What is the prevalence of social skills within the most relevant information technology based training programs, and what are the implications of the results?

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Abstract

Information technology is one of the largest growing industries in the world and has a steady growth in the job market. Past research and articles have noted the importance of both technical and social skills in information technology specialists. In addition, researchers have shown the importance of training programs and onboarding programs for maximizing efficiency in any industry. These findings from previous research papers led to the question: What is the prevalence of social skills within the most relevant information technology based training programs, and what are the implications of the results?

In order to find the prevalence of social skills within IT training programs, nine sources were selected to identify 89 total training programs. Those 89 programs were analyzed using a conceptual content analysis approach. To limit inconsistency, the documents were inspected three times each at different moments and the results discussed.

The results reflected the well-known idea that technical skills are the main focus of IT training programs, however, they also revealed the problematic absence of social skills. Of the 995 total skills identified across the 89 training programs, only 25 (2.513%) of them were related to social skills. The implications of the results on onboardings programs and industry efficiency were discussed with a stress on possible future studies.

Significance/Introduction

The labor market has drastically changed in the last century. With progression in computer and robotics technology, the automation of jobs has increased (Picker, 2015). According to David J. Deming (2015), researcher at Harvard University, since 1980, occupations requiring social skills have seen more growth compared to any other jobs. There has been a 12% increase in job growth from 1980 to 2012 (p. 5). Professions requiring high levels of mathematics and analytical reasoning can be easy to automate, therefore, they haven't prospered nearly as well as other occupations in the job market (Deming, 2015). In fact, Carl Benedikt Frey and Michael A. Osborne (2013), researchers at the Oxford Martin School, estimated that 47% of all U.S. jobs are likely to be automated in the next couple of decades (p. 38). The positions left available will be those that require human interaction, which human-computer interaction (HCI) cannot fit the role of (Carey et al., 2004).

Information technology (IT) is an outlier to the trends described above. According to the U.S. Bureau of Labor Statistics, it is such an exception that "employment in computer and information technology occupations is projected to grow 13 percent from 2020 to 2030," which is a greater growth than any other occupation (para. 1). Mathematics and analytical computation were said to be automatable, and information technology, which can be anything from building communications networks, analyzing data and information, creating databases, and *helping employees and clients* troubleshoot problems, would fall into that category if it weren't for the last role of IT professionals (Picker, 2015; Stokdyk, 2022). Helping employees and clients is a common example of social interaction and communication found within any occupation, and it is a critical skill for those working in IT (Siddiqui, 2015; Wolk; 2019). With the importance of

communication in IT so clear, it is a problem that information technology specialists are stereotyped as anti-social.

LITERATURE REVIEW

Search Strategies

The information above in the introduction and below in the literature review were found from various sources. These sources were checked for credibility by verifying the researchers' reliability and purpose. While researching, various databases were used such as JSTOR, SagePub, IEE Xplore, and Science Direct. The following keywords were used while researching: IT skills, social skills, information technology, training programs, and onboarding new employees.

Valued Skills by IT Employers

While information technology (IT) is a broad term for many occupations relating to the "use of any computers, storage, networking and other physical devices, infrastructure and processes to create, process, store, secure, and exchange all forms of electronic data," most employers are looking for similar things in future employees for these jobs (Castagna & Bigelow, 2021, para. 1). The Indeed Editorial Team (2021) claims technical writing, social media management, coding, network configuration, hardware deployment, operating system knowledge, and database management are essential for those looking to work in IT. Those are all technical skills which are touched upon during courses at secondary education. The article continues to say that IT employers also equally value "soft skills" (Indeed Editorial Team, 2021). Personal skills, interpersonal skills, essential skills, and non-technical skills are all different names for soft skills. The following soft skills are listed in the article: communication, organization, analytical abilities, creativity, project management, tenacity, problem-solving,

resourcefulness, leadership, and flexibility (Indeed Editorial Team, 2021). While all these soft skills are important, this research project will focus on communication, project management, and leadership, which are all instances of social skills (Indeed Editorial Team, 2021).

Defining Social Skills

Prior to studying the importance of social skills within IT jobs, it is important to define the term. Social skills can be described "as a level or extent according to which a person demonstrated social awareness and ability to manage the social interaction" (Jurevičienė et al., 2018, pp. 42-52; Hogan & Shelton, 1998, pp. 129-144). In other words, it is how well a person is able to interact with another individual in any given scenario. The definition can be built upon by adding that social skills relate to both the ability to initiate a social interaction and the quality of the responses to the behaviors of others (Hogan & Shelton, 1998, pp. 129-144; Gresham, 2002). Examples of social skills include effective communication, conflict resolution, active listening, empathy, relationship management, and respect (Indeed Editorial Team, 2021). While all these examples of social skills are important in every professional occupation, effective communication is what will be focused on in this paper as it is a critical skill for information technology specialists.

Importance of Training Programs

Training programs are "planned sequences and combinations of activities designed to equip employees with knowledge and skills to become better professionals" (Kokoulina, 2022, para. 15). There are several types of training programs, each designed to achieve a specific goal. For example, the purpose of management training is to prepare an employee for a managerial position by teaching them their new responsibilities and tasks (Indeed Editorial Team, 2021). The benefits of training programs include improved skills and knowledge of a specific topic,

well-prepared employees for increased responsibilities, increased productivity, improved organizational structure, boosted morale, and a better workplace environment (Indeed Editorial Team, 2021).

In 2017, researchers by the names Alfsheen Majed and Sidra Shekeel sought to find the correlation between training programs and workplace efficiency. A quantitative based research model was planned with a questionnaire to collect data. Five-point Likert scales were handed to employees in the banking sector of Pakistan, and of the 200 people that received the scale, 180 completed it. The study concluded that there was a "positive relationship between training and organization effectiveness" (Majeed & Shakeel, 2017, pp. 500). Furthermore, 93% of the employees that were a part of the research agreed that training programs led to higher efficiency and helped them with their duties (Majeed & Shakeel, 2017). It is clear that the proper use of training programs by employers leads to higher efficiency in the workplace (Majeed & Shakeel, 2017; Kokoulina, 2022).

In relation to information technology (IT), IBM (International Business Machines), a technology-based corporation focusing on building computers, has done research about the effects of training programs on the IT industry. An IBM Smarter Workforce study looked at a variety of companies from the best to the worst to see whether training programs played a role in an organization's effectiveness (Falkingham, 2014). According to the results, 84% of the employees in the best performing companies were being put in training programs. In addition, the study claims that the amount of training a worker receives does not need to be a great deal. It needs to be enough so that the employee has accomplished his goal and gained insight about a topic/skill that needed reinforcement (Falkingham, 2014). IBM also lists the benefits of a skilled workforce; one that has gone through training. Some benefits include: an increase in customer

satisfaction by an average of 16% and 10% higher productivity (Falkingham, 2014). An overlooked benefit of training programs is a boost in employee morale. According to IBM's study, "employees who do not feel they can achieve their career goals… are 12 times more likely to consider leaving than employees who do feel they can achieve their career goals" and this is only for current employees (Falkingham, 2014). New employees who don't feel as they are accomplishing their goals are 30 times more likely to leave (Falkingham, 2014).

Onboarding New Employees

Training programs can also be utilized by employers for the purpose of teaching new employees, which is alternatively called onboarding. Onboarding is a process where new employees are aided in adapting to their new responsibilities and environments ("What is Onboarding in HR," n.d.). When adjusting to their new responsibilities, new hires are educated with technical skills that relate to their career field. In addition, as the employees are adapting to their new environments, they are tested with their social skills as they interact with their new co-workers ("What is Onboarding in HR," n.d.; Bauer, 2010). According to Bauer (2010), onboarding has four different building blocks, and they are called "the Four C's":

- Compliance is the lowest level and includes teaching employees basic legal and policy-related rules and regulations.
- Clarification refers to ensuring that employees understand their new jobs and all related expectations.
- Culture is a broad category that includes providing employees with a sense of organizational norms— both formal and informal."
- Connection refers to the vital interpersonal relationships and information networks that new employees must establish.

Footnote: The Four C's (Bauer, 2010)

Of the four levels of onboarding, two of them, compliance and clarification, are intended to test and develop technical skills within the employees, while the other two, culture and

connection, are designed to check and progress the employees' social skills and interactions. These four levels of onboarding must be integrated within an onboarding plan for it to be successful (Bauer, 2010). Bauer provides an outline of a plan that has been studied by many researchers:

Figure 1: *Onboarding Outline by IBM (*Bauer, 2010)

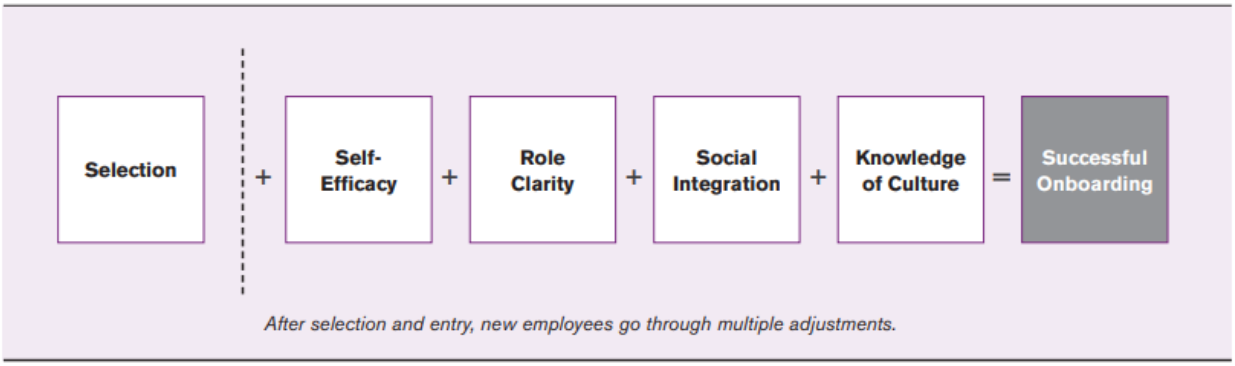


Figure 1 shows the general outline of a plan that integrates four necessary aspects of onboarding for new employees. Before starting the onboarding plan, there is *selection*, where people are distinguished from others and then hired *(*Bauer, 2010). The first aspect of a successful onboarding plan is S*elf-Efficacy*. *Self-Efficacy* is a critical part of onboarding as that's when new employees gain self-confidence. *Role Clarity*, the second element of a successful onboarding, focuses on teaching technical skills to new employees and giving them insight on their new responsibilities. These aspects relate back to the first two C's, compliance and clarification. The next two elements of a successful onboarding are *Social Integration* and *Knowledge of Culture*, which are in accordance with the last two C's, culture and connection *(*Bauer, 2010). Both of these elements focus on the social skills of the new employees as they are put through the test of interacting with their new co-workers and their new environment. Furthermore, Bauer (2010) notes four important tactics for succeeding in *Social Integration* and *Knowledge of Culture*. It is stated that "making time to engage in small talk with colleagues,

arranging informal social interactions, participating in voluntary company functions, and trying to build a relationship with a supervisor by taking on new responsibilities and successfully completing assignments" are critical when a new employee is fitting in with their new environment and co-workers *(*Bauer, 2010). Bauer states that "new employees need to feel socially comfortable and accepted by their peers and superiors," and this is not a possibility if the new employees are lacking interpersonal skills *(*Bauer, 2010).

Research Gap

There are several studies and articles that discuss the most important skills that a professional in the information technology field must possess. In addition, as shown in previous sections, investigations that focus on the effects of training programs on employees and organizations exist. IBM also has very detailed studies on the purposes, effects, and processes of onboarding programs and training programs. Some are focused on information technology solely, while others relate to workplace efficiency in all industries. Furthermore, there are many existing studies and articles that discuss the importance of social skills for employees in IT and in all industries. Finally, a detailed investigation by Ömer Gökel and Gökmen Dağlı (2017) shows the effects of social skill training programs on young people in Cyprus. However, there is no pre-existing research on if training programs for information technology lack a focus on social/interpersonal skills. The purpose of this study is to address that gap and determine the implications the results bring among any onboarding programs in the IT employees' future and any possible effects on efficiency in the IT industry.

Hypothesis

Given the technicality of the field of information technology, I believe that most training programs for IT employees will be based on technical skills rather than social skills (Indeed Editorial Team, 2021). I hypothesize that most training programs will be focused on teaching skills such as application development and architecture, artificial intelligence, cloud computing, HTML, CSS, Python, and other programming languages (Doyle, 2021). As a result, the people going through training programs for information technology will lack the social skills required for their career.

RESEARCH DESIGN AND METHODOLOGY

Study Design

The following research was conducted to find how many of the existing training programs for information technology are aimed at developing interpersonal or social skills within current and future information technology professionals. The results of this study are important because if the outcome shows that training programs lack a focus on developing social skills, then there could be a clear shortcoming of skills in the general information technology field, therefore, IT organizations may not be running at maximum efficiency.

A conceptual content analysis was performed various times on numerous training programs' course descriptions. The reason for choosing this specific research method was that it would allow for the collection of quantitative data, specifically how often certain words or concepts appear in documents. Also, a successful conceptual content analysis would set up a path for determining the meaning and relationship of this data. Not only was the conceptual content analysis performed on dozens of documents or training program course descriptions in this study, but the content analysis was iterated several times on each training program's description for the

purpose of reinforcing the validity of the data. This was a necessary part of the research design since instead of searching for only specific words and phrases in the documents like most other conceptual content analysis studies, different concepts were the main target in these documents as explained in the following section.

DELIMITATIONS & PARAMETERS

Sampling Method

With the high popularity of information technology, the demand for training programs based around IT is tremendous and for that reason there is a large amount of IT training. During the data collection process, it became clear that it would be impossible to analyze every single training program or course for information technology, so delimitations were placed to limit the number of documents that would be considered in the study. Rather than setting a numerical limit to the number of total training programs that would be evaluated, the maximum was set by choosing the top nine sites that offer the courses, and then choosing the ten most relevant training programs from each website. If the sites didn't include a sort by relevancy option for the programs, the first ten shown training programs were used. Furthermore, if the training programs didn't include a list of things that would be learned or a list of skills that would be developed under the program description, it would be skipped and the next option in the courses list chosen. The top nine sources were chosen from a list provided by Sarah White in her article about the best websites for online IT courses. The article provided twelve sources: Alison.com, Codeacademy, Coursera, Dash General Assembly, EdX, Harvard Online Learning, Khan Academy, MicrosoftLearn, MIT OpenCourseWare, Skillshare, Udacity, and Udemy, however, MIT OpenCourseWare, Harvard Online Learning, and Khan Academy were left out in this study. The first two sources were neglected in the interest of keeping out secondary education and colleges from the investigation. This was done because I believe there should be a similar study

conducted in the future but rather focused on computer science courses in secondary education. Additionally, Khan Academy was left out due to the lack of information technology training programs offered.

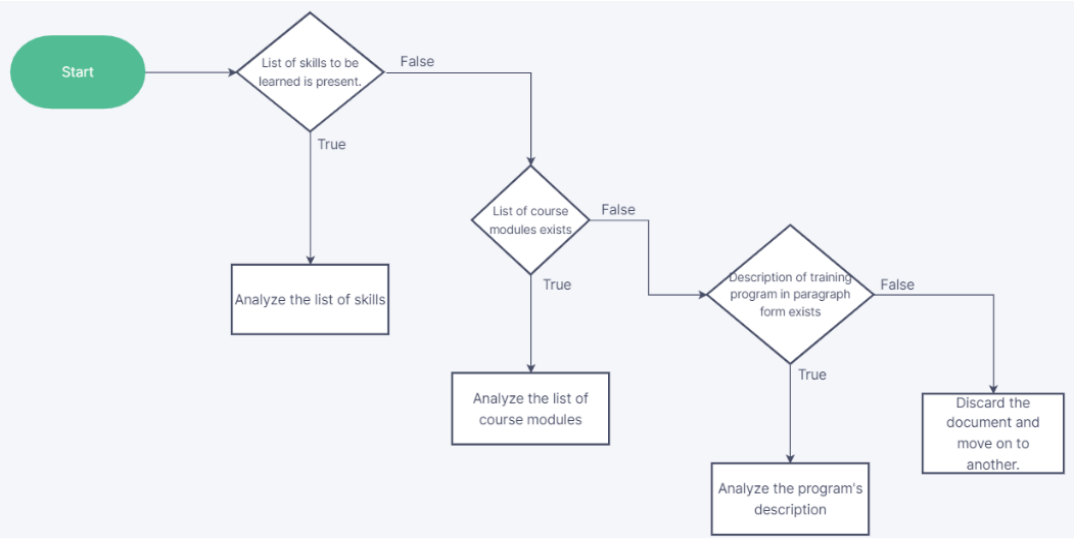
Keywords and Concepts

A conceptual content analysis calls for the search of key words and concepts within various documents. With the documents already chosen, delimitations were also set on keywords and concepts that were searched for during the study. The aim of this research is to find the recurrence of social skills and technical skills within training programs, so some keywords that indicate social skills included “social skills,” “social,” “soft skills,” “interpersonal skills.” However, it would be very unlikely for those exact phrases to show up in the training programs’ descriptions, for that reason, concepts that related to social skills were also a target. Any skill or module indicated in a course/program’s description that would relate to building communication and social skills were also marked for social skills. ”Customer service,” “management training,” “interview training,” and “communication” are some examples of phrases that fell under the social skill category. On the other hand, phrases and words that related to the knowledge of computer science, programming, and information technology were marked for the technical skills category. Ideas under a training program’s description that related to programming languages and other computer science concepts were also marked for technical skills, for example, “HTML,” “Python,” “CSS,” “C++,” “computer,” and “hardware.” Any topic/module/skill that didn’t relate to technical or social skills was marked under the other skills category.

Course Model Names + Listed Skills

Another important aspect of a conceptual content analysis that was considered was which part of each document to analyze. The documents being the descriptions of training programs made it difficult to locate the best way for analysis. Since many sources were considered for the documents, not every single training program's description had the same format, which led to inconsistencies during analysis. In order to limit the inconsistences as much as possible, a conditional-systematic approach to analysis was used. If the training program had a section where each learned skill was printed, then that section was examined. If the training program did not have a section where each learned skill was printed but had parts where there was a list of course modules, then that was used. Finally, if only a course description in paragraph form was present, then that was examined. If there was no mention of skills to be learned or a clear syllabus of the training program, the document was neglected. Figure 2 shows the outline mentioned above in a flow-chart diagram, which was made using Zen Flowchart.

Figure 2: *Training Program Description; "Conditional-Systematic" Approach to Analysis*



Data Set Choice

As mentioned before, three iterations of conceptual content analysis were performed on the same 89 documents. This was done in order to limit human error when analyzing the documents and shrink any sizable inconsistency among the results. With three similar data sets, the final iteration was used for sharing the final results. Instead of finding the averages of all results or taking the results that were the most similar with another iteration, the final iteration was declared the ultimate data set. This was done because while it is unlikely for a course's description to change between iterations, it is still a possibility and that could explain some of the data inconsistencies among the different iterations. However, the main reason for using the final data set was human error and inexperience. During the first iteration of data collection, there were difficulties when choosing which category to place a keyword and concept under and when deciding which part of the document to analyze as the data collection framework shown in Figure 2 was not yet perfected. With time between iterations, the data collector gained more experience, and the data collection process became more consistent.

Procedures

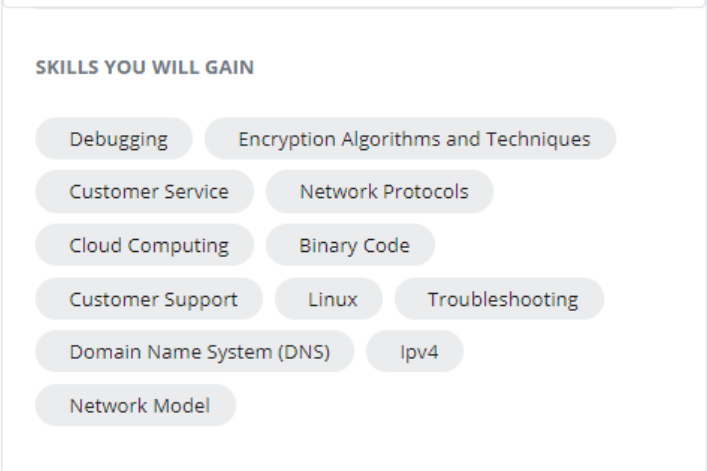
While collecting data from various websites that included many training programs and courses for learning information technology, a similar procedure was followed every time. For example, when collecting data from the website Coursera, first the names of each course were written in the "Training Program Name" column as found in Figure 3. In this example, the names were "Google IT Support," "Technical Support Fundamentals," "Foundations: Data, Data, Everywhere," "Key Technologies for Business," "Preparing for Google Cloud Certification: Cloud DevOps Engineer," "Google IT Automation with Python," "Preparing for Google Cloud Certification: Cloud Architect," "Preparing for Google Cloud Certification: Cloud Engineer," and "Architecting with Google Compute Engine." Then, the training programs' descriptions

were analyzed. Keywords and ideas identified in the previous sections were searched for and then marked in the figure. As an example, the "Google IT Support" training program's course description, specifically the "Skills You Will Gain" part, can be found in Figure 4. In Figure 4, of the twelve skills that people taking the training program are meant to gain, only two of them are related to enhancing social skills: "Customer Service" and "Customer Support," so a "2" was entered under the "Social Skills" column found in Figure 3. All of the remaining ten skills listed were technical skills, so a "10" was put under the "Technical Skills" column also found in Figure 3. All of the listed skills fell under either the "Technical Skills" or "Social Skills" category, so with none left over, a "0" was entered under the "Other Skills" column. In addition, the "Total Skills" column is meant to store the total number of skills that are promised to be learned, so a "12" was put under that column. Finally, "TRUE" was the data value stored under the "Social Skills Present" column because there was indeed some mention of enhancing social skills under the training program's description.

Figure 3: *Data Collected from "Google IT Support" in Coursera*

Training Program Name	Technical Skills	Social Skills	Other Skills	Total Skills	Social Skills Present
Google IT Support	10	2	0	12	TRUE
Technical Support Fundamentals					
Foundations: Data, Data, Everywhere					
Key Technologies for Business					
Preparing for Google Cloud Certification: Cloud DevOps Engineer					
Google IT Automation with Python					
Preparing for Google Cloud Certification: Cloud Architect					
Preparing for Google Cloud Certification: Cloud Engineer					
Architecting with Google Compute Engine					
Security in Google Cloud Specialization					

Figure 4: *Google IT Support "Skills You Will Gain"* [26]



RESULTS

An iterated conceptual concept analysis was performed on nine sources with every source providing ten training programs for information technology with one outlier providing only nine training programs. As a result, 89 total training programs were analyzed. The name of each of the 89 training programs, the recurrence of technical skills and social skills, and whether social skills were present at all in the training programs were recorded. Figure 5 depicts a full analysis of ten training programs for a source named Coursera. Only two of the ten training programs sampled from Coursera provided training in social skills, while all others were just focused on building technical skills. With 97 total skills listed under all ten training programs and only three of them being marked under social skills, around 3.1% of all skills being taught related to communication and social skills.

Figure 5: *Data Collected from Coursera – Iteration 3*

Training Program Name	Technical Skills	Social Skills	Other Skills	Total Skills	Social Skills Present
Google IT Support	10	2	0	12	TRUE
Technical Support Fundamentals	3	1	0	4	TRUE
Foundations: Data, Data, Everywhere	5	0	0	5	FALSE
Key Technologies for Business	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud DevOps Engineer	12	0	0	12	FALSE
Google IT Automation with Python	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud Architect	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud Engineer	12	0	0	12	FALSE
Architecting with Google Compute Engine	12	0	0	12	FALSE
Security in Google Cloud Specialization	4	0	0	4	FALSE

Figures 6 and 7 depict data collected from CodeAcademy at two different times. The data in Figure 6 was collected in the first months of 2022, when the source only provided eight training programs for information technology. However, when the second iteration of the analysis was being complete during the first week of April, it became clear that another IT course was added to website, so it was also added into the content analysis as seen in Figure 7.

Figure 6: *Data Collected from CodeAcademy – Iteration 1*

Training Program Name	Technical Skills	Social Skills	Other Skills	Total Skills	Social Skills Present
Fundamentals of Cybersecurity	3	0	1	4	FALSE
Learn Python 3	10	0	0	10	FALSE
Learn SQL	4	0	0	4	FALSE
Learn the Command Line	4	0	0	4	FALSE
Introduction to Cybersecurity	4	0	3	7	FALSE
Introduction to IT	6	0	1	7	FALSE
Introduction to Linux	10	0	0	10	FALSE
Fundamentals of Operating Systems	7	0	0	7	FALSE

Figure 7: *Data Collected from CodeAcademy – Iteration 2*

Training Program Name	Technical Skills	Social Skills	Other Skills	Total Skills	Social Skills Present
Fundamentals of Cybersecurity	3	0	1	4	FALSE
Learn Python 3	10	0	0	10	FALSE
Learn SQL	4	0	0	4	FALSE
Learn the Command Line	4	0	0	4	FALSE
Introduction to Cybersecurity	4	0	3	7	FALSE
Introduction to IT	6	0	1	7	FALSE
Introduction to Linux	10	0	0	10	FALSE
Fundamentals of Operating Systems	7	0	0	7	FALSE
Learn Spring	5	0	0	5	FALSE

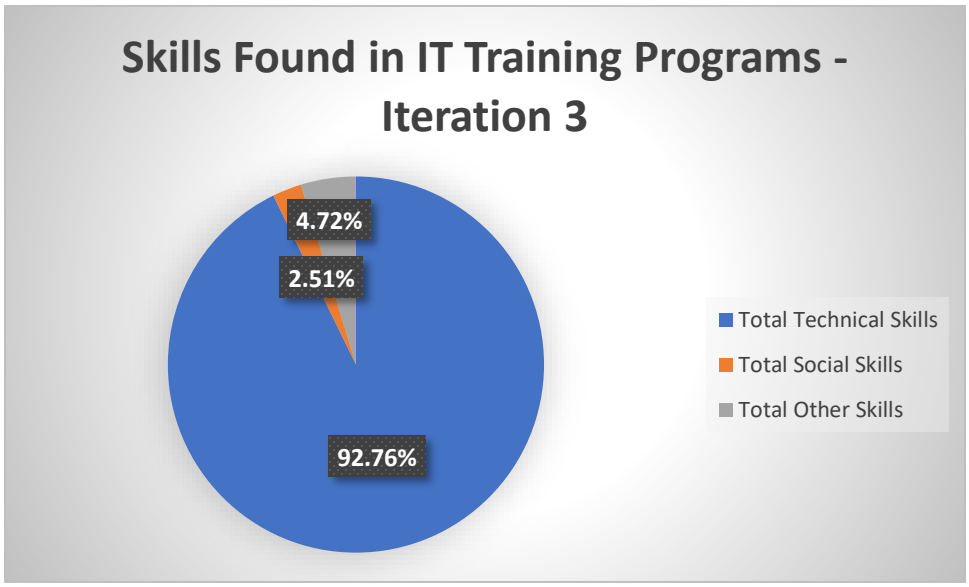
An unexpected result is shown below in Figure 8. The figure presents data collected on training programs from a source called EdX. Surprisingly, not a single training program focused on aspects of social skills as seen under the "Social Skills Present" and "Social Skills" column in the figure. While it was hypothesized that most training programs would focus on building technical skills, it never came to mind that social skills would be entirely left out of sources that offer training programs. Even more interestingly, EdX is not the only source where social skills are absent from training programs' curriculums. There is a similar situation in CodeAcademy and Microsoft Learn.

Figure 8: *Data Collected from EdX – Iteration 3*

Training Program Name	Technical Skills	Social Skills	Other Skills	Total Skills	Social Skills Present
Information Technology Foundations	10	0	0	10	FALSE
Information and Communication Technology (ICT) Accessibility	8	0	0	8	FALSE
IT Fundamentals for Business Professionals: Cybersecurity and Social Implications	10	0	1	11	FALSE
IT Fundamentals for Business Professionals: Hardware	13	0	0	13	FALSE
IT Fundamentals for Business Professionals: Enterprise Systems	16	0	0	16	FALSE
Global Media, War, and Technology	1	0	5	6	FALSE
IT Fundamentals for Business Professionals: Programming	16	0	0	16	FALSE
IT Fundamentals for Business Professionals: Software Development	8	0	1	9	FALSE
Computing: Art, Magic, Science	8	0	0	8	FALSE
Innovation and IT Management	5	0	3	8	FALSE

Figure 9 displays the results from the third and final iteration of analysis of the 89 information technology training programs. Of the 995 total skills identified among the documents, a majority of them or exactly 923 (92.76%) were technical. Additionally, only 25 (2.51%) were social skills and the remaining 47 (4.72%) skills identified within the documents did not fall under either category.

Figure 9: *Pie Chart Results - Iteration 3*



Discussion

Even with the possibility of human error during data collection, the results show minimal differences among the various data sets. Figures 9, 10, and 11 depict the results of each of the three iterations that were completed. As seen in each figure, the percentages are almost identical with only decimal value changes. Perhaps the miniscule difference in data can be better seen in Figure 12. The total counted technical skills, social skills, and other skills are reflected upon in Figure 12 with Iteration 1 producing 921 technical skills, 26 social skills, and 47 other skills. Additionally, Iteration 2 produced 925 total technical skills, 25 social skills, and 47 other skills, while the final iteration (Iteration 3) produced 923 technical skills, 25 social skills, and 47 other

skills. Among all three data sets, the total number of skills that fell under the "other" category is the same. Furthermore, the difference of data for the social skills category is only a value of one between Iteration 1 and 2. More importantly, there is no difference in the number of identified social skills between Iteration 2 and Iteration 3. The largest inconsistency found in the data among the three iteration is under the technical skills category. First 921 technical skills were identified, then in the following iteration, 925 were found, and in the final iteration, 923. With only a 1.00432% difference between the data values for technical skills in Iterations 1 and 2 and a 1.00217% difference in Iterations 2 and 3, the overall inconsistency is insignificant.

Figure 10: *Pie Chart Results - Iteration 1*

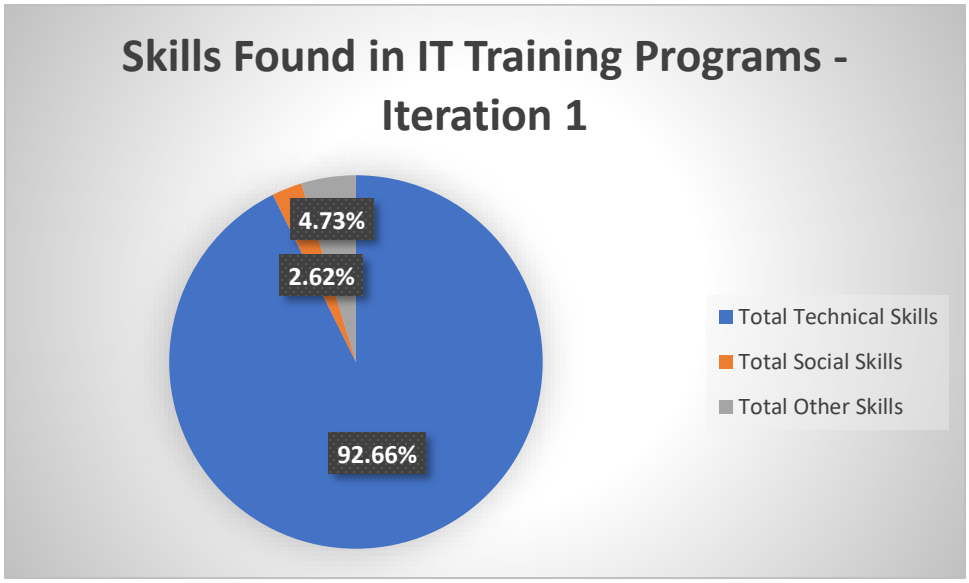


Figure 11: *Pie Chart Results - Iteration 2*

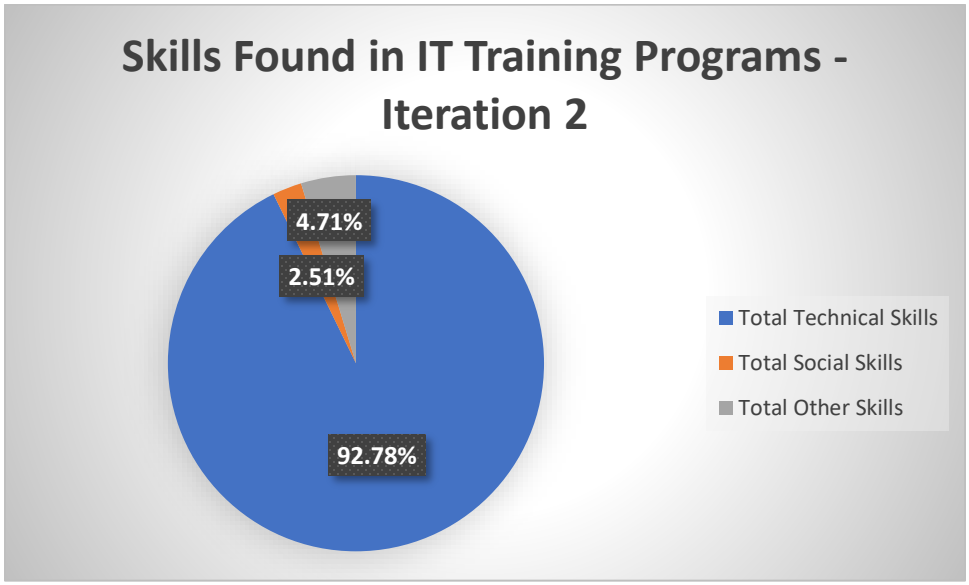
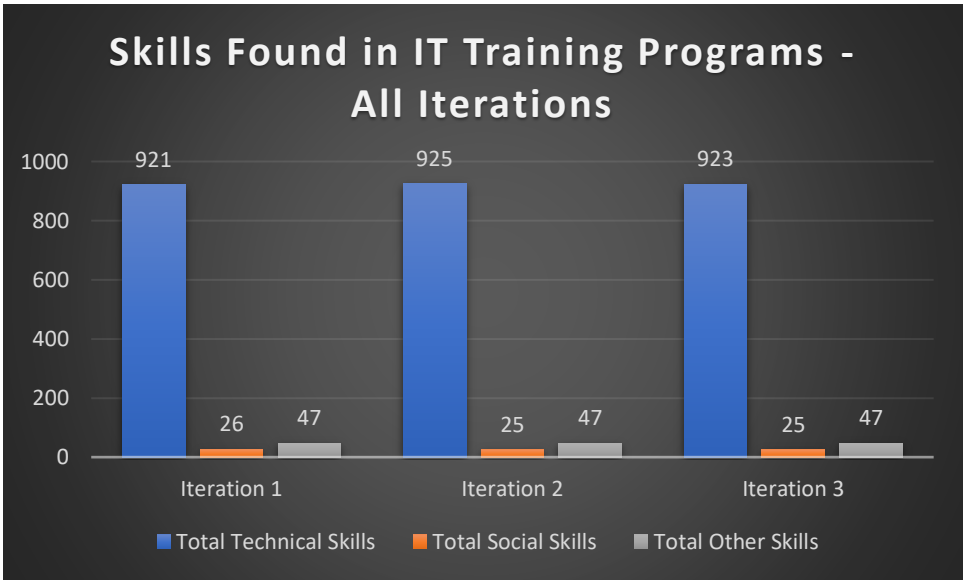


Figure 12: *Bar Graph Results – All Iterations*



The small inconsistent data values for the total number technical skills emerged from the data collection process on multiple sources, however, the most significant contributor is Microsoft Learn. Some training programs found in Microsoft Learn contained topics and modules that touched upon dozens of technical skills. Those topics and modules were sometimes unclear and were scattered around the document, which made analyzing difficult and led to the

inconsistency in data. The problem can be seen in Figures 13 and 14, where the values for technical skills do not match for some training programs. Most notably in “Information Protection Overview” and “Manage Information Protection and Governance.”

Figure 13: *Data Collected from Microsoft Learn – Iteration 1*

Training Program Name	Technical Skills	Social Skills	Other Skills	Total Skills	Social Skills Present
Introduction to AI Technology for Business Leaders	10	0	0	10	FALSE
Azure for the Data Engineer Learning Path	13	0	2	15	FALSE
Enterprise 5G Technologies for Azure Cloud Services	3	0	0	3	FALSE
Protect Enterprise Information with Microsoft 365	11	0	1	12	FALSE
Introduction to Data Protection and Privacy Regulations	7	0	0	7	FALSE
Manage Information Protection and Governance	39	0	0	39	FALSE
Define the Foundation Pillars of DevOps: Architecture and Technology	3	0	0	3	FALSE
Information Protection Overview	43	0	0	43	FALSE
5G Business Models for Azure Cloud Technologies in Enterprise	4	0	0	4	FALSE
Introduction to Modern Management in Microsoft 365	2	0	0	2	FALSE

Figure 14: *Data Collected from Microsoft Learn – Iteration 2*

Training Program Name	Technical Skills	Social Skills	Other Skills	Total Skills	Social Skills Present
Introduction to AI Technology for Business Leaders	10	0	0	10	FALSE
Azure for the Data Engineer Learning Path	14	0	2	16	FALSE
Enterprise 5G Technologies for Azure Cloud Services	3	0	0	3	FALSE
Protect Enterprise Information with Microsoft 365	14	0	1	15	FALSE
Introduction to Data Protection and Privacy Regulations	5	0	0	5	FALSE
Manage Information Protection and Governance	37	0	0	37	FALSE
Define the Foundation Pillars of DevOps: Architecture and Technology	3	0	0	3	FALSE
Information Protection Overview	38	0	0	38	FALSE
5G Business Models for Azure Cloud Technologies in Enterprise	4	0	0	4	FALSE
Introduction to Modern Management in Microsoft 365	2	0	0	2	FALSE

Implications

The results of the completed conceptual content analysis support the hypothesis that most IT training programs prioritize teaching technical skills over social skills. While it is difficult to determine the direct impacts of this result on work efficiency in the IT industry, there are many possible implications. The importance of soft skills including communication and social skills in information technology specialists is highly stressed by Indeed, and while it is improper to assume that all IT professionals lack social skills because training programs don't target them as much as they do with technical skills, the very small attention social skills receive by training programs implies that there could be a lot more information technology employees in the IT industry that lack the aforementioned skills than previously expected (Indeed Editorial Team, 2021). Additionally, the absence of social skills within IT training programs implies a possible problem in the future of some information technology specialists. Given that the perfected onboarding program by Dr. Talya Bauer includes four steps, of which two are related to social skills in some matter, the lack of social skills within future information technology employees could bring up issues during those last two phases of the onboarding program (Bauer, 2010). Without the necessary practice and ability in social and communication skills, future employees could have trouble with some aspects of the last two steps of a successful onboarding: "Social Integration" and "Knowledge of Culture" (Bauer, 2010).

Limitations

As mentioned before, there is an immense amount of information technology training programs and analyzing every single one of them would be impossible, however, this study was still limited by the number of documents that were analyzed. Investigating a larger quantity of training programs would give slightly more reliable results. However, the highest rated websites that offer training programs was the target group of this study, therefore, that limitation did not

have a significant effect. Another limitation of this study was human error. Being unable to use a computer program to analyze the highly differentiated documents made human error a factor to discuss. The last limitation was discovered during the data collection process as it became clear that not all documents had the same structure. A work around to this problem was discussed earlier as a specific guideline was followed when analyzing each document to limit inconsistency. Still, the analysis could've been more reliable as some documents had sections where a complete course syllabus could be requested. With access to those complete source syllabuses, the total number of found social and technical skills within the training programs could've been more precise. Requesting the syllabi required a paid subscription which was not a possibility for this research paper.

Conclusion

With a iterated conceptual content analysis on training programs focused on information technology, this study proved that the initial hypothesis was correct. Most IT training programs are indeed intended to teach technical skills, and they lack a strong focus on building a good foundation of social skills in future and current IT specialists. While the importance of teaching technical skills is important, this study also showed that many sources offering IT training programs completely neglected social skills. The implications of this problem were also discussed referencing the possible failure of new IT hires in onboarding and the possibility of inefficiency in the IT industry.

Future Considerations

Both the limitations and findings of this study open up the possibility of many future investigations. As noted before, the content analysis during this research process was completed by hand. I believe it would be beneficial for IT organizations and the information technology

industry if the same study was completed but with a web scraping computer program collecting data. This course of action would eliminate the possibility of human error. Furthermore, also previously mentioned, two sources were not included in this study: MIT OpenCourseWare and Harvard Online Learning. Those two sources include information technology and computer science courses from the universities MIT and Harvard. Performing a similar investigation on courses offered at universities rather than training programs offered by other sources could give more insight about the possible lack of social skills within future and present IT specialists. In future research, it would be beneficial to increase the sampling size of documents, which would be a possibility with a computer program completing the analysis.

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APPENDICES

Appendix A: *Data Collected from 88 IT Training Programs – Iteration 1*

Microsoft Learn					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Introduction to AI Technology for Business Leaders	10	0	0	10	FALSE
Azure for the Data Engineer Learning Path	13	0	2	15	FALSE
Enterprise 5G Technologies for Azure Cloud Services	3	0	0	3	FALSE
Protect Enterprise Information with Microsoft 365	11	0	1	12	FALSE
Introduction to Data Protection and Privacy Regulations	7	0	0	7	FALSE
Manage Information Protection and Governance	39	0	0	39	FALSE
Define the Foundation Pillars of DevOps: Architecture and Technology	3	0	0	3	FALSE
Information Protection Overview	43	0	0	43	FALSE
5G Business Models for Azure Cloud Technologies in Enterprise	4	0	0	4	FALSE
Introduction to Modern Management in Microsoft 365	2	0	0	2	FALSE
Dash General Assembly					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Data Analytics Immersive	10	0	1	11	FALSE
Data Science Immersive	5	0	0	5	FALSE
Software Engineering Immersive	4	0	0	4	FALSE
User Experience Design Immersive	5	2	1	8	TRUE
Data Analytics	7	1	0	8	TRUE
Data Science	6	1	0	7	TRUE
Digital Marketing	6	0	0	6	FALSE
Front-End Web Development	7	0	1	8	TRUE
JavaScript Development	7	0	0	7	FALSE
Product Management	4	1	0	5	TRUE
SkillShare					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
How to start your Information technology "I.T" Career	7	0	12	19	FALSE
Getting Started with the Google Cloud Platform	3	0	1	4	FALSE
Core Java Programming from Scratch to Advanced	38	0	0	38	FALSE
Business Requirements Elicitation Basics Part 1	6	0	0	6	FALSE
I.T. Project Management for Beginners	29	1	0	30	TRUE

IT Project Vision and Scope Definition	15	0	0	15	FALSE
IT Management 101 - The Skills you Need To Have to Be A Great Tech Manager!	4	7	1	12	TRUE
Computer Science and Information Systems - Tell the Different and Take Advantage	20	1	0	21	TRUE
Beginning Software Development with Python	17	0	0	17	FALSE
IT Technologies for IT Recruiters explained simple	57	1	0	58	TRUE
Alison					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
CompTIA Cloud+ Advaced	12	0	0	12	FALSE
CompTIA Cloud+ Intermediate	11	1	0	12	TRUE
Introduction to CCTV Systems & AutoCAD Layouts	7	0	0	7	FALSE
CompTIA A+ 1000	12	2	0	14	TRUE
CompTIA Cloud+ Basic	15	0	0	15	FALSE
Management Information Systems	12	0	1	13	FALSE
Computer Networking - Digital Network Security	6	0	0	6	FALSE
Computer Networking - Local Area Networks and the OSI Model	11	0	0	11	FALSE
Excel 2021 for Beginners	17	0	0	17	FALSE
Diploma in Computer Networking - Revised	35	0	0	35	FALSE
Udacity					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Introduction to Programming	10	0	0	10	FALSE
Digital Marketing	7	0	0	7	FALSE
Programming for Data Science with Python	6	0	0	6	FALSE
AI Programming with Python	5	0	0	5	FALSE
Front End Web Developer	7	0	0	7	FALSE
C++	6	0	0	6	FALSE
Data Structures and Algorithms	3	1	1	4	TRUE
Cloud DevOps Engineer	5	0	0	5	FALSE
Natural Language Processing	5	0	0	5	FALSE
Intro to Machine Learning with PyTorch	4	0	0	4	FALSE
EdX					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Information Technology Foundations	10	0	0	10	FALSE
Information and Communication Technology (ICT) Accessibility	7	0	0	7	FALSE
IT Fundamentals for Business Professionals: Cybersecurity and Social Implications	10	0	1	11	FALSE

IT Fundamentals for Business Professionals: Hardware	13	0	0	13	FALSE
IT Fundamentals for Business Professionals: Enterprise Systems	16	0	0	16	FALSE
Global Media, War, and Technology	1	0	5	6	FALSE
IT Fundamentals for Business Professionals: Programming	17	0	0	17	FALSE
IT Fundamentals for Business Professionals: Software Development	8	0	0	8	FALSE
Computing: Art, Magic, Science	8	0	0	8	FALSE
Innovation and IT Management	5	0	4	9	FALSE
CodeAcademy					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Fundamentals of Cybersecurity	3	0	1	4	FALSE
Learn Python 3	10	0	0	10	FALSE
Learn SQL	4	0	0	4	FALSE
Learn the Command Line	4	0	0	4	FALSE
Introduction to Cybersecurity	4	0	3	7	FALSE
Introduction to IT	6	0	1	7	FALSE
Introduction to Linux	10	0	0	10	FALSE
Fundamentals of Operating Systems	7	0	0	7	FALSE
Coursera					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Google IT Support	10	2	0	12	TRUE
Technical Support Fundamentals	3	1	0	4	TRUE
Foundations: Data, Data, Everywhere	5	0	0	5	FALSE
Key Technologies for Business	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud DevOps Engineer	12	0	0	12	FALSE
Google IT Automation with Python	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud Architect	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud Engineer	12	0	0	12	FALSE
Architecting with Google Compute Engine	12	0	0	12	FALSE
Security in Google Cloud Specialization	4	0	0	4	FALSE
Udemy					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
The Absolute Beginners Guide to Information Technology 2022	9	0	0	9	FALSE
Diploma Course in Information Technology (IT)	12	0	0	12	FALSE

Information Technology Essentials	6	0	1	7	FALSE
Fundamentals of Information Technology	18	2	2	22	TRUE
Information Technology Specialist - Networking (ITS-101)	10	0	0	10	FALSE
Beginner's Guide to Information Technology	9	1	0	10	TRUE
Information Technologies for Everybody	15	0	2	17	FALSE
Information Technology for Business Administration	9	0	1	10	FALSE
Certified in Information System Audit (CISA) by ISACA	7	0	1	8	FALSE
How to start your Information Technology "I.T" Career	1	1	3	5	TRUE

Appendix B: *Data Collected from 89 IT Training Programs – Iteration 2*

Microsoft Learn					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Introduction to AI Technology for Business Leaders	10	0	0	10	FALSE
Azure for the Data Engineer Learning Path	14	0	2	16	FALSE
Enterprise 5G Technologies for Azure Cloud Services	3	0	0	3	FALSE
Protect Enterprise Information with Microsoft 365	14	0	1	15	FALSE
Introduction to Data Protection and Privacy Regulations	5	0	0	5	FALSE
Manage Information Protection and Governance	37	0	0	37	FALSE
Define the Foundation Pillars of DevOps: Architecture and Technology	3	0	0	3	FALSE
Information Protection Overview	38	0	0	38	FALSE
5G Business Models for Azure Cloud Technologies in Enterprise	4	0	0	4	FALSE
Introduction to Modern Management in Microsoft 365	2	0	0	2	FALSE
Dash General Assembly					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Data Analytics Immersive	10	0	1	11	FALSE
Data Science Immersive	5	0	0	5	FALSE
Software Engineering Immersive	4	0	0	4	FALSE
User Experience Design Immersive	5	2	1	8	TRUE
Data Analytics	7	1	0	8	TRUE
Data Science	6	1	0	7	TRUE
Digital Marketing	6	0	0	6	FALSE
Front-End Web Development	7	0	1	8	TRUE
JavaScript Development	8	0	0	8	FALSE
Product Management	4	1	0	5	TRUE
SkillShare					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
How to start your Information technology "I.T" Career	7	0	12	19	FALSE
Getting Started with the Google Cloud Platform	4	0	1	5	FALSE
Core Java Programming from Scratch to Advanced	38	0	0	38	FALSE
Business Requirements Elicitation Basics Part 1	6	0	0	6	FALSE
I.T. Project Management for Beginners	29	1	0	30	TRUE
IT Project Vision and Scope Definition	15	0	0	15	FALSE

IT Management 101 - The Skills you Need To Have to Be A Great Tech Manager!	4	6	1	11	TRUE
Computer Science and Information Systems - Tell the Different and Take Advantage	20	1	0	21	TRUE
Beginning Software Development with Python	16	0	0	16	FALSE
IT Technologies for IT Recruiters explained simple	57	1	0	58	TRUE
Alison					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
CompTIA Cloud+ Advaced	12	0	0	12	FALSE
CompTIA Cloud+ Intermediate	11	1	0	12	TRUE
Introduction to CCTV Systems & AutoCAD Layouts	7	0	0	7	FALSE
CompTIA A+ 1000	12	2	0	14	TRUE
CompTIA Cloud+ Basic	15	0	0	15	FALSE
Management Information Systems	12	0	1	13	FALSE
Computer Networking - Digital Network Security	6	0	0	6	FALSE
Computer Networking - Local Area Networks and the OSI Model	11	0	0	11	FALSE
Excel 2021 for Beginners	17	0	0	17	FALSE
Diploma in Computer Networking - Revised	37	0	0	37	FALSE
Udacity					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Introduction to Programming	10	0	0	10	FALSE
Digital Marketing	7	0	0	7	FALSE
Programming for Data Science with Python	6	0	0	6	FALSE
AI Programming with Python	5	0	0	5	FALSE
Front End Web Developer	7	0	0	7	FALSE
C++	6	0	0	6	FALSE
Data Structures and Algorithms	3	1	1	4	TRUE
Cloud DevOps Engineer	6	0	0	6	FALSE
Natural Language Processing	5	0	0	5	FALSE
Intro to Machine Learning with PyTorch	4	0	0	4	FALSE
EdX					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Information Technology Foundations	10	0	0	10	FALSE
Information and Communication Technology (ICT) Accessibility	8	0	0	8	FALSE
IT Fundamentals for Business Professionals: Cybersecurity and Social Implications	10	0	1	11	FALSE
IT Fundamentals for Business Professionals: Hardware	13	0	0	13	FALSE

IT Fundamentals for Business Professionals: Enterprise Systems	16	0	0	16	FALSE
Global Media, War, and Technology	1	0	5	6	FALSE
IT Fundamentals for Business Professionals: Programming	16	0	0	16	FALSE
IT Fundamentals for Business Professionals: Software Development	8	0	1	9	FALSE
Computing: Art, Magic, Science	8	0	0	8	FALSE
Innovation and IT Management	5	0	3	8	FALSE
CodeAcademy					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Fundamentals of Cybersecurity	3	0	1	4	FALSE
Learn Python 3	10	0	0	10	FALSE
Learn SQL	4	0	0	4	FALSE
Learn the Command Line	4	0	0	4	FALSE
Introduction to Cybersecurity	4	0	3	7	FALSE
Introduction to IT	6	0	1	7	FALSE
Introduction to Linux	10	0	0	10	FALSE
Fundamentals of Operating Systems	7	0	0	7	FALSE
Learn Spring	5	0	0	5	FALSE
Coursera					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Google IT Support	10	2	0	12	TRUE
Technical Support Fundamentals	3	1	0	4	TRUE
Foundations: Data, Data, Everywhere	5	0	0	5	FALSE
Key Technologies for Business	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud DevOps Engineer	12	0	0	12	FALSE
Google IT Automation with Python	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud Architect	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud Engineer	12	0	0	12	FALSE
Architecting with Google Compute Engine	12	0	0	12	FALSE
Security in Google Cloud Specialization	4	0	0	4	FALSE
Udemy					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
The Absolute Beginners Guide to Information Technology 2022	9	0	0	9	FALSE
Diploma Course in Information Technology (IT)	12	0	0	12	FALSE
Information Technology Essentials	6	0	1	7	FALSE

Fundamentals of Information Technology	18	2	2	22	TRUE
Information Technology Specialist - Networking (ITS-101)	10	0	0	10	FALSE
Beginner's Guide to Information Technology	9	1	0	10	TRUE
Information Technologies for Everybody	15	0	2	17	FALSE
Information Technology for Business Administration	9	0	1	10	FALSE
Certified in Information System Audit (CISA) by ISACA	7	0	1	8	FALSE
How to start your Information Technology "I.T" Career	1	1	3	5	TRUE

Appendix C: *Data Collected from 89 IT Training Programs – Iteration 3*

Microsoft Learn					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Introduction to AI Technology for Business Leaders	10	0	0	10	FALSE
Azure for the Data Engineer Learning Path	14	0	2	16	FALSE
Enterprise 5G Technologies for Azure Cloud Services	3	0	0	3	FALSE
Protect Enterprise Information with Microsoft 365	14	0	1	15	FALSE
Introduction to Data Protection and Privacy Regulations	5	0	0	5	FALSE
Manage Information Protection and Governance	36	0	0	36	FALSE
Define the Foundation Pillars of DevOps: Architecture and Technology	3	0	0	3	FALSE
Information Protection Overview	38	0	0	38	FALSE
5G Business Models for Azure Cloud Technologies in Enterprise	4	0	0	4	FALSE
Introduction to Modern Management in Microsoft 365	2	0	0	2	FALSE
Dash General Assembly					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Data Analytics Immersive	10	0	1	11	FALSE
Data Science Immersive	5	0	0	5	FALSE
Software Engineering Immersive	4	0	0	4	FALSE
User Experience Design Immersive	5	2	1	8	TRUE
Data Analytics	7	1	0	8	TRUE
Data Science	6	1	0	7	TRUE
Digital Marketing	6	0	0	6	FALSE
Front-End Web Development	7	0	1	8	FALSE
JavaScript Development	8	0	0	8	FALSE
Product Management	4	1	0	5	TRUE
SkillShare					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
How to start your Information technology "I.T" Career	7	0	12	19	FALSE
Getting Started with the Google Cloud Platform	4	0	1	5	FALSE
Core Java Programming from Scratch to Advanced	38	0	0	38	FALSE
Business Requirements Elicitation Basics Part 1	6	0	0	6	FALSE
I.T. Project Management for Beginners	29	1	0	30	TRUE
IT Project Vision and Scope Definition	15	0	0	15	FALSE

IT Management 101 - The Skills you Need To Have to Be A Great Tech Manager!	4	6	1	11	TRUE
Computer Science and Information Systems - Tell the Different and Take Advantage	20	1	0	21	TRUE
Beginning Software Development with Python	16	0	0	16	FALSE
IT Technologies for IT Recruiters explained simple	57	1	0	58	TRUE
Alison					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
CompTIA Cloud+ Advaced	12	0	0	12	FALSE
CompTIA Cloud+ Intermediate	11	1	0	12	TRUE
Introduction to CCTV Systems & AutoCAD Layouts	7	0	0	7	FALSE
CompTIA A+ 1000	12	2	0	14	TRUE
CompTIA Cloud+ Basic	15	0	0	15	FALSE
Management Information Systems	12	0	1	13	FALSE
Computer Networking - Digital Network Security	6	0	0	6	FALSE
Computer Networking - Local Area Networks and the OSI Model	11	0	0	11	FALSE
Excel 2021 for Beginners	17	0	0	17	FALSE
Diploma in Computer Networking - Revised	36	0	0	36	FALSE
Udacity					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Introduction to Programming	10	0	0	10	FALSE
Digital Marketing	7	0	0	7	FALSE
Programming for Data Science with Python	6	0	0	6	FALSE
AI Programming with Python	5	0	0	5	FALSE
Front End Web Developer	7	0	0	7	FALSE
C++	6	0	0	6	FALSE
Data Structures and Algorithms	3	1	1	5	TRUE
Cloud DevOps Engineer	6	0	0	6	FALSE
Natural Language Processing	5	0	0	5	FALSE
Intro to Machine Learning with PyTorch	4	0	0	4	FALSE
EdX					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Information Technology Foundations	10	0	0	10	FALSE
Information and Communication Technology (ICT) Accessibility	8	0	0	8	FALSE
IT Fundamentals for Business Professionals: Cybersecurity and Social Implications	10	0	1	11	FALSE
IT Fundamentals for Business Professionals: Hardware	13	0	0	13	FALSE

IT Fundamentals for Business Professionals: Enterprise Systems	16	0	0	16	FALSE
Global Media, War, and Technology	1	0	5	6	FALSE
IT Fundamentals for Business Professionals: Programming	16	0	0	16	FALSE
IT Fundamentals for Business Professionals: Software Development	8	0	1	9	FALSE
Computing: Art, Magic, Science	8	0	0	8	FALSE
Innovation and IT Management	5	0	3	8	FALSE
CodeAcademy					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Fundamentals of Cybersecurity	3	0	1	4	FALSE
Learn Python 3	10	0	0	10	FALSE
Learn SQL	4	0	0	4	FALSE
Learn the Command Line	4	0	0	4	FALSE
Introduction to Cybersecurity	4	0	3	7	FALSE
Introduction to IT	6	0	1	7	FALSE
Introduction to Linux	10	0	0	10	FALSE
Fundamentals of Operating Systems	7	0	0	7	FALSE
Learn Spring	5	0	0	5	FALSE
Coursera					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
Google IT Support	10	2	0	12	TRUE
Technical Support Fundamentals	3	1	0	4	TRUE
Foundations: Data, Data, Everywhere	5	0	0	5	FALSE
Key Technologies for Business	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud DevOps Engineer	12	0	0	12	FALSE
Google IT Automation with Python	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud Architect	12	0	0	12	FALSE
Preparing for Google Cloud Certification: Cloud Engineer	12	0	0	12	FALSE
Architecting with Google Compute Engine	12	0	0	12	FALSE
Security in Google Cloud Specialization	4	0	0	4	FALSE
Udemy					
Training Program Name	**Technical Skills**	**Social Skills**	**Other Skills**	**Total Skills**	**Social Skills Present**
The Absolute Beginners Guide to Information Technology 2022	9	0	0	9	FALSE
Diploma Course in Information Technology (IT)	12	0	0	12	FALSE
Information Technology Essentials	6	0	1	7	FALSE

Fundamentals of Information Technology	18	2	2	22	TRUE
Information Technology Specialist - Networking (ITS-101)	10	0	0	10	FALSE
Beginner's Guide to Information Technology	9	1	0	10	TRUE
Information Technologies for Everybody	15	0	2	17	FALSE
Information Technology for Business Administration	9	0	1	10	FALSE
Certified in Information System Audit (CISA) by ISACA	7	0	1	8	FALSE
How to start your Information Technology "I.T" Career	1	1	3	5	TRUE