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A Comprehensive Study that Identifies the Gap in Project Management Education Concerning Fundamental Interpersonal and Cultural Skills

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Honors Capstone Project in Information Management & Technology

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Abstract

The project management field has an absence of a universally accepted set of attributes that relate to project success. The current methodology alone does not focus enough attention on developing skills to engage, adapt, and communicate effectively with a diverse group of stakeholders, including the project team and those affected or impacted by the project. The gap in cultural and interpersonal skills I have identified in the classroom and in textbooks motivated me to complete a research project that investigates the claims that I have outlined. The purpose of this research was to create a conceptual triangle that incorporates the three knowledge areas—hard skills, soft skills, and cultural knowledge— and its sub-points that are critical for a project manager's competency and their ability to lead a team to project success. The knowledge areas are representative of my research and the literature review resulted in questions and sub-questions to be used to explore throughout the project. The capstone project identifies how adequate project management literature and a university education equip potential project managers in the area of human and cultural skills. Through research, I have identified the distribution of hard skills, soft skills, and cultural knowledge courses at various colleges and disciplines at Syracuse University. The key lessons learned from this capstone project contribute to the overall body of knowledge in project management, as well as practice.

Executive Summary

This capstone project concerns the project management education and its related fields taught in the classroom at Syracuse University. Its aim is to identify how well the project management literature and the university education equip potential project managers in the area of human and cultural skills. The purpose of this study is to develop a conceptual model illustrating what is commonly believed as the most important project management skills and validating it through exploration of available courses in project management paths. The model illustrates the combination of three knowledge areas—technical skills, interpersonal skills, and cultural knowledge—for a well-rounded project manager's competency and their ability to lead a team to project success.

Traditional project management education focuses on the technical skills, and while they are fundamental, the Project Management Institute recognized they are not enough in today's dynamic work environment. There has been a recent realization that the missing piece to the puzzle is the acquisition of interpersonal skills to effectively lead and communicate with a team. This capstone project is motivated by the previous assertion that the project management field places an emphasis on both the hard skills and the soft skills needed in a project manager's efficacy. However, from a student's perspective, the current education does not focus enough attention on teaching and developing the soft skills to engage, adapt, and communicate effectively with a diverse group of stakeholders, including the project team and those affected or impacted by the project. The concern lies in the idea that the soft skills are fundamental, but due to the complicated nature of teaching the skills or the mere lack of acknowledgement of the importance of the skills, they are not well-represented in the courses at the University. In the

curriculum, there is a leading challenge and a lack of guidance on how to acquire human knowledge and cultural skills as relating to a project team and its organizational environment.

The research design aims to explore the claim that there is an absence of courses concerning the understanding and practice of acquiring soft skills. It is accomplished through identifying different domains of management paths at Syracuse University, ranging from project management to civil engineering, and compiling a list of the courses offered to complete the degree or concentration. The courses are categorized and measured against the three skill areas to discover the proportion of courses offered concerning interpersonal and cultural skills. The quantitative data will provide a representation of the courses that will stimulate discussion.

The capstone project is separated into four chapters. The first chapter focuses on versing the reader with a general understanding of the current project management field and educational framework. It is followed by a comprehensive literature review that compiles various research and studies that address and identify the fundamental skills in a project manager. With the combination of the literature review and first-hand experience in this chapter, I suggest and explain the overarching gap as it relates to the lack of human and cultural based knowledge areas in the project management curriculum. Given that my goal is to examine if the proportion of soft skill courses offered are reflective of the importance of those skills, the next chapter conducts the research that provides qualitative and quantitative data. In the final chapter, implications are made and conclusions are drawn.

The preliminary research results show an overwhelming amount of technical skill courses, followed by human-based skills, and then cultural skills. Therefore, the two areas this study focuses on are the gap in the human-based skills and cultural knowledge in the college curriculum.

The central purpose of this study is to stimulate conversation and identify where there is a gap in education, with recommendations to implement closer attention to particular desirable skills and knowledge areas. Preliminary results showed the gap in desirable skills concerning human and cultural knowledge. This study sought specifically to elicit and describe the factors individuals perceive to hold value relating to the project manager's skills that influence a project manager’s efficacy in a project environment. It will take into account various perspectives from different domains in an effort give valuable recommendations. This study has a significant purpose because current students are the next generation of project managers and if there is a gap in education, it should be addressed to improve the future of project management.

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Chapter 1: Understanding the Project Management Educational Framework

The central purpose of this study is to identify the current Project Management curriculum and recognize the elements that are perceived as the most fundamental skills that should be taught in the classroom as related to project managers and the project environment. The Project Management Institute (PMI) identifies essential project management tools and techniques, but it stands to reason that project managers must possess additional skills relating to the interpersonal knowledge and cultural knowledge of the project stakeholders.

Published research shows that project management roles of the future continually evolve and professionals are requiring both soft and functional skills as requisites for success (Daniels, 2011; Gillard, 2009). The functional skills relate to the technical abilities and the baseline knowledge of project management methodology. The soft skills are defined as subjective, undefined skills that deal with a project manager's relationship with its stakeholders (Peggy, 2007). The balance of the soft skills that concern the organization and its people are essential to help project manager’s build team morale and foster good working relations, to ensure team commitment towards achieving the common goal of project completion (Zachary, 1984; Gillard, 2009). Soft skills are mainly learned through practice due to the difficulty to create a systemic and tested framework, but the skills should be introduced and learned through a deep understanding of how to adapt to different workplace cultures and communicate with diverse stakeholders.

The results of this literature review will provide a conceptual triangular model on the competencies related to project manager's success in effectively managing a team. It will

challenge the current education by expanding on the factors and elements of understanding and applying human and cultural knowledge to a project setting. It aims to contribute to project management education by identifying common attributes that are believed to be the most important skills for a project manager to possess. It will provide a recommendation to adjust curriculum based on the findings of my research.

Problem Statement

Research Question #1: Is there an identifiable gap in curriculum covering the soft skills and acculturation needed for project success?

The goal of this question is to understand and gauge the exposure level of soft skills in the classroom setting, and identify where the gap lies. Subsequently, it raises a series of additional questions, like does the material in the classroom adequately prepare students and do the texts allow them to gain a substantial understanding of soft skills? Where in the curriculum is there a lack of material relating to cultural and interpersonal skills?

Through the literature review, studies show there is a trend for an increased demand for project management practitioners with high skill certifications that demonstrate proficiency in functional and technical skills (Daniels, 2011). There is a seeming consensus that project managers are excellent communicators and the reoccurring theme in all successful projects is a project manager that exercises strong interpersonal skills (Gillard, 2009). Furthermore, there is evidence that the leading reason for project failure can be assigned to the lack of interpersonal and communication skills in the project manager, also referred to as “people” skills (Azim et al., 2010). The soft skills are recognized in the PMI and correspond to the Human Resource Management and Communications Management in *The Guide to the Project Management Body of Knowledge* (2013). The issue lies in accepting that these skills lack a quantitative foundation

in comparison to technical skills, and due to its complexity, it, therefore, creates a gap in academia.

The researcher (me) is a Syracuse University student studying project management, and I have identified the gap in my education thus far, which ultimately led me to construct the research question. In each of my project management classes (Table 1.1), to some extent the curriculum addresses the fundamental knowledge of communication and interpersonal skills. Professors and students have also acknowledged the importance of understanding the organizational culture and the culture of the project team and stakeholders. My experience and research have led me to understand the importance of these skills, but my education in the classroom has not resulted in the critical outcome of a complete understanding of the skills.

If we asked project management students the research question, how many of them would express satisfaction with the curriculum? Correspondingly, if we approached project management practitioners and professors, to what extent would they agree with the gap that I have suggested? This study contributes to the expansion of the competencies and components that are most important for a student to learn before entering the workplace. The desired result is to provide an awareness to implement a more efficient approach towards project management education.

Background

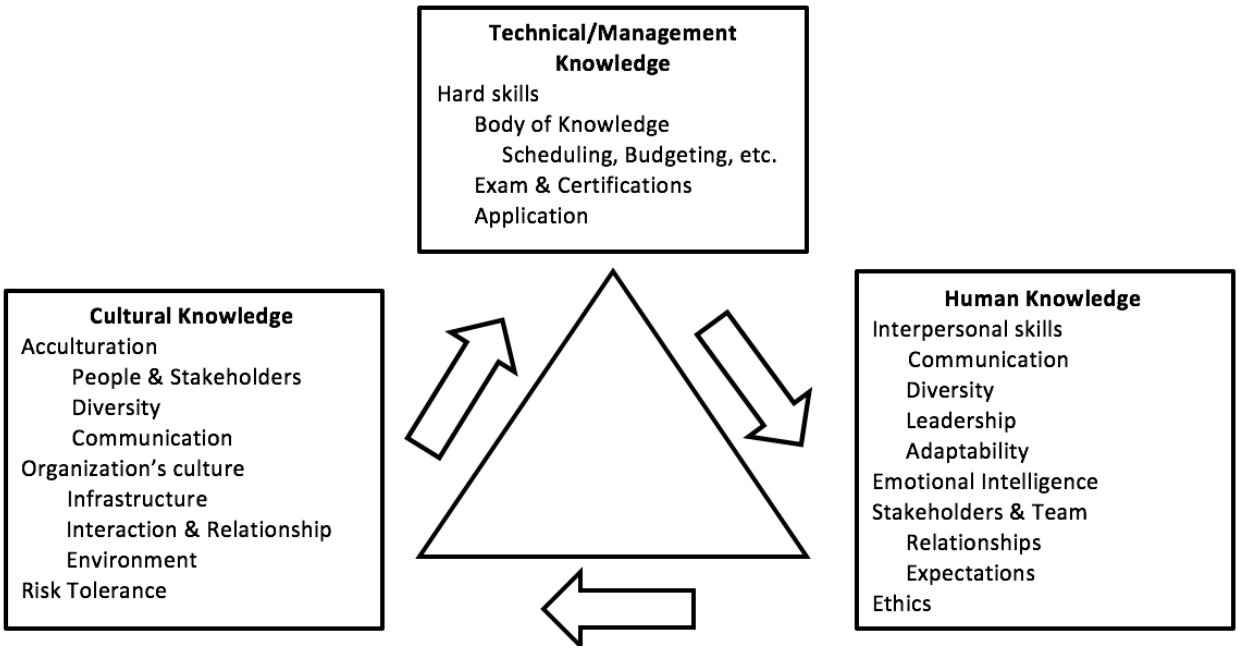
The Concern in Project Management Education

Current project management texts focus on teaching students primarily the development of technical skills and techniques needed to become a successful project manager. Texts cover the importance of soft skills, but there is a lack of a systematic way of teaching these desired skills to students. Through a meticulous review of the existing literature, this study has created a

conceptual model that is narrowed to three specific skills and knowledge areas that I believe are essential for project manager's success in a project environment. In the early stages of review, I identified the three critical components to project manager's success in leading a team as technical knowledge, human knowledge, and organizational culture. However, as research became more rigorous, the areas slightly shifted its focus to technical knowledge, human knowledge, and cultural knowledge. The three knowledge areas have components and subcomponents that will be explored in later chapters. Each of these areas is believed to have equal importance in project management efficacy, creating a triangular framework. It is important to note that they are not bound by constraints and should not be compared to the triple constraint project management triangle. Instead, the points work cohesively, each adding significant value to project manager's success.

Figure 1.1 presents a conceptual project management triangle that illustrates the skills and components that directly relates to this study. This triangle is the focus of this study and what the research aims to validate as the most fundamental skills through evidence.

Figure 1.1 Project Management Triangle as Relating to Fundamental Skills for Project Manager Efficacy



Published papers and research identify interpersonal skills or soft skills as valuable assets for developing and managing a project team (Muzio, Fisher, Thomas & Peters, 2007; Gillard, 2009). This conceptual triangle provides a set of attributes contributing to project management efficiency. It is important to note that there is not an assumption that this triangle is universally accepted and applicable for all projects. On the contrary, this study aims to provide evidence that validates these knowledge areas illustrated in the triangle, as well as its subsequent components. The project manager must understand not only technical skills but also skills that manage the project team members, which I identify as human and cultural knowledge. It is important for a project manager to understand that team members are essential stakeholders and they can affect the success of a project. Therefore, the people skills pertaining to a project manager's efficacy in a project and its team are essential to include while educating students.

This study moves beyond current literature and develops a deeper understanding of where

these three aspects of success come together and to what extent they affect project success. Through review in different management domains, this study will demonstrate the importance of implementing a focus on these skills in the curriculum with the result of project management students having strong competencies in these desirable areas.

Project Management Skills

There is a current, universally accepted project management methodology outlined in *The Guide to the Project Management Body of Knowledge* (2013) that extensively covers the hard skills with tools and techniques to manage those skills. They are demonstrated in different knowledge areas and can be easily taught and tested in a classroom setting. The mastery of the hard skills in project management can be demonstrated through gaining certifications. The most recognized and valued certification is the Project Management Practitioner (PMP) certification that assesses the competencies in knowledge areas outlined in *The Guide to the Project Management Body of Knowledge* (2013). Earning the PMP certification only demonstrates the comprehensive knowledge of the hard skills and tools related to project management. However, there are additional soft skills that are proven to have importance, but contrary to functional skills, they are not easily taught in a classroom setting (Azim et al., 2010).

This study suggests that the optimum point is the combination of hard and soft skills, and it will result in a well-rounded project manager that has competencies in skills that allow them to manage, adapt, and communicate effectively with a diverse group of project stakeholders.

The term "soft skills" is used as a title for an extensive list of skills effective in managing relationships and leading a team. There are different definitions to describe the meaning of soft skills because of its subjective nature. The Project Management Institute defines soft skills as "behavioral competencies that include proficiencies such as communication skills, emotional

intelligence, conflict resolution, negotiation, influence, team building, and group facilitation" (PMI, 2013, p. 301). It is important to note that literature focuses on the broad term soft skills, but this study will address specific components relating to what I refer to as "human knowledge" (Figure 1.1) and take into account many factors, like ethics and adaptability to project stakeholders.

Cultural knowledge is one main component of this study, and it is the only component that will encompass aspects of both soft and hard skills. Cultural skills are separated into sub-points of the organizational culture and the having a global perspective that helps understand the culture of the stakeholders. Understanding different cultures is an essential people skill, or soft skill, and research suggests that managers must understand the values and perception people from different cultures hold to communicate in a workplace to manage people effectively (Fisher, 2011; Trompenaars & Hampden-Turner, 1997). Cultural knowledge is also a hard skill because understanding the organizational culture can be represented through the organizational infrastructure. I will also refer to cultural knowledge as acculturation, which aims at an individual developing competence for a culture and adapting to the accepted norms and values of the culture or society (Jaafari, 2003). Organizations have its own culture sustained through its operations and its members, based on the vision of the organization. The process of an individual understanding the company and becoming accustomed to it is known as acculturation (Jeedigunta, 2015). Possessing this skill allows managers to quickly absorb organizational culture and succeed in the company or team, and can be seen in both assimilating to an organization's value system or stakeholders differing cultures. Additionally, risk tolerance is an important part of organizational culture, and it is a skill that is covered in *The Guide to Project Management Body of Knowledge* (2013).

A project manager's competency in technical knowledge, human knowledge, and organizational knowledge poses the following question. To what extent does one knowledge area affect or perceive to affect another knowledge area? This study does not identify the three areas as constraints, but answering this question can lead to a better understanding of the relationship between each component. The answer to this question will be considered through a thorough review of the literature.

Significance of the Study

It is important to note that the author is a student attending Syracuse University with a focus on project management, and is active in studying project management academia. From a student's perspective, one of the leading challenges in the curriculum is a lack of guidance on how to acquire human knowledge and cultural skills as relating to a project team and its organizational environment. The researcher has the first-hand experience in project management courses taught in the classroom with personal opinions about the current education. This study uses my experience, and research conducted through Syracuse University course catalog to address the gap and inform the audience a recommended shift in how educators should focus attention on skills that have an emphasis on soft skills. Prior to this study, there was conversation, but little evidence that specifically addressed a student's perspective about attributes most important for a project manager's efficacy, and the representation of these skills in courses offered at the university. This study has a significant purpose because current students are the next generation of project managers and if there is a gap in education, it should be addressed to improve the future of project management. There is further value in that the researcher that conducted the study has significant personal experience with project management education in a variety of settings and locations (Table 1.1).

Table 1.1: Summary of Author's Experience in Project Management Education

Course Title	Institution
Managing Information Systems Projects	Syracuse University
Introduction to Project Management	City University of London
Certified Associate in Project Management (CAPM)	PMI Syracuse

Purpose of the Study

The purpose of this study is to develop a conceptual model illustrating what is commonly believed as the most important project management skills and validating it through exploration of available courses in the project management path. The first-hand experience of the curriculum studied in a classroom combined with the opinions on the current education and research will provide valuable discussion. This study will review existing literature relating to the topic and address gaps in curriculum and paradoxes that pertains to the research. It is important to note that this study does not acknowledge every skill and does not prove nor cover all necessary components. It is intended to stimulate conversation and identify where there is a gap in education, with a recommendation to implement closer attention to particular desirable skills and knowledge areas based on criteria to be discussed in later chapters. This study sought specifically to elicit and describe the factors individuals perceive to hold value relating to the project manager's skills that influence a project manager's efficacy in a project environment. It will take into account various perspectives in an effort give valuable recommendations.

Limitations of the Study

This study is limited to the literature the researcher has examined, and there are many publications that address this topic that are not included in the research. The individual research done examining Syracuse University's courses is limited to one university and its pool of classes offered to students pursuing project management. The limitations of empirical research will be explained further in chapter three. This study is not limited to IT-centric project management students, and the courses examined will be across various domains of education to gain a diverse perspective. This study generates important findings, but it is just a start and does not aim nor intend to prove that the model illustrated is without flaw.

Importance of the Study

Many factors attribute to project manager's efficacy, and there are indications that the three knowledge areas outlined in Figure 1.1 are assumed to have importance among students and practitioners. Consideration in exercising the components outlined are fundamental for project managers to manage and communicate with the team successfully.

As outlined by Millhollan (2015), agile methodologies are an additional approach to consider when looking at the factors that affect the project manager's efficacy. The Agile Manifesto specifically emphasizes communication and collaboration, with the ability to adapt to change in a dynamic environment while delivering quick development of small features under the development of an overall project (www.agilemanifesto.org). In agile project management, there is a prominence placed on soft skills and the conceptual triangle could add significant value in agile education. Research also provides the importance of concepts of ethical project management decisions in different industries and applications. This study will draw connections from my understanding of my ethics course and provide additional text and articles to expand

this research.

I will detail in Chapter 2 the inconsistencies in published literature as relating to this study and the current project management methodology definitions and the skills described as fundamental in a project manager. This study examines various domains of project management and highlights the differences among domains and organizations. It identifies opportunities for future research and provides a recommendation that places more emphasis on soft skills, like human skills and cultural knowledge. The findings from this study have suggestions and potential implications for project management professionals, project management students, and project management curriculum.

Chapter 2: Literature Review

This research was motivated by the researcher's opinion on the Project Management education (see Table 1.2) and published literature further supports the claims about project management education. While reading the literature, the approach was derived from the perspective of the student and sought to outline current methodology and identify gaps in project management education. The following methods were used to acquire credible sources that concern the research in the project:

- Citation chain by first investigating the popular, well-known project management education texts and its extracting journals and articles that were pertinent to the sections covered in this research.
- A traditional keyword search and systematic exploration of the educational texts published on the Internet. The sources were acquired from the following publications: Project Management Body of Knowledge, *Project Management Handbook, International Journal of Project Management,* and *Project Management Journal* and journals on the field of information technology, business, public relations, and communications.

Method of Acquiring Sources

Reviewing project management textbooks, scholarly articles, and academic dissertations was a logical foundation to initially derive sources related to the suggested conceptual project management triangle (Figure 1.1). A traditional search result across the top Information Technology and Project Management scholarly journals generated a well-rounded list of articles published from varying disciplines and cultures. Utilizing the Syracuse University online database and the PMI database provided a connection to sources that were specific to particular sections and areas of concern.

Additional sources were acquired through consulting the Internet to derive a variety of sources that are related to the research. The selection method was more scrutinizing to ensure credible, reliable sources were selected.

The initial search combinations when searching in databases were 1) project management skills, 2) project management education, 3) soft skills, 4) project manager success, and 5) project management framework. However, the vagueness of the searches generated thousands of scholarly articles. In effort to limit results, searches were modified to specific key terms. The combinations used were 1) importance of project management soft-skills, 2) project management in the classroom, 3) project manager's cultural knowledge, and additional terms relating to the educational framework and a project manager's cultural and interpersonal competencies.

The citation chain method was utilized when examining sources in a dissertation written by a Syracuse University graduate student in fulfillment of a Doctor of Professional Studies in Information Management degree. Appropriate sources were cited in the thesis concerning the role of soft skills and hard skills in IT-centric project environments were selected (Millhollan, 2015). Articles and texts which overlapped with previously identified resources were removed; however, there were approximately (11) additional sources added to the resource list that related to the impact and role of soft skills in a project manager's efficacy.

Project Management Curriculum and Education

A student's preliminary approach towards learning the project management skills are acquired in a classroom setting through studying the project management curriculum. The Project Management Institute has been the leading professional association for project managers since 1969, promoting project management standards, training, education, and research (PMI, 2013). The *Project Management Body of Knowledge* Guide (2013) written by the PMI

predominately emphasizes the necessary hard skills at the expense of the soft skills. The identified accepted and best practice knowledge areas are integration, scope, time, cost, quality, human resource, communications, risk, procurement, and stakeholder management. The focus in literature has always been on developing the technical skills for managing projects, which relegates the soft skills in the background (Pant & Baroudi, 2008). The left-brain intensive approach has not experienced major shift since the existence of the PMBOK in 1987.

Project management education has an expected outcome where the project manager has abilities to elicit, understand, and manage stakeholder expectations throughout the lifecycle of a project (Millhollan, 2015). Consider a student studying project management methodology completes a course with an understanding of the body of knowledge, they *should* have competency in all knowledge areas and, therefore, can successfully lead a project team, right? The complexity of the question stems from the claim that not all students who demonstrate excellence in current curriculum are successful project managers. This addresses the gaps presented throughout this research where effective application of the methodology can contribute to project success, but do not ensure success because there is lack of human skills.

There is an apparent lack of emphasis placed on the human skills needed within the context of university education, which raises the question to how well current university training prepares future project managers in the area of human skills. Bourne and Walker (2004) indicates that the two knowledge areas concerned with soft skills are *Project Human Resources Management* and *Project Communications Management.* The proportion of human-based skills represented in the *PMBOK* does not align with research illustrating the importance of interpersonal skills (Fisher, 2011; Millhollan, 2015).

Educational programs focus on project management training in technical skills, primarily being the triple constraint triangle or triple measures of time, cost, and scope is proven effective in managing a project (de Wit, 1988; Kloppenborg & Opfer, 2002). This can be credited to the concept that technical skills are easier to deal with when compared to the difficult nature of teaching soft skills (Yen et al., 2001). Managing project successfully requires a combination of skills that incorporate interpersonal ability, technical competencies, and cognitive aptitude, along with the capability to understand the situation and people and then dynamically integrate appropriate leadership behaviors (Pant & Baroudi, 2008).

Competency Exams and its Success Factors

Trends in recent studies show that there is an increase in demand in the project management field for practitioners that have acquired professional certifications to demonstrate understanding within a certain body of knowledge (Gabberty, 2013; Daniels, 2011). Among all certifications the Project Management Institute's (PMI) *Project Management Professional* (PMP) certification exam is the most demanded certification in the western hemisphere. It is one of the top IT certifications that tests the competencies of skills and demonstrates mastery of the hard skills related to project management (PMI, 2013).

The United Kingdom measures a project manager's comprehensive knowledge in project management language, systems and procedures to confidently manage a team and lead a successful project through an exam titled PRINCE2 (prince2.com, 2017). The Prince 2 certification exam is an acronym for PRojects In Controlled Environments. The curriculum is structured as a business approach to educate a project management student on technical knowledge and implementing it when leading a project in a Prince 2 environment. Similarly, to the PMP exam, the hard skills acquired during training are essential to guide a project manager

in a controlled manner towards completing a successful project (prince2.com, 2017). It is a process-based approach to project management, providing an easily tailored and scalable method for managing projects. Themes in the PRINCE2 methodology are based on technical skills in the following principle areas: progress, quality, organization, business case, plans, risks, and change management (prince2.com, 2017).

Studies show that the traditional project management methodology and competencies associated with the certification process and standards are not necessarily effective in all project (Thomas & Mengel, 2008). Therefore, certification alone cannot guarantee the outcome of a successful project manager. The key point in this research is acknowledging gaps found in research and the following section will first identify the broad gap.

Gaps Identified in Literature on Project Management Curriculum

The traditional project management framework is a range of knowledge areas crucial and effective to help achieve project success. I am not asserting that publications like the *Project Management Body of Knowledge* are incorrect, rather I am suggesting that all competencies critical for project success *should* be included in educational programs and curriculum. With the combination of literature review and first-hand experience, I suggest the overarching gap relates to the lack of human and cultural based knowledge areas in the project management curriculum.

Early forms of research suggest that the fundamental factors contributing to project's success focus on more than schedule, budget, and technical performance measures (Baker et al., 1988; de Wit, 1988). Throughout the comprehensive literature review, there were no studies or texts that outlined a clear set of attributes to ensure project manager's efficacy. Justification of this statement can be credited to the complexity of educating students on soft skills like adaptability and emotional intelligence. Conveying the importance of 'soft skills' is not the

challenge—the difficulty rests in the complication of teaching students how to acquire skills and apply them to adapt in dynamic and diverse projects.

The project management methodology lacks emphasis on the importance for a project manager to understand people skills vital for project success (Cowie, 2003). Gaining this insight may result in an increase in efforts to improve the coverage of human or 'people skills' in academia. It is interesting to consider the proposed gap extends beyond defining project success, and identifies that there is also an absence of an effective methodology contributing to project failure (Lacerda et al., 2011). The recognition of the opposite is fascinating, but it will not be explored in this project.

As outlined in the PMI Talent Triangle published in 2014, success in a project is driven by a blend of technical skills, leadership skills, and strategic and business management skills. PMI has recently identified that in today's dynamic environment, project managers need competencies beyond technical skills to support their strategic objectives (PMI, 2018). Significant amounts of studies and articles concern a lack in addressing human skills in curriculum; however, I discerned that cultural knowledge and its application to understanding and communicating to diverse stakeholders is not well-represented. The *Project Management Body of Knowledge* (2013) declares 'some obvious gaps,' which are 'particularly in the area of people and culture.' Recognition of the gap confirms my previous claim concerning the lack of coverage in both human and cultural knowledge areas.

Reports critique project management education for its lack of relevance and rigor—but they offer little guidance as to what to do in managing the problem (Berggren & Soderland, 2008). There is a common theme where studies and articles declare a gap, but fail to provide suggestions to improve the current framework. The goal of this research project is to provide

recommendation in implementing additional knowledge areas and proposing potential methods to test complex skills. Additionally, the research aims to result in a proposed course of action for students pursuing project management, compiling a list of necessary subject areas to gain acculturation skills and human-based skills.

The following sections will focus on the conceptual project management triangle three points modeled earlier in the research in efforts to address the gaps in project management curriculum.

Area of Inquiry 1: Technical Knowledge Skills in Project Manager's

The area of inquiry concerning the technical and hard skills in a project management context is less complex and easily learned through the study of formal education (Daniels, 2011; PMI, 2013). The *Project Management Body of Knowledge* (2013) incorporates a detailed set of standard terminology and guidelines for executing project management with process-based knowledge areas, including all inputs, tools, and techniques typically of most project. Some of the tools and techniques relate to scheduling and budgeting a project. The core knowledge areas listed by PMI (2013) represent "a complete set of concepts, terms, and activities that make up a professional field, project management field, and area of specialization."

Application of the technical skills are outlined in the *PMBOK* (2013) and provides detailed steps towards applying the knowledge and skills to a project. Competency in application of the technical knowledge is reliant on the project management exams and certifications. Obtaining a certification demonstrates mastery in knowledge and individual capability to successfully apply skills in a project. The technical project management skills are fundamental may help with success factors related to the planning and organizational efforts for tracking and managing changes throughout a project (Azim et al., 2010).

Gap in the Project Management Curriculum

Project management curriculum provides ample information in acquiring and applying the hard skills for technical performance (de Wit, 1988; PMI, 2013; Gabberty, 2013; Azim et al., 2010). The project management methodology supports a project manager with a library of tools and a blueprint for project success (Massis, 2010).

There are no identified gaps in the curriculum, therefore, the research project will not focus its efforts on the education of technical skills. Its inclusion in the conceptual triangle (Figure 1.1) is critical because the core knowledge discipline is essential to project manager's ability to effectively managing and leading a team to success (de Wit, 1988).

Area of Inquiry 2: Human Knowledge Skills in Project Management

Human-based skills are increasingly gaining credibility among project management professionals and there is a seemingly general consensus that project management soft skills are superior to technical skills in ranking (Gillard, 2009). Human skills, soft skills, and interpersonal skills are used interchangeably and they all concern behavioral competencies dealing with human issues, like communication skills, emotional intelligence, conflict resolution, negotiation, influence through leadership, team building and group facilitation (PMI, 2013; Azim et al., 2010).

As the project management field continues to grow, it is becoming more apparent that success of a project manager cannot be fulfilled with only a set of technical skills (Gillard, 2009). According to a PMI report, 79% of the best companies prioritize the development of project management leadership skills (PMI, 2018). The project manager plays a critical role in a company's vision for a project or initiative, and having robust skills can make or break a project.

With the soft skill knowledge in their toolbox, project managers are more equipped to sense and adapt to change in efforts to improve delivery (PMI, 2018). In the past few years, there has been a dramatic increase in importance placed on soft skills, like communications, leadership, and negotiation. The change is represented in a study that reveals organizations say soft skills are 51% more important today, whereas only 19% report the importance of the skills are basically unchanged (PMI, 2018).

However, the current *Project Management Body of Knowledge* (2013) provides only two sections related to educating a student on the human skills, *Human Resource Management* and *Communications Management.* Recognizing the importance of human knowledge is one of the most critical considerations for project managers in any project environment. It is essential that project managers acquire the following competencies in complex projects environments: communication; emotional intelligence; and social competence and leadership; and managing conflicts (Thomas & Mengel, 2008). Table 1.2 summarizes the definition of key terms used in this section:

Table 1.2 Key Definitions

Term	Source	Definition
Soft Skills	PMI, 2013	Behavioral competencies that include proficiencies such as communication skills, emotional intelligence, conflict resolution, negotiation, influence, team building, and group facilitation.
Interpersonal Skills	PMBOK, 2013	Skills relating to leadership, team building, motivation, communication, influencing, decision making, political and cultural awareness, and negotiation.
Emotional Intelligence (EI)	Mersino, 2013	The ability to monitor self and others' emotions and use this information to inform thinking and behavior.

Stakeholder	PMI, 2013	Anyone who may affect, be affected by, or perceive itself to be affected by a decision, activity, outcome of a project.
Social Awareness	Mersino, 2013	The ability to accurately read situations and people and to understand and empathize with the emotions of others.
Acculturation	Jeedigunta, 2015	The process that occurs when two entities with different values come into direct contact with each other.

The leading reason for project failures can be assigned to the lack of a project manager's 'people' skills (Azim et al., 2010). The *Project Management Institute* (2013) provides expansion and identifies communication as the single biggest reason for project success or project failure.

The *PMBOK* (2013) dedicates an entire chapter to *Project Communications Management* and the chapter's content represents the tools and techniques utilized by project managers for effective communications management. Potential project management professionals can take the PMP exam (2013) to assess their understanding and competency in areas, including communications management. However, this statement provokes an interesting question for the project management education:

1. Is a student's competency in solely communications management tools and techniques, along with its application to a project team, a satisfactory exposure soft skills? Are there additional elements of communication to include when considering an acceptable curriculum?

There is emphasis on the importance of human-based skills associated with project manager's facilitating relationships with project stakeholder(s) and successfully managing their expectations. Communication is the interpersonal skill that deals with effective interactions

among the project stakeholders. Millhollan (2015) highlights the fundamental attributes necessary to apply the project management methodology and leveraging project management tools and techniques to meet stakeholder expectations.

Emotional intelligence is the ability to monitor both personal and other individual's emotions and use the information to inform thinking and behavior (PMI, 2013) EI is an important interpersonal skill as it relates to managing relationships as a function of success in self-awareness, self-management, and social awareness (Mersino, 2013). Due to the dynamic and temporary nature of project management, the emergence of new projects places an urgency on project manager's to quickly develop productive relationships. Social awareness relates to empathy and is a sub-skill of emotional intelligence that allows individuals to quickly and accurately understand members of the project team (Mersino, 2013). The awareness of others' emotional state and modifying personal behavior to minimize the impact of negative influences and maximize the impact of positive influences contributes to success (Millhollan, 2015).

Leadership excellence in the definition of managing a project's scope, cost, time, quality and communication all rely on the project manager's ability to lead the project stakeholders (Cleland, 1995). Kloppenberg and Opfer's (2002) study shows the trend of a demand for project managers to demonstrate abilities as a leader, not just a manager. Identification in the importance of leadership skills plays a vital role in dynamic relationships due to the temporary nature of project environments. Many studies have begun to place leadership skills on the same level as any other technical ability a project manager faces (Drossel, 1980).

Gap in the Project Management Curriculum

The PMBOK (2013) provides two sections that are related to educating a student on the human skills, *Human Resource Management* and *Communications Management.* They provide

theoretical knowledge but not a practical application in theory or a method to test the real-life application of the skills. Pant and Boudi (2008) considers that the *PMBOK* is used as an initial guide to other knowledge and reliance on it alone will not ensure success. The *PMBOK* is only one of many educational texts, but it is the most universally accepted form of methodology. It highlights the softer skills in project management, but it fails to include the more holistic issues, such as ethics, adaptability and emotional intelligence, and conflict resolution.

According to a PMI report, there will be 15.7 million new project management roles, according to the 2013 Project Management Talent Gap Reports. Due to the increase in demand for project management jobs, PMI has developed guidelines to provide core skills that a student should possess. According to the Knowledge Module Specifications in the guidelines, only eight of the thirty modules (26%) encompass behavioral knowledge. While there has been an increase in focus on soft skills, it remains to represent a fourth of the modules (PMI, 2018).

There is a clear struggle in measuring and testing a project management student's competency in human skills, which can be credited to the lack of proper education. Based on experience, academic institutes educate students on communication management and the tools applied to managing communication and relationships with stakeholders. The gap is identified in the complexity of teaching students to apply human-based knowledge and adapt to diverse project environments. An important aspect of education is the opportunity to apply the theory into real-world scenarios (Turner, 2016). Simulation-based training (SBT) for project management education can aid in filling the gap addressed and enhance a student's understanding of human skills competency beyond text. Findings in a study (Zwikael, Shtub & Chih, 2017) advance the SBT existing theory by revealing that the simulation filled the existing gap between the trainees' prior knowledge in project management and their understanding in

applying that knowledge to a project environment. Firms are integrating SBT and putting greater emphasis on projects and project management to increase flexibility and integrate knowledge resources more effectively (Bredin & Soderlun, 2011). Tackling the dynamic simulation-based training tool in a classroom environment can help alleviate the challenge and provide a basis for measuring and assessing competency of in human skills in project management students.

Communication between team members and the organization is crucial to support a community with shared understandings of the project (Pant & Baroudi, 2008). The project management methodology lacks emphasis on the importance for a project manager to understand the related people skills that are vital for project success (Cowie, 2003). Gaining this perspective may result in an increase in efforts to improve human or 'people skills' and incorporation of tacit knowledge. Tacit knowledge is understanding without open expression and it closely relates to emotional intelligence and is the domain of subjective, cognitive, and experiential learning (Pant & Baroudi, 2008).

There are concerns regarding the educational need of project manager's competency in soft skills used in complex environments. Different leadership approaches, specifically the transformational leadership process is not well represented in the project management curriculum (Cleland, 1995). Additionally, there is a demanding need to develop emotional intelligent project managers that have the capability to build effective relationships with stakeholders and create a meaningful project environment (Mersino, 2013). However, though people can learn how to interact more effectively at work to become more emotionally intelligent, implementation will require more attention to tools aimed at increasing levels of emotional intelligence.

Area of Inquiry 3: Cultural Knowledge Skills in Project Management

The cultural knowledge competencies in this research will be concern the acculturation process in an organization and ability to understand and communicate with diverse people. The cultural sections provide a combination of applying hard and soft skills in a project environment and they will both comment on measurement of risk tolerances.

The project manager's cultural knowledge in terms of its people and stakeholders concerns the understanding significance of shared beliefs and values among a project team, including the project manager. Empirical evidence from the field of information systems support the importance of project managers' ability to instill a strong sense of purpose, beliefs and values in team members which positively influences a team's cohesiveness and team performance (Want et at, 2005). Creating an environment that respects other cultures is critical for a project manager's ability to gain respect and admiration from the stakeholders from cultures.

The ability for a project manager to understand and adapt to its diverse team plays a large role in ensuring effective communication and a comfortable project environment. Cultural aspects include language and its barriers, ethnic heritage, religion, values and perceptions, and even the geographical location of the team. Additionally, emphasis is placed on identifying the risk tolerance of the diverse stakeholders to better comprehend the decision-making practices. The process of an individual accustoming and adapting to an environment with new individuals and understanding the culture of an organization and its values is known as acculturation (Jeedigunta, 2015).

It is essential that project managers acquire the following competencies in complex projects environments: communication; emotional intelligence; social competence and

leadership; social competence and; skills in organizational politics; and the importance of visions, values, and beliefs (Thomas & Mengel, 2008).

Understanding the organizational culture helps the project manager in better leading the project due to a deeper comprehension on the company's best practices. In assessing the culture, project managers can extract pertinent information relating the company infrastructure and political hierarchy, which saves time in communication. Other value information gained through observing the organizations culture is risk tolerance and identification of the cultural work environment and the interactions within the company.

Gap in the Project Management Curriculum

The gap in cultural knowledge primarily is the absence of cultural knowledge relating to the culture of stakeholders. Based on personal experience in projects, a lack in understanding and respecting another individuals culture creates tension, whether they are a team member or project manager. A case study by Christenson and Walker (2004) provides evidence that softer project management competencies, like cultural knowledge, help the project manager understand the current project environment in new and different ways. However, the competencies are not representative in the current project management methodology and it would require new competencies that expand on adapting to a complex, diverse project environment.

Most programs in the project management field produce more of the left brain that focuses on the analytical and methodical skills; however, they should be focused on raising project manager's awareness for the demand of politics and contextual understanding (Thomas and Mendal, 2008). I discerned the concept of cultural knowledge and its application to understanding and communicating to diverse stakeholders is not well-represented. The *Project Management Body of Knowledge* (2013) confirms the claim and states 'there are some obvious

gaps in all the BoKs, particularly in the area of people and culture.' The recognition of gaps concerning lack of coverage in cultural knowledge areas prove there is room for growth in the field.

Summary and Implications

The literature review provided resources and studies that support the three knowledge areas outlined in my conceptual project management triangle (Figure 1.1). There has been an identification of gaps in the areas that I had suspected, and the research provoked additional questions to be explores. Technical skills are not a concern to the current education, however, the lack of human skills and cultural skills have potential to pose a threat to a student's ability to successfully grasp the soft skills needed for project success. The absence of these fundamental knowledge area can inhibit a project manager's success.

Though research suggests that there is a gap in the project management education for soft skills, the authors do not offer much recommendation on how to move away from the current bodies of knowledge to improve project manager's efficacy. The literature review confirms the speculation for the gap in curriculum and potential issues, and presents an interesting ground for research.

There is increasingly an understanding among the field the need to rethink education and its traditional delivery of technique and standard oriented pedagogy. Alternatively, universities can compile a list of advised courses students should complete in addition to the project management course, which will provide them with courses that will give them the soft skills competence. This suggestion intends to adequately prepare students and will be explored and expanded upon in the research analysis.

Setting the Stage for Research Design

As addressed in the literature review through a detailed analysis, there is an absence of a universally accepted project management curriculum and framework that ensures a project managers success in effectively leading a project team. The gap in curriculum addressed provides an opportunity to conduct empirical research that investigates the educational issue at hand. Given this, the research design will allow the researcher to gather information on the current project management educational framework at the university and measure the exposure of technical skills, soft skills, and cultural competencies. It enables the researcher to capture the gaps in the curriculum and measure the exposure of specific knowledge areas. The aim of the research is to confirm the gap presented in the university in which the researcher attends. The results will deepen our understanding of attributes and skills most important for project manager's success and efficacy in a project environment.

Chapter 3. Research Design and Methods

The research project is expected to continue beyond the literature review completed in fulfillment in my capstone course at Syracuse University. Given that my goal was to examine if the proportion of soft skill courses are reflective of the importance of those skills in the university, the research design will aim to provide quantitative and qualitative data that draw conclusions. The research design and methods were carefully chosen to give this study meaningful information and provide recommendations that can have an impactful effect on the project management curriculum at the university. Before providing details of the research methodology, it is important to address my assumptions and rationale.

Assumptions

The research has practical assumptions that the curriculum taught to students is an acceptable exposure of education to allow them to understand and apply project management skills in project environments. However, we did not assume that the students are fully prepared with a breadth of skills learned, and we expect that the addressed gap in literature results in a gap in curriculum related to the cultural and soft skills of a project manager.

The study is done through examining the undergraduate course titles and course descriptions, and there are assumptions that the information found is an accurate representation of the material and concepts taught in the given course. Additionally, we will assume that the process of measuring the courses will accurately determine the exposure of the identified interpersonal and cultural skills to the students.

Limitations and Expected Outcomes

This study is limited to one university and its undergraduate courses associated with project management that are offered at the university. The university involved is Syracuse

University, and this study is restricted to that university and its pool of classes offered to undergraduate students pursuing project management. The research conducted is a surface level examination that investigates the catalog descriptions and course titles, which helps determine if there is a gap of the skills in Syracuse University's education.

This study is not limited to IT-centric project management students, and the courses examined will be across various domains of education to gain a diverse perspective. This study generates important findings, but it is just a start and does not aim nor intend to prove that the model illustrated is without flaw. The expected outcome is to confirm the gap that I have identified; however, there are possibilities the results will not support my research or the literature review. Regardless, the accurate results will be reported, and no data will be falsified or omitted.

Potential Bias

It is important to note that I am a Syracuse University undergraduate student on a project management concentration path. I have completed many of the courses examined, and I cannot completely escape those bias. To mitigate the risk of the potential bias, I only used the information provided in the course catalog and removed my personal experience from the equation.

Rationale for the Design of Study

As I considered the research topic, there were multiple ways I could have approached the design of the study. A focus group would be useful in acquiring information from the participants in a one-on-one personal setting. Additionally, surveys would provide quantitative, but limited qualitative data. Because the gaps were already addressed, I felt using students or

professors as subjects of research would not objectively confirm the presented gap with factual evidence.

The design of the study will be an individual effort towards examining Syracuse University's course catalog. I will explain the method of acquiring courses and the categories or criteria used to measure the distribution of the three skills in the courses. My observation prior to research is that the current educational framework places too much emphasis on acquiring the hard skills needed as a project manager. There are knowledge areas that address the soft skills, but there is a lack of courses teaching these skills, and there is no method of measuring the competency of soft skills.

My initial research question focused on students studying project management attitudes towards the current project management academia and if they identify a gap in curriculum covering the soft skills needed for project success. But since a gap has been identified through the literature review, the current research question is the following:

> *Research Question #2: In the curriculum at Syracuse University, is the proportion of courses offered concerning interpersonal and cultural skills reflective of the importance of those skills in a project manager?*

The design of the study I felt most appropriate to gain more meaningful information is to explore the courses taught at the university through the course catalog. The research will begin with gaining a comprehensive list of all of the courses taught at each school in the university and identifying the courses recommended for project management students in a specific domain.

Data Gathering Method

The data gathered was carefully selected in efforts to cover a breadth of courses and degrees at the university. The research began first by identifying the schools that have a project

management or related path of courses. The schools I selected from Syracuse University and the majors, minors, and related paths are listed in the table below**.**

Table 1.3 Selected College and its Programs

College at Syracuse University	**Program**
School of Information Studies (iSchool)	All Courses in the iSchool Information Management & Technology Core Project Management Concentration Information Management & Technology Minor
Whitman School of Management	Business Management Major Whitman School of Management Core Management Field Specialization Management Minor
College of Engineering and Computer Science	Civil Engineering Major
S.I. Newhouse School of Public Communications	Advertising Project Management Emphasis Broadcast Digital Journalism Major Television, Radio, and Film Major

Step 1: Selecting the Colleges and Programs

The selection method was designed to encompass various areas of discipline that concern the management field. It resulted in four colleges at Syracuse University and twelve programs offered in the four colleges.

The School of Information Studies, also referred to as the iSchool, was selected as the pilot study because I am a student in the college and felt comfortable navigating the course catalog. Because the iSchool was used as the pilot study and it is my home college, I decided to investigate all courses offered in the school initially. The Information Management and Technology degree, also referred to as IM&T, was chosen because it provides a broad introduction to information management. The project management concentration was selected because it directly offers courses that are intended to equip a student for a career in IT project

management. The IM&T minor was selected to measure if the minor level provides students with courses that offer skills that cover all three knowledge areas in the proposed triangle.

The Whitman School of Management's core curriculum was selected because the core represents fundamental management courses a student must complete to have a management career. The Business Management degree provides a more extensive list of courses that a student must complete to gain a degree in business management. The management field specialization was selected among others because it narrows the path even more specifically to a management career. The management minor was chosen to measure if the minor level provides students with courses that cover all three knowledge areas.

The College of Engineering and Computer Sciences represented the construction engineer major, however, the school does not offer specifically that degree. Instead, the Civil Engineering degree was selected because as outlined on the colleges website, construction engineering falls under the general degree of civil engineering.

The final school chosen to examine was S.I. Newhouse School of Communications. Selecting the following majors was more difficult because there is not a direct correlation to project management, but in each of the majors chosen, there is a relation to management. First, the Advertising Project Management emphasis was selected because in advertising, individuals are managing a team to complete a campaign. Broadcast and Digital Journalism, also referred to as BDJ, was chosen because the program has elements of managing a project to produce a journalistic piece. Similarly, the Television, Radio, and Film major were selected because it mirrors production management.

Step 2: Compiling the List of Project Management Courses

After all of the colleges and programs were carefully chosen, I consulted the undergraduate course catalog found on the course catalog website (coursecatalog.syr.edu). The process was the same for each of the colleges-- I obtained the catalog on the universities website and listed in an excel document the entire list of courses offered in the specific program. For example, for the iSchool project management concentration, every class required was listed, including the iSchool core and the requirements for the concentration. Therefore, the concentrations and degrees include the core curriculum along with the requirements needed to fulfill the desired program.

Step 3: Data Analysis

The objective of the study is to examine, categorize, and analyze the data based on the attributes deemed as the most important contributors to a project manager's success (Figure 1.1). The data analysis method was conducted the same in each of the colleges. The data analysis strategy identifies and measures the distribution of courses teaching soft skills, hard skills, and cultural knowledge based on percentages. I used a combination of the course catalog title and the course descriptions to assign a percentage of the knowledge area included in the curriculum. Additionally, I looked at the description of the program to understand the intended result of a student completing the program.

Key Words

When examining the course titles and descriptions, I looked for key words or similar words that represented either the hard skills, soft skills, or cultural knowledge taught. It is important to note that cultural knowledge also concerned the extent to which a student is acculturated into a management setting, which can be seen in internships and selective capstone

projects. The hard skills were dependent on the program being examined, but the general terms are listed below.

- *Hard Skills:* technical skills, concepts, issues, techniques, tools, analysis, framework, structures, strategy, development, models, theories, analytical skills, and application.
- *Soft Skills:* communication, leadership, presentation, strategic management, society, ethics, behavior, decisions, teamwork, social environment, group work, human resource, interviewing, ethics, problem solve, and relationships.
- *Cultural Competencies*: global, internship, social environment, diversity, ethics, international, understanding markets, teamwork, communication, integrative or capstone project, group work, organizational, religion, values and attitudes, and organizational infrastructure.

An excel spreadsheet was created with all of the twelve programs listed in the Table 1.3. Each course was assigned a percentage of exposure for the specific knowledge area. For some courses, the student was exposed to all three knowledge areas, but for others it was just one area. The percentages are reflected on the excel spreadsheet, and in the figures represented in the following chapter.

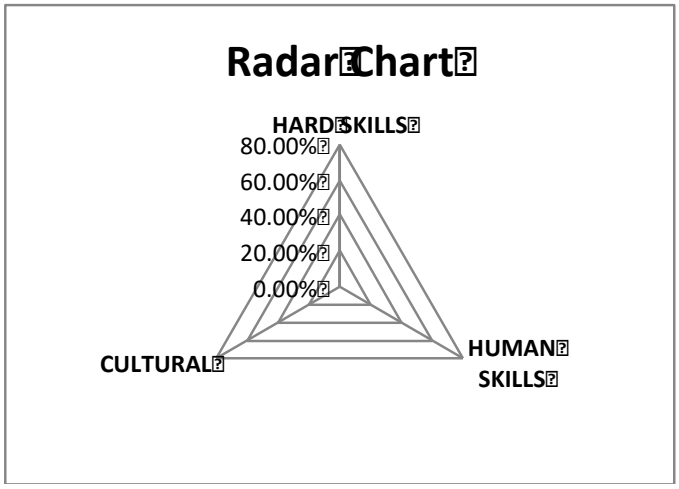
Criteria Measured

The criteria measured was based on the three desirable skills needed in a manager identified in the first chapter—technical skills, human-based skills, and cultural knowledge. Technical skills and hard skills are used interchangeably depending on the program being measured because not all degrees or concentrations necessarily include technical skills.

Step 4: Visual Representation of Data

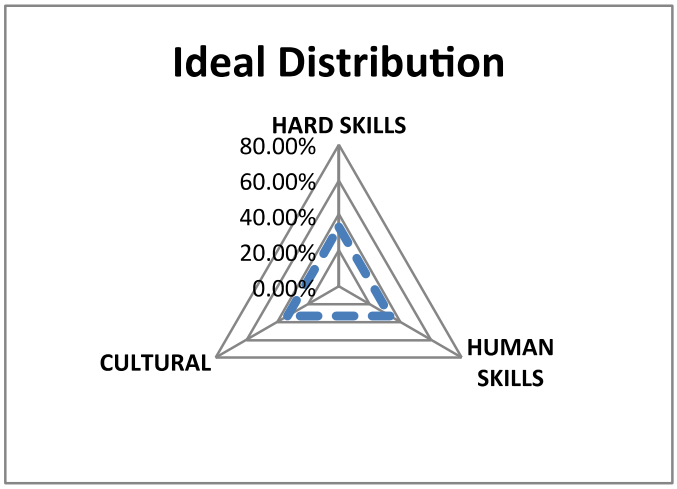
The objective of the research was to measure if the proportion of courses offered for management students at Syracuse University concerning interpersonal and cultural skills reflective of the importance of those skills in a project manager. To effectively show the comparison between an ideal distribution versus the actual distribution, I used radar charts. Radar charts are a way to visualize data that has multiple variables and allows us to plot one or more groups of values over multiple common variables (Nowicki & Merenstein, 2016). For this research, each axis in the triangle was given a variable that represented the knowledge area (Figure 1.2).

Figure 1.2 Radar Chart Distribution



The triangle represented in the radar chart is standardized on an 80% scale, where the minimum percentage is zero, and the maximum is eighty percent. The scale was selected because no college program had a proportion that exceeded 80% in a given knowledge area. For reference, the following chart illustrates the ideal distribution of the three desirable knowledge areas in a management program. The dashed line in the figure represents the distribution of courses.

Figure 1.3 Ideal Distribution



The ideal distribution is represented in the figure above, with an equal proportion of hard skills, human skills, and cultural skills offered in a given program.

Chapter 4. Findings and Analysis

The findings of the study confirmed there is an overwhelming amount of hard skill courses, followed by human-based skills, and then cultural skills. The gap in desirable skills concerning human and cultural knowledge, which was proposed in the literature review, is evident in the university's curriculum. This research confirms that at Syracuse University, the proportion of courses offered concerning interpersonal and cultural skills is not reflective of the importance of those skills in a project manager. In the perfect world, each skill would be equally represented in the curriculum; however, there is not a proportional distribution in any of the programs. There are some colleges and programs that have a better distribution than other, and that will be explored in this chapter. The following table illustrates the percentage of hard skills, soft skills, and cultural knowledge in each of the programs. This table can be used for reference when examining the radar charts in the following sections.

Table 1.4 Percentage of Knowledge Areas in Each Program

Syracuse University School	Program	Hard Skills	Human Skills	Cultural
iSchool	All Courses	77.1%	10.4%	12.5%
	IM&T Core Curriculum	67.5%	20%	12.5%
	PM Concentration	55.4%	32.1%	12.5%
	IM&T Minor	86.1%	2.8%	11.1%
Whitman	Business Management Degree	39.8%	42.6%	17.6%
	Whitman Core	61.4%	27.3%	11.3%
	Management Field Specialization	46.1%	36.8%	17.1%
	Management Minor	62.5%	37.5%	0%
College of Engineering & Computer Science	Civil Engineering Degree	89.3%	8.3%	2.4%
Newhouse	Advertising Project Management	75%	13.75%	11.25%
	Broadcast Digital Journalism Degree	44.2%	30.8%	25%
	Television, Radio, Film Degree	62.7%	19%	18.3%

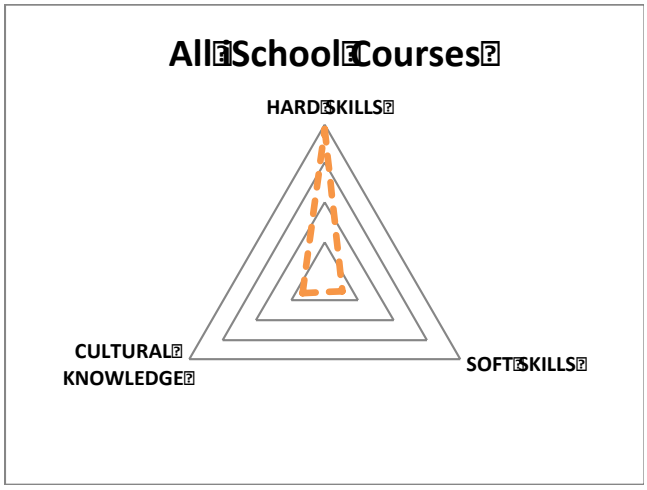
As seen in the table above, there is an overwhelming amount of hard skills in each of the programs. Whitman's Business Management degree is the closest to an equal distribution, and the only program which has a higher percentage of soft skills (42.6%) compared to hard skills (39.8%). I will analyze each of the colleges in the following sections.

School of Information Studies

All Courses Offered

The School of Information studies offers an extensive number of courses that aim to educate students in the field of information management and technology. According to its website, the approach of the program is to offer innovative curriculum that lies at the intersection of technology, management, and its people (Syracuse University, 2017). Its human and technology interrelationship allows students to understand the fundamental skills of technology and people. The study began with examining all of the courses offered in the iSchool, and the results are reflected in the figure below.

Figure 1.4 All iSchool Courses



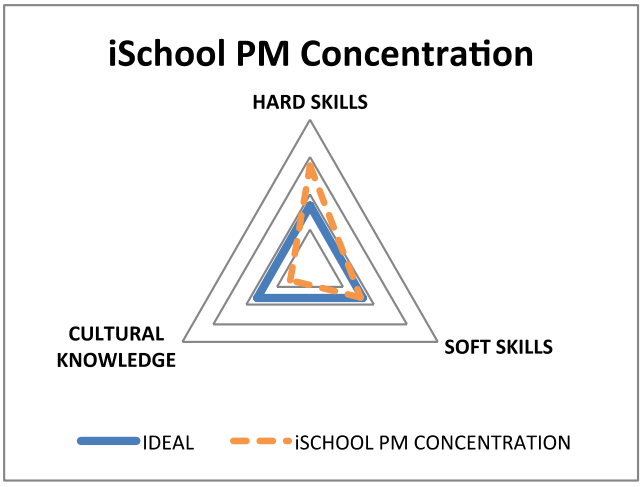
It is evident that there is a substantial overall percentage (77.1%) of courses that teach hard skills; however, it is an information technology school. According to the course catalog, the

IM&T degree program aims to provide students with a broad introduction to information management, services, and technologies (Syracuse University, 2017). The coursework has an overarching emphasis on educating students on the usefulness of the information systems to people. There is an emphasis on technology, but there is the keyword of "people," but what is interesting is only 10% of the curriculum concerns soft skills and 12.5% concern cultural skills. When comparing all courses to the core, there is the same percentage of cultural knowledge, but a slight increase to 20% of soft skills taught in its curriculum.

Project Management Concentration

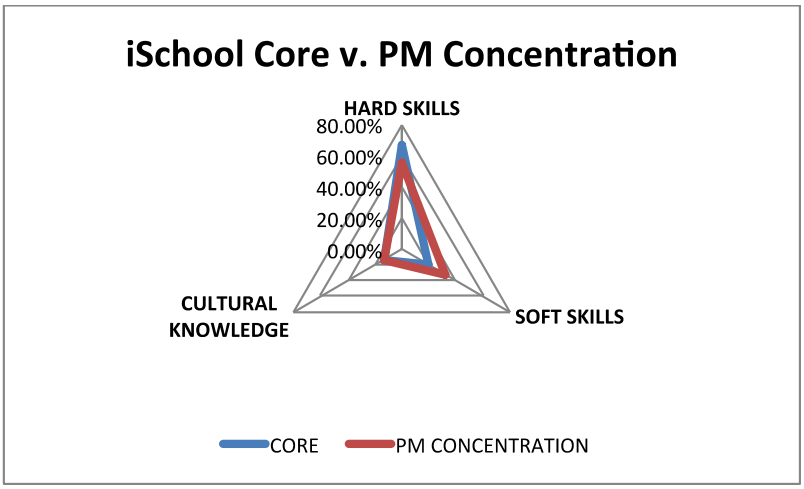
The project management concentration states that students will develop both managerial and technical skills to oversee the information systems, so we can assume to see an increase in soft skills and cultural skills. It is true the project management curriculum has more emphasis on soft skills, but there is still a much stronger percentage (55.4%) of technical skills in its courses. The concentration requires students to take four additional courses in addition to the core curriculum. The following figure incorporates the four courses into the core curriculum and shows the distribution against the ideal proportion.

Figure 1.5 iSchool Project Management Concentration



The findings show the percentage of soft skills (32.1%) is nearly an ideal percentage of soft skills, but there is a lack of courses that expose students to cultural competencies. Therefore, students in the project management concentration path are adequately educated in soft skills and technical skills, whereas cultural knowledge and acculturation heavily lack. Students gain cultural skills when they are integrated into a to working environment or if they gain education on organizational culture. The additional courses required for the concentration concern consultation practices, policies and decision making, risk management, and complex issues in project management. The courses are primarily soft skills, which explains the increase in percentage from the core curriculum figure. The following figure compares the core curriculum against the project management concentration in efforts to show the increase in the exposure of soft skills, based on four additional courses.

Figure 1.6 Comparison of Core and PM Concentration

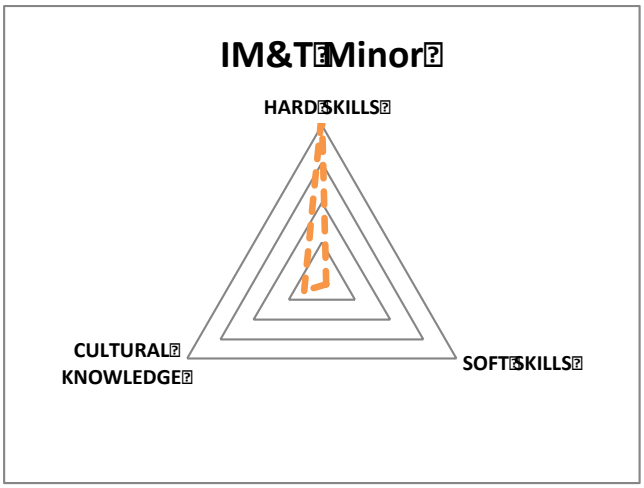


Information Management & Technology Minor

The information management and technology minor require students to take a total of six classes, some of which students have the option to select one course from a list. The complicated nature of selecting the courses make it difficult to display the proportion accurately. As a result,

the courses advised in the catalog were selected and measured. The possibility of students having options means that the following distribution is not reflective of all students completing a minor. Instead, it reflects the courses in the catalog listed as courses the students can select.

Figure 1.7 Information Management & Technology Minor



The figure shows that students completing a minor in the iSchool have an emphasis on learning a large portion of hard skills (86.1%). However, it is important to note the minor aims to complement any degree and gives students an understanding of information technology and resources. Therefore, the minor does not intend to equip students with any skills other than understanding information technology.

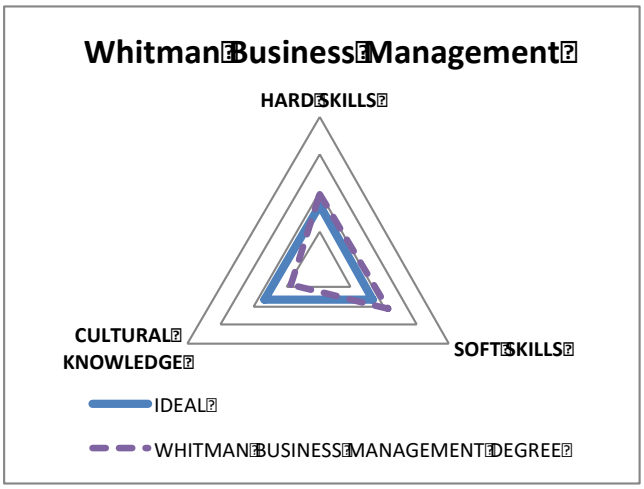
Whitman School of Management

Business Management Degree

The Business Management degree is the only management program in the study that has a higher percentage of soft, human-based skills (42.6%) in comparison to hard skills (39.8%). The objective of a management school is to manage, so it makes sense that there is more exposure of courses that focus on understanding effective management strategies, including

managing teams. The following figure illustrates the distribution of courses in the program against the ideal proportions.

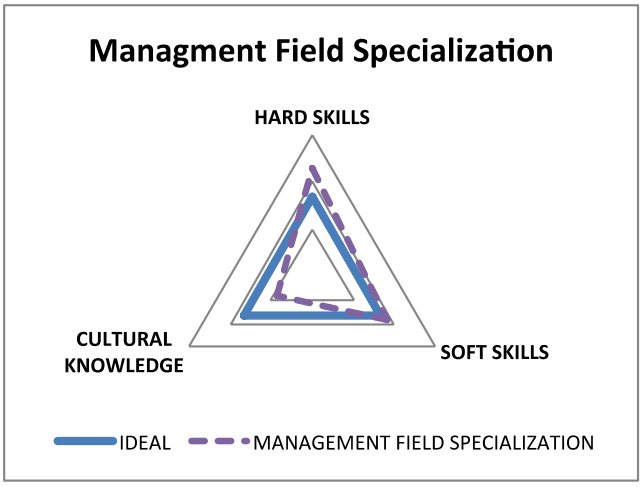
Figure 1.8 Whitman Business Management Degree



Management Field Specialization

The management field specialization exposes students to a curriculum that teaches them the development of skills and perspectives to become managers and leaders. Based on their program description, students should have practice in managing people and organizations. It is interesting to note that the field specialization serves as a compliment to other technical majors at Whitman and other colleges in the university. According to the catalog, the courses allow students to analyze and use all the organizational processes and resources necessary to manage their position and other employees (Syracuse University, 2017). The courses included in the analysis were the core classes and eight additional required courses.

Figure 1.9 Management Field Specialization

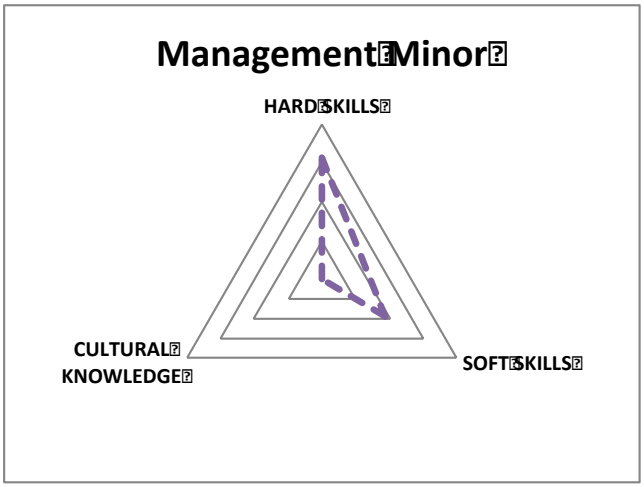


The required courses to complete the specialization include organizational behavior, human resource management, cross-cultural management, leadership and organization change, and management and ethics. The curriculum places a large emphasis on human-based, interpersonal skills and cultural knowledge, which is reflected in the figure. However, there is still a dominating percentage of hard skills (46.1%), followed by soft skills (36.8%), then cultural knowledge (17.1%).

Business Management Minor

The management minor is comprised of six required courses, with a large emphasis on hard skills. The distribution reflects the lack of cultural knowledge (0%), but shows that there are 37.5% of courses that include soft skills. Although there is only one course in human resource management, the other courses incorporate elements of communication and deals with working in teams.

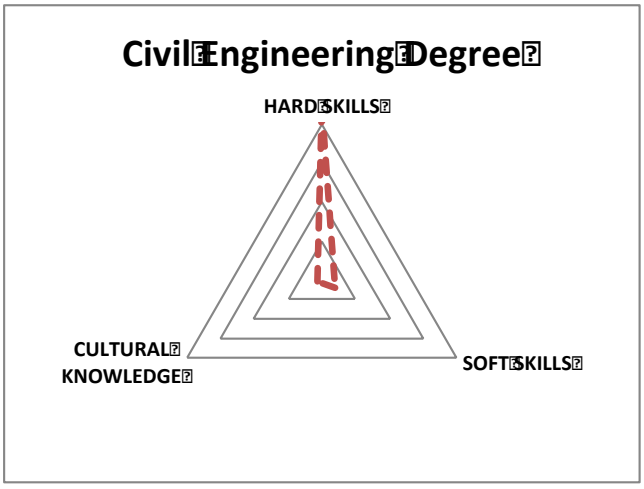
Figure 2.0 Management Minor



College of Engineering and Computer Science

According to the catalog, the goal of completing a civil engineering degree is to prepare students for engineering practice, advanced study, and learning in civil and environmental engineering (Syracuse University, 2017). Engineers are known for their technical specialties, and because the degree is in civil engineering, there is the expectation of an overwhelming focus on technical skills. The program is structured, and planned down to the specific classes needed to take each semester. There were other requirements to be fulfilled by the College of Arts & Sciences, but I decided to use solely the courses offered in the College of Engineering and Computer Science. The courses offered outside the college included mathematics subjects and writing courses primarily. The following distribution is illustrated in the figure below.

Figure 2.1 Civil Engineering Degree



As expected, there is an overwhelming amount of hard skills (89.3%). However, in the degree program description, it states, students "understand the importance and methods of effective communication." There is a lack of management courses, and only one course offered that concerns specifically project management, titled Construction Engineering and Project Management. In the description of the course, there are no keywords that include any communicative elements or soft skills. The findings were interesting because it is titled project management, yet there are no aspects that incorporate communicative skills. I investigated further and saw there were no requirements for the program to take soft skill courses, such as a presentational course. Therefore, it is arguable that students completing a civil engineering degree will not be adequately prepared to manage a team with effective communication.

S.I. Newhouse School of Public Communications

Students completing a degree in Newhouse are required to take additional courses in the College of Arts & Sciences; however, for the research analysis, the courses I included and measured were those that are required to complete in Newhouse. It is anticipated that because

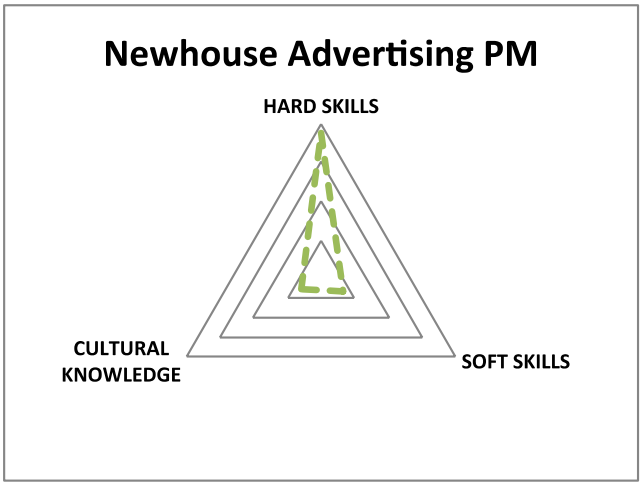
Newhouse is a communications school, there will be a stronger percentage of soft skills in comparison to hard skills because they encompass communication.

Advertising Project Management Emphasis

According to the project management emphasis description, the program focuses on building and managing brands, while developing strong verbal, writing, storytelling, and critical thinking skills. Students gain a strong ethical and global sensitivities, and strong leadership and management skills. Also, students will understand relationship building, and develop and agile mind to cope with pressures from individuals. Students will learn how to effectively coordinate and manage advertising campaigns, and communicate clearly to the stakeholders involved as a critical part of the project.

The language used in the description highlights the soft skills and acculturation that the project manager should learn to lead a campaign. It is interesting because there are only three courses needed to fulfill the emphasis, and students only are required to select one Newhouse course from a suggested list of nine courses offered. I completed the analysis based on the list of courses that are provided, although students completing the emphasis are not required to take all of the courses. Therefore, the distribution represents the list, not the curriculum that the students completing the emphasis will follow.

Figure 2.2 Advertising Project Management Emphasis

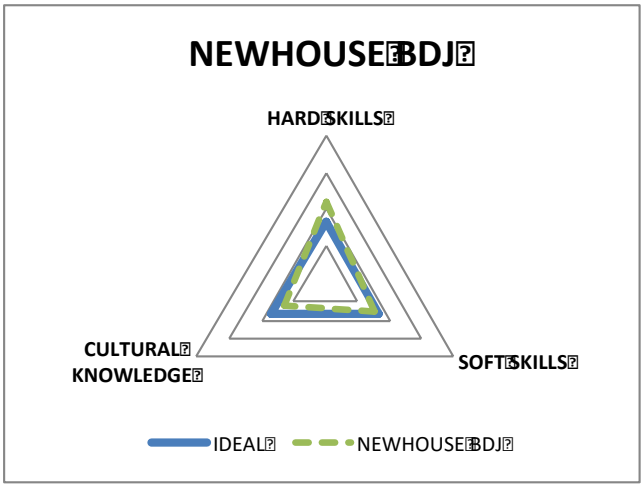


The distribution shows an overwhelming amount of hard skills (75%), but as previously stated, the percentages reflect the list of courses offered. However, the proportion of soft skills and cultural skills do not reflect the description which emphasized communication and effectively managing its team. The course catalog does not offer suggestions for course in other schools to fill the additional two electives required in the emphasis. Therefore, it is up to the student to choose courses that will give them the education on soft skills and acculturation.

Broadcast Digital Journalism Degree

Students completing the Broadcast Digital Journalism degree learn all the components that contribute to the production of traditional and digital media platforms. According to the catalog, courses equip students to face ethical dilemmas and critical issues in the complex communications environment (Syracuse University, 2017). The following figure shows the close alignment of the courses in the major in comparison to an ideal distribution.

Figure 2.3 Broadcast Digital Journalism Degree

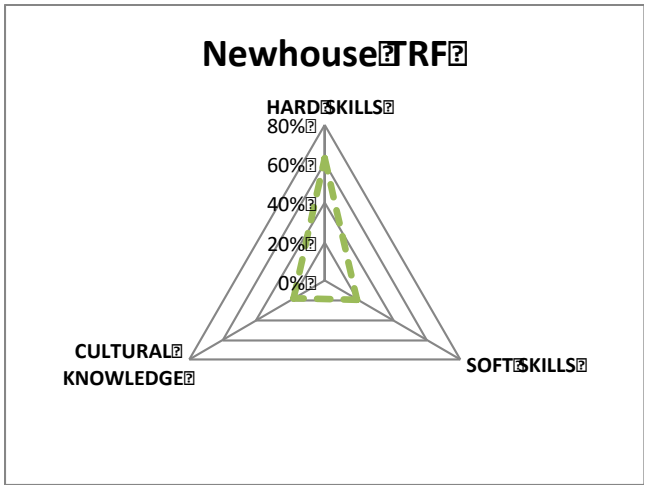


Due to the hands-on nature of the course, as illustrated above, there is a relatively equal distribution in each the knowledge areas. It is important to note that there are additional requirements needed to be completed by the students, but the degree program does an excellent job of exposing students to all desirable skills.

Television, Radio, and Film Degree

According to the course catalog, the TRF curriculum engages students in the components of storytelling, including the writing, visual aesthetics, principles and practices, collaboration, global perspective, and ethics (Syracuse University, 2017). The degree concludes with a capstone project in their area of interest, like filmmaking and television production. Students have required courses, a capstone course selected from a list, and four additional electives. I included and measured all of the courses listed and included them in the distribution. The following shows the proportion of classes that cover the knowledge areas.

Figure 2.4 Television, Radio, and Film Degree



The findings show there is an emphasis on hard skills (67.2%), but this can be explained due to the technical knowledge needed to understand and use the equipment. Many courses include elements from all knowledge areas, such as production management, ethics and media professions, and working with actors. There is a total of 46 courses that were measured and included in the percentages, which is significantly more compared to other programs.

Summary

The results confirmed that there is no program which represents an ideal proportion of the technical skills, soft skills, and cultural knowledge. The data provides clear evidence that there is much more to be included into course curriculum to incorporate desirable skills in a manager. While it is important to note the findings were based solely on the course title and descriptions extracted from the course catalogs; therefore, there is potential that the findings do not perfectly represent the actual exposure of those skills.

As a fellow student, I can agree to the following statement: the proportion of courses offered concerning interpersonal and cultural skills are not reflective of the importance of those

skills in a project manager. The following chapter will continue the discussion and address the implications of these findings.

Chapter 5. Discussion and Implications

Throughout the capstone study, we have identified a gap in project management education or a similar disciple. Previous chapters included a comprehensive literature review, supported by methods used to conduct research and analyze data. The final chapter will discuss the key findings with implications for the project management curriculum, as well as suggestions for future research.

Key Finding 1: Understanding the Gap and its Concerns

As addressed in the literature review and confirmed in research, there is a prevalent gap in the education concerning the desirable soft and cultural skills. The concern has been increasing and more institutes and professions are realizing the importance of a manager who possesses skills other than technical capabilities. The growing demand for practitioners with a range of knowledge has led to a reciprocal demand for modifying the current education model.

The concern lies in the statement that schools are not exposing students to these skills to the best of their ability. The reasoning could be they are not aware of the demand or they have struggle implementing and teaching skills that were otherwise learned in the workplace. Educators must seek to develop these skills through education and training to equip future project managers for project success. The literature review confirms that there has been more emphasis towards project management students manifesting soft, interpersonal skills, and it results in a need for improvements in the education.

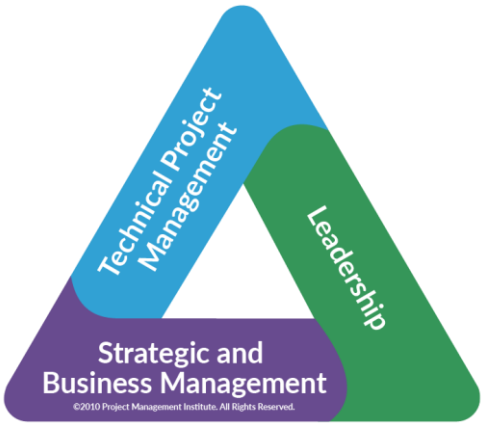
Key Finding 2: Improvements to Education

In evaluating the findings, the data shows there is a need for improvement in the education. The results represent a gap in the knowledge, and the literature review reinforces that it is critical for project managers to possess soft skills. There is a need for improvements in

education and carefully chosen additions to the curriculum will provide students with all necessary skills.

The Project Management Institute created new triangle titled the talent triangle, in response to a realization that there were flaws in project management curriculum because managers were not entirely effective (PMI, 2018). It took an entire wave of a generation to realize that there was a missing piece to the puzzle, and that was the ability to have interpersonal skills to lead and communicate with a team effectively. A manager-employee relationship ought to be built on the value of trust, and it is now that we realize the classic methods of project managers are slowly invalidating. The talent triangle includes three points: technical project management, leadership, and strategic and business management. The following diagram is PMI's Talent Triangle ® (PMI, 2018).

Figure 2.5 PMI Talent Triangle ®



The Project Management Institute has addressed the realization, and as a result, they have created new guidelines for undergraduate project management curriculum and resources. A window of opportunity was identified to develop an updated framework at the undergraduate level. According to PMI's 2013 Project Management Talent Gap Report, there will be 15.7

million new project management roles by 2020 (Task Force, 2017). The increase in demand places a larger emphasis on the curriculum at an undergraduate student level because they are the future managers. Improvements to the education are needed to ensure that the students are being educated on important material that ensures efficacy. Students expect to graduate with comprehensive behavioral competencies and strategic business awareness (Task Force, 2017). The guidelines show PMI is taking steps to update the curriculum based on the demands of the project management profession.

Impact of Improvements on Education

Improvements in education will have a positive impact on students working towards a project management career. Integrating the softer skills into the undergraduate curriculum will allow students to have exposure and understanding of the values and practices of interpersonal skills and understanding cultural aspects. It is ideal to begin at an early level, instead of relying on students learning once they enter the workforce. However, teaching a student how to have interpersonal skills is not an easy task, and there is need to explore methods to teach those skills.

Implications for Project Management Curriculum

Research provides evidence that it is critical for project managers to have mastery and knowledge of both technical skills and interpersonal skills (Gillard, 2009). My research supports the evidence from the literature review, visually displaying and explaining the lack of soft skills and the gap that it creates in the curriculum. The key implication for project management students relies on the fundamental skills that contribute towards a most effective project manager. This study suggests the current education can benefit from integrating more knowledge areas that include interpersonal skills and acculturation. Students will benefit from developing

these skills at the undergraduate level, and through practice, they can manifest these skills and traits to enhance their project manager efficacy post-graduation.

As previously addressed in Chapter 2, certifications and mastery of hard skills is not satisfactory and does not ensure that the project manager is entirely efficient (Thomas & Mengel, 2008). The findings suggest the additional skills to include, which will help address the gap and work towards filling the void. Being a current student at the undergraduate level, I agree that if universities invest more time into implementing new practices, the goal of a well-rounded project manager will be achieved. Through collaboration in the classroom and introduction and practice of acculturation with a diverse team of individuals, the students will have stronger abilities to lead a project. This study informs the types of skills that universities should aim to educate students to acquire. Acceptance of the evidence leads to the conclusion that the project management curriculum is missing focus on soft, interpersonal and cultural skills.

Contributions for Future of Research

The research and associated key findings confirm a clear lack of courses that concern the soft, interpersonal and cultural knowledge needed in an effective project manager. The findings have contributed to identifying the gap at the university level, and replication of this study with a different university can further explain if the gap is present. Additionally, this study can be completed in following years to measure if the exposure of the desirable skills shifted.

Another recommended study is to use a sample of the student and professor population to understand their opinions and perspectives of the suggested and identified gap. Opportunities exist to further progress this research and provide valuable recommendations to enhance the project management curriculum.

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Appendix

Figure 1.1 Project Management Triangle as Relating to Fundamental Skills for Project Manager Efficacy

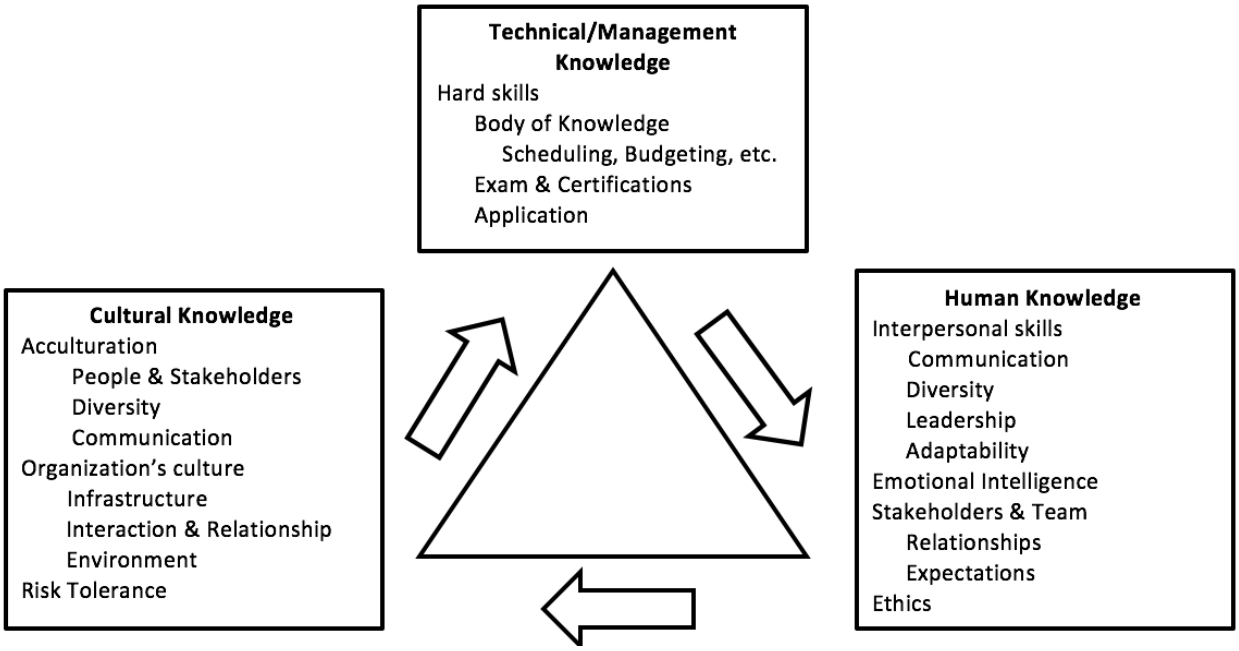


Figure 1.2 Radar Chart Distribution

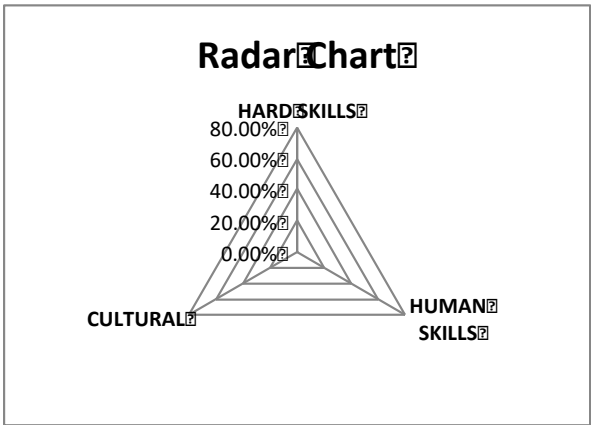


Figure 1.3 Ideal Distribution

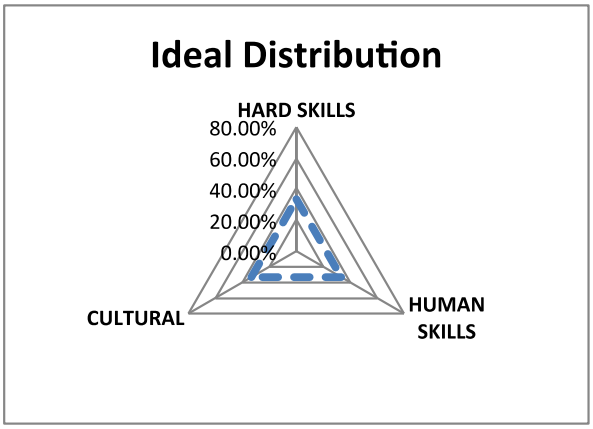


Figure 1.4 All iSchool Courses

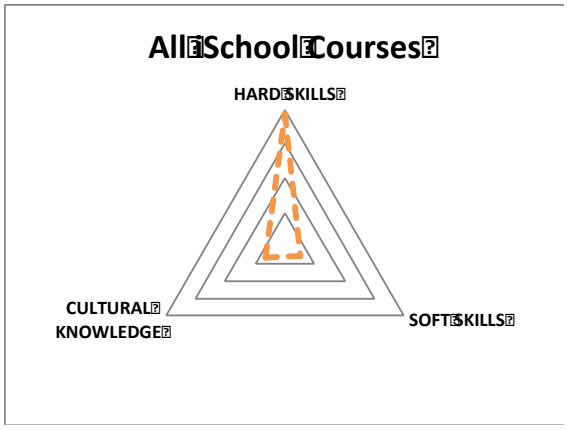


Figure 1.5 iSchool PM Concentration

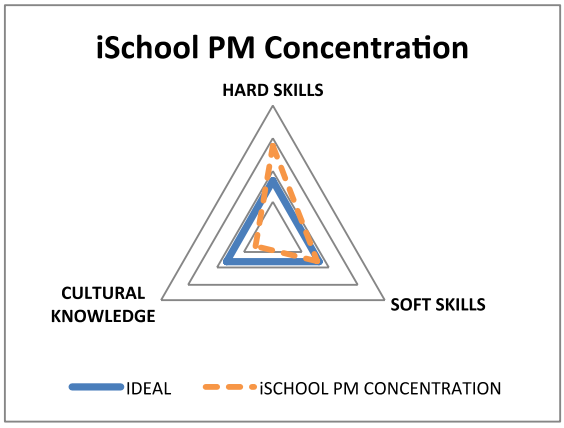


Figure 1.6 Comparison

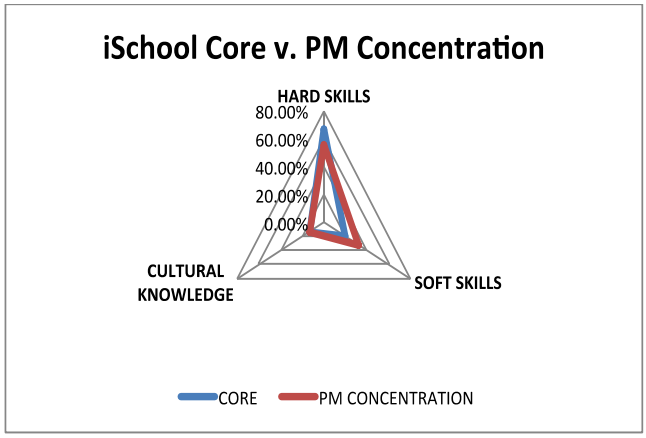


Figure 1.7 IM&T Minor

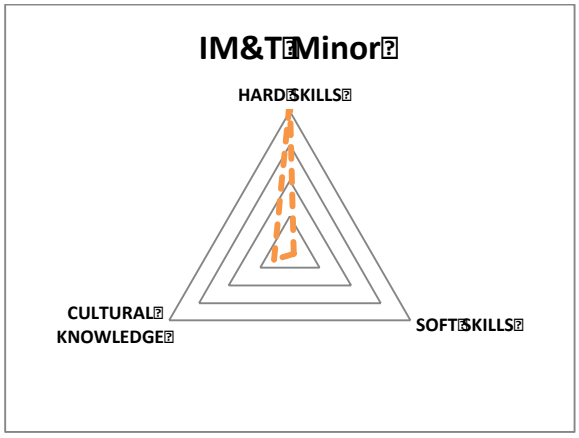


Figure 1.8 Whitman Business Management

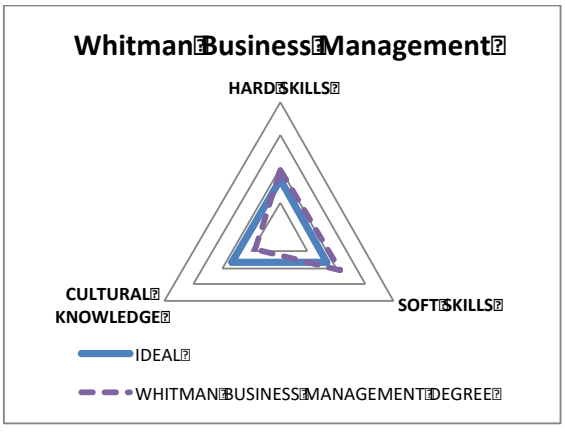


Figure 1.9 Management Field Specialization

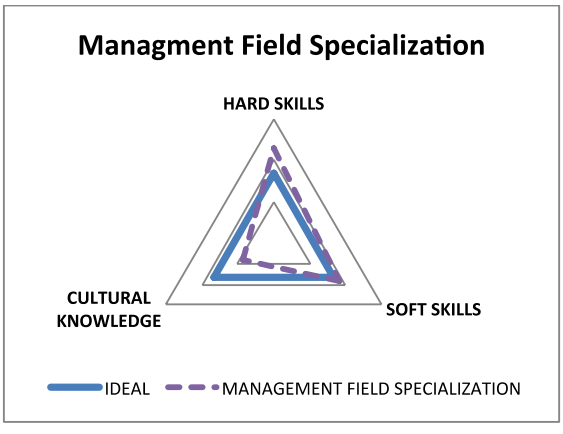


Figure 2.0 Management Minor

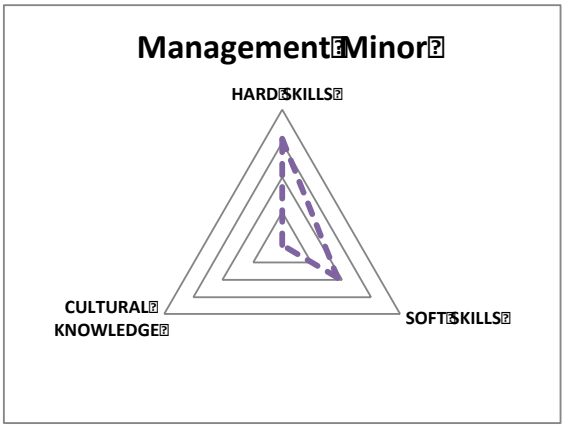


Figure 2.1 Civil Engineer Degree

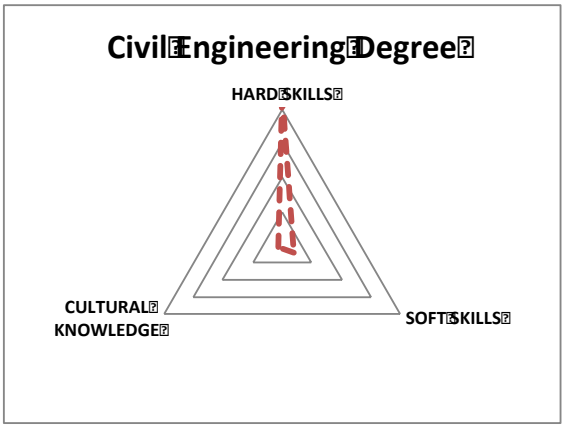
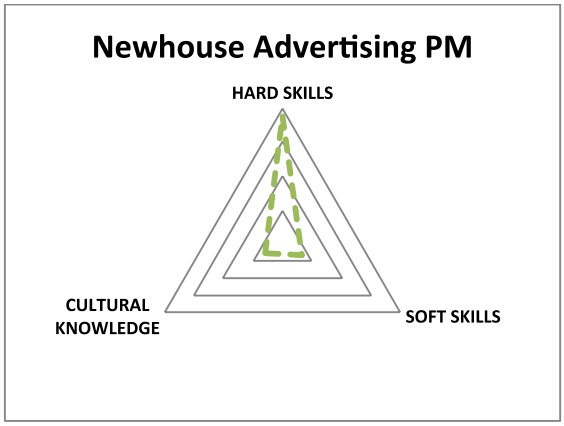


Figure 2.2 Advertising PM



Emphasis Figure 2.3 BDJ Major

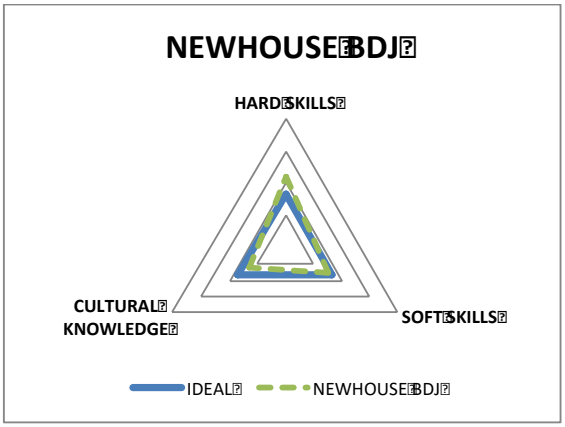


Figure 2.4 TRF Major

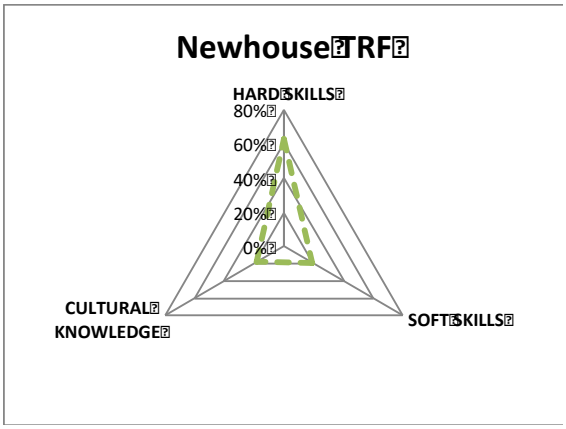


Figure 2.5 PMI Talent Triangle®

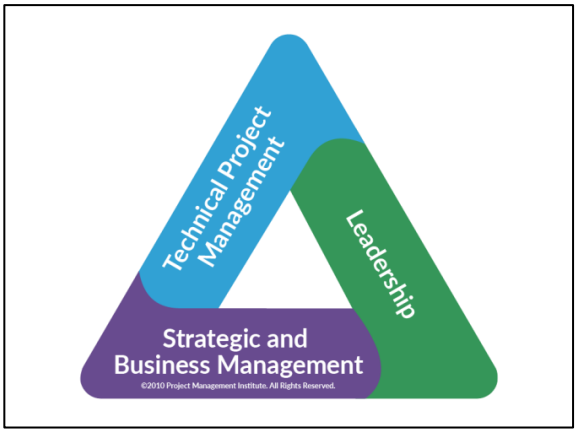


Table 1.1: Summary of Author's Experience in Project Management Education

Course Title	Institution
Managing Information Systems Projects	Syracuse University
Introduction to Project Management	City University of London
Certified Associate in Project Management (CAPM)	PMI Syracuse

Table 1.2 Key Definitions

Term	Source	Definition
Soft Skills	PMI, 2013	Behavioral competencies that include proficiencies such as communication skills, emotional intelligence, conflict resolution, negotiation, influence, team building, and group facilitation
Interpersonal Skills	PMBOK, 2013	Skills relating to leadership, team building, motivation, communication, influencing, decision making, political and cultural awareness, and negotiation.
Emotional Intelligence (EI)	Mersino, 2013	The ability to monitor self and others' emotions and use this information to inform thinking and behavior.
Stakeholder	PMI, 2013	Anyone who may affect, be affected by, or perceive itself to be affected by a decision, activity, outcome of a project.
Social Awareness	Mersino, 2013	The ability to accurately read situations and people and to understand and empathize with the emotions of others.
Acculturation	Jeedigunta, 2015	The process that occurs when two entities with different values come into direct contact with each other.

Table 1.3 Selected College and its Programs

College at Syracuse University	Program Title
School of Information Studies (iSchool)	All Courses in the iSchool Information Management & Technology Core Project Management Concentration Information Management & Technology Minor
Whitman School of Management	Business Management Major Whitman School of Management Core Management Field Specialization Management Minor
College of Engineering and Computer Science	Civil Engineering Major
S.I. Newhouse School of Public Communications	Advertising Project Management Emphasis Broadcast Digital Journalism Major Television, Radio, and Film Major

Table 1.4 Percentage of Knowledge Areas in Each Program

Syracuse University School	Program	Hard Skills	Human Skills	Cultural
iSchool	All Courses	77.1%	10.4%	12.5%
	IM&T Core Curriculum	67.5%	20%	12.5%
	PM Concentration	55.4%	32.1%	12.5%
	IM&T Minor	86.1%	2.8%	11.1%
Whitman	Business Management Degree	39.8%	42.6%	17.6%
	Whitman Core	61.4%	27.3%	11.3%
	Management Field Specialization	46.1%	36.8%	17.1%
	Management Minor	62.5%	37.5%	0%
College of Engineering & Computer Science	Civil Engineering Degree	89.3%	8.3%	2.4%
Newhouse	Advertising Project Management	75%	13.75%	11.25%
	Broadcast Digital Journalism Degree	44.2%	30.8%	25%
	Television, Radio, Film Degree	62.7%	19%	18.3%