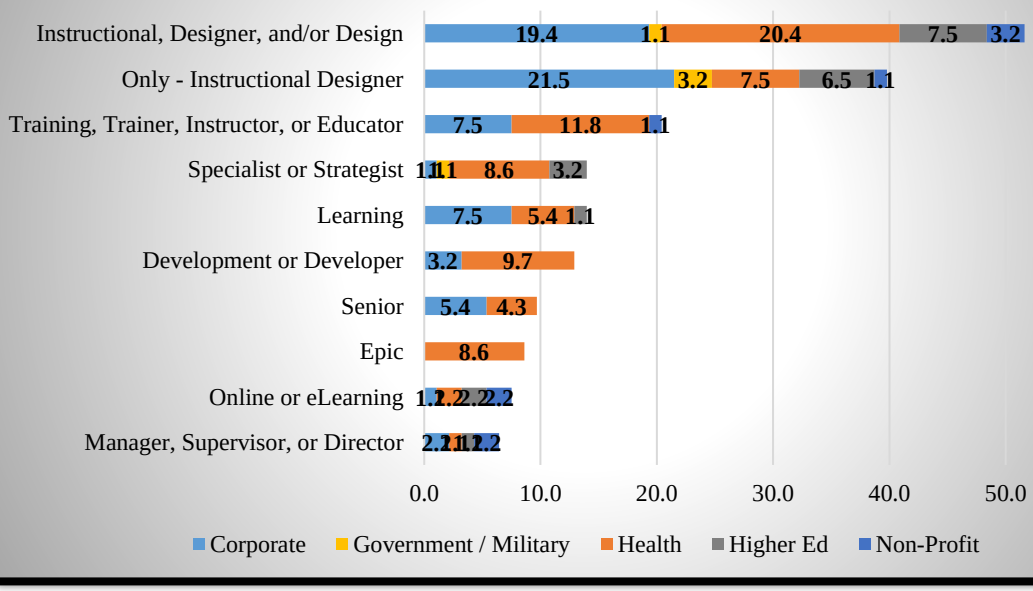


Figure 2b: This chart compares key words in job titles by industry.

39.8% of job titles contained only the words "Instructional Designer", and an additional 51.6% of jobs contained the words instructional, designer, and/or design.

APPENDIX E

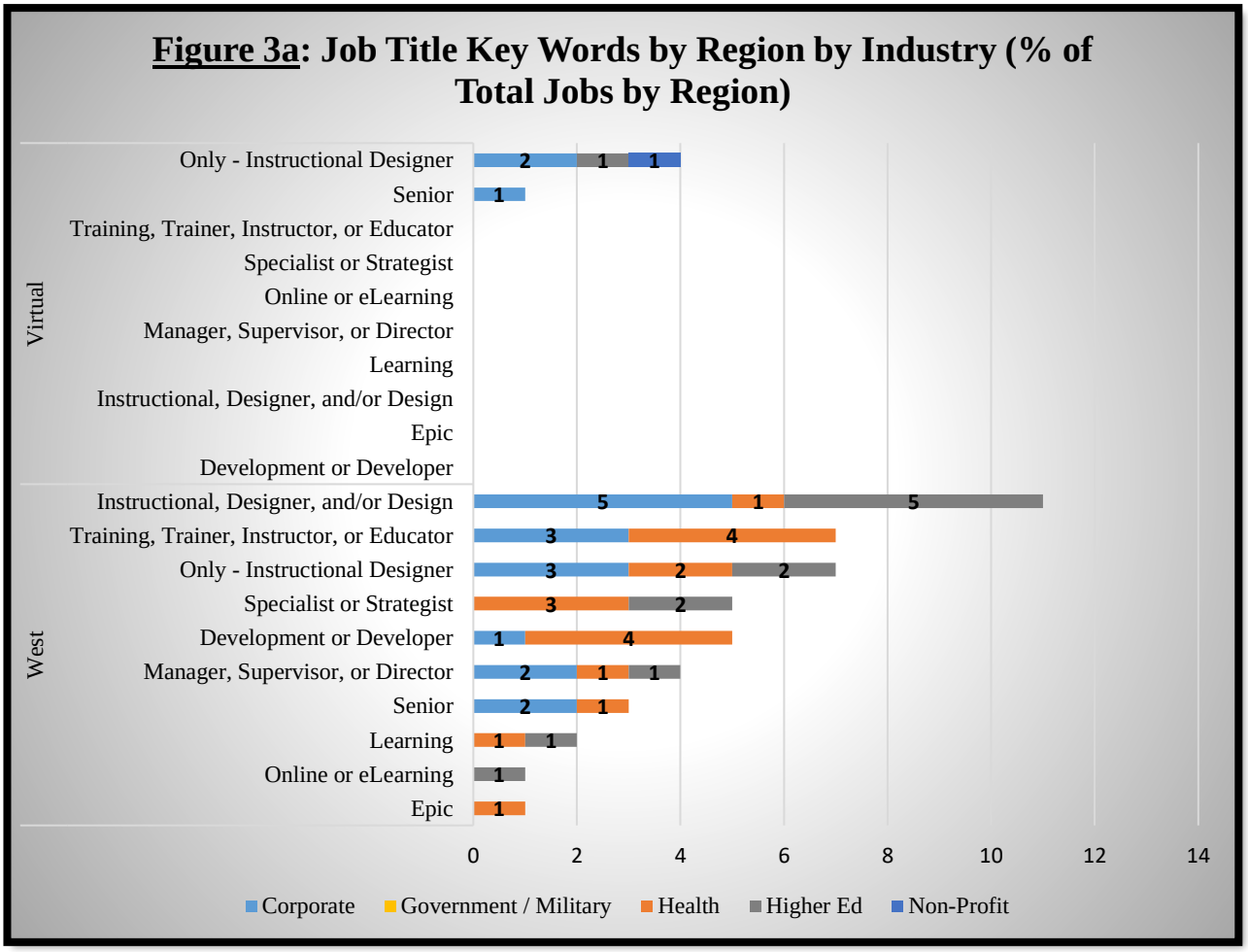


Figure 3a: This chart spans the next two (2) pages and depicts the most frequent words occurring in job titles across geographic locations categorized by the US regions: West, South, Northeast, and Midwest. Jobs that permitted telecommuting as the main form of commute were categorized as 'Virtual'.

The numbers in the bar chart represent the number of jobs identified for each title.

The Corporate, Health, and Higher Education industries dominated job titles in the West, while the Corporate, Non-Profit, and Higher Education industries announced several virtual, telecommuting jobs.

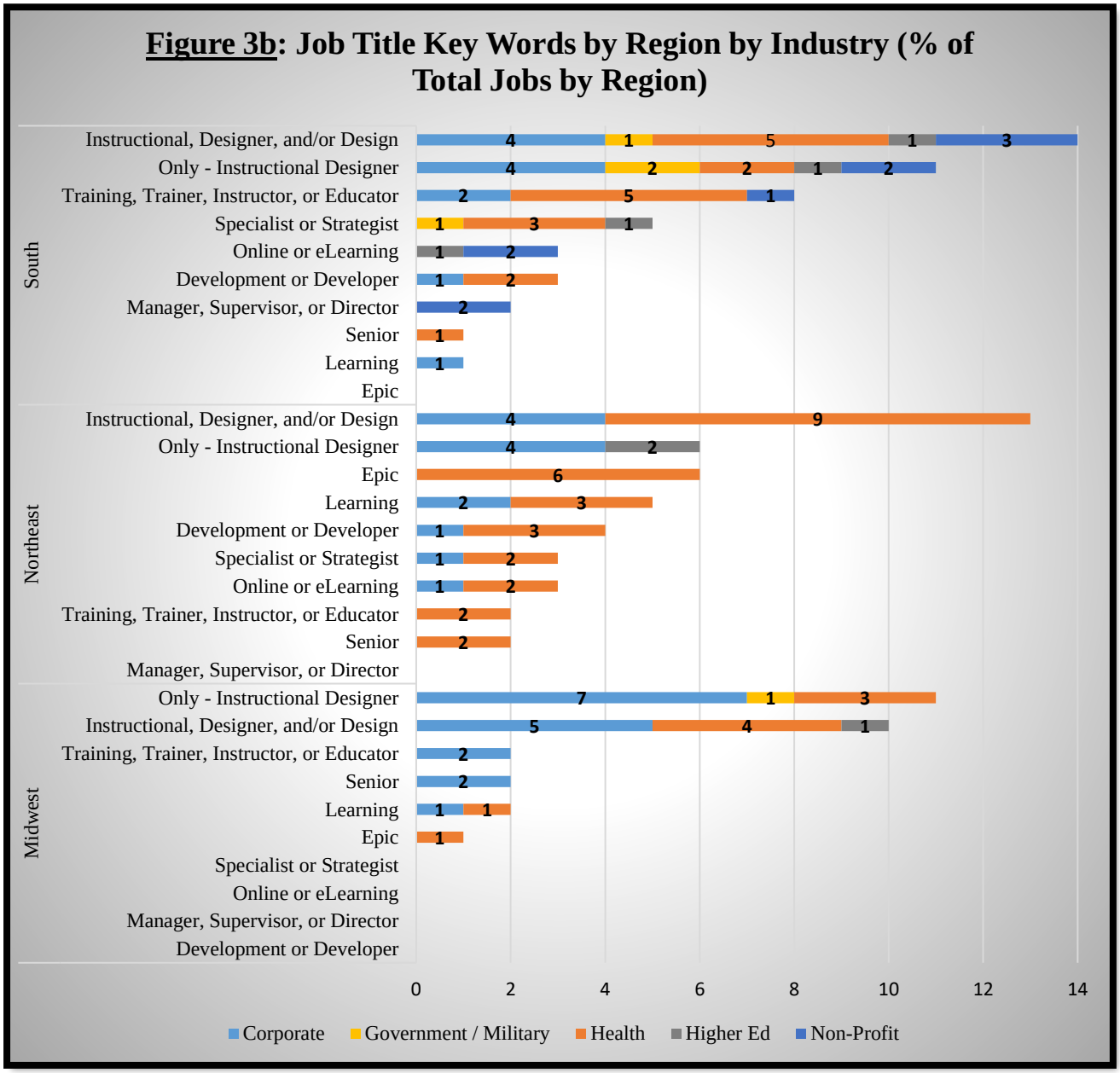


Figure 3b: The South announced jobs from all five (5) industries, while the Northeast was dominated by jobs in the Corporate and Health sectors. The Midwest was also dominated by the Corporate and Health sectors, though this region contained slightly more variety in industry.

APPENDIX F

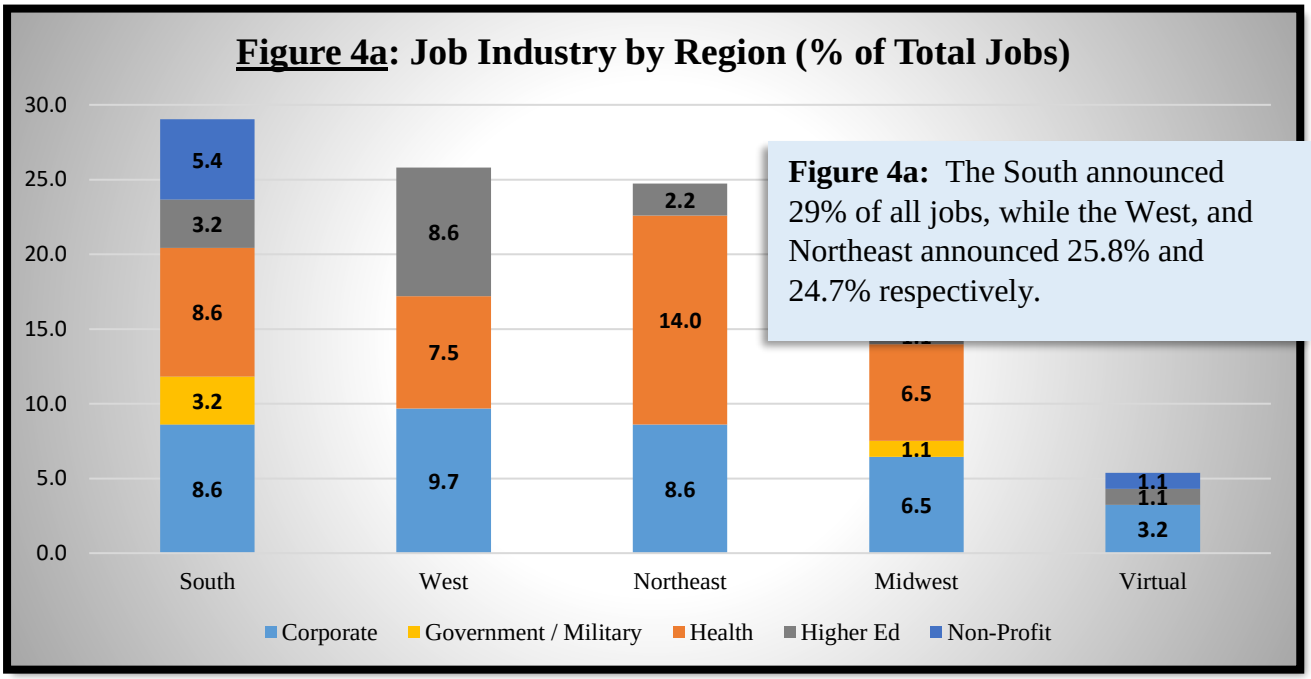


Figure 4a: The South announced 29% of all jobs, while the West, and Northeast announced 25.8% and 24.7% respectively.

Figure 4a: The four (4) region divisions were determined using the US Census Bureau categorizations.

Each of the four census Regions is divided into two or more census Divisions:

Northeast Region

New England Division: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont

Middle Atlantic Division: New Jersey, New York and Pennsylvania

Midwest Region

East North Central Division: Illinois, Indiana, Michigan, Ohio and Wisconsin

West North Central Division: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota

South Region

South Atlantic Division: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia and West Virginia

East South Central Division: Alabama, Kentucky, Mississippi and Tennessee

West South Central Division: Arkansas, Louisiana, Oklahoma and Texas

West Region

Mountain Division: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming

Pacific Division: Alaska, California, Hawaii, Oregon and Washington

Retrieved from: **US Census Bureau**

http://www.census.gov/econ/census/help/geography/regions_and_divisions.html

APPENDIX G

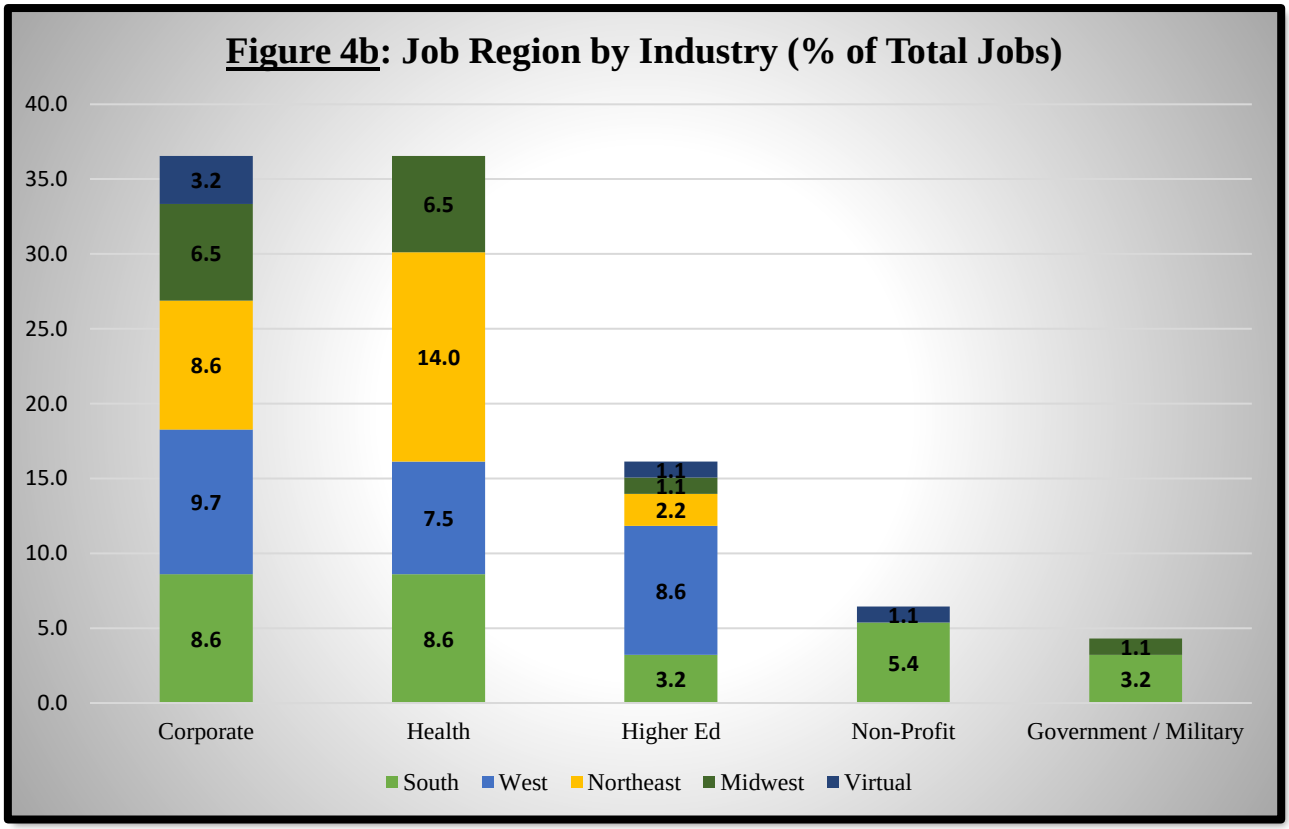


Figure 4b: The Corporate, Health, and Higher Education industries announced jobs from all US regions, while the Non-Profit and Government/Military sectors were announced mostly in the South.

APPENDIX H

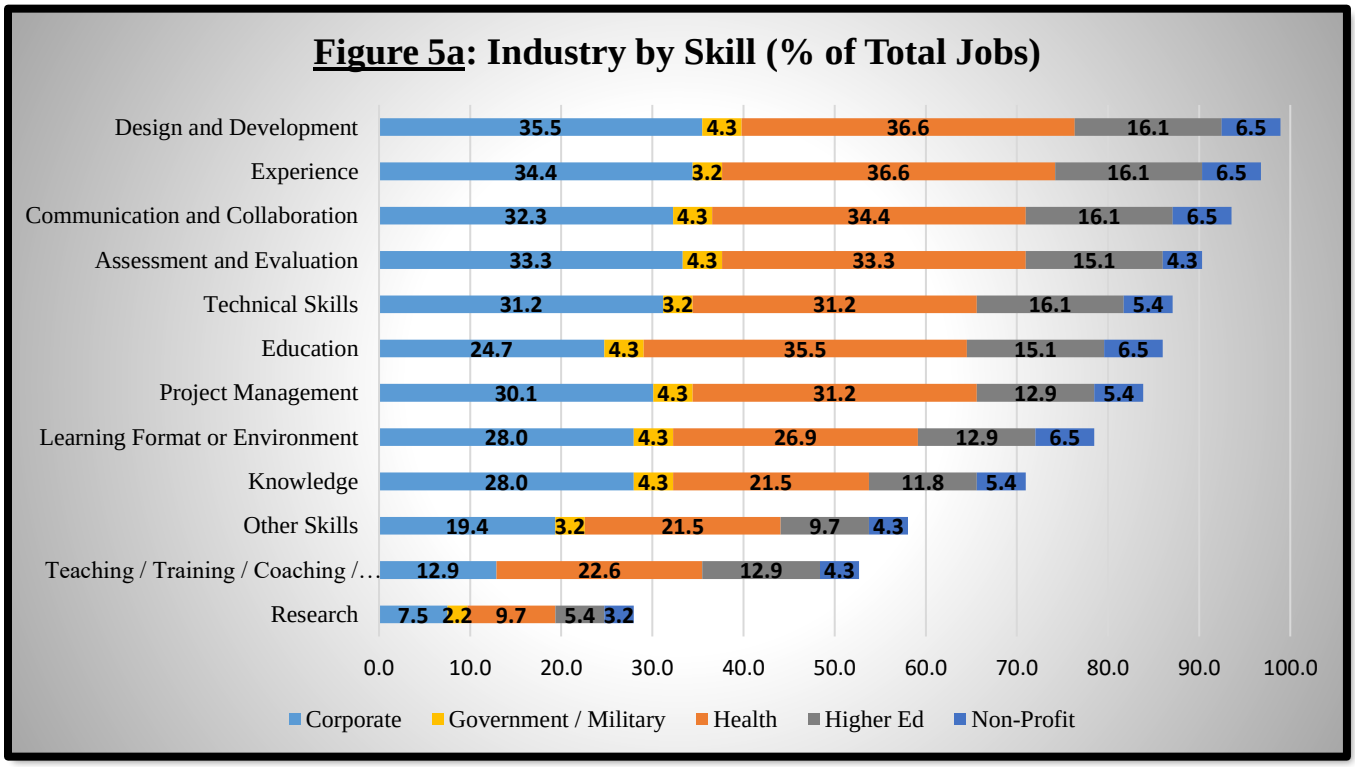


Figure 5a: This chart depicts industries by skill (Level 1 categories). The numbers in each bar section depict the percentage of total jobs (93 total jobs across all industries).

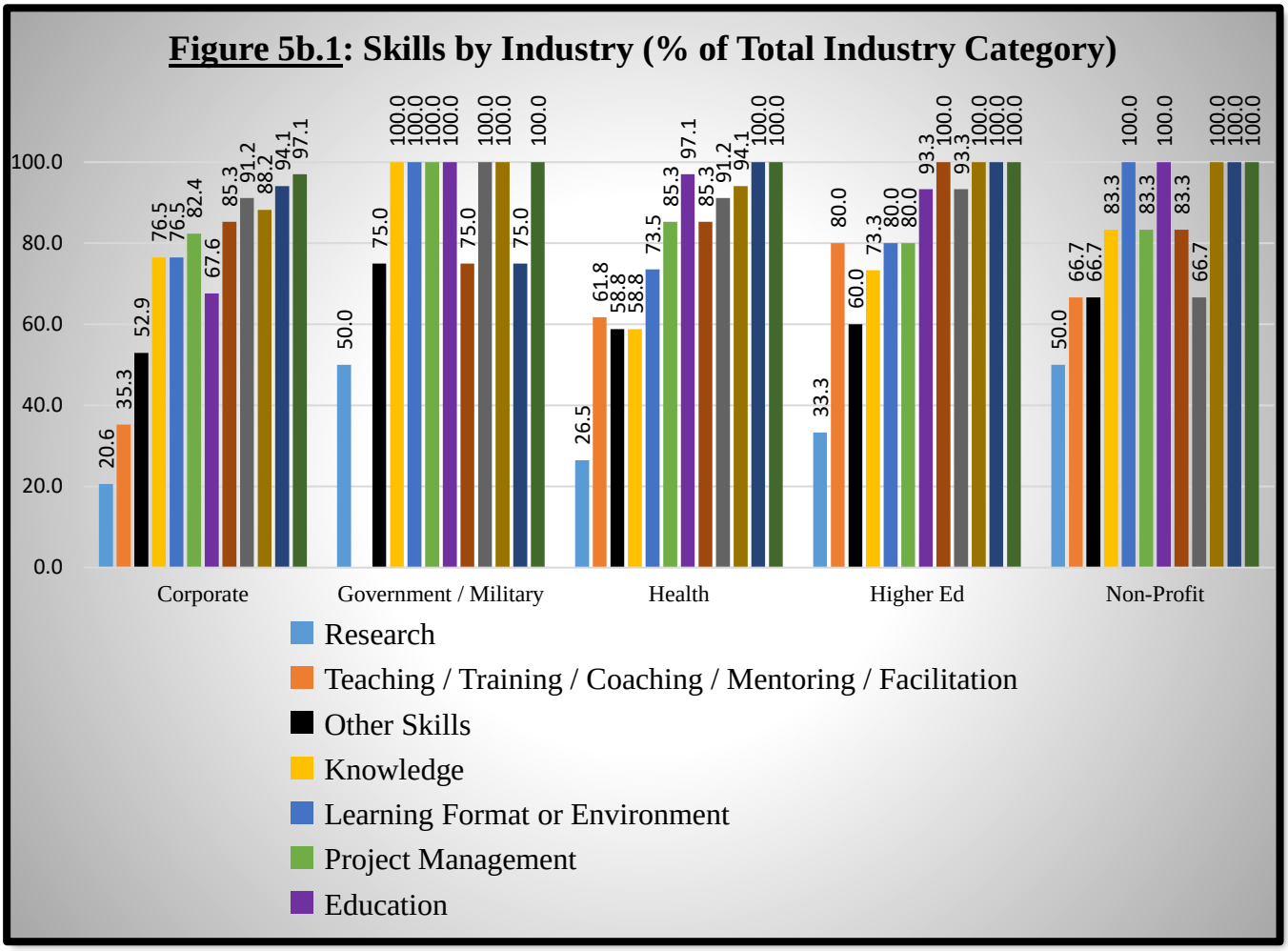


Figure 5b.1: This chart represents skills (Level 1) by industry. This chart depicts the significance of each skill in each of the five (5) industries analyzed.

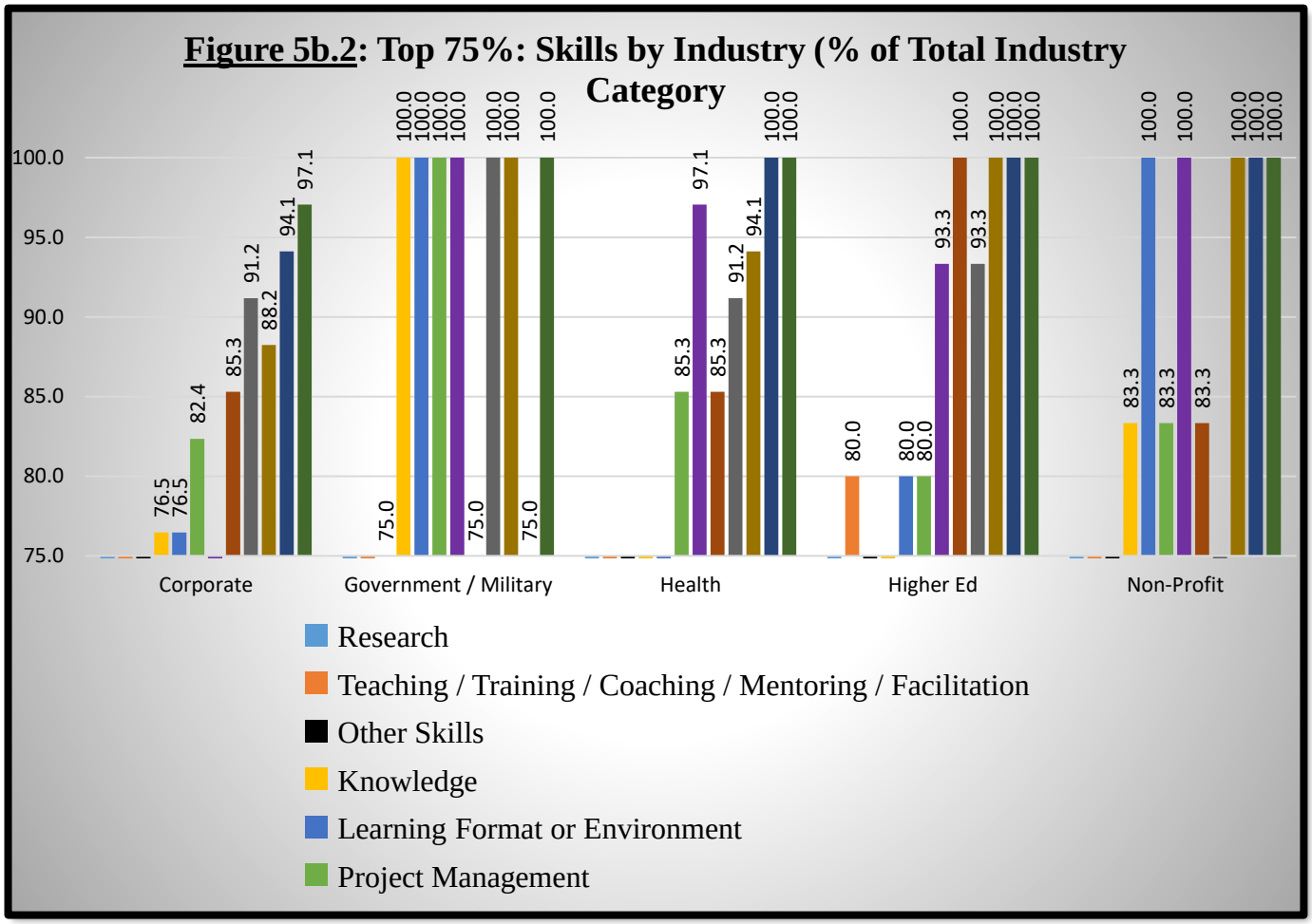


Figure 5b.2: This chart zooms in on the upper quartile of Figure 5b.1 (75 – 100%). "Teaching and Training" showed to be the most important in the Higher Education industry. Overall, all industries identified "Design and Development" to be an important skill, along with "Experience" as well as "Communication and Collaboration".

APPENDIX I

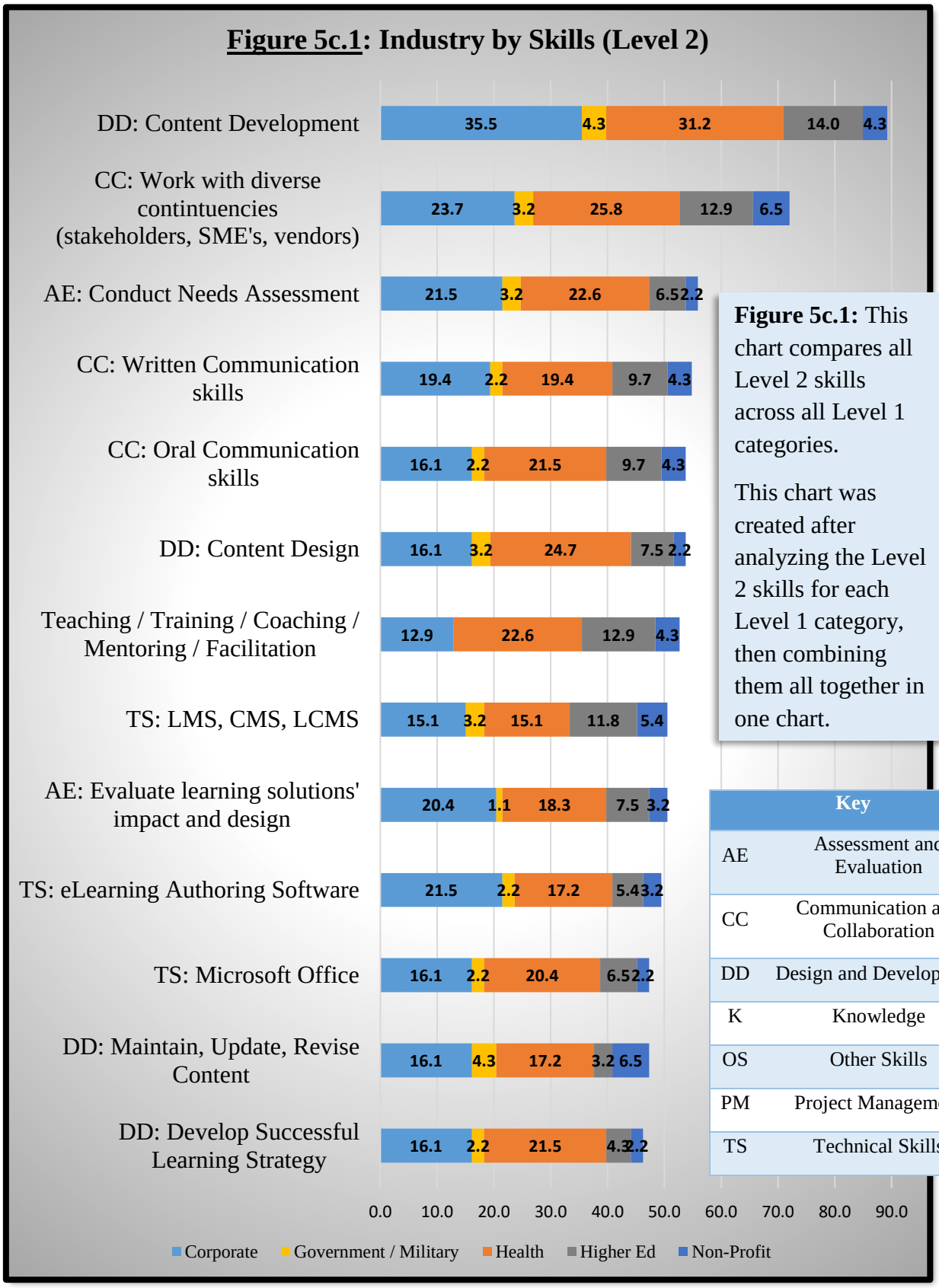


Figure 5c.1: Industry by Skills (Level 2)
DD: Content Development
35.5
4.3
31.2
14.0
4.3
CC: Work with diverse contintuencies (stakeholders, SME's, vendors)
23.7
3.2
25.8
12.9
6.5
AE: Conduct Needs Assessment
21.5
3.2
22.6
6.5
2.2
CC: Written Communication skills
19.4
2.2
19.4
9.7
4.3
CC: Oral Communication skills
16.1
2.2
21.5
9.7
4.3
DD: Content Design
16.1
3.2
24.7
7.5
2.2
Teaching / Training / Coaching / Mentoring / Facilitation
12.9
22.6
12.9
4.3
TS: LMS, CMS, LCMS
15.1
3.2
15.1
11.8
5.4
AE: Evaluate learning solutions' impact and design
20.4
1.1
18.3
7.5
3.2
TS: eLearning Authoring Software
21.5
2.2
17.2
5.4
3.2
TS: Microsoft Office
16.1
2.2
20.4
6.5
2.2
DD: Maintain, Update, Revise Content
16.1
4.3
17.2
3.2
6.5
DD: Develop Successful Learning Strategy
16.1
2.2
21.5
4.3
2.2
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
Corporate
Government / Military
Health
Higher Ed
Non-Profit
Figure 5c.1: This chart compares all Level 2 skills across all Level 1 categories.
This chart was created after analyzing the Level 2 skills for each Level 1 category, then combining them all together in one chart.
Key
AE Assessment and Evaluation
CC Communication and Collaboration
DD Design and Development
K Knowledge
OS Other Skills
PM Project Management
TS Technical Skills

Figure 5c.2: Industry by Skills (Level 2) Cont'd

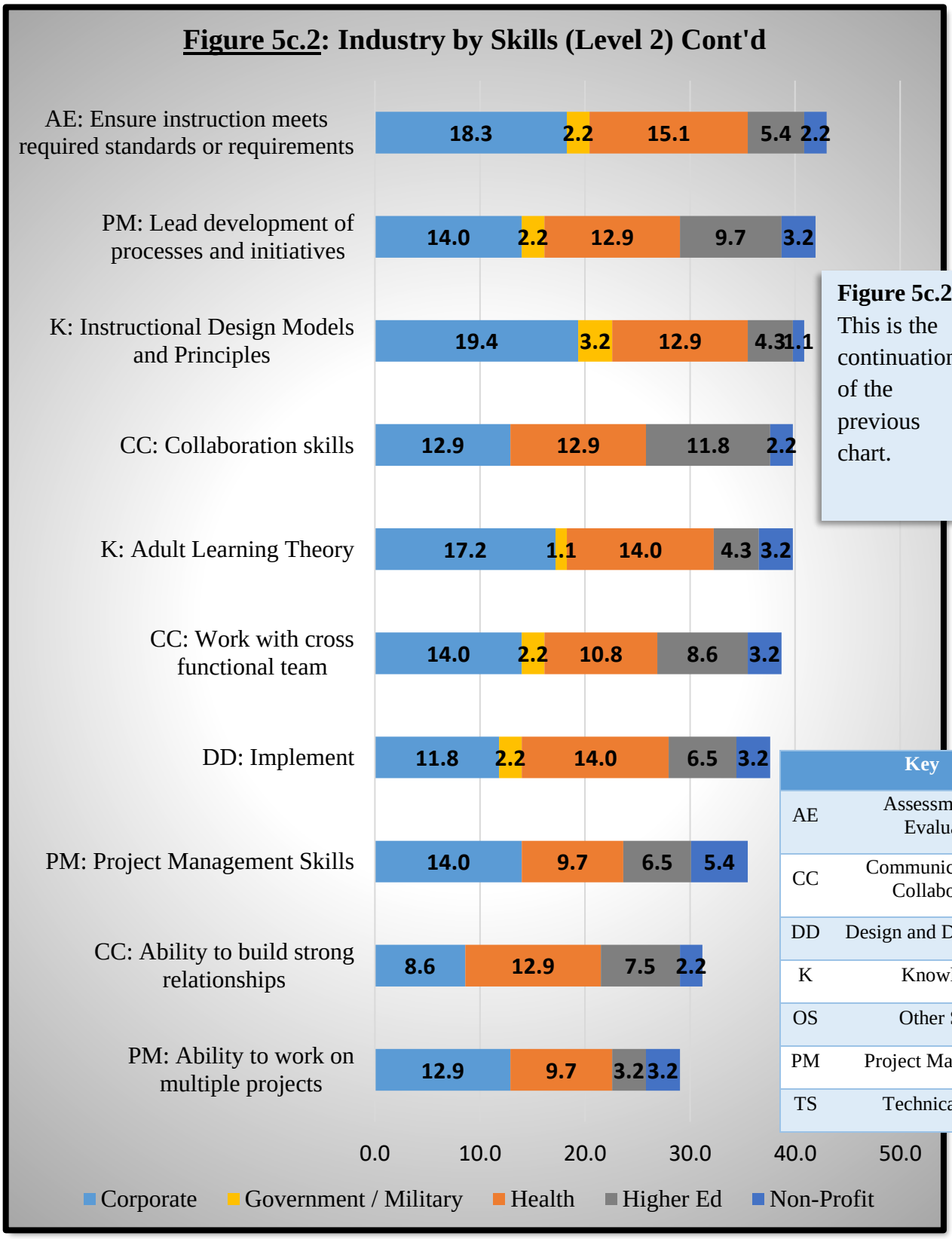


Figure 5c.2: This is the continuation of the previous chart.

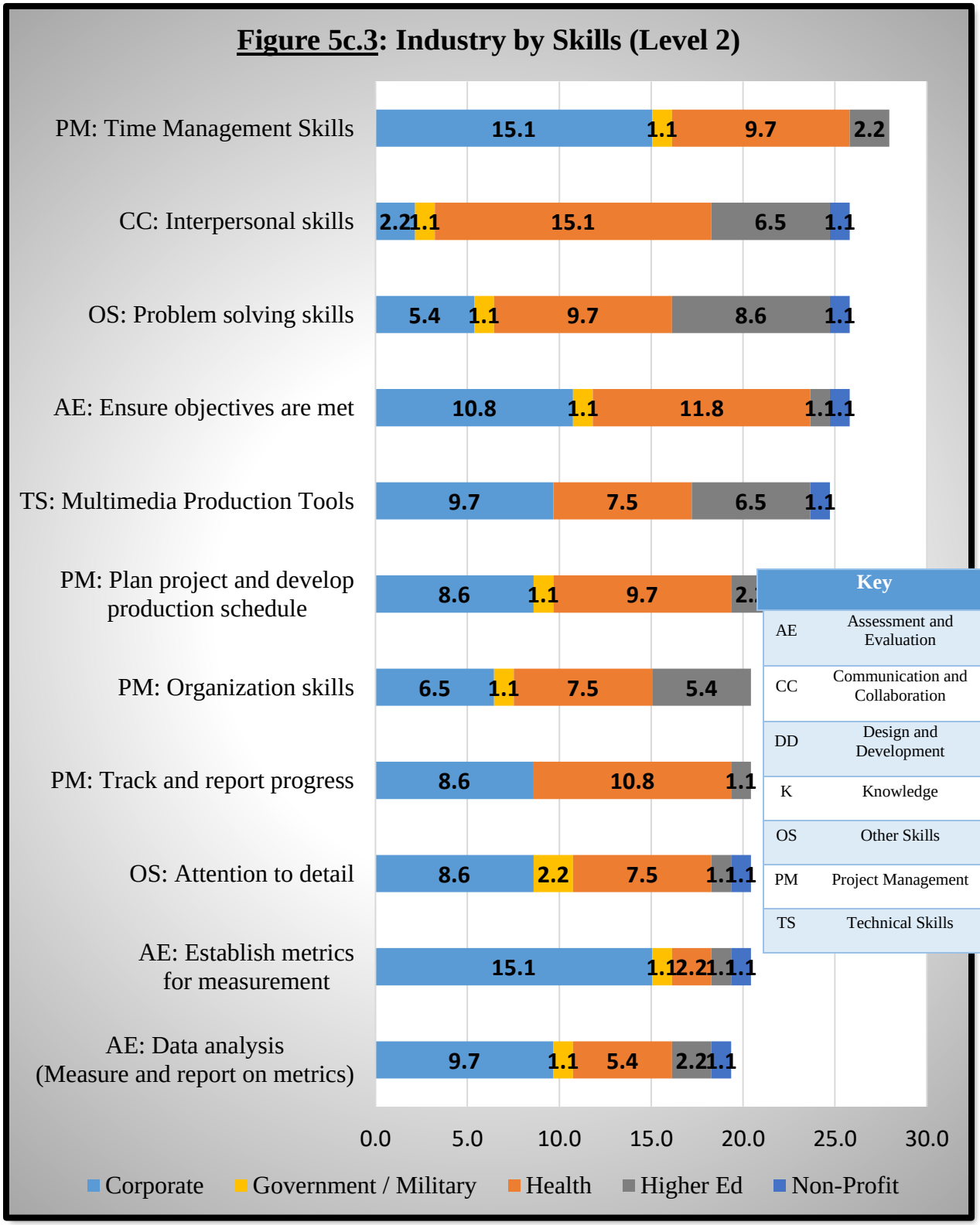


Figure 5c.3: This is the continuation of the previous chart.

APPENDIX J

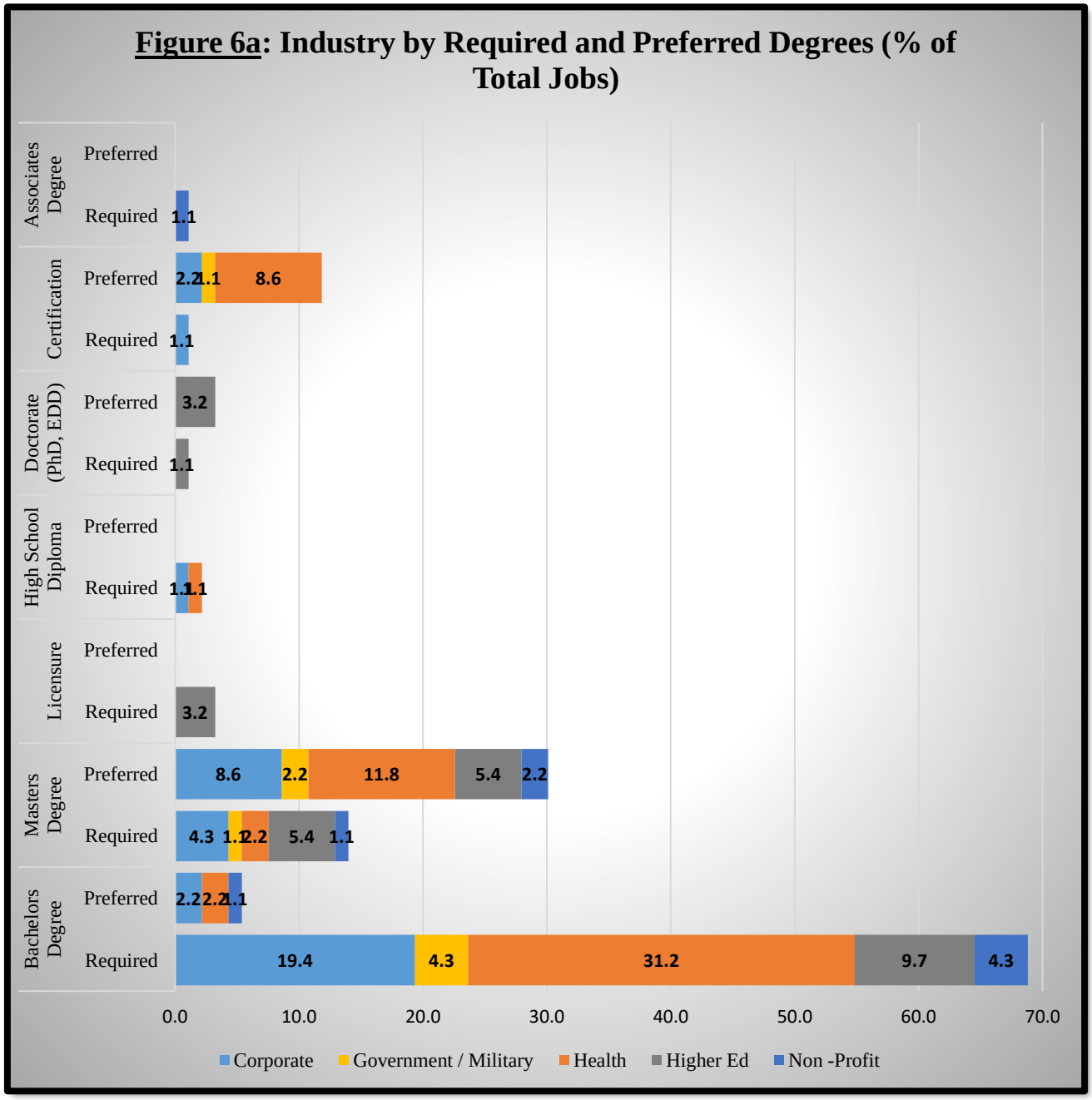
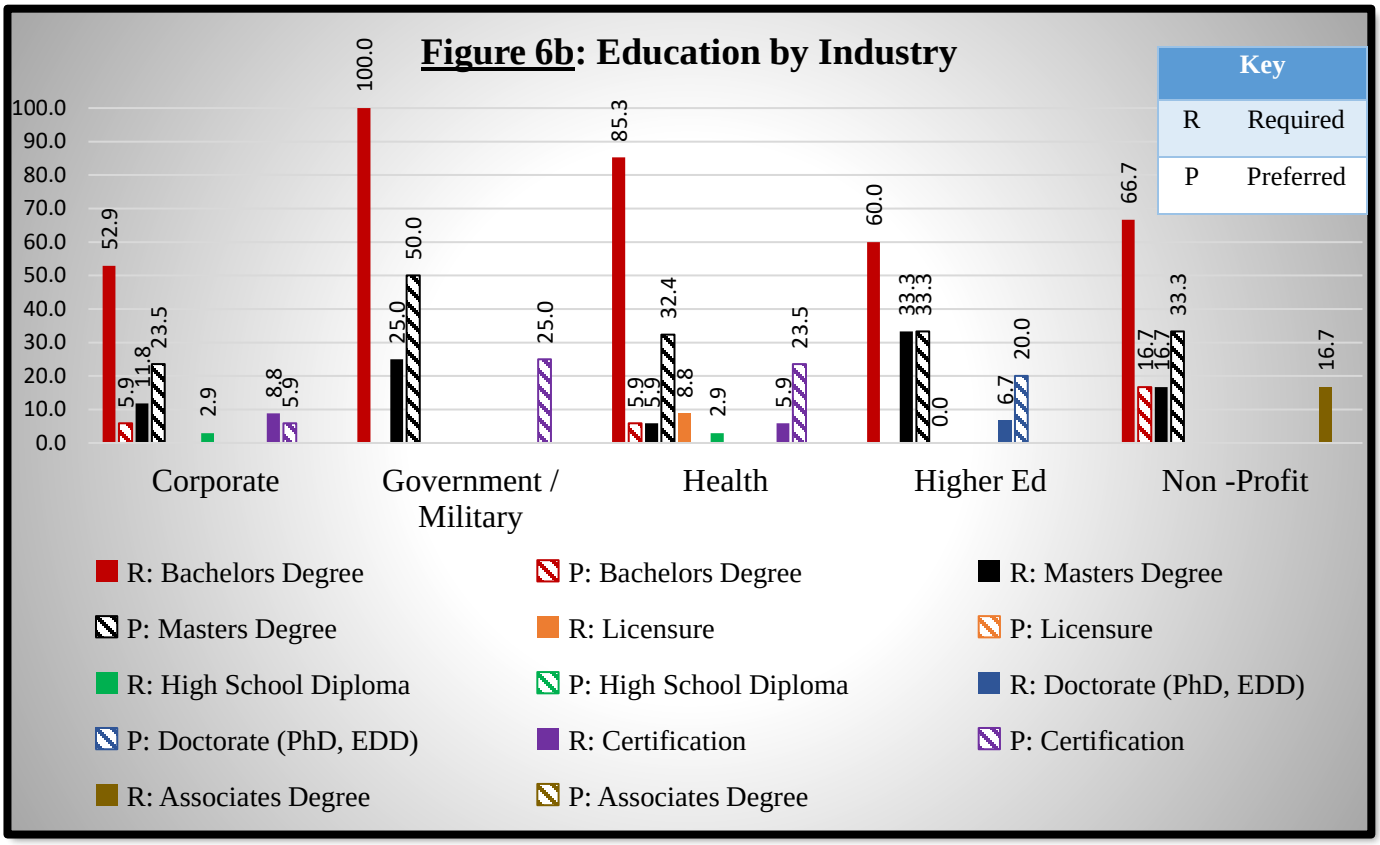


Figure 6a: This chart depicts the required and preferred degrees identified across industries. Bachelor's Degrees were required by a large margin over other degrees, but many employers preferred applicants with a Master's Degree in a related field.

Additionally, the Healthcare industry preferred certifications in Epic applications or participants that would be willing to get certified upon hiring. Examples of certifications are provided on the following page.

Figure 6b: This chart depicts the required and preferred degrees identified by each industry.



Specific Certifications Referenced:

**Note: Most jobs did not reference specific certifications. This data exemplifies jobs that did.*

Corporate

ATD (Association of Talent Development, formerly ASTD)

CPLP (from ATD)

NBCC (National Board for Certified Counselors)

Security certifications: CISSP, SSCP, CISA, CISM

SHRM (Society for Human Resource Management)

Technical certifications: MCSA, MCSE, CCNA, CCNP

Government / Military

State level teaching certification

Non-Profit

Completion of NTC Mentor Academies or School Leadership

Health

ATD training certification (Association of Talent Development, formerly ASTD)
ASAP
ASTD or comparable alternative in needs analysis and/or instructional design
SHRM (Society for Human Resource Management)
ATD - Presentation skills
ATD - training
ATD Master Trainer
CPLP (from ATD)
CPT
Epic applications such as Epic Willow
Healthcare IS system certification (Cerner, Lawson, SAP, Microsoft)
Improvement technologies
In accordance with departmental and organizational standards
Lean black belt from PeaceHealth
Professional designation
TED (Training and Enterprise Development)
Training certifications (general)

APPENDIX K

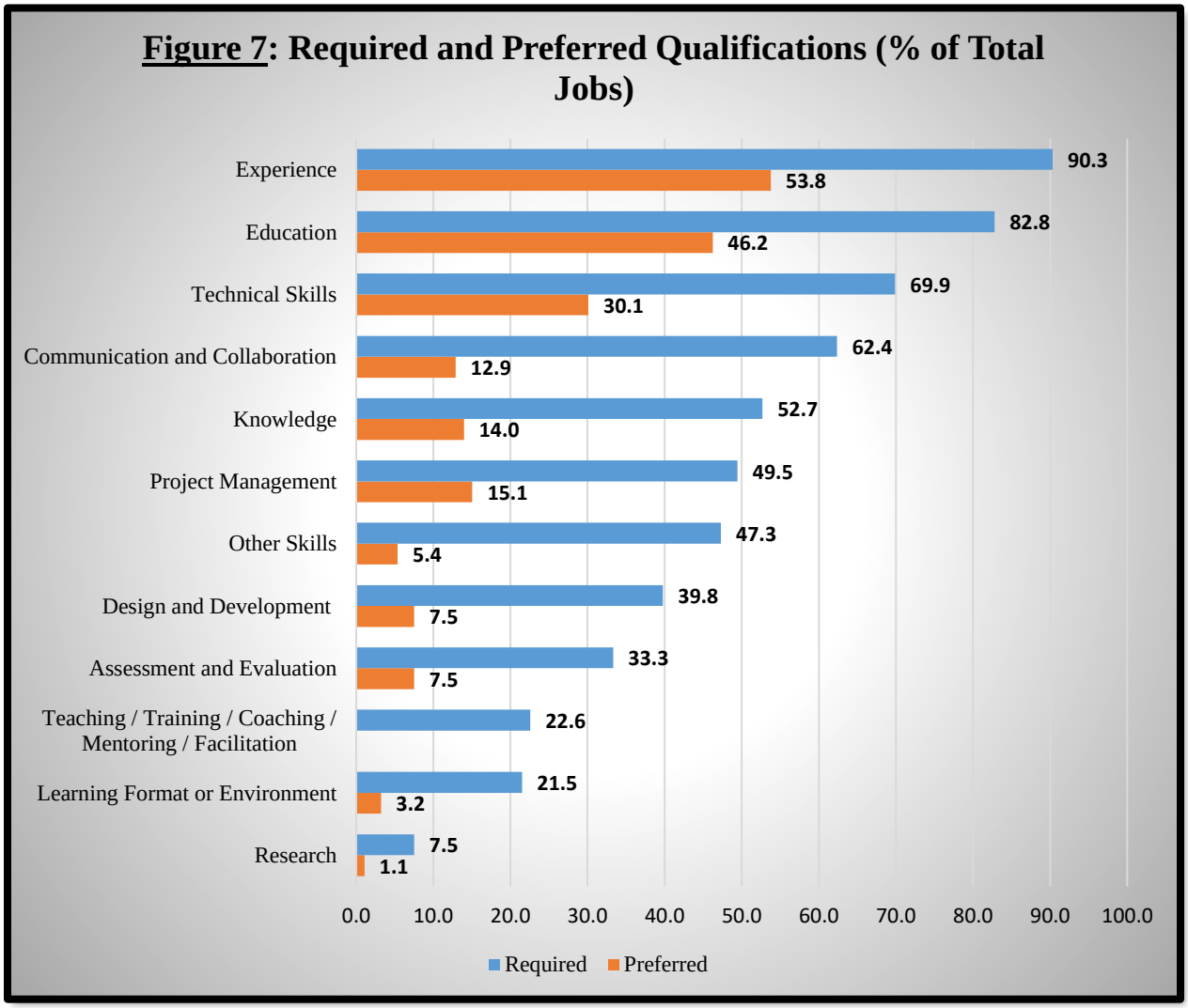


Figure 7: This chart depicts the required and preferred qualifications identified by each industry. This data was generated by sorting only items tagged as a "Qualification" as opposed to "Responsibility". Most employers saw Experience, Education, Technical skills, and Communication and Collaboration to be the top qualifications of an instructional designer.

APPENDIX L

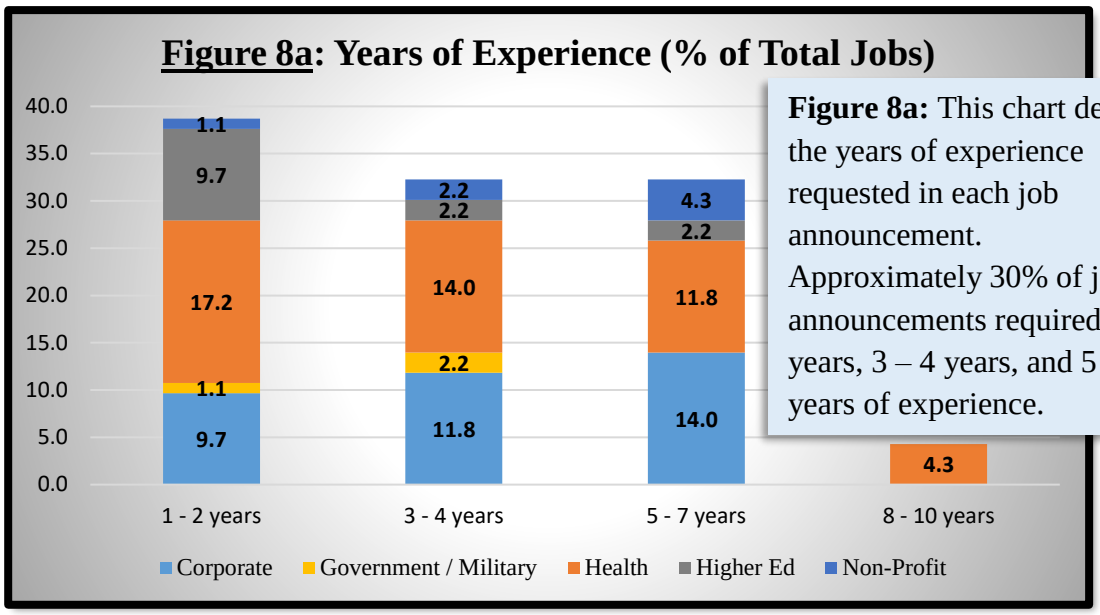


Figure 8a: This chart depicts the years of experience requested in each job announcement. Approximately 30% of job announcements required 1 – 2 years, 3 – 4 years, and 5 – 7 years of experience.

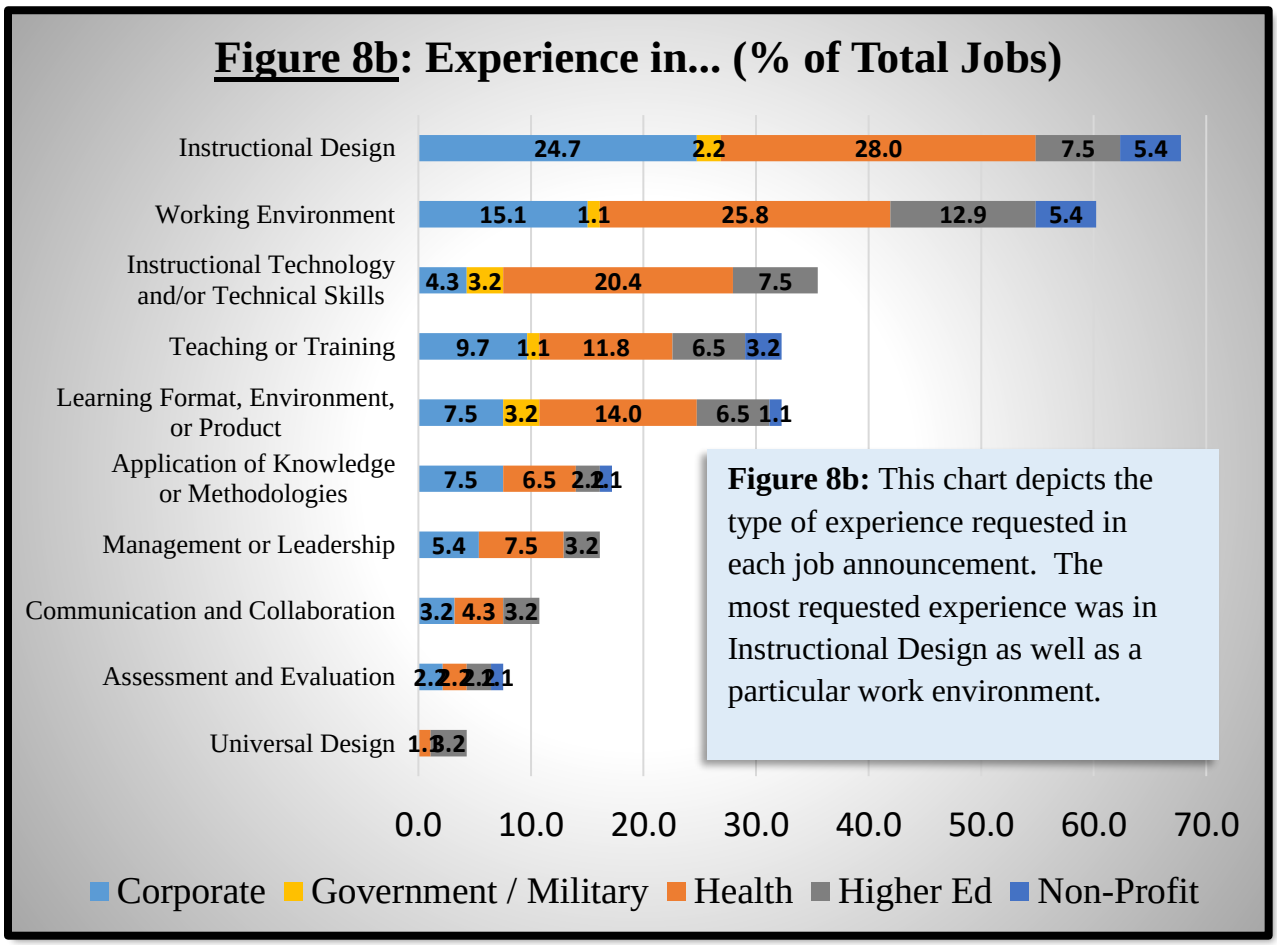


Figure 8b: This chart depicts the type of experience requested in each job announcement. The most requested experience was in Instructional Design as well as a particular work environment.

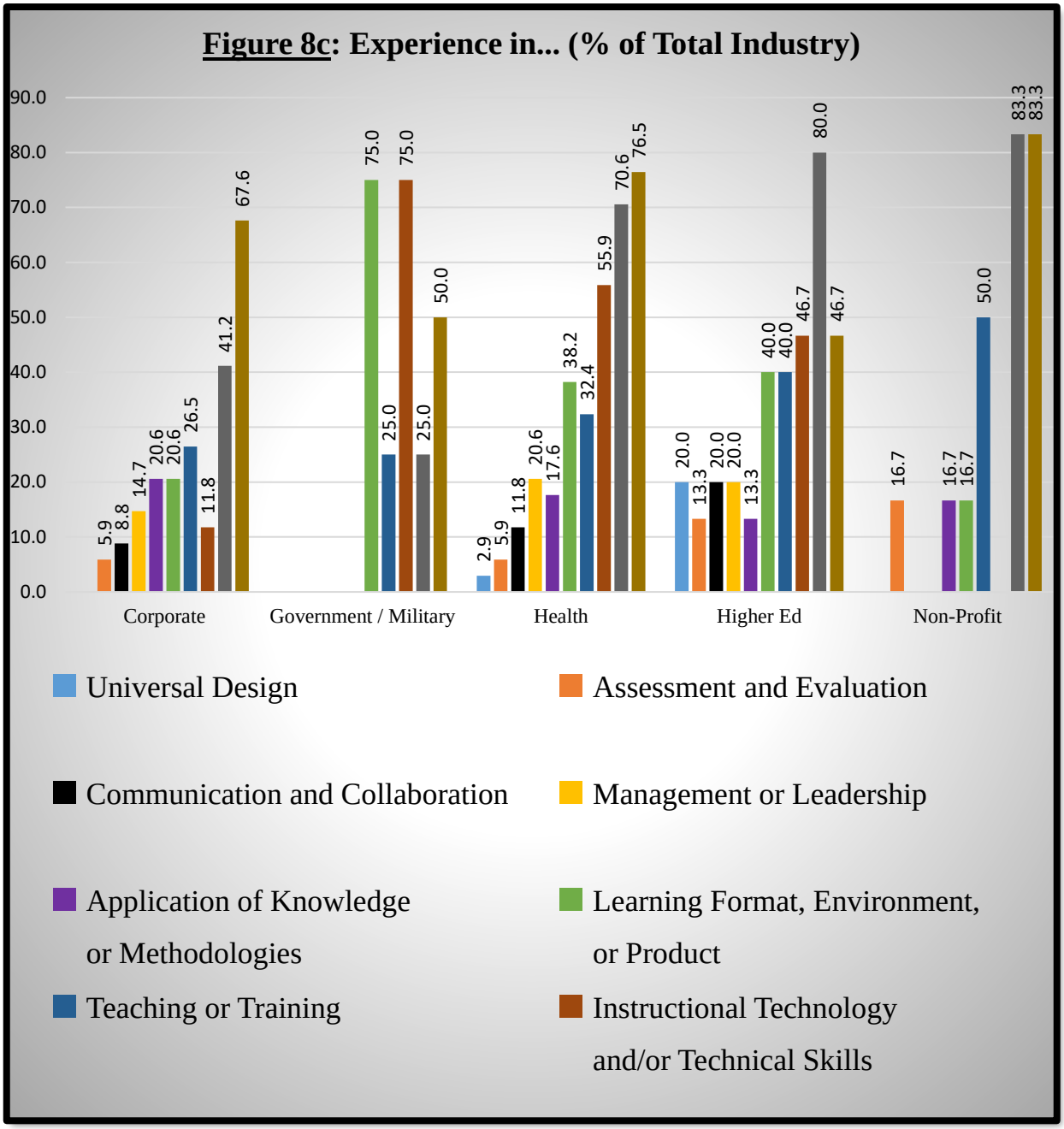


Figure 8c: This chart depicts the type of experience most requested by industry.

APPENDIX M

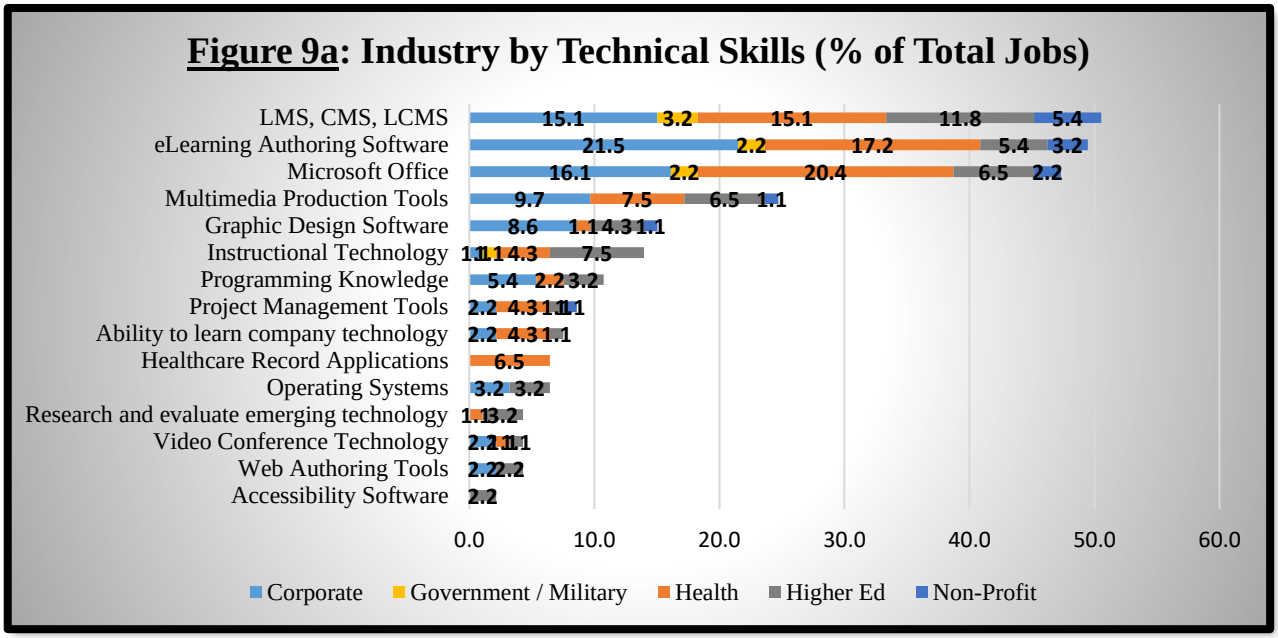


Figure 9a: This chart depicts the top technical skills identified across all ninety-three (93) jobs.

LMS, eLearning Authoring Software, and Microsoft Office skills were the most frequently requested.

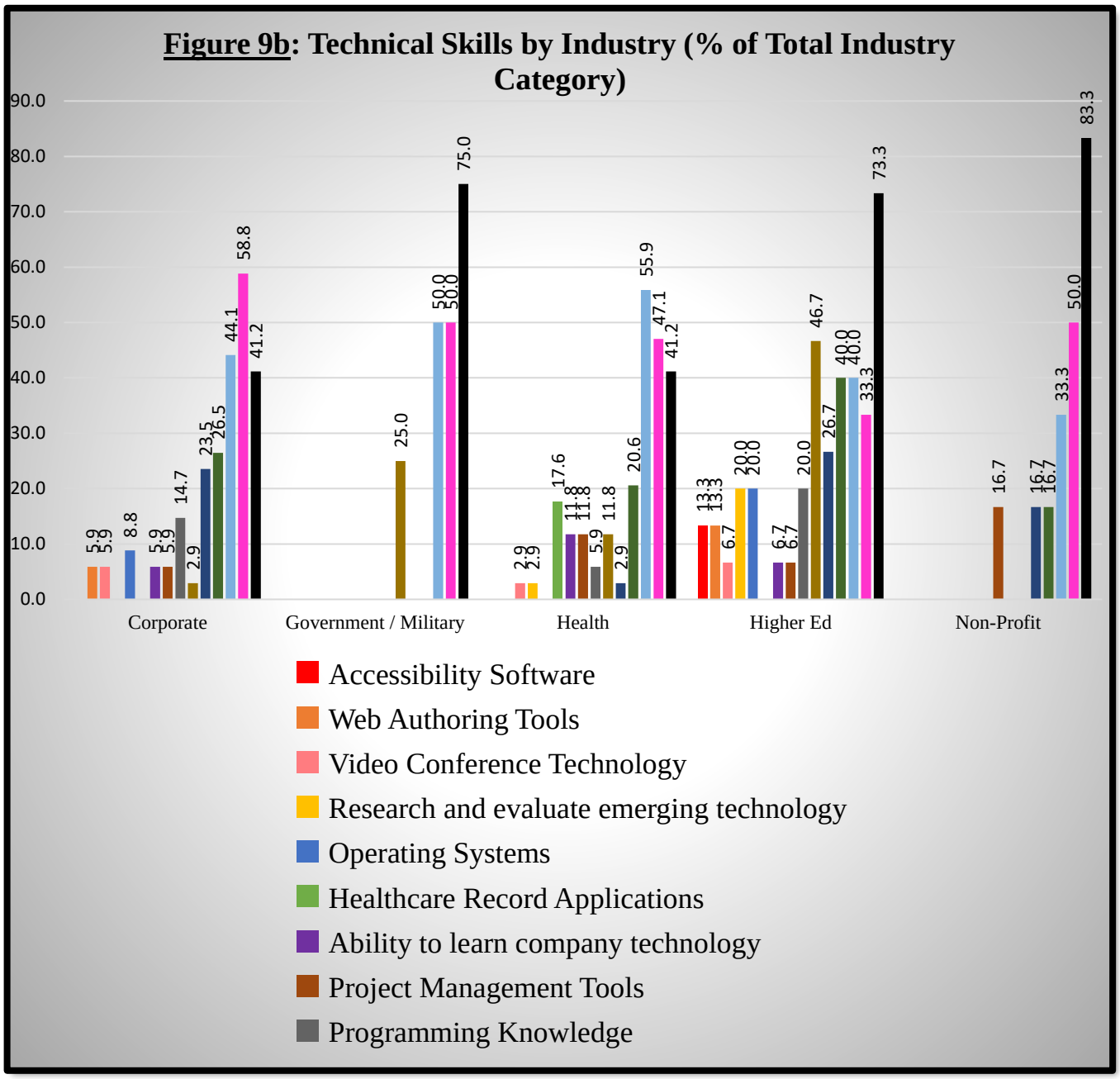
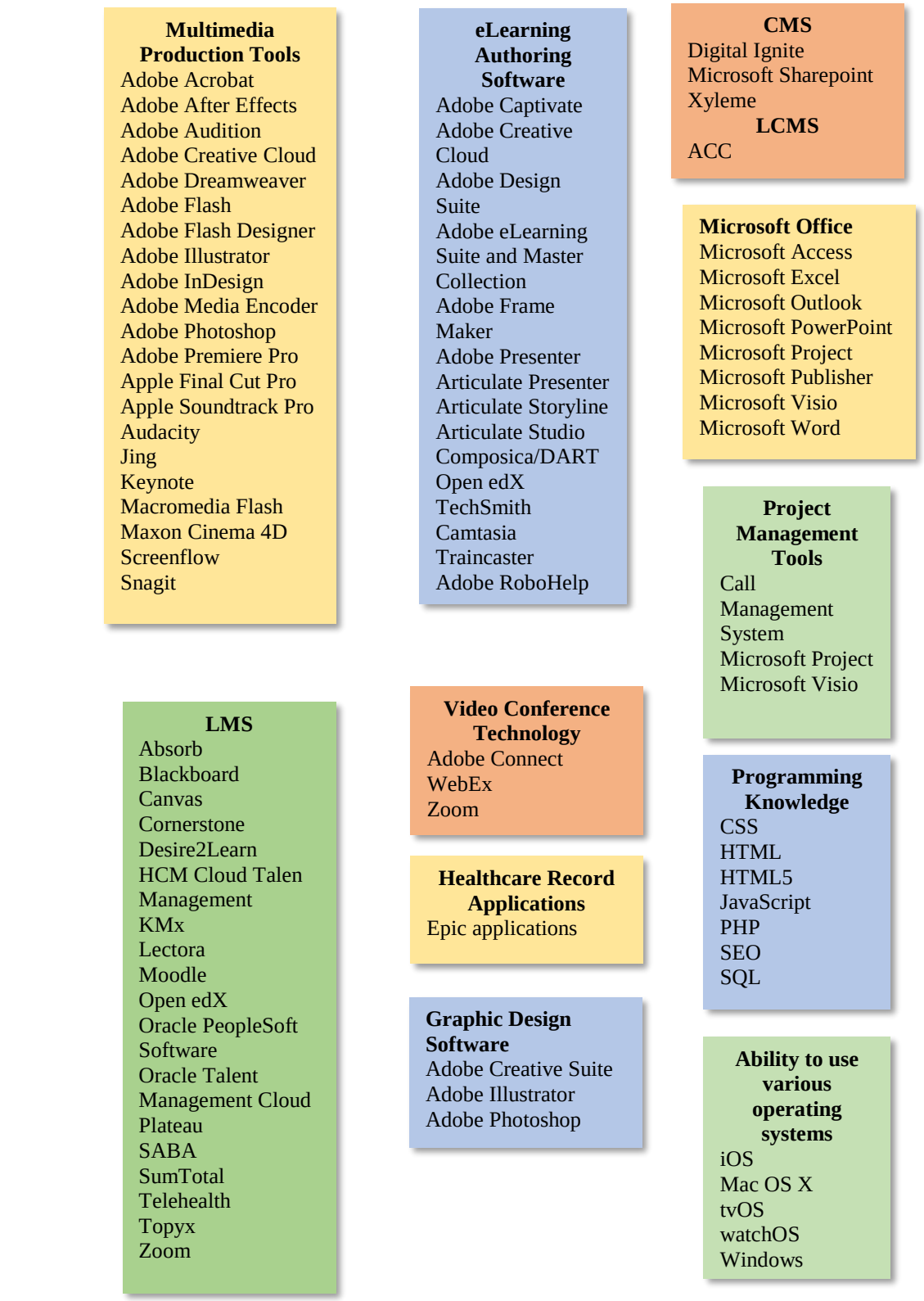


Figure 9b: This chart depicts top technical skills by industry.

Figure 9c: Examples of Software Supporting Technical Skills

The following are examples of software and applications that support the technical skills identified in Figures 9a and 9b.



APPENDIX N

Figure 10a: Learning Format or Environment (% of Total Jobs)

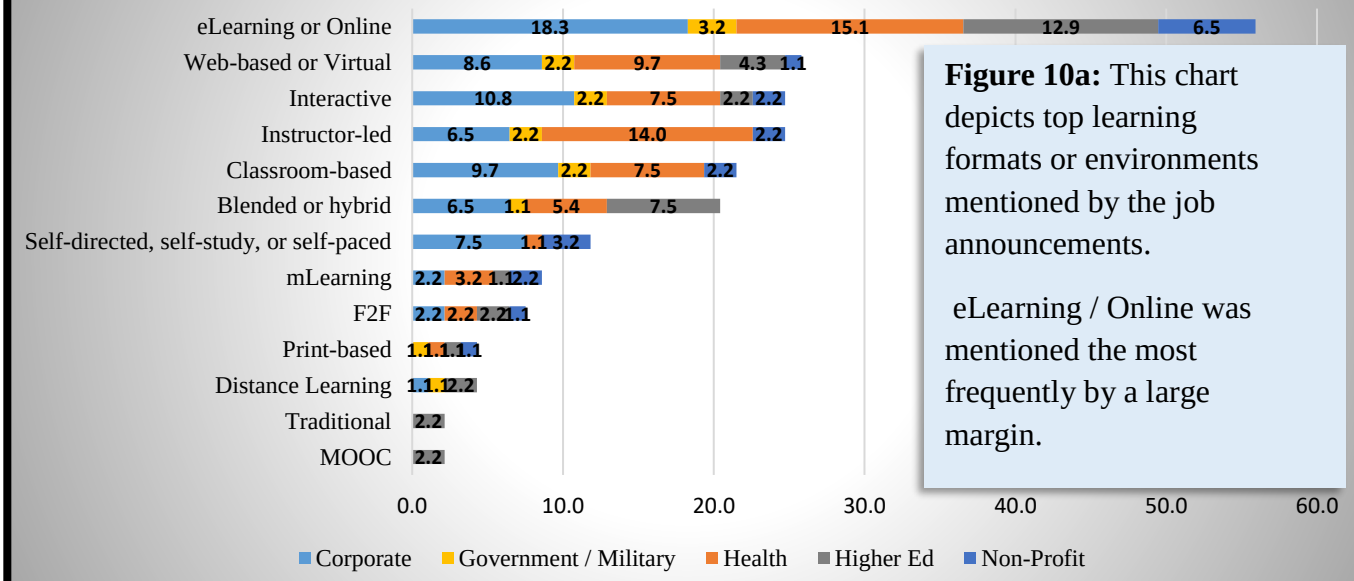


Figure 10a: This chart depicts top learning formats or environments mentioned by the job announcements.

eLearning / Online was mentioned the most frequently by a large margin.

Figure 10b: Learning Format or Environment by Industry (% of Total Industry Cateogry)

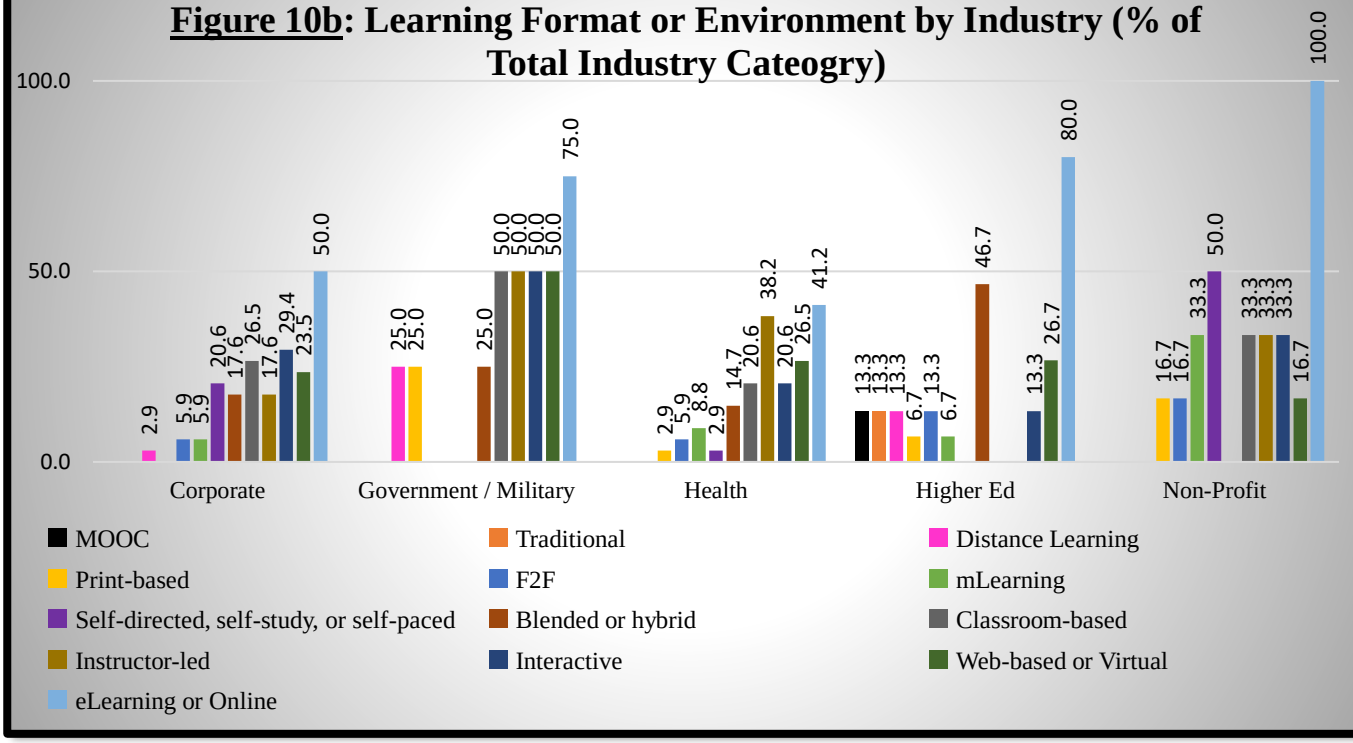


Figure 10b: This chart depicts top learning formats or environments by industry.

APPENDIX O

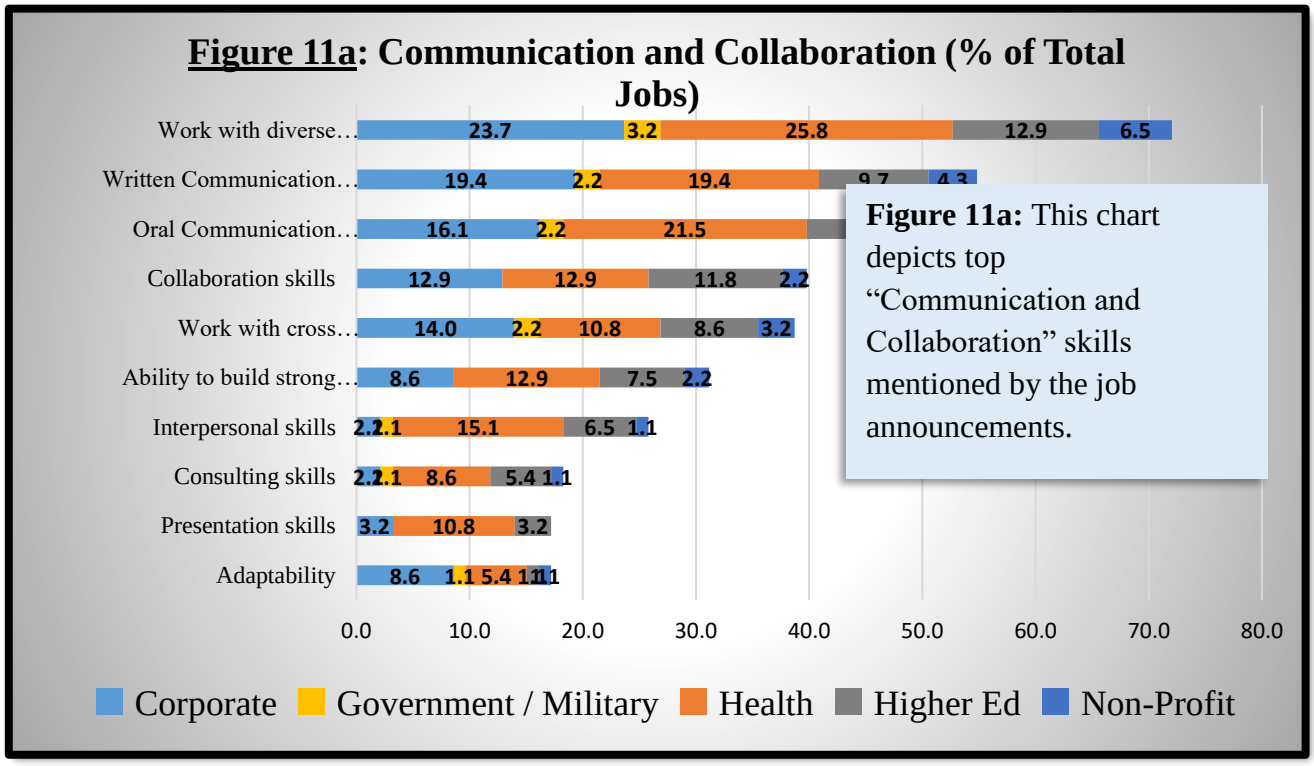
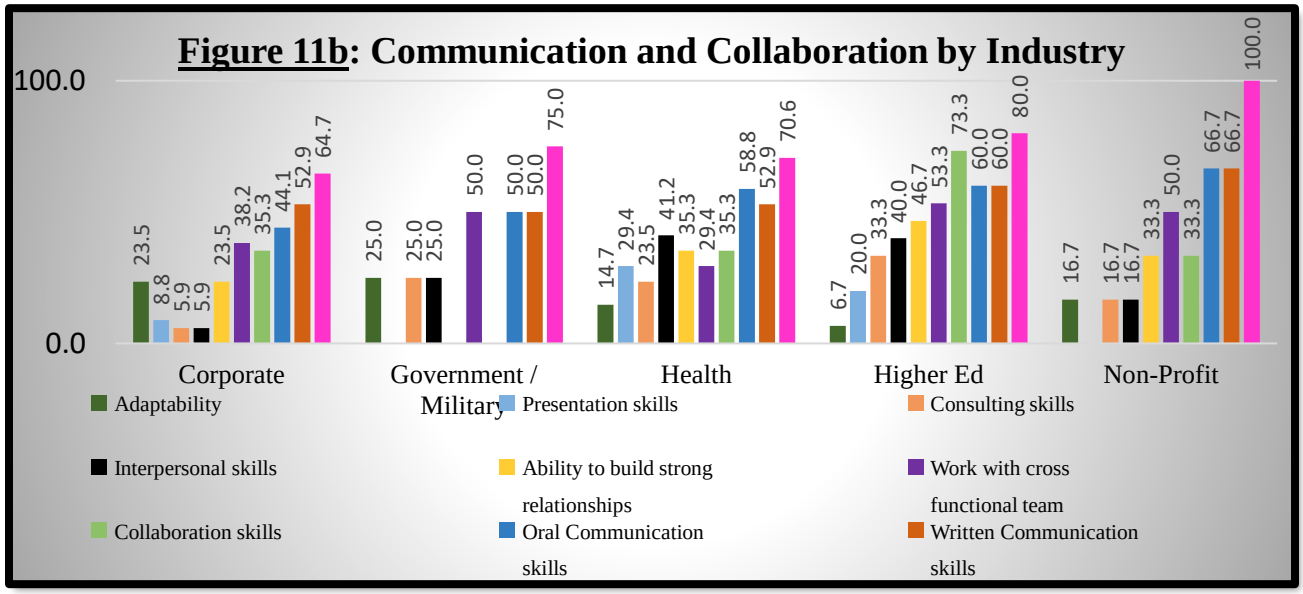


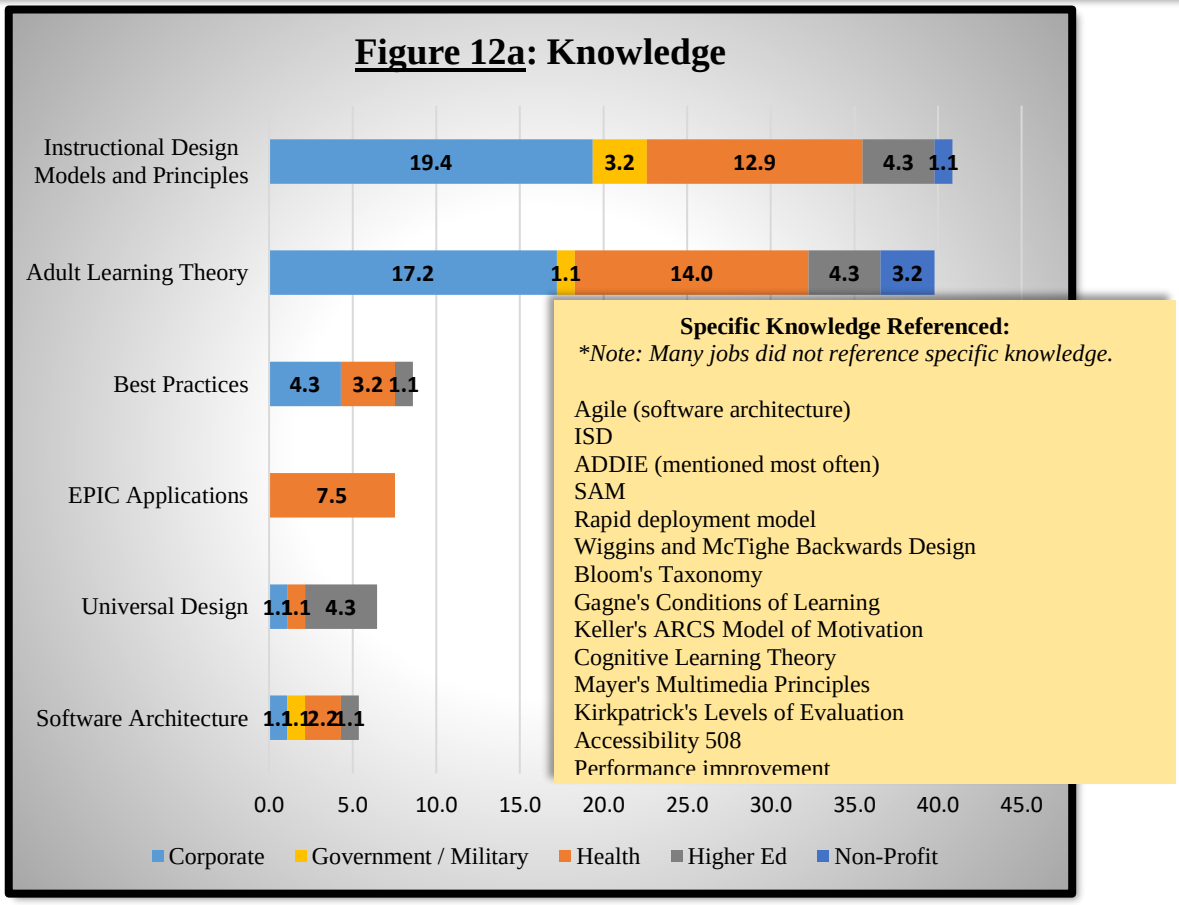
Figure 11a: This chart depicts top "Communication and Collaboration" skills mentioned by the job announcements.

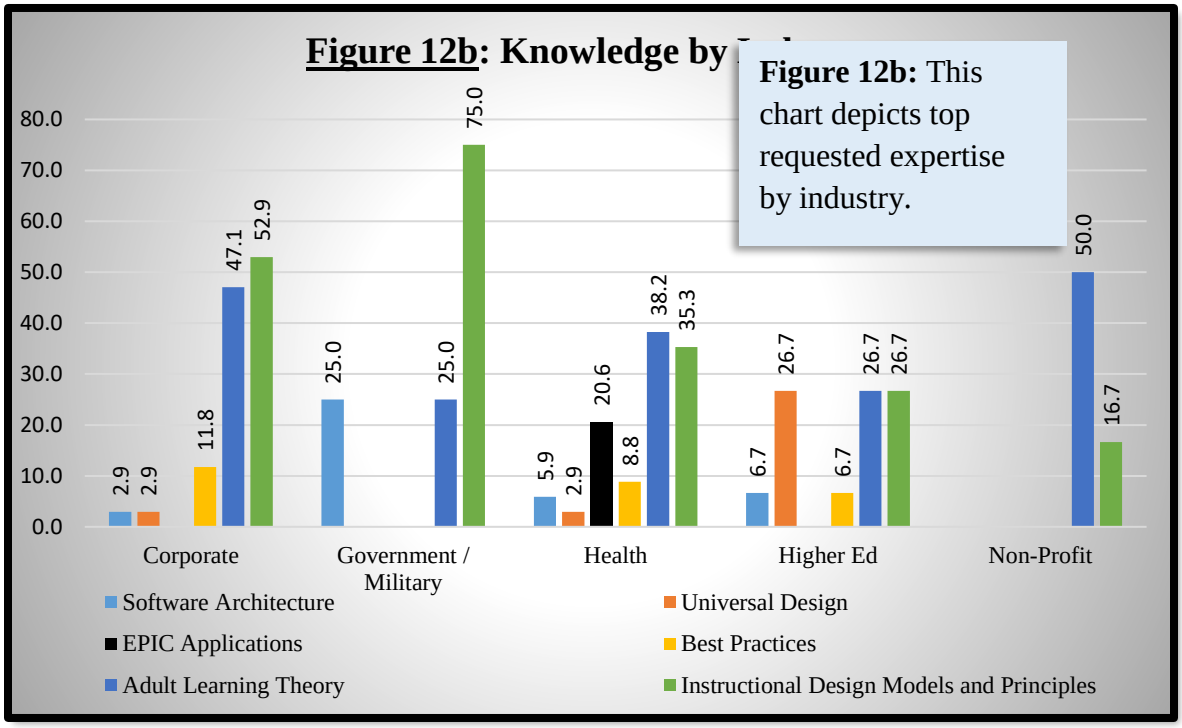
Figure 11b: This chart depicts top "Communication and Collaboration" skills by industry.



APPENDIX P

Figure 12a: This chart depicts top knowledge/theoretical expertise categories mentioned by the job announcements.





APPENDIX Q

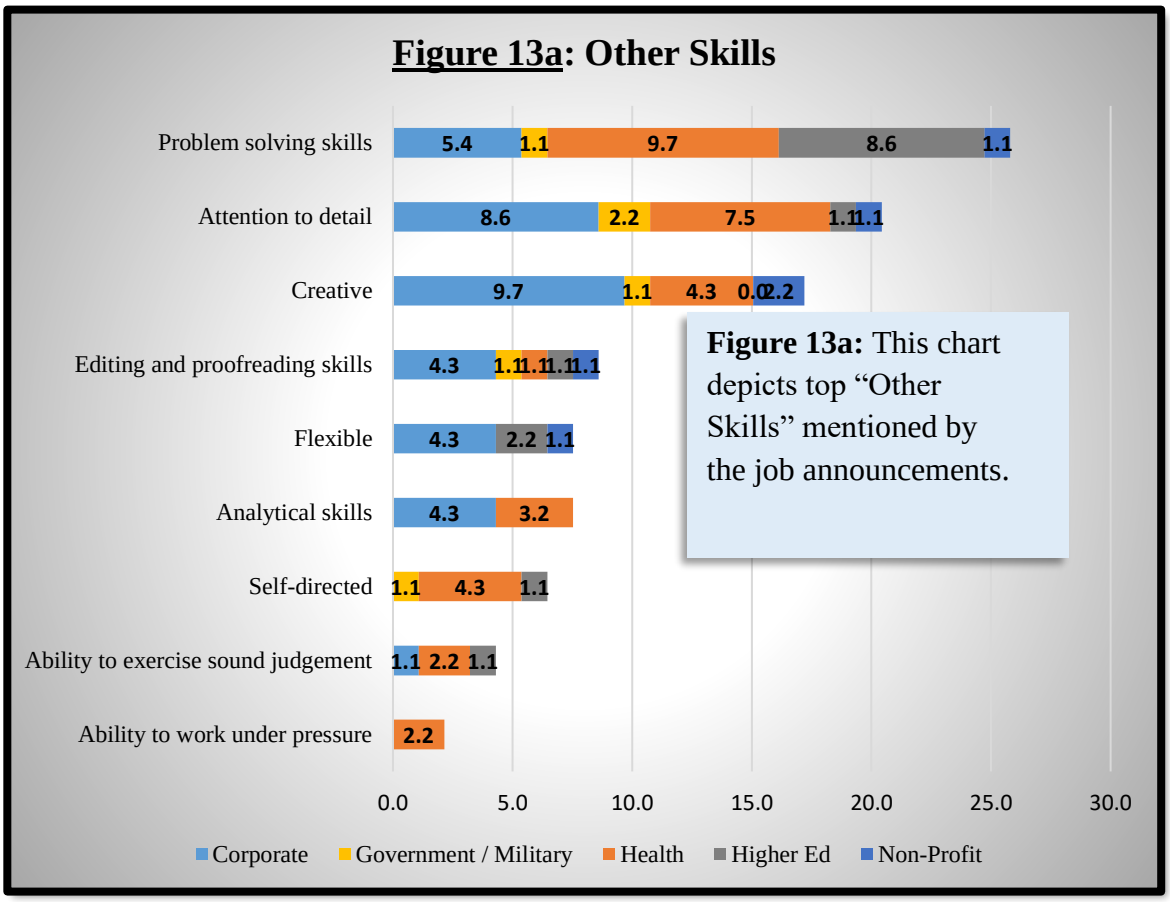
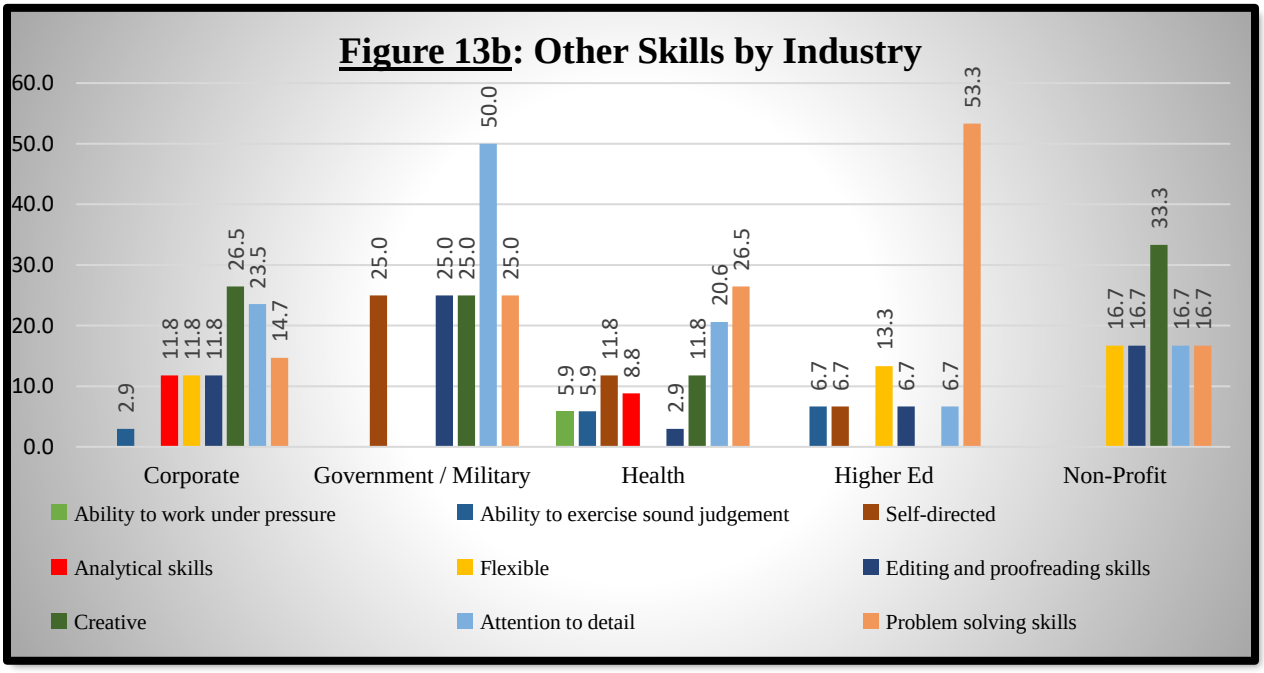


Figure 13a: This chart depicts top "Other Skills" mentioned by the job announcements.

Figure 13b: This chart depicts top "Other Skills" by industry.



APPENDIX R

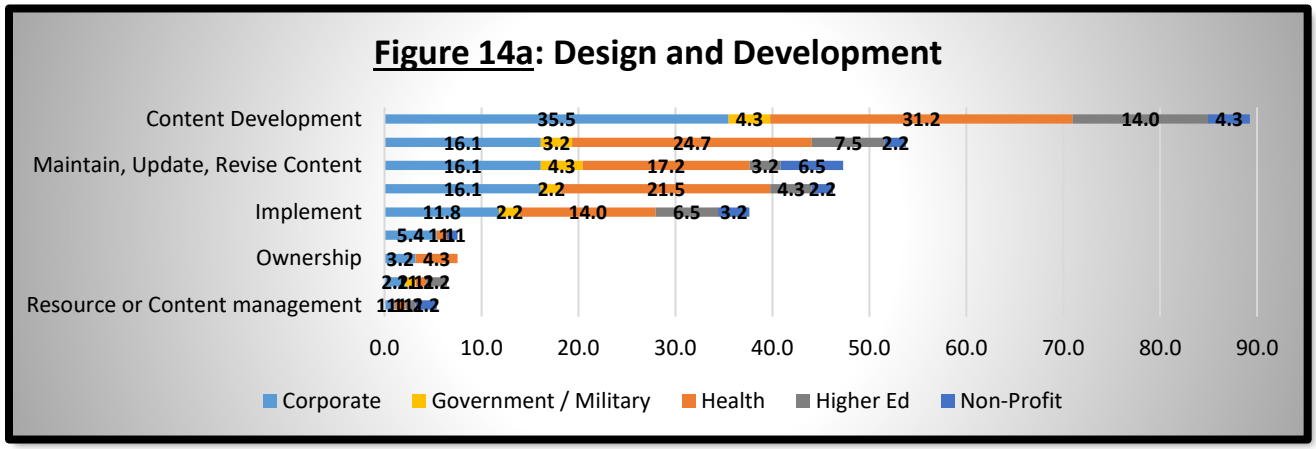
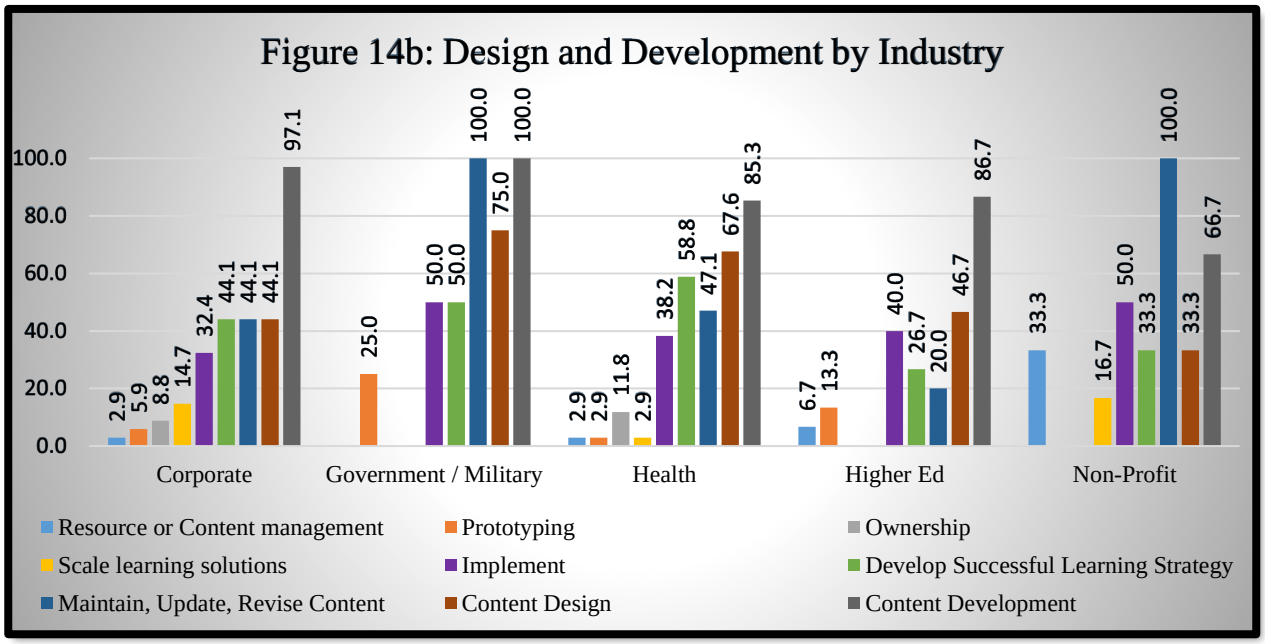


Figure 14a: This chart depicts top "Design and Development" skills mentioned by the job announcements.

Figure 14b: The chart below depicts top "Design and Development" skills by industry.



APPENDIX S

Figure 15a: Assessment and Evaluation

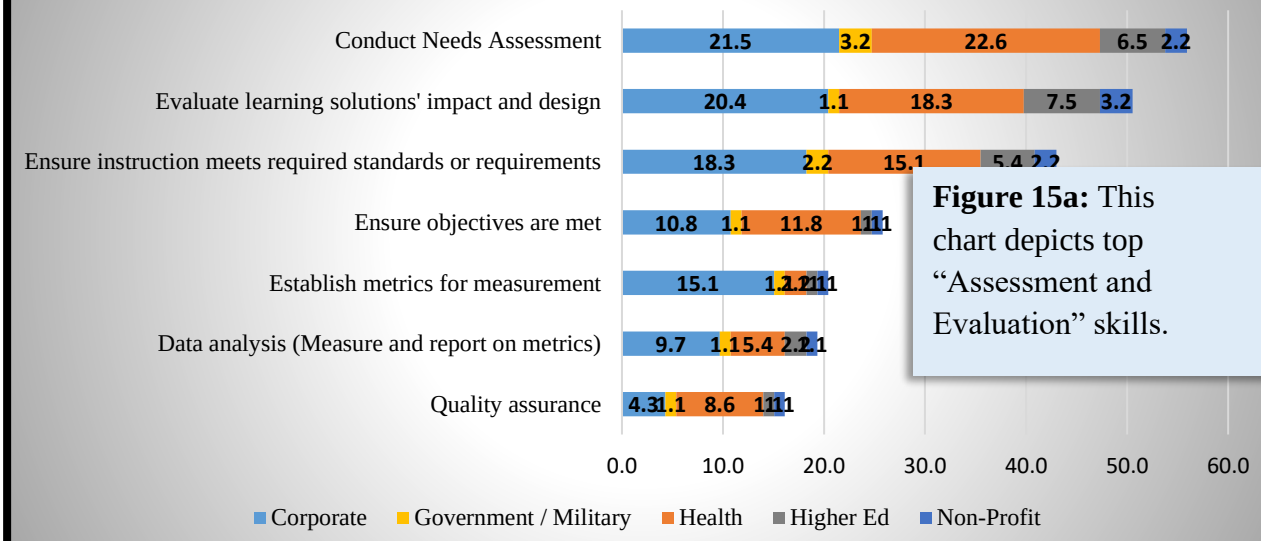


Figure 15a: This chart depicts top "Assessment and Evaluation" skills.

Examples of "Ensure instruction meets required standards or requirements" referenced:

**Note: Many jobs did not reference specific examples.*

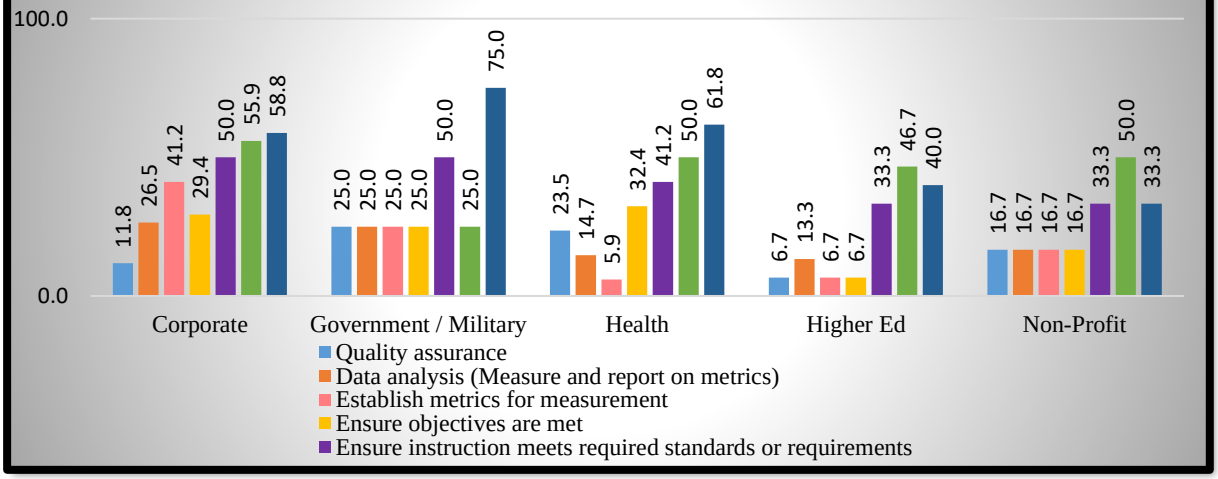
Accessibility requirements
ACCME / ANCC
ADA (Section 508) compliance requirements
Assessment standards
Campus security policy
College and Career Ready Standards (CCRS)
College and faculty standards
Continuing medical education (CME) credit
Copyright, Fair Use, and intellectual property standards
FDA and ISO regulatory requirements
FERPA

Examples cont'd:

Departmental and organizational standards
MBA Education Standards
Pedagogical design
Professional teaching and administrative standards
Project management standards
SCORM / AICC
Security requirements
Social and Emotional Learning (SEL)
State and national standards
Strict brand/editorial requirements
Student content standards
TEACH Act
Web design

Figure 15b: This chart depicts top "Assessment and Evaluation" skills by industry.

Figure 15b: Assessment and Evaluation skills by Industry



APPENDIX T

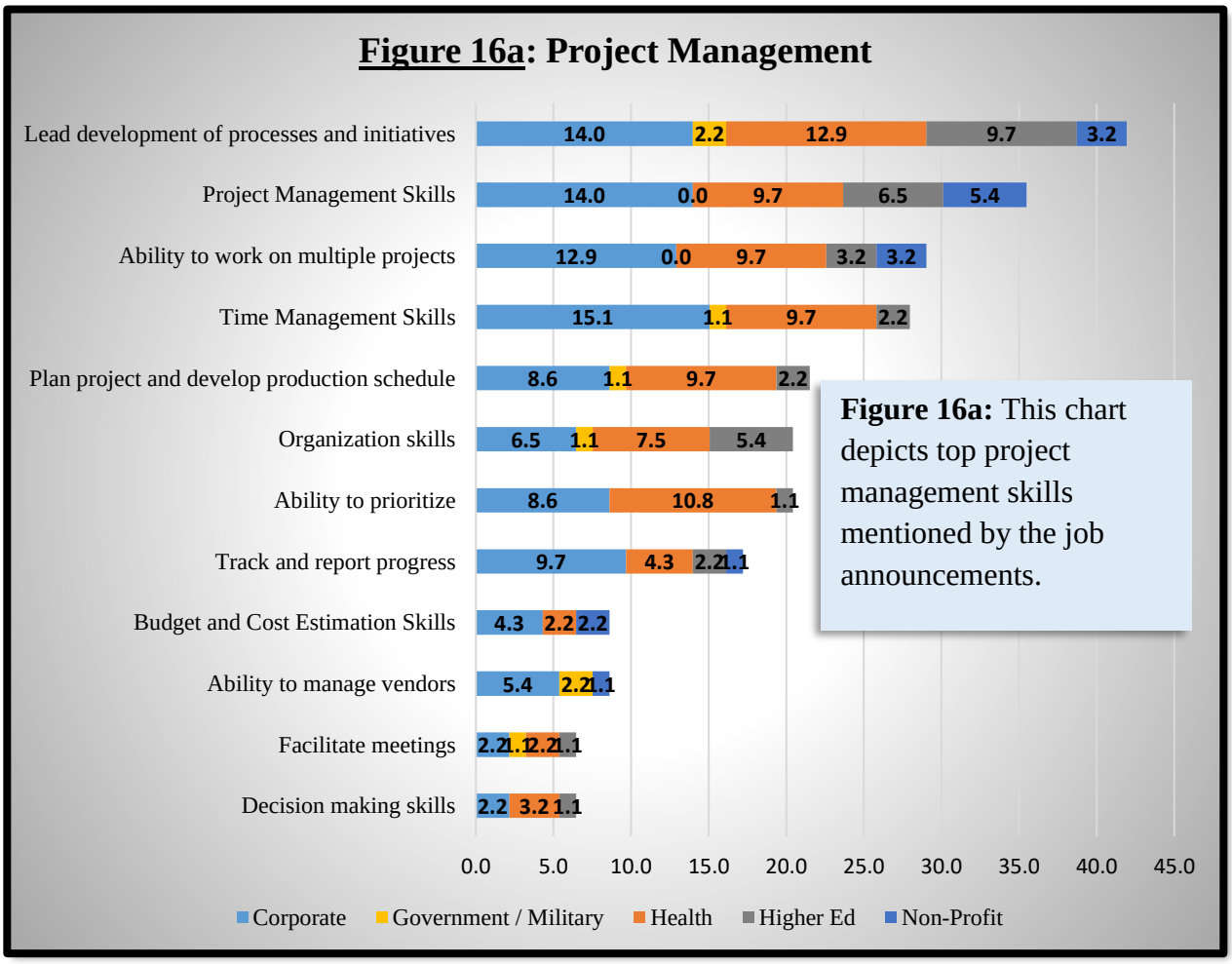


Figure 16a: This chart depicts top project management skills mentioned by the job announcements.

Figure 16b: This chart depicts top project management skills by industry.