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UNDERSTANDING THE DEVELOPMENT OF
GLOBAL LEADERSHIP COMPETENCIES

by

Andrea L. McMullen

A dissertation submitted in partial fulfillment
of the requirements for the degree of

Doctor of Philosophy

January 2014

Dissertation Committee

Mary McDonald, Ph.D., Chair
Lea Hubbard, Ph.D., Member
Charla Griffy-Brown, Ph.D., Member

University of San Diego

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ABSTRACT

As businesses seek to gain a competitive advantage in a rapidly evolving global marketplace and in the midst of a global talent shortage, the demand is increasing for guidance surrounding the development of global leaders. Although competency model frameworks have existed since the 1970s, the process of *how* an organization develops Global Leadership Competencies (GLCs) has not been well documented, particularly in new and evolving industries such as the biosciences. Furthermore, despite the time, effort, and money spent on learning and development or training programs, there are no studies that investigate employer-learner perceptions regarding the alignment of these learning programs with the GLC models designed to develop employees as transdisciplinary global leaders. This case study takes a modest step in filling that void by exploring a unique problem in the bioscience industry where scientists and business people are being cross-trained to bridge the gaps in their respective areas of disciplinary expertise.

Among other factors, employee-learner perceptions regarding the impact of a learning program on their GLC development were studied to gain a better understanding of how employees make sense of their own development and apply GLCs in their work. The participant sample consisted of 714 responses included in the learning program evaluation data, as well as 14 purposefully selected individuals for in-depth interviews. A review of documents included: course syllabi, learning objectives, field observation notes, competency framework materials, and course-level evaluation data. The document review informed this study's analysis of aggregate learning program evaluation data and the in-depth interviews.

The findings of this study connected complementary streams of literature related to GLCs. Theoretical frameworks associated with leadership, learning, and transdisciplinarity were explored to gain a better understanding of how organizations and individuals develop GLCs. The significance of this study is applicable across a diversity of sectors, especially when considering whether to build or buy the talent needed for organizations to be successful. Not only does this study contribute to the nascent field of global leadership and the emergent biosciences industry, it extends theory and applied research with a scalable methodology for other comparative work.

DEDICATION

To my beloved husband, Greg: the wind beneath my wings.

ACKNOWLEDGEMENTS

It is my honor to thank my beloved husband, Greg. Your faith, hope, and unconditional love have strengthened me throughout this entire journey. Words cannot express my appreciation for your sacrifices, support, and selflessness. I am also grateful to my entire family, faith community, faculty, and friends for your inspiration, prayers, wisdom, and support during my doctoral studies.

I would like to offer sincere appreciation to my dissertation chair, Dr. Mary McDonald, as well as to Dr. Lea Hubbard and Dr. Charla Griffy-Brown. Your thoughtful, supportive, and challenging feedback, as well as your willingness to share your time and talent in the process of writing this dissertation were truly precious gifts.

To my colleagues at BIO, thank you for your commitment to excellence and pursuit of lifelong learning, which are evident in the insights you shared throughout this study. You have continued to fuel my passion for the work that I do, and I wish you continued success in your professional and personal pursuits.

Throughout my life, I have been the blessed beneficiary of those who have guided me and helped me become a better leader and a better person. Thank you for teaching that prayer, love, faith, empathy, humor, humility, resilience, patience, and persistence are powerful leadership tools. I carry each of you with me wherever I go. And to my mentees (you know who you are): keep up your great work wherever you choose to serve; there is no limit to your potential. I'm proud of you and respect you.

Finally, I would like to recognize leaders in all sectors for your ongoing efforts to make a meaningful difference in the lives of individuals, organizations, and the world. Your willingness to share your gift of leadership is appreciated, valued, and honored.

TABLE OF CONTENTS

ACKNOWLEDGEMENTSvii
LIST OF TABLES.....	...xii
LIST OF FIGURES.....	...xiii
CHAPTER ONE: INTRODUCTION.....	1
Background of Bioscience Industry: Study Context.....	3
Statement of the Problem	11
Purpose of the Study & Research Questions	13
CHAPTER TWO: LITERATURE REVIEW.....	15
Introduction	15
Terminology and Historical Context.....	17
The Significant Crisis and Unmet Need for GLCs in the Business Sector	20
Development of GLCs.....	23
GLC theoretical frameworks.....	24
Leadership theories.....	28
Adult learning theories and blended learning approaches.....	31
Instruments for assessing GLCs.....	36
Transdisciplinarity: Developing the Breadth and Depth of GLCs.	40
Literature Review: Research Implications and Conceptual Framework.....	43
CHAPTER THREE: METHODOLOGY	49
Introduction	49
Rationale for the Research Approach.....	50

Overview of Research Design	52
Research Setting.....	54
Research Sample	57
Description of participant sample.	57
Sample selection.	59
Interview site setting.	61
Summary of Document Review	61
Data Collection Methods	63
Learning program evaluation data.	64
Interviews.....	65
Data Analysis Methods	68
Data analysis methods for the GROW learning program.	68
Data analysis methods for interviews.....	74
Learning factor summary table.....	75
Competency code matrix.....	77
Persona quote matrix.....	78
Ethical Considerations.....	79
Researcher positionality.	79
Limitations.....	81
CHAPTER FOUR: FINDINGS.....	87
Review of Study Purpose and Research Questions.....	88
Participant Demographics.....	90

Data Analysis, Interpretation, and Synthesis of Findings.....	92
RQ #1: GLC Definitions.....	93
RQ #2: Organizational Factors: Influences on GLC Development	99
GROW learning program.....	100
Managerial support.....	104
Organizational structure and transformation initiatives.....	107
Budget, business alignment, and culture.....	110
RQ #3: Learning Program Factors: Alignment with GLC Development ...	113
Learning program factors.....	114
Learning program factor insights: themed personas.....	117
Alignment between GROW learning program & GLC framework.....	122
Learning program gaps.....	125
Kirkpatrick levels of learning.....	127
RQ# 4: Training Roadmap Insights.....	133
RQ# 5: Transdisciplinarity Insights.....	136
CHAPTER FIVE: CONCLUSIONS & RECOMMENDATIONS.....	143
Conclusions and Implications	144
GLC definitions.....	144
Organizational factors: What helps or hinders learning.....	147
Learning program factors and alignment with GLC development.....	151
Training roadmap insights.....	154
Transdisciplinarity insights.....	156

Recommendations	159
Recommendations for practitioners.....	160
Recommendations for scholars.....	164
Limitations and Significance of the Study	166
References	169
Appendices	
A. Interview Protocol Excerpts.....	179
B. Research Participant Consent Form.....	185
C. Coding Matrix.....	187

LIST OF TABLES

Table 1. Participant demographics.....	91
Table 2. Learning program factors.....	115
Table 3. Learning factor insights: themed personas	118

LIST OF FIGURES

<i>Figure 1.</i> Revised definition of the bioscience industry.....	6
<i>Figure 2.</i> Global reasons for difficulty filling jobs.....	7
<i>Figure 3.</i> Global strategies to overcome talent shortage.	9
<i>Figure 4.</i> Strategies used in Americas to overcome talent shortage.....	10
<i>Figure 5.</i> Strategies used in Asia to overcome the talent shortage.....	10
<i>Figure 6.</i> Conceptual Framework	46
<i>Figure 7.</i> The Leadership T: Global Leadership Competency model at BIO	55
<i>Figure 8.</i> Product Manager (PM) profile	59
<i>Figure 9.</i> The Kirkpatrick Model: four levels of learning	71
<i>Figure 10.</i> Chain of evidence for Kirkpatrick Model four learning levels.....	72
<i>Figure 11.</i> Kirkpatrick Model: four levels of learning	128
<i>Figure 12.</i> Chain of evidence for Kirkpatrick Model four learning levels.....	129

CHAPTER ONE

INTRODUCTION

In today's business environment, leaders face challenges from the global economic crisis, as well as the emergence of global markets and the rapid technological developments that support them. To fully address the challenges, guidance is needed surrounding the process of *how* to develop *global* leadership competencies (GLCs) that integrate the universal soft skills of relational leadership competencies (e.g., authenticity, inspiration, relationship building, or diversity) with the hard skills within functional or technical domains (i.e., science, engineering, marketing, or finance). GLC developmental guidance is needed particularly in new or emerging global industries, such as the complex bioscience industry, which was the focus of this study. Adding to the complexity of investigating GLC development, almost every industry is currently facing a significant global talent shortage due to a growing skills gap. The American Society of Training & Development (ASTD) defined a skills gap as:

a significant gap between an organization's current capabilities and the skills it needs to achieve its goals. It is the point at which an organization can no longer grow or remain competitive because it cannot fill critical jobs with employees who have the right knowledge, skills, and abilities. (Galagan, 2010, p. 46)

ASTD further explained that an overall loss of expertise and management skill in the U.S. workplace is expected to result from the gradual departure of the 77.2 million baby boomers, the oldest of whom turned 60 years old in 2006. The aging workforce in the US, Europe, Asia, and other parts of the world will create vacancies at high-level positions requiring competencies critical for the success of organizations. Yet, there is a comparative lack of younger replacement workers with such competencies (Galagan, 2010). In addition to the ASTD study, the *2012 Talent Shortage Survey* conducted by

ManpowerGroup (2012) found that over a third of the 38,000 employers surveyed in 41 countries said they were unable to find the talent their organizations needed. This increase from 24% in 2011 to 33% in 2012 revealed that employers have continued to identify talent shortages as a barrier to meeting their business goals, which seems to defy prevailing logic when viewed against the high levels of unemployment in many economies, particularly among young adults.

Although there is a surplus in numbers of job seekers, companies are facing shortages in critical areas where they most need to attract and keep highly skilled talent, particularly in the fields requiring expertise in the science, technology, engineering, and math (STEM) disciplines. When employers were asked why they were experiencing problems filling positions in their organizations, over 33% named “lack of technical competencies/hard skills” (ManpowerGroup, 2012, p. 8), in particular the lack of industry-specific qualifications in both professional and skilled trades categories—up from 22% in 2011. Further complicating this problem, according to Gillis (2012), “the lack of leaders ready to take on global roles in emerging and expanding markets indicates that current global leadership development programs are deficient”(p. 26). In a 2011 global benchmarking study, conducted by Development Dimensions International (DDI), only 38% of the 12,423 leaders who participated reported the quality of leadership in their organizations as very good or excellent, and only 18% of HR professionals surveyed reported a strong next generation workforce to meet future global business needs (as cited in Gillis, 2012).

To address this global leadership gap as businesses seek to gain a competitive advantage in a rapidly evolving global marketplace, the demand is increasing for

guidance surrounding the development of globally competent leaders. Although there are many variations in definitions, for this study, a *global leader* in the business sector is recognized as anyone, regardless of organizational level, title, workplace location, ethnicity, or functional role, who has global responsibility over any business activity (Jokinen, 2005). Just as the term *global leader* has been defined many ways, the same is true for *Global Leadership Competencies* or GLCs. As suggested by some experts (Bird, 2013; Bücker & Poutsma, 2010; Javidan, Dorfman, De Luque, & House, 2006; Jokinen, 2005; ManpowerGroup, 2012; Mendenhall et al., 2013; Osland, 2013a; Tubbs & Schulz, 2006), GLCs include a combination of soft skills required for people leadership, as well as the hard skills in the technical and functional areas of expertise to succeed in business. Some scholars and practitioners have suggested that GLCs may need to account for the unique skills, and more important, the unique combinations of skills that define true global leaders rather than local or domestic leaders.

To understand the nature of what it means to develop the GLCs of global leaders, it is important for researchers and practitioners to understand the contextual nuances and unique challenges associated with such development. The research reported here studied development of GLCs within the context of the evolving bioscience industry.

Background of Bioscience Industry: Study Context

To set the context for this case study, the bioscience industry will be defined and described in detail in this section. The following section will describe a unique problem related to developing GLCs within the bioscience industry. The purpose of this study and the questions guiding this research will follow.

Unlike established industries that are familiar to the average consumer, such as manufacturing or retail, the bioscience industry is a relatively new, unknown, and evolving industry that encompasses many different industries with new sub-classifications emerging every year. At a time when the global economy struggles to recover from a recession and uncertainty remains regarding future economic growth, the bioscience industry is generating significant attention because it continues to fuel innovation, job creation, and economic growth. In defining the “Biosciences,” the Battelle Biotechnology State Bioscience Initiatives Report states that:

The biosciences are a diverse group of industries and activities with a common link—the application of biological scientific knowledge [of the way in which plants, animals, humans function]...into a broad array of higher level industries, such as chemical and food manufacturing, professional, scientific and technical services, and increasingly distribution services. (Battelle, 2012, p. 3)

By definition, the biosciences are a unique industry cluster currently spanning 27 detailed industries and are constantly changing to incorporate the latest research and scientific discoveries. At the aggregate level, Battelle (2012) has classified the bioscience industry sector as falling within four major subsectors:

1. Agricultural Feedstock and Chemicals: involving industries, for example, that utilize advances in biochemistry and biotechnology for producing products involved in crop protection, advanced seed, agricultural processing, bio-fuels, biodegradable materials from plant-based feedstock, sustainable industrial oils, lubricants and enzymes and bio-based catalysts for industrial processes.
2. Drugs and Pharmaceuticals: involving industries that produce vaccines, biopharmaceuticals, and tissue and cell culture media.

3. **Medical Devices and Equipment:** involving industries that produce a variety of biomedical products such as surgical instruments, orthopedic implants, bioimaging equipment, dental instruments, and patient care products.
4. **Research, Testing, and Medical Laboratories:** involving emerging companies working to develop and commercialize new drug discovery/delivery systems and gene and cell therapies as well as more service-oriented firms involved in pre-clinical drug development, clinical trials, and research/laboratory support services. While primarily focused on human health, these companies also include those that are focused on research and testing for agriculture and veterinary uses. (p. 3)

In April 2012, the U.S. government released the *National Bioeconomy Blueprint* which noted that bioscience industries are “a large and rapidly growing segment of the world economy that provides substantial public benefit” (White House, 2012, p. 97). The Blueprint further stated the bioeconomy has emerged as a priority because of its tremendous potential for growth as well as the many other societal benefits it offers:

It can allow Americans to live longer, healthier lives, reduce our dependence on oil, address key environmental challenges, transform manufacturing processes, and increase the productivity and scope of the agricultural sector while growing new jobs and industries (p. 97).

One of the factors behind the attractiveness and resiliency of the bioscience industry is how closely its growth is shaped by the fast pace of advances in biological sciences, making it one of the most innovative industries today, particularly in its creation of high quality jobs, the breadth of markets it serves, and its research and development intensity (Battelle, 2012). In fact, “during the 2001-2010 period, the U.S. bioscience industry gained jobs, despite job losses in overall U.S. total private sector

industry employment and among other leading knowledge-based industries” (Battelle, 2012, p. 5).

This offers a unique perspective on the resiliency of an industry not only during an economic crisis, but also over a long-term period with the inevitable fluctuations of a business cycle. Additionally, due to its technological innovations, the bioscience industry continues to expand the sectors where it competes, as evidenced by the following revised definition of the bioscience industry from the *2012 State Bioscience Industry Development Report* (Figure 1).

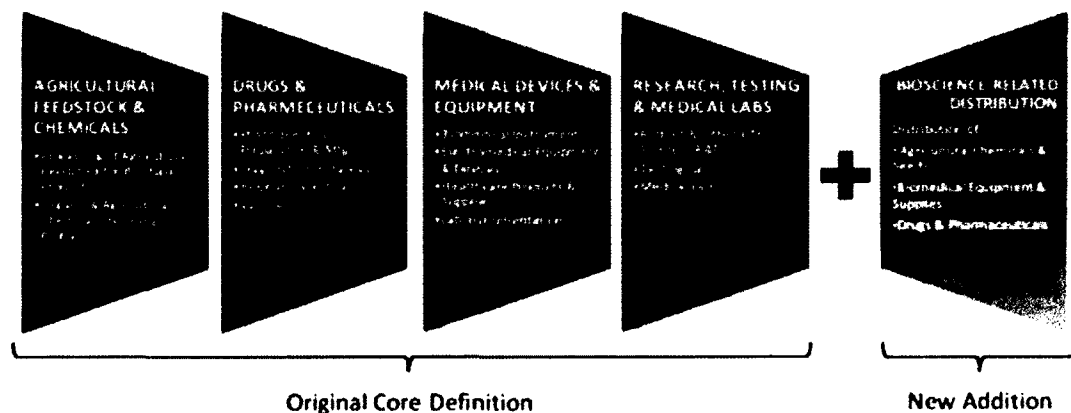


Figure 1. Revised definition of the bioscience industry. From “State Bioscience Industry Development 2012” by Battelle, & Biotechnology Industry Organization, 2012. Copyright 2012 by Battelle. Used with permission.

The above graphic shows that the *new addition* is an emerging fifth subsector that expands the current biosciences marketplace, and thus creates more job opportunities in the areas of agriculture, biomedical equipment, and partnerships with pharmaceutical companies. An excellent example of how significant an impact the biosciences industry has had on the U.S. economy is the human genome project. This \$10.4 billion investment in basic sciences during the 1993 to 2010 period not only drove \$796 billion

in economic impact, but also created 3.8 million job-years of employment (Battelle, 2012).

Yet, despite the importance and overall growth of the biosciences industry, it is not immune from the recent global recession and the talent shortage that global employers are experiencing. The 2012 Talent Shortage Survey by ManpowerGroup (2012), which was conducted across more than 38,000 employers in 41 countries, found that a global average of 34% of employers continue to experience difficulties filling vacancies due to lack of available talent. Although Japan is experiencing the most difficulty at 81%, the U.S. is also above the global average at 49%. Employers cite a variety of reasons behind their inability to fill jobs, but the top reported reason is a simple lack of available applicants in their local labor market. The second reason employers give to explain their difficulty in finding qualified candidates is a lack of hard skills or technical competencies (see Figure 2). This is problematic particularly in industries, such as the bioscience industry, where the technical or hard skills associated with STEM are critical complements to the soft skills typically associated with the breadth of universal or common GLCs, such as people leadership skills.

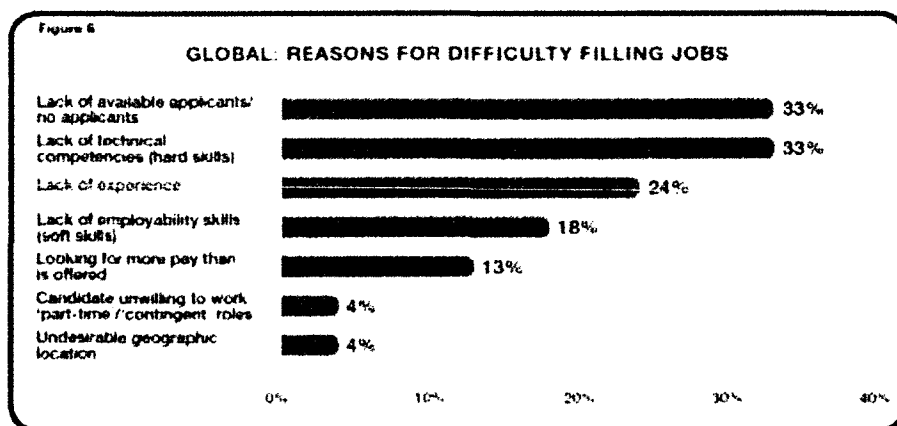


Figure 2. Global reasons for difficulty filling jobs. From "2012 Talent Shortage Survey" by ManpowerGroup, 2012. Copyright 2012 by ManpowerGroup. Used with permission

This difficulty of finding qualified candidates due to a lack of technical competencies is a problem for 36% in the Americas, 3% in Europe/Middle East/Africa, and 29% in Asia Pacific (ManpowerGroup, 2012, p. 8). At a global level, the study highlights the lack of focus on developing STEM skills in many economies around the world. One of the top cited strategies for coping with this global talent shortage is to cross-train existing staff (Figure 3) in other disciplines (i.e., training scientists for global marketing functions, such as product management). In the Americas, the strategies of cross-training and retaining existing staff were cited much more frequently than other strategies such as recruiting external new hires, enhancing benefit packages, and other less viable solutions (Figure 4). Likewise, in Asia Pacific, cross-training was also the most frequent solution (Figure 5). Solutions that may have worked historically are no longer sufficient for the global market demands driving today's business. Therefore, cross-training existing staff has become a plausible, albeit not yet proven, solution to address the global talent gap.

GLOBAL: STRATEGIES EMPLOYED TO OVERCOME THE TALENT SHORTAGE

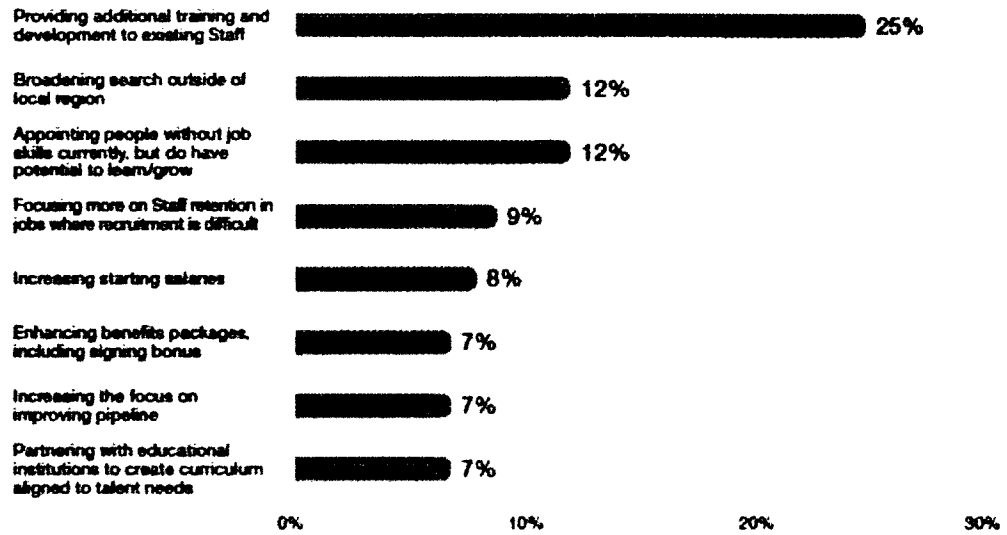


Figure 3. Global strategies to overcome talent shortage. From “2012 Talent Shortage Survey: Research Results” by ManpowerGroup, 2012. Copyright 2012 by ManpowerGroup. Used with permission

AMERICAS: STRATEGIES EMPLOYED TO OVERCOME THE TALENT SHORTAGE

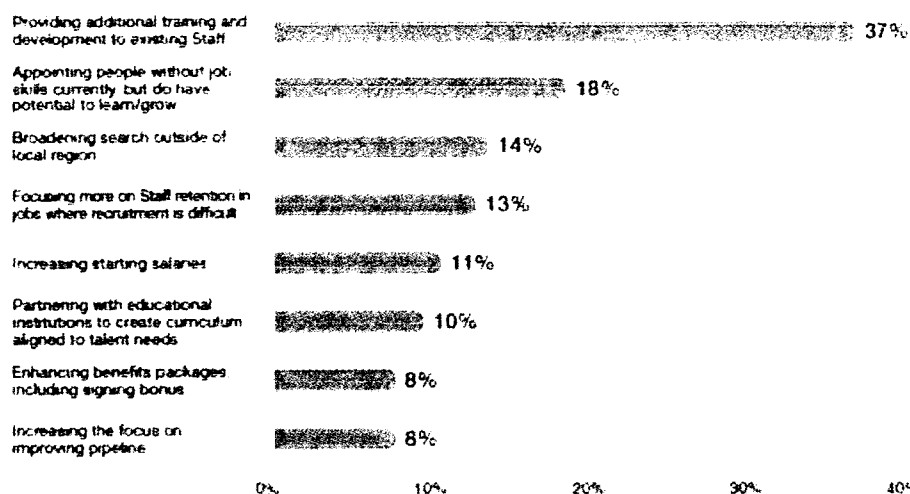


Figure 4. Strategies used in Americas to overcome talent shortage. From “2012 Talent Shortage Survey: Research Results” by ManpowerGroup. Copyright 2012 by ManpowerGroup. Used with permission

ASIA PACIFIC: STRATEGIES EMPLOYED TO OVERCOME THE TALENT SHORTAGE

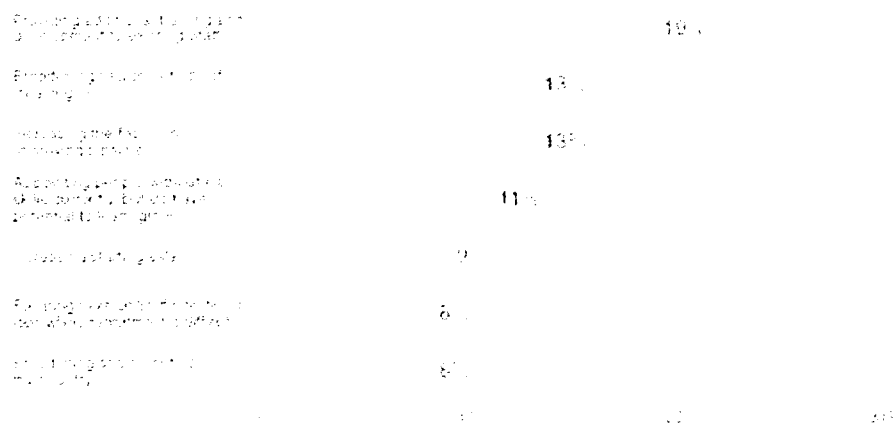


Figure 5. Strategies used in Asia to overcome the talent shortage. From “2012 Talent Shortage Survey: Research Results” by ManpowerGroup. Copyright 2012 by ManpowerGroup. Used with permission

To address the skills gap within the biosciences industry, which is needed to ensure success in the holistic development of GLCs across bioscience firms and other sectors, the *2012 National Bioeconomy Blueprint* prioritized as one of its strategic objectives to update training programs because a “vibrant bioeconomy depends upon the education and skills of its workers” (White House, 2012, p. 101).

Within the realm of global competency development and global talent shortages, one of the biggest issues facing the biosciences industry is cross-training scientists for commercial (marketing and sales) positions, such as global product management roles. Such roles are responsible for product and market development, as well as sales and support serving worldwide markets. Because no other research has been published about the process of developing global leadership competencies within bioscience firms, particularly from an employee-learner perspective, this case study was designed to fill that gap. The National Bioeconomy Blueprint identified this problem as follows:

Many biomedical doctorate recipients are being employed in positions other than those for which they were trained...and while the workforce needs within and outside of academia will continue to evolve as the bioeconomy develops, training programs and academic incentives should be aligned to meet the full spectrum of workforce demands. (White House, 2012, p. 102)

Statement of the Problem

Although competency model frameworks have existed since the 1970s, the process of *how* an organization develops GLCs has not been well documented, particularly in new and evolving industries such as the biosciences. Furthermore, despite the time, effort, and money spent on learning and development (or training) programs, no studies have investigated the employer-learner perceptions regarding the alignment of these learning programs with the GLC models designed to develop employees as transdisciplinary global leaders. This study fills that void by exploring the unique problem in the bioscience industry of cross-training scientists and business people to bridge the gaps in their respective areas of disciplinary expertise.

Further exacerbating this problem—and described in detail in Chapter Two—is that there is no universally accepted definition of a *global leader* or *GLCs* or an ideal GLC model. Nonetheless, guidance is still needed surrounding the process of *how* to

develop global leadership competencies (GLCs) that integrate the universal soft skills of people leadership competencies (e.g., authenticity, inspiration, relationship building, and diversity) with the hard skills within functional or technical domains (e.g., science, engineering, marketing, and finance). Selecting the components for a GLC business model may seem fairly straightforward, but Kanaga (2007) suggested

it is not the competency labels or titles that are most important. The value and problematic challenge really comes from the *behaviors* that make up the competencies and the *buy-in resulting from the processes used for identifying them*. (p. 7)

Like many industries, the bioscience industry is finding that it must dig deeper beyond reductionist lists of GLCs and encourage employees to learn and apply the integration of both soft and hard skills to ensure the organization is competitive in a global environment (ManpowerGroup, 2012). In fact, it is argued that *global leadership* differs from domestic leadership in *degree* and in the *kind* of issues related to connectedness, boundary spanning, complexity, ethical challenges, dealing with tensions and paradoxes, pattern recognition, and building learning environments, teams, and community and leading large-scale change efforts all across diverse cultures (Osland & Bird, 2005, p. 123). As suggested by some experts (Bird, 2013; Bücken & Poutsma, 2010; Javidan et al., 2006; Jokinen, 2005; ManpowerGroup, 2012; Mendenhall et al., 2013; Osland, 2013a; Tubbs & Schulz, 2006), scholars and practitioners have not arrived at one universal definition because GLCs may need to be completely redefined to account for the unique skills, and more important, the *unique combinations of skills* that define true global leaders.

To summarize, as companies continue to struggle with the problem of *how* to develop the next generation of global leaders in a more effective and efficient manner,

research is needed to address the integrated and applied learning of soft and hard skills. The lack of leaders ready to take on global roles in emerging and expanding markets indicates that global leadership development programs are needed to address the current deficiencies (Bersin, 2004; Gillis, 2012; ManpowerGroup, 2012).

Purpose of the Study & Research Questions

The purpose of this study was to gain an understanding, from the employee-learner perspective, of one organization's efforts within the bioscience industry to develop GLCs as part of a larger business transformation initiative. This study explored the successes and challenges in providing a learning and development program designed to upskill employees, particularly those serving in global marketing roles. The organizational context was important to consider because the learning program was embedded within a larger business transformation initiative. Part of this transformation entailed an intensive focus in improving individual and organizational GLCs that required transdisciplinary cross-training of scientists and business people in their roles as global product management leaders.

Currently, it is unknown within the industry as to whether classically educated scientists are able to develop the GLCs to become successful global product management leaders. Likewise, it is uncertain whether classically trained business people can learn the requisite scientific knowledge and other GLCs they may need to be successful in a product leadership role. Bioscience companies currently employ product management (PM) personnel with backgrounds and work experience primarily in science as opposed to business. However, it is important to gain a better understanding of how to develop

and cross-train the existing talent pool by acknowledging the PM role may require differing levels of expertise in the science and business disciplines and other GLCs.

The research goal for this study was to answer the question: *How does a bioscience company develop the GLCs of their Product Managers?* Additional research questions guiding this study were:

1. How do employees define GLCs within the context of their own professional development as global product management leaders?
2. What organizational factors do employees perceive as supporting or impeding their GLC development, particularly as global marketers within the product management function?
3. What are the employees' perspectives regarding the alignment of the company's GLC development program and the actual competencies that employees feel they need to learn to develop proficiency in the applied practice areas of their work?
4. What type of product management GLC training roadmap might employees recommend based upon their educational and experiential background, and what might this reveal about future learning program recommendations for product management roles?
5. How might employees build upon strengths within their discipline(s) of expertise and address gaps by developing cross-functional GLCs within the product management role?

CHAPTER TWO

LITERATURE REVIEW

Introduction

As businesses seek to gain a competitive advantage in a rapidly evolving global marketplace, the demand is increasing for guidance surrounding the development of leaders. Scholars and practitioners acknowledge the importance of competency models, or frameworks, which can serve as useful tools for recruiting, selecting, developing, assessing, and compensating leaders (Intagliata, Ulrich, & Smallwood, 2000; Kanaga, 2007). Definitions of what constitutes *Global Leadership Competencies* (GLCs) vary, as do the GLC models themselves (Jokinen, 2005; Mendenhall, Reiche, Bird, & Osland, 2012). However, the value of such models is derived from the knowledge, skills, attitudes, abilities, and behaviors that comprise the competency frameworks and the competency-based processes used to identify and develop leaders more generally (Alldredge & Nilan, 2000; Brownell & Goldsmith, 2006; Conger & Ready, 2004; Mendenhall et al., 2012; Morrison, 2000; Osland & Bird, 2005; Suutari, 2002).

Competency models arose in the 1970s as social and industrial psychologists gained interest in performance levels related to specific jobs (McClelland, 1973). Over the past four decades, GLCs have evolved from individual, job-specific performance criteria to more general competencies that cut across specific jobs and are associated with a company achieving a competitive advantage in a global environment (Eden & Ackermann, 2000; Garman & Johnson, 2006; Intagliata et al., 2000; Kanaga, 2007; Mendenhall et al., 2012; Osland & Bird, 2005; Prahalad & Hamel, 2006). The thinking is that if an organization knows *what* critical competencies are needed for it to function

successfully in a global business environment, and the organization knows *how* to develop its leaders to acquire the appropriate GLCs, then the organization has a competitive edge that is hard to duplicate (Lombardo & Eichinger, 2011).

This literature review provides an overview of GLCs from the perspective of scholars as to *what* defines GLCs, *why* they are important, and *how* GLCs may be developed via theoretical frameworks, leadership and learning theories, assessment instruments, and learning programs. The first section examines terminology and the historical context associated with the evolution of GLCs. The second section explains the important factors compounding the significant crisis and unmet need for developing GLCs. The third section explores various GLC theoretical frameworks, the leadership and learning theories that are relevant for *how* to develop GLCs, and the relationship of research methods to findings associated with GLC assessment instruments. The fourth section focuses on integrating the transdisciplinary breadth and depth of GLCs through learning programs. Here an important distinction is made that GLC capacities are broader and deeper than what was needed historically for domestic leaders. Global leaders must learn and apply GLCs at high proficiency levels both in the breadth of the soft people leadership skills and depth of the hard transdisciplinary technical or functional skills. The magnified complexity of global contextual factors, the greater flow in the relational dimension, and the increased need for presence in a spatial dimension differentiate global from domestic leaders (Mendenhall et al., 2013). The conclusion of this chapter calls for bridging the gaps between scholars and practitioners with implications for future research, as well as the conceptual framework used for this study.

Terminology and Historical Context

In exploring a taxonomy of GLCs and meta-competencies, Tubbs and Schulz (2006) stated that “there is no more important task with regard to leadership development than identifying the competencies and meta-competencies that comprise leadership” (p. 29). However, the research on GLCs lacks a consensus regarding the definitions and classifications of such fundamental terms as *global*, *management*, *leadership*, and *competency* (Jokinen, 2005). For instance, the terms *global*, *multinational*, *transnational*, and *international* are used interchangeably, even though some authors attempt to explain distinctions by describing variations in global leadership dependent upon an individual’s level or title in an organization, geographic scope of responsibility, and/or expatriate status or experience (Bartlett & Ghoshal, 1998). In synthesizing the definitions offered by several scholars, a global leader typically refers to someone in a role that covers or influences the whole world, as opposed to an expatriate or someone on a limited international assignment with country-specific responsibilities.

Mendenhall et al. (2012) further tackled the problem of construct definition for global leadership by arguing that *global* has three primary dimensions: (a) contextual complexity inherent in the international leader’s responsibilities, (b) relational flow as measured by the richness (frequency, volume, and scope of information flow) and quantity of channels required for boundary spanning the role, and (c) the spatial-temporal presence that an individual has to physically move across geographical, cultural and national boundaries. In considering these three dimensions, the authors contributed the following definition of what they consider a global leader: “an individual who inspires a group of people to willingly pursue a positive vision in an effectively organized fashion

while fostering individual and collective growth in a context characterized by significant levels of complexity, flow, and presence” (Osland, 2013b, p. 75). Simplifying this definition from a practitioner perspective, a global leader in the business sector is recognized as anyone—regardless of organizational level, title, workplace location, ethnicity, or functional role—who has global responsibility over any business activity (Bartlett & Ghoshal, 1998; Brownell & Goldsmith, 2006; Bücken & Poutsma, 2010; Bueno & Tubbs, 2004; Jokinen, 2005; Lobel, 1990; Prahalad, 1993; Tubbs & Schulz, 2006).

Just as there is no universal consensus regarding the word *global* in global leadership, the words *management* and *leadership* are often interchanged, even though there is a higher level of consensus that *management* is often associated with administrative and supervisory tasks, whereas *leadership* involves influencing others to accomplish organizational goals by mobilizing people to tackle the tough challenges associated with adaptive work (Heifetz, 1994; Kotter, 2001; Tubbs & Schulz, 2006). Kotter (2001) proposed that management and leadership are different but complementary, and that in a changing world, one cannot function without the other. He then enumerated and contrasted the primary tasks of the manager and the leader and concluded that managers promote stability whereas leaders press for change, and only organizations that embrace both sides of that tension can thrive in turbulent times. Other scholars have added that global leaders leverage a capacity for greater scope and proficiency in applying various competencies across cultures (House, Quigley, & de Luque, 2010; Javidan et al., 2006; Jokinen, 2005; Schein, 2004).

To develop greater leadership capacity and master proficiency across GLCs, it is useful to have a basic understanding of the terminology typically used by scholars and practitioners. Although the current literature does not provide standardized terminology surrounding *competencies* and global leadership development, Garman & Johnson (2006) provided the following terms, which are frequently used to describe various aspects of GLCs:

- *Competencies*: characteristics of employees with behavioral implications that are thought to be associated with successful performance of their job
- *Core Competencies*: competencies thought to be associated with the success of an organization
- *Competency model*: a collection of competencies associated with successful performance
- *Competency modeling*: a systematic process for identifying and articulating competencies at either the individual or organizational level. (p. 14)

Early competency models, developed by social psychologist David McClelland (1973, 1998), focused on the characteristics that led to an individual's success on a job or at a task. McClelland noted in 1998 that the competency-assessment movement had come a long way since 1973 when he argued that competency assessments should be developed as an alternative to academic style intelligence testing, which was failing to account for successful performance, especially in high-level executive positions.

McClelland (1998) suggested that competencies—outcomes-relevant measures of knowledge, skill, abilities, and traits and/or motives— might be adopted as a more useful approach to aptitude measurement. Beyond someone's intelligence or ability to perform a specific task, one widely used acronym is KSA, representing knowledge, skills, and abilities or attitudes (Tubbs & Schulz, 2006), including personality traits, behaviors, or motives that enable someone to be an effective leader. The more leaders exhibit the

desired KSAs and personal characteristics, the more they are assumed to possess the requisite leadership competencies and adapt to challenges along a continuum of mastery (Kanaga, 2007; Senge, 2006).

The Significant Crisis and Unmet Need for GLCs in the Business Sector

Today's work environment is in constant flux and requires constant adaptation. "Change is the new normal for employees—changes in target markets, products, business objectives, organization structure, work location, work teams, job role, or manager alignments have become common" (Corporate Executive Board, 2012, p. 37). Furthermore, the global economic crisis, worldwide political conflict, healthcare and education reform, and rapid changes in technology are adding to the complex challenges that leaders must tackle in today's global business environment.

Given these issues and others, companies are becoming increasingly focused upon the urgent need to develop leaders with global competencies and perspectives (Alldredge & Nilan, 2000; Bartlett & Ghoshal, 1998; Mendenhall et al., 2013; Suutari, 2002). International trends in deregulation and formalized regional trading agreements, such as the Association of Southeast Asian Nations and the International Free Trade Agreement, have facilitated opportunities for companies to act globally. Consequently, increased prospects for global expansion have resulted in greater focus on creating an effective global workforce so that global organizations can become more successful players in the international marketplace (Hsieh, Lavoie, & Samek, 1999; Mendenhall et al., 2013). Such globalization of industry puts enormous pressure on companies to adopt global strategies (Morrison, 2000), which may have the upside advantage of establishing core and distinctive GLCs that create a substantial competitive advantage in the marketplace

and that serve as a guide for companies anxious to develop the competencies in their employees (Keegan & Green, 2005; Mendenhall, 2006; Mendenhall et al., 2012; Mendenhall et al., 2013).

Although scholarly research and applied practice recognize the importance of GLC competency models as useful tools for describing the types of competencies associated with leadership (Kanaga, 2007), models alone do not address the urgent need of knowing *how* to develop leaders. Kanaga (2007) suggested that employees should be involved in the processes for developing competency models as well as the learning and development programs. Yet, many companies are not modifying their strategies and leadership practices fast enough to include employee voices in the design of customized GLC models or learning and development programs (Mendenhall et al., 2013; Morrison, 2000). If external GLC models are used, the lack of buy-in from employees might be remedied by asking for their input and feedback (Kanaga, 2007).

Since the global recession started in 2007, companies have been facing increasing pressure to do more with less, including operating with fewer people, producing results in less time, and using less capital. Hence, non-customized off-the-shelf domestic competency models and learning programs are sold to organizations by vendors and consultants whether or not these are the right resources to address a company's specific global needs. Within the fledgling bioscience industry, this approach often appeals to stakeholders because it appears to be an expedient solution to address the global talent shortage problem. Yet, within a couple of months to years of heading down an unprofitable path, bioscience companies have realized that the recycled traditional

domestic leadership models are insufficient to understand the global market forces that significantly increase the complexity of global leadership development initiatives.

According to the 2009 Skills Gap poll from the American Society of Training & Development (ASTD), organizations are experiencing gaps in leadership skills and basic workplace competencies that are the building blocks of successful performance in any job. Of the 1,179 organizations that were polled, 79% identified a current skills gap, and among the top categories of skills most lacking were leadership and executive-level skills, which was reported by 50% of respondents.

The crisis and unmet need in global leadership development is substantiated further by additional data from a global benchmarking study, conducted by a leading talent development firm, Development Dimensions International (DDI). DDI surveyed 4,500 leaders in 944 organizations in 42 countries (Bernthal & Wellins, 2006) to study a review of the leadership competencies (e.g., results orientation, interpersonal skills, etc.) that affect leader success and failure. Not only did this study find a growing requirement for managers to have a global perspective and to manage across regions, but cited another contributing factor to the increasing GLC gap: leaders at all levels are asked to play multiple roles requiring transdisciplinary expertise. Similar to the findings of the 2009 Skills Gap poll from ASTD, Bernthal and Wellins (2006) stated that the challenge to find leaders capable of handling complex leadership roles has been heightened by the gradual drain of experienced leaders.

As the demand increases for new leaders in emerging economies, such as Brazil, Russia, India, and China, new empirical research is needed to understand what GLCs are defined as significant by global businesses, how organizations are developing these GLCs

across the employee population, and what is or isn't working in terms of development from the perspective of the employees.

Development of GLCs

Research designed to gain a better understanding the development of GLCs from a theory and practice perspective is difficult, partly due to the differing perspectives about defining the construct of global leadership among scholars and practitioners (Mendenhall et al., 2013). Competency frameworks proposed by academics are criticized by practitioners for being overly complex, with most models composed of 50 or more individual competencies and taking the form of long lists of universal soft skills or generic competencies such as: exerting influence, building relationships, communication skills, and managing change (Conger & Ready, 2004; Intagliata et al., 2000; Kanaga, 2007; Prahalad, 1993). Although the GLCs typically appear straightforward to practitioners, the reductionist lists are often considered superficial by practitioners. Additionally, such lists have not taken into account context (particularly the inclusion of the hard skills needed in the business setting), nor is there any justification as to why specific competencies have been selected over others.

Organizations often do not allocate the time or resources to conduct in-depth explorations of employee perspectives. At best, quantitative employee engagement surveys are conducted as a quick method to understand whether the organization is providing sufficient developmental opportunities. Since the global recession started in 2007, companies have been facing increasing pressure to do more with less, including less staff, less time, and less capital (Piasecki, 2012). In practical terms, this means there are fewer Human Resources and Learning & Development employees on staff, as well as

other employees responsible for driving business revenue. Revenue-generating employees cannot be taken away from their daily job tasks to engage in competency modeling work owned by HR, nor should they be expected to serve as learning and development consultants or trainers. Nonetheless, there is a growing need to understand that the global context significantly increases the complexity beyond traditional domestic leadership and that employees need developmental programs to become effective global leaders in their current and future jobs.

Given these pressures and the challenges facing global leaders in today's context, companies are struggling with the process of *how* to develop the next generation of global leaders. To understand this issue, four areas dominant within the current literature related to the development of GLCs will be reviewed: theoretical frameworks, leadership theories, learning theories, and assessments.

GLC theoretical frameworks. As previously mentioned, one widely used acronym is KSA, representing knowledge, skills, and abilities or attitudes (Tubbs & Schulz, 2006) and one or more personal characteristics, including personality traits, behaviors, or motives that enable someone to be an effective leader. The more employees exhibit the desired KSAs and personal characteristics, the more they are assumed to possess the requisite leadership competencies along a continuum of mastery (Kanaga, 2007; Senge, 2006). To develop a person along such a continuum of mastery, McClelland (1973) had an early notion of developing competencies for job positions as a static set of roles and responsibilities. This has evolved to the idea that individual positions must allow greater flexibility for adaptation to changing organizational needs and leadership requirements (Garman & Johnson, 2006). Traditional job design and

analysis methods are still useful in creating position specifications. However, competency modeling allows for more universality and flexibility of job requirements to allow for ties to corporate strategy (House et al., 2010; Jokinen, 2005; Prahalad, 1993; Prahalad & Hamel, 2006; Senge, 2006). Competency frameworks typically provide a comprehensive list of tangible and measurable competencies, skills, and attitudes or behaviors that provide the developmental benchmarks for leaders in the organization (Conger & Ready, 2004; Garman & Johnson, 2006; Intagliata et al., 2000).

In an example of one taxonomy (Bueno & Tubbs, 2004; Tubbs & Schulz, 2006), the meta-competencies include broad areas, such as: (a) teamwork and followership, (b) understanding the big picture, (c) attitudes are everything, (d) communication, innovation and creativity. Within each meta-competency, individual competencies are used to assess a leader's overall mastery in that area. For instance, within "understanding the big picture," leaders must demonstrate mastery in the following six areas: (a) demonstrating knowledge of the entire organization, (b) using systems theory, (c) effectively utilizing technology, (d) demonstrating global sensitivity, (e) utilizing effective compensation, and (f) demonstrating ethical practices (Tubbs & Schulz, 2006).

Brownell and Goldsmith (2006) argued that these *common competencies* often called *core competencies*, are the fundamental knowledge and skills developed in traditional environments, which are necessary but insufficient in the preparation of global leadership. They proposed that *distinctive competencies* are best assessed through experience in the field. From this type of business model, the values, goals, and aspirations of the system will further the cycle of discovery of the most powerful competencies and the potential for creating company-specific expertise to foster high-

performing organizations (Brownell & Goldsmith, 2006; Day, 1994; Eden & Ackermann, 2000; Intagliata et al., 2000; Prahalad, 1993; Prahalad & Hamel, 2006).

It has been suggested that current approaches to developing GLCs lack the theoretical grounding that may help provide linkages for practitioners to develop meaningful, targeted competencies into an effective GLC framework in practice (Kanaga, 2007). Filling such a gap might ultimately be linked to learning curricula that could address the development of GLCs. The practices at several global companies, including FedEx, TRW, Avery-Dennison, and McDonald's, have been explored by researchers for the purpose of understanding the initial development and implementation of corporate GLC models (D'Alesandro & Crandell, 2009; Neary & O'Grady, 2000; Schuler, 2007; Williams-Lee, 2008). In each case, the corporations utilized one of three approaches: (a) adopt a GLC model that has been created and implemented with some type of success in another business (b) create a model internally, or (c) develop a hybrid approach with elements adapted from external GLC models and customized with competencies considered critical for one's own organization. None of these case studies was hailed as a best practice or a failed effort, perhaps because they were not tied to organizational business outcomes or the development of employee behavioral proficiency levels over time.

Although each of these case studies explained a basic approach in developing and implementing global leadership development programs with targeted competencies, none of these studies leveraged leadership or learning theories to explore how GLCs might be developed from the employees' perspectives. Likewise, the early leadership theorists (Bass, 1985; Burns, 1978; McClelland, 1973, 1998) provided conceptual theories and

studies related to individual leadership competencies. However, they did not seek to understand development from the employee perspective, nor did they apply their theories or studies to GLC proficiency development or global organizational performance, which is an area of increasing focus in the academic business literature (Intagliata et al., 2000; Lei, Hitt, & Bettis, 1996; Senge, 2006; Slater & Narver, 1995). As global business grows more complex, corporate leaders must develop complex yet malleable skill sets consisting of the core *and* distinctive competencies, rooted in leadership *and* learning theories, so that practitioners can adapt GLC frameworks to their organizational and global environments that are grounded in theory and practice for the business world.

To summarize this review of the GLC literature, competency models can serve as useful tools for describing the general or universal types of soft skill competencies as well as the technical function-specific hard skills. Examples of common soft skills competencies include authenticity, inspiration, diversity, influence, relationship building, communication skills, delegating, motivating others, and managing change. Although important competencies, developing these universal soft skills is insufficient because business practitioners see these as superficial reductionist lists which do not fully address the complexities of how to develop GLCs that integrate the soft skills with the hard skills needed in business. For instance, beyond a model that may list the soft skill competency of “developing a global mindset,” an employee needs to be able to demonstrate applied behaviors of this global mindset by leveraging specific hard skills.

In this case study, examples of the hard skills that were needed for global product managers included: business and financial acumen, analytic ability, customer insight, market and competitive knowledge, product lifecycle management, value capture

strategies, and driving for results. In order to gain a better understanding of how the soft and hard GLCs might be developed in an integrated fashion, the next sections of this chapter will explore the literature pertaining to relevant leadership and adult learning theories, as well as some of the literature surrounding competency assessments and how to develop the breadth and depth of GLC skills for transdisciplinary leaders.

Leadership theories. Leadership theories can help to identify which GLCs to incorporate into the business sector, particularly where strategies have been studied regarding the teaching of core competencies and soft skills including: emotional and social intelligence (Cherniss, Extein, Goleman, & Weissberg, 2006; Goleman, 1995, 1998, 2004; Goleman, Boyatzis, & McKee, 2001; Goleman, Boyatzis, & McKee, 2002; Salovey & Mayer, 1990), transformational leadership and the Full Range Leadership (FRL) model (Bass & Riggio, 2006), and situational leadership (Hersey & Blanchard, 1969). Emotional and social intelligence, as well as transformational or situational leadership theories, have gained widespread support in helping to frame a wide range of universal soft skills for people leadership (e.g., the ability to collaborate, strategic innovation, adaptation, resiliency, authenticity, inspiring engagement, and empowering others). Such competencies are applicable and observable across job-specific roles in many sectors (Bass & Riggio, 2006). Furthermore, some scholars have suggested that leaders who have built reputations on technical problem-solving often do not have well developed core competencies in the management of people and other soft skills that are described within the emotional intelligence and transformational leadership literature such as self-awareness, other awareness, authenticity, relationship building, and

inspirational leadership (Bass, 1985; Bass & Riggio, 2006; Burns, 1978; Goleman, 1995; Goleman et al., 2002; Heifetz, 1994; Schein, 2004).

Although such assertions may have merit because emotional intelligence and other soft skills may be important as core competencies, industry practitioners often suggest that what differentiates GLCs in business versus some other sectors is being accountable for the distinctive competencies. These distinctive GLC competencies are the hard skills that produce results-based, proactive actions that matter most to the global marketplace (Day, 1994; Hartman, Conklin, & Smith, 2007; Intagliata et al., 2000; Kanaga, 2007; Prahalad & Hamel, 2006). Such distinctive GLCs are typically specialized within specific fields of discipline such as engineering, finance, information technology, research & development, operations, marketing, and sales.

Regardless of whether scholars and practitioners can come to agreement in the prioritization of core competencies or distinctive competencies, the global leadership literature suggests that an ongoing challenge in leadership development is balancing *both* the soft skills *and* the technical or functional hard skills (Mendenhall, 2006). Just as practitioners understand that training is needed in the technical competencies, as traditional assumptions and norms are challenged in a global context, leaders may need instruction and practice in determining *how* and *when* they choose to exercise different emotional intelligence attributes and other soft skill leadership styles (Bass & Riggio, 2006; Brooks, 2003; Goleman, 1995, 2004; Goleman et al., 2002).

To bridge the gap of the hard skills *and* soft skills, James MacGregor Burns' seminal book, "Leadership" (1978), introduced the concept of transforming leadership. Building upon Burns' concept and Robert House's 1976 theory of charismatic leadership

(Javidan & House, 2001), Bass and his colleagues developed the model of transformational leadership and the means to measure it through the Multifactor Leadership Questionnaire (Bass & Riggio, 2006). As psychologists, Bass and Riggio brought a different perspective to the theory of transformational leadership by integrating Burns' political science perspective with psychology. Both perspectives have helped provide foundational concepts that may integrate well with the GLC research that is evolving in the current academic business and practitioner literature because GLC research, practice, and development necessitate transdisciplinary approaches (Mendenhall et al., 2013; Osland & Bird, 2005).

As an example of the type of GLC applications that a practitioner might find helpful, Burns (1978) suggested that socially useful goals in adaptive work must meet the needs of followers and elevate them to a higher moral level beyond the sole purpose of the pursuit of business profit motives. Bass and Riggio (2006) expanded this view by noting that transformational leadership stimulates and inspires followers to achieve extraordinary outcomes and, in the process of focusing on motivation and goal attainment, they are better positioned to develop leadership capacity.

To summarize, there is a potential integration linkage with traditional leadership theorists and the contemporary business literature. Practitioners are increasingly focusing upon business-oriented hard skills *and* the soft skills associated with leadership capacity as talent development essentials to address competitive advantage priorities (Intagliata et al., 2000; Kanaga, 2007; Prahalad, 1993; Prahalad & Hamel, 2006). This linkage suggests an opportunity to integrate the leadership theorists' suggestions that motivation, morale, and performance of followers are enhanced by leaders with a more balanced

concern for the human element with business metrics. Balancing this concern for the human element is shared by learning theorists, who have found that learning motivation and *how* adults learn is equally as important as *why* and *what* they learn.

Adult learning theories and blended learning delivery approaches. In developing GLCs and designing learning programs that are effective and efficient, it is important for learning practitioners to consider adult learning theory literature, which can inform and shape thinking for the design and delivery of learning programs. An understanding of adult learning theory is particularly important in the current environment of educational disruption where the lines between business education and corporate training are increasingly blurred in the digital ecosystems of the 21st century. The central question of *how* adults learn has occupied the attention of scholars and practitioners since the founding of adult education as a professional field of practice in the 1920s. Over 90 years later, there is still no single theory or model of adult learning that explains everything known about adult learners, the various contexts where learning takes place, and the process of learning itself. As with leadership theories, there is a mosaic of adult learning theories, models, sets of principles, and explanations that function as a prism allowing practitioners to see through various lenses by drawing upon a growing knowledge base of adult learning (Merriam, 2001). Recognizing that there are many other adult learning theories (Mendenhall et al., 2012; Mezirow, 1997b), two important lenses of the prism are andragogy and self-directed learning, both of which were advanced by Knowles (1970, 1975, 1984, 1990).

Malcolm Knowles, widely known as the father of Adult Learning Theory, or andragogy, argued in the 1970s that as people mature, they become more motivated to

learn based on internal drivers, such as their own personal desire to learn, rather than external drivers, such as someone telling them they need to learn. He postulated that as people age, experience becomes an increasing resource for learning, and that people seek to apply new insights immediately to solve problems (i.e., competency-based learning). As he continued his research into the 1980s, Knowles theorized five basic characteristics of adult learners. Each of these leads to the success of an adult to gain knowledge:

1. **Self-concept or Self-Directed:** as a person matures, his self concept moves from one being a dependent personality toward one of being a self-directed human being;
2. **Life Experiences:** as an adult accumulates a growing reservoir of experience that becomes an increasingly rich resource for learning;
3. **Readiness to Learn:** the readiness of an adult to learn becomes oriented increasingly to the developmental tasks of his or her social roles;
4. **Orientation to Learning:** as a person matures, his time perspective changes from one of postponed application of knowledge to immediate application, and accordingly, his orientation shifts from subject-centeredness to problem-centeredness in learning;
5. **Motivation to Learn:** as a person matures, the motivation to learn is internal. People need to know why they need to learn something. If they know why they are learning and if the reason fits their needs as they perceive them, they will learn quickly and deeply (Knowles, 1970, 1984).

During the 1970s and early 1980s, scholars debated the validity of andragogy as a theory of adult learning. One point of contention was whether andragogy could be

considered a theory of adult learning, method of adult education, or merely a set of assumptions or principles of good practice (Davenport & Davenport, 1985; Hartree, 1984). Despite the debates, Knowles (as cited in Merriam, 2001) proposed a learning program planning model for designing, implementing, and evaluating educational experiences with adults. For example, with regard to the first assumption that as adults mature they become more independent and self-directing, Knowles (1980) suggested that the classroom climate should be one of adulthood, both physically and psychologically that adults “feel accepted, respected, and supported with a spirit of mutuality between teachers and students as joint inquirers” (p. 47).

Knowles’ assumption that adults are capable of directing, or at least assisting in planning, their own learning contributed to the growth of “Self-Directed Learning”. This theory or concept is described as a “process in which individuals take the initiative, with or without the help of others, to diagnose their learning needs, formulate learning goals, identify resources for learning, select and implement learning strategies, and evaluate learning outcomes” (Knowles, 1975, p. 18). This same type of approach was advanced by other researchers in their attempt to explore and explain how learners could minimize the gap between their ideal self and real self through Self-Directed Learning models (Boyatzis & McKee, 2005). Although the Self-Directed Learning (SDL) label may seem to imply learning in isolation, Knowles (1975) pointed out that SDL usually takes place in association with various types of helpers (e.g., teachers, tutors, mentors, and peers). In fact, there is a lot of mutuality among a group of self-directed learners.

In summary, andragogy and self-directed learning, along with a multitude of learning theories advanced within the last 40 years have expanded our understanding of

how and why adults learn. Mezirow's (1997a) transformative learning, Gardner's (1987) multiple intelligences, Becker's (1975) human capital, and a social constructivist's understanding of learning (Carroll & Levy, 2010) within the leadership development context have origins in a variety of disciplines. Although differing in origin, Merriam (2001) has suggested that there are at least three ways in which these learning theories are contributing to our understanding of adult learning:

1. The adult *learner* is seen holistically: more than a cognitive machine, "He or she comes with a mind, memories, conscious and subconscious worlds, emotions, imagination, and a physical body, all of which can interact with new learning" (p. 96);
2. The learning *process* is much more than acquisition of knowledge. It involves sense-making from a constructivist perspective and transforming not just what we learn but the *way* we learn, and it entails learning informally with others;
3. The *context* in which learning occurs has taken on greater importance (Merriam, 2001, p. 96).

This more holistic and integrated understanding of adult learning has the potential to inform the business sector, as it engages in efforts to develop GLCs and leadership practice from a professional development perspective. For example, Knowles' (1984) conceptual understanding of andragogy suggests that a particular skill might be taught once. However, within a supportive environment, adult learning methods are most effective when the learning can be applied by self-directed learners in real-world contexts in their on-the-job activities (Kirkpatrick & Kirkpatrick, 2007; Kirkpatrick & Kirkpatrick, 2011; Knowles, 1984; Mendenhall, 2006). Constructing learning environments for adult

learners has been translated into what is commonly accepted, although not empirically validated as effective, by industry practitioners as the 70:20:10 approach to learning, where 70% of learning is experienced during on-the-job experiences, 20% involves learning from other people, and 10% from formal learning coursework (McCall, Lombardo, & Morrison, 1988).

Beyond the 70:20:10 approach to learning, industry practitioners have increasingly adopted blended learning delivery mechanisms to address the different learning style preferences of adults. Hofmann and Miner (2008) focused on the pedagogical characteristics of blended learning. They stated: “[blended learning] means using the best delivery methodologies available for a specific objective, including online, classroom-based instruction, electronic performance support, paper-based, and formalized or informal on-the-job solutions among numerous others” (p.28). Organizations today are recognizing the business value of informal learning such as internal blogs, wikis, LinkedIn, and Facebook. According to *Chief Learning Officer* magazine’s Learning Technology survey, formulating the right balance between formal and informal learning methodologies is the challenge for many organizations to develop their learning strategy (Hartley, 2012). This is critical to understand to ensure that the GLC learning and development programs are providing the right type of information to the right employee in the right way at the right time. Otherwise, all of the time and effort spent in developing and implementing GLC models and the learning programs will not be producing the intended outcome of developing GLC proficiency levels.

Such blended learning delivery approaches attempt to address the adult learning theory findings that adults learn differently by empowering the learner to select which

learning delivery vehicle(s) will best meet their needs and learning preferences. Whereas the CLO Learning Technology survey (Hartley, 2012) examined the various types of delivery vehicles organizations are using, one of the major gaps in the literature is linking the adult learning theories and GLC frameworks to measure the *efficacy* of blended learning programs, which require an enormous amount of human and financial resources to be successful. Because resources are limited, firms must recognize that to improve workforce productivity through learning, companies must “accept the work environment has changed and their underlying approaches to employee development, work roles, management, and technology must also change” (Corporate Executive Board, 2012, p. 37).

Without input from the employee-learner perspective, senior leadership and course developers often design and deliver expensive learning programs without fully understanding whether such programs are meeting the desired goals to educate employees and improve their competencies. Regardless of whether companies know whether their GLC models actually give them what they need to meet the desired goals, learning professionals are expected to design and deliver curricula aligned with the prescribed GLCs (Bersin, 2004; Hofmann & Miner, 2008). Furthermore, even if there is alignment between the curricula, theories, and the GLCs, research is needed to assess employee development along a continuum of mastery.

Instruments for assessing GLCs. This section reviews of some of the currently available competency assessments and the suggestion by Bückner and Poutsma (2010) to use complementary qualitative research, which is a gap in the literature that will be addressed by this qualitative research study.

A common challenge for many organizations is to find leaders who can achieve superior results while simultaneously mastering the nuances of *how* those results are achieved (Bernthal & Wellins, 2006). In their benchmarking study of 4,500 leaders across 944 organizations in 42 countries, Bernthal and Wellins discovered that of the 35% of leaders who are not successful, most fail because they have poor people skills or exhibit inappropriate personal qualities. This is consistent with the themes noted in seminal work in emotional intelligence, which used validated assessment tools demonstrating that soft skill competencies such as self-awareness, empathy, and social skills play a major role in determining leader success and failure (Cherniss et al., 2006; Goleman, 1995, 1998, 2004; Goleman et al., 2001; Goleman et al., 2002; Salovey & Mayer, 1990). Despite the consistent findings in the assessments linked to the importance of mastering soft skills, such as emotional intelligence, no consensus exists regarding a standardized competency-based approach to holistic global leadership development of GLCs that is inclusive of soft skills and technical/functional hard skills or how *effective* specific competency frameworks are developed in practice (Roberts, Kossek, & Ozeki, 1998).

Because there is a lack of consistency and agreement upon a holistic model of critical GLCs for individual and organizational success in business, this leads to a significant gap in the methodology for studying and developing GLCs, as well as inconsistencies in the assessment instruments for global leadership development (Bücker & Poutsma, 2010; Conger & Ready, 2004; Eden & Ackermann, 2000; Garman & Johnson, 2006; Intagliata et al., 2000; Kanaga, 2007; Lobel, 1990; McClelland, 1998; Prahalad, 1993; Scholtes, 1999; Tubbs & Schulz, 2006). To address and analyze these

gaps and variations, Bückner & Poutsma (2010) conducted an extensive search of the international business literature and found 23 instruments of varying quality that measure GLCs, with a special focus on measuring ways of coping with cultural diversity. They assessed reliability by considering to what extent the instrument was used and tested at different times, as well as assessing validity among different cultural and professional groups, and scalability in using the instrument across different countries.

General themes and conclusions identified by Bückner & Poutsma (2010) for the selected published instruments include the following:

- All but one instrument measures competencies to work, live, or adjust in a cross-cultural environment. Only one instrument (Global Mindset Questionnaire by Kefalas/Neuland, 1997) investigates the competencies to *perform* in a global strategic environment.
- All instruments are of a *quantitative* nature, making use of a survey format.
- All instruments, except one, make use of dimensions that are described in terms of KSAOs (Knowledge, Skills, Abilities, and Other personal factors).
- Some instruments concentrate on the personality or trait background of the respondent.
- Almost all instruments are self-report instruments.
- Quite a few instruments used only student samples, rather than samples of respondents with significant work experience (Bückner & Poutsma, 2010, p. 273).

The authors concluded that a limited number of instruments exist that may help to assess GLCs in the business environment. Furthermore, only *quantitative* measures were included in their exhaustive review, and as Bückner and Poutsma (2010) suggested, usage of complementary *qualitative* research is recommended to incorporate the full potential of triangulation. Not only does triangulation provide diverse ways of looking at the same phenomenon, it has the added benefit of providing credibility by strengthening conclusions that are drawn (Mathison, 1988).

Due to the limitation of self-report quantitative instruments, scholars have acknowledged that they could not fully explore the relationship of the instruments with applied learning or business-related performance outcomes, which could be explored further with qualitative inquiry. Percentage increases in desired outcomes (i.e., higher competency test scores) are important “to provide concrete evidence of overall patterns of effectiveness. What such statistics cannot do, however, is show the human faces behind the numbers” (Patton, 1990, p. 152). In practical terms, this means that the research participants’ voices need to be heard and shared to gain a better understanding of their perceptions and experiences of the effects of learning experiences on their own learning and development.

The use of qualitative inquiry can help explore employee perceptions regarding assessments of applied learning effectiveness beyond cognitive measures of test scores. Furthermore, qualitative inquiry can address *how* companies might be able to develop their employees GLCs from the baseline assessment of one’s competencies along the continuum of mastery. Finally, to tailor learning experiences to unique individuals, rather than lump them into homogeneous groups of people that perform the same role function, it is important for qualitative researchers to understand employee profiles, which consider the background, work experience, and behaviors of employees within their daily work contexts. To gain a better understanding of the employee-learner perspective for this study, learning program evaluation data and qualitative interviews were used as described in detail in Chapter Three.

Transdisciplinarity: Developing the breadth and depth of GLCs

Transdisciplinarity is defined as the ability to adapt concepts and lessons from outside one's field of experience to challenge one's core proficiency, which "can provide counterintuitive solutions to elaborate challenges in the workplace and the world at large — and can prepare an organization for the unpredictable years ahead" (Fraleigh, 2012, p. 32). It is theorized that when people can bridge different disciplines, they can approach problems and opportunities with a wider range of possible solutions. This is a particularly important concept when considering the global product management (PM) leaders that were the focus for this study. For example, PMs are expected to have core proficiencies and competencies associated with problem-solving to ensure product development is focused on addressing customer needs and marketplace demands. Creativity and innovation are essential, which may leverage the experimental curiosity of a scientist or the innovative value capture strategies of a businessperson.

During the interviews for this study, product management participants described whether they had primarily scientific or business backgrounds. They were asked their perceptions as to whether there is an ideal background based on someone's discipline of expertise in their prior academic and/or work experience, and they gave examples of how they had learned and applied GLC skills that may not have been in their discipline of expertise.

Assessing employee profiles and the nature of transdisciplinarity development from an employee perspective is one approach that may be helpful to address the current GLC skill gap with role-specific learning programs. "Reflecting on the requirements for a genuinely human science and transdisciplinary capacity," Klein (2004) notes that the

term's origins can be traced to the 1970s and conventional attribution of the terminology associated with transdisciplinarity was adopted by the first international conference on interdisciplinary research and education. According to Klein, two early contributors advanced the theory in the following ways:

Jean Piaget believed the maturation of general structures and fundamental patterns of thought across fields would lead to a general theory of systems or structures. Erich Jantsch, in turn, envisioned a multi-level systemic coordination of research, innovation and education. Yet, both admitted that transdisciplinarity was, as Piaget put it, 'still a dream'. (Klein, 2004, p. 515)

In Nicolescu's 1996 "Manifesto of Transdisciplinarity", he acknowledged that transdisciplinarity is not a new discipline or super-discipline, but rather, "the science and art of discovering bridges between different areas of knowledge and different beings" (as cited in Thompson Klein, 2004, p. 516) Transdisciplinarity permits genuine dialogue to address problems of society that are increasingly complex and interdependent crossing multiple sectors such as problems of environmental sustainability, healthcare, and education . By applying research strategies from a transdisciplinarity approach, one can create a holistic approach to study problems that cross boundaries of two more disciplines. As mentioned previously, transdisciplinarity is the ability to adapt concepts and lessons from outside one's field of experience to challenge one's core proficiency, which "can provide counterintuitive solutions to elaborate challenges in the workplace and the world at large—and can prepare an organization for the unpredictable years ahead" (Fraleigh, 2012, p. 32). Transdisciplinarity becomes increasingly important as companies grapple with the global talent shortage and strategize approaches to cross-train existing staff in different disciplines.

Transdisciplinarity was identified in a report written by the Institute for the Future for Apollo Research Institute, "Future Work Skills 2020," as one of 10 workplace skills

that will help organizations handle disruptive technological and societal change (Davies, 2011). The report stated the following insights:

Many of today's global problems are just too complex to be solved by one specialized discipline (think global warming or overpopulation). These multifaceted problems require transdisciplinary solutions. While throughout the 20th century, ever-greater specialization was encouraged, the next century will see transdisciplinary approaches take center stage...the ideal worker of the next decade is "T-shaped"—they bring deep understanding of at least one field, but have the capacity to converse in the language of a broader range of disciplines. This requires a sense of curiosity and a willingness to go on learning far beyond the years of formal education. (Davies, 2011, p. 11)

As the global talent shortage continues, it will be particularly important for workers and companies to develop this T-shaped quality. A number of organizations, including IBM and IDEO, are beginning to talk about this skill in terms of a "T-shaped person," a concept popularized by Tim Brown, CEO of design firm IDEO (as cited in Kelley & Littman, 2005). T-shaped people have both depth and breadth in their skill set. The vertical bar of the *T* represents depth in one field—for example marketing, engineering, finance, or operations. The horizontal bar represents the ability to collaborate across other disciplines and to apply knowledge in areas of expertise other than one's own (Davies, 2011; Fraleigh, 2012; Kelley & Littman, 2005).

To be successful in the next decade, *individuals* will need to demonstrate foresight in navigating a rapidly shifting landscape of organizational forms and skill requirements. They will increasingly be called upon to continually reassess the skills they need, and quickly put together the right resources to develop and update these. Workers in the future will need to be adaptable lifelong learners. *Businesses* must also be alert to the changing environment and adapt their workforce planning and development strategies to ensure alignment with future skill requirements. (Davies, 2011, p. 14)

By developing GLCs that intentionally include a transdisciplinary dimension, companies might be in a better position to design role-specific learning curricula and roadmaps to guide employees through GLC development opportunities. Such roadmaps

would address learning needs based upon employees' educational and experiential backgrounds, as well as the strengths and gaps associated with GLC proficiency levels as defined by the organization. Given today's global talent shortage, employers are expected to do more with less, including more complex work with less capital for hiring more employees, and "while firms may be tempted to hire an all-new employee...their needs are much more immediate, and the new skills required are best developed through on-the-job experience" (Corporate Executive Board, 2012, p. 37). This recommendation is consistent with the cross-training strategies that companies are exploring, yet more research is needed to assess the process of how organizations are doing to develop the GLCs of their existing staff.

Literature Review: Research Implications and Conceptual Framework

The intent of this literature review was to provide an overview from the perspective of scholars as to *what* defines GLCs, *why* GLCs are important, and *how* GLCs may be developed via frameworks, theories, assessments, and learning program approaches in the business setting. New developments in global leadership and adult learning are contributing to a better understanding of how to bridge the gap between theory and practice. However, still no studies have been published from an employee-learner perspective to shed light on whether GLC development efforts are having a positive impact on learning behaviors and outcomes. Theoretically, the integration of humanistic soft skills with the technical or functional hard skills of leadership should improve the design, implementation, and evaluation of transdisciplinary GLC learning and development programs that can demonstrate positive learning and business outcomes. To advance the research in this area, it is necessary to assess a variety of

initial GLC proficiency levels and re-evaluate these GLC levels and business outcomes after the implementation of leadership development initiatives (Lobel, 1990). Scholars also recommend research to: delineate situational contingencies and effects on global leadership effectiveness, determine antecedents of global leadership effectiveness, investigate learning processes of global leaders, and “clarify how global leadership explicitly influences competitive advantages for organizations” (Reiche & Mendenhall, 2013, p. 260).

This study investigated the learning processes of global leaders by exploring the horizontal integration of soft skills with the vertical integration of hard skills within the depth of the disciplinary expertise of marketing for product management leaders. This research process was complex because it attempted to apply transdisciplinarity as an organizing framework to understand the development of GLCs in both horizontal and vertical dimensions. Knowledge of complexity, Edgar Morin exhorts, demands a new dialogue that bridges humanistic and scientific cultures (as cited in Klein, 2004, p. 519). Klein contended that such dialogue must link scientific and everyday language because “differences in research methods, work styles, and epistemologies must be bridged in order to achieve mutual understanding of a problem and arrive at a common solution. In transdisciplinary work, the language of stakeholders must also be recognized” (2004, p. 520). Hence, the decision was made to include the employer-learner voice in this study.

Although this study attempted to fill some of the gaps in the literature, Kramer (2008) noted that there are several areas of disconnect between professional researchers and stakeholder practitioners: lack of academic researchers with real-world experience, differing language and goals between scholars and practitioners, and complex academic

models impractical for business settings. Suggestions to improve communication between researchers and practitioners include: researching topics currently challenging leaders, rewriting research findings from “academic jargon to everyday language” (as cited in Kramer, 2008, p. 30), and publishing in outlets where business leaders will read. The leadership development field lacks a standardized approach to understanding and developing GLCs, and although advancing GLC development remains a blend of research and speculation according to Kramer (2008), this provides an opportunity:

This shifting and incomplete state of knowledge...greatly hampers our ability to develop these capabilities in individuals. The upside is that there is plenty of opportunity to learn more about this subject [of developing GLCs]—and to significantly improve its practice. (p. 30)

The conceptual framework for this study was designed to use the theories of leadership, learning, and transdisciplinarity to address the opportunity to improve practice. By gaining a better understanding of the process of developing GLCs from an employee-learner perspective, it is hoped that the research and practice associated with developing GLC frameworks and impactful learning programs can be improved. As pictured below in Figure 6, the conceptual framework helped to focus and shape the research process, inform the methodological design, and influence the data-collection instruments that were used.

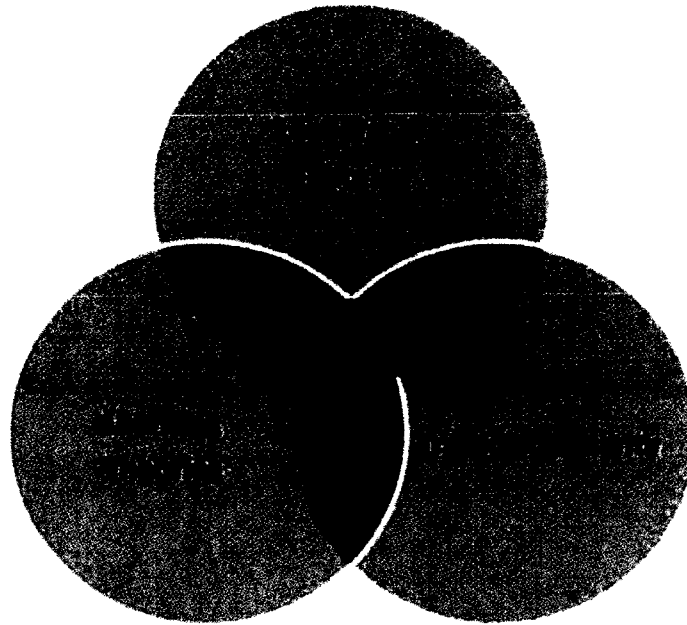


Figure 6. Conceptual framework

The intersection of leadership, learning, and transdisciplinarity was explored with two frameworks to operationalize the research. The Leadership T model, which will be described in Chapter Three, is a competency model that was used within the organization being studied. This framework operationalized transdisciplinarity with both the soft skills in the horizontal dimension of the “T”, which represents the breadth of leadership capability associated with 16 universal competencies, as well as the technical hard skills in the vertical dimension of the “T”, which represents the depth of marketing leadership competencies associated with the 15 competencies in this functional area. Because leadership theories recognize that leadership is not one dimensional, the Leadership T is an appropriate framework to study leadership from a transdisciplinary multi-trait, multi-dimensional approach.

The Kirkpatrick Model (Kirkpatrick & Kirkpatrick, 2007) is a framework used to operationalize the progression of learning levels, which also is described further in Chapter Three of this study. Adult learning theories acknowledge that the learning process is much more than acquisition of knowledge. How this learning is behaviorally applied and achieves results helps with understanding the development of GLCs.

The conceptual framework also provided an organizing structure for reporting this study's findings, including the analysis and interpretation that will be presented in Chapters Four and Five. The conceptual framework was directly derived from the study's research questions as described in Chapter One:

1. **GLC Definition.** The first research question sought to determine how employees define GLCs within the context of the organization's goals and their own personal development as global product management leaders. Therefore, the logical conceptual category to capture responses to this question was *GLC Definition*. To understand how employees might define GLCs within their organization, The Leadership T framework provided context in that it reminded employees of the soft and hard skills that were the areas of developmental focus in this organization.
2. **Organizational Factors Supporting or Inhibiting GLC Development.** The second question sought to explore what organizational factors employees perceive as supporting or impeding their GLC development, particularly as global marketers within the product management function. The conceptual category that captured responses to this question was *Organizational Factors*.

3. Learning Program Alignment with GLCs. The third question was designed to gain a better understanding of the employees' perspectives regarding the alignment of the company's GLC development program with the actual competencies or KSAs (knowledge, skills, abilities/attitudes) that employees felt they needed to learn to develop proficiency in the applied practice areas of their work. The category entitled *Learning Program Alignment with GLCs* is an appropriate way to represent this data, and The Kirkpatrick Model provided a contextual framework for how employees described their levels of learning.
4. Training Roadmap Insights. The fourth question which was categorized as *Training Roadmap Insights* dealt with responses pertaining to the product management GLC training roadmap. Employees were asked to provide insights for a training roadmap based on their educational and experiential background.
5. Transdisciplinarity Insights. Finally, the fifth research question categorized as *Transdisciplinarity Insights* sought to explore how employees might build upon their strengths within their discipline(s) of expertise and address gaps by developing cross-functional GLCs within the product management role.

To summarize, leadership theories and the Leadership T model provide the context for *what* type of GLCs were studied. Learning theories and The Kirkpatrick Model describe *how* GLCs were developed and assessed via the learning program. Finally, transdisciplinarity is crucial to understanding *why* it is necessary to develop cross-functional GLCs.

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this study was to gain an understanding of the process of developing GLCs by evaluating one organization's efforts within the biosciences industry. One of the challenges facing the biosciences industry is whether it is possible to tackle the skills gap by cross-training existing staff, who are primarily scientists, to develop GLCs as global marketers within the product management function.

Bioscience companies currently employ product management personnel with backgrounds and work experience primarily in science. However, because product managers, including scientists, are not a homogenous group of people, it is important to gain a better understanding of how to develop and cross-train the existing talent pool by acknowledging the transdisciplinary nature of the product management role.

Therefore, the overriding research goal that guided this study was to answer this question:

How does a bioscience company develop the GLCs of their Product Managers?

Additional research questions guiding this study were:

1. How do employees define GLCs within the context of their own professional development as global product management leaders?
2. What organizational factors do employees perceive as supporting or impeding their GLC development, particularly as global marketers within the product management function?
3. What are the employees' perspectives regarding the alignment of the company's GLC development program and the actual competencies

that employees feel they need to learn to develop proficiency in the applied practice areas of their work?

4. What type of product management GLC training roadmap might employees recommend based upon their educational and experiential background, and what might this reveal about future learning program recommendations for product management roles?
5. How might employees build upon their strengths within their discipline(s) of expertise and address gaps by developing cross-functional GLCs within the product management role?

This chapter includes discussions around the following areas: (a) rationale for the research approach (b) overview of the research design (c) description of the research setting and sample (d) summary of document review (e) methods of data collection, (f) description of analysis procedures, (g) ethical considerations and positionality of researcher, and (h) limitations of the study.

Rationale for the Research Approach

This study explored one organization's efforts to develop and implement a learning program with the intent to improve GLCs deemed to be high priorities by the organization as part of a larger business transformation initiative. As the researcher, I believed that a better understanding of this phenomenon would allow other researchers and practitioners to proceed from a more informed perspective in terms of understanding the process of *how* an organization develops GLCs. The intent of this qualitative research was to allow me to enter into the world of others and attempt to achieve a holistic understanding from the employee-learner perspective. To do so, the emphasis

was on discovery and description, and the research goal was focused on extracting and interpreting the meaning of the research participants' perspectives (Denzin & Lincoln, 2005; Patton, 1990; Stake, 2011).

Within the framework of a qualitative approach, this research was most suited for a case study design. As a form of research methodology, case study is an intensive description and analysis of a phenomenon or system bounded by time or place (Creswell, 2009; Merriam, 1998; Stake, 2011). In bounding a case, Stake (2011) suggests that the researcher can: select themes or issues (i.e., the research questions to emphasize), seek patterns of data to develop the issues, triangulate key observations and basis for interpretation, and develop assertions or generalizations about the case.

Additionally, Merriam (1998) notes that qualitative case study is an ideal design for understanding and interpreting educational phenomena:

A case study design is employed to gain an in depth understanding of the situation and meaning for those involved. The interest is in *process* rather than outcomes, in *context* rather than a specific variable, in *discovery* rather than confirmation. Insights gleaned from case studies can directly influence policy, practice, and future research. (Merriam, 1998, p. 19)

The present research study fit well with Merriam's criteria because the research goal sought to better understand the *process* of how a biosciences company develops the GLCs of their Product Managers, which may be useful to influence future practice and research. Patton (1990) notes that, "getting into case details better illuminates what worked and didn't work along the journey to outcomes—the kind of understanding a program needs to undertake improvement initiatives" (Patton, p. 152).

This study also addressed one of the gaps in the current GLC literature: the employee-learner voice. In this case study of employees' learning experiences, participants could expose how they felt they were able to apply the GLCs they learned

into their daily on-the-job practices, whether the learning program aligned with the GLCs they needed to learn in various disciplines, and what type of organizational factors supported or impeded their GLC development. Their perspective on GLC development could not be fully understood through quantitative instruments and cognitive assessments. This was acknowledged in the literature by Bücken and Poutsma (2010) who conducted an exhaustive review of leadership assessments, which were all quantitative. They recommended usage of complementary qualitative research to incorporate the full potential of triangulation.

Not only does triangulation provide diverse ways of looking at the same phenomenon, it has the added benefit of providing credibility by strengthening conclusions that are drawn (Mathison, 1988). As described in detail later in this chapter, the data collection methods and analysis involving learning program evaluation data, as well as themes from the interviews were used to determine convergent, inconsistent, and/or divergent findings (Kvale & Brinkmann, 2009; Mathison, 1988; Saldaña, 2009).

Overview of Research Design

The list below summarizes the steps I used to execute this research. Following is a more in-depth discussion of the methods of data collection, analysis procedures, ethical considerations and researcher positionality, and limitations of the study.

1. Preceding the actual collection of data, a selected review of the literature was conducted to study the contributions of other researchers and writers in the broad areas of: terminology and the historical context associated with the evolution of GLCs, the nature of the global talent shortage and unmet need for

developing GLC, and relevant theories associated with leadership, adult learning, and transdisciplinarity.

2. I obtained approval from the IRB to proceed with the research. The IRB approval process involved outlining all procedures and processes needed to ensure adherence to standards put forth for the study of human subjects, including participants' confidentiality and informed consent.
3. Aggregate learning program evaluation data was analyzed for the purpose of gaining better insight into total population and sub-population demographic data, as well as learning evaluation scores and themes for an entire year's worth of the learning program's seven courses.
4. Potential research participants were contacted by email, and those who agreed to participate were scheduled for 60-90 minute interviews via Outlook calendar invitations.
5. Semi-structured, in-depth interviews were conducted with 14 product managers. Seven of the interviews were face-to-face at the organization's facilities. The other seven interviews were conducted via phone and WebEx.
6. Interview responses were transcribed verbatim by an external professional transcription service. Then, I coded and analyzed the data using two models that operationalized the study: the organization's Leadership T model for competencies and The Kirkpatrick Model for the four levels of learning. Findings and key themes were presented, analyzed, and interpreted within the context of this study's five research questions as analytic categories.

7. Conclusions and recommendations were presented to assist scholars and practitioners with potential applications and ideas for future research.

Research Setting

This case study was conducted during the third year of implementation of a learning program (pseudo-named “GROW”) offered by a global biosciences company (pseudo-named “BIO”). BIO provides products and services that enable researchers to accelerate advancements across the biological spectrum, including the fields of research, molecular medicine, food safety, animal health, and forensics. The company has a presence in over 180 countries, and it was a good place to explore the proposed research questions because it is one of the recognized leading companies in this emerging industry (*FastCompany*, 2012, *Wall Street Journal*, 2012, *CNN*, 2012, CES 2012). BIO conducts business globally and provides an extensive learning program for all BIO employees, and the GROW program was one avenue for employees to develop their GLCs, particularly in the global marketing function. Furthermore, BIO had been engaged in a business transformation initiative for several years. The GROW learning program was part of this GLC transformation initiative and used the Leadership T competency model pictured in Figure 7 to build individual and organizational global leadership capacity.

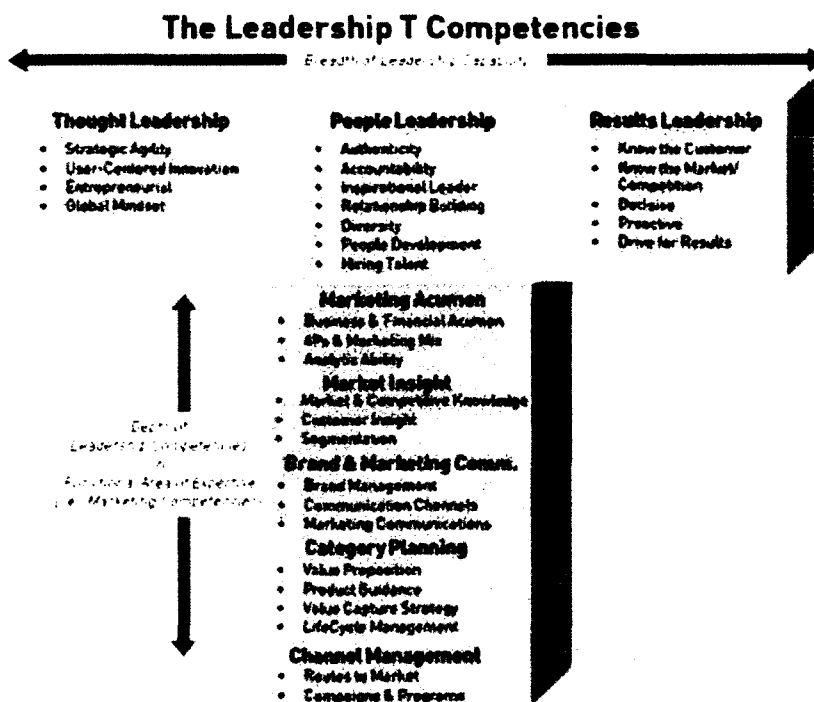


Figure 7. The Leadership T: Global Leadership Competency model at BIO. Used with permission.

The Leadership T model at BIO incorporates transdisciplinarity, the ability to adapt concepts and lessons from outside one's field of experience to challenge one's core proficiency, which "can provide counterintuitive solutions to elaborate challenges in the workplace and the world at large—and can prepare an organization for the unpredictable years ahead" (Fraleigh, 2012, p. 32). As the global talent shortage continues, scholars and practitioners (Choi & Pak, 2006; Davies, 2011; Max-Neef, 2005; McGregor, 2009) have suggested that it will be particularly important for workers and companies to develop this T-shaped quality. A number of organizations including IBM, IDEO, and "BIO" are beginning to talk about this skill in terms of a "T-shaped person," a concept popularized by Tim Brown, CEO of design firm IDEO (Kelley & Littman, 2005). It is argued by these organizations and transdisciplinary scholars that T-shaped people have both depth and breadth in their skill set. The vertical bar of the T represents depth in one

field, for example marketing, engineering, or finance. The horizontal bar represents the ability to collaborate across other disciplines and to apply knowledge in areas of expertise other than one's own (Davies, 2011; Fraleigh, 2012; Kelley & Littman, 2005).

To be successful in the next decade, *individuals* will need to demonstrate foresight in navigating a rapidly shifting landscape of organizational forms and skill requirements. They will increasingly be called upon to continually reassess the skills they need, and quickly put together the right resources to develop and update these. Workers in the future will need to be adaptable lifelong learners. *Businesses* must also be alert to the changing environment and adapt their workforce planning and development strategies to ensure alignment with future skill requirements. (Davies, 2011, p. 14)

Applying this to the Leadership T GLC model at BIO, all employees are expected to develop their proficiency levels along the breadth of leadership capabilities within the GLC meta-categories of thought leadership, people leadership, and results leadership. Additionally, the employees within the global marketing function are required to develop the depth of competencies in the marketing leadership area. To expedite the transdisciplinarity development of the breadth and depth of their GLCs, the company's marketing transformation initiative and the GROW learning program were designed to address the issue of upskilling existing and new staff, especially for the scientists without classical marketing backgrounds. The thinking was that over time, these employees would be developed into global leaders with broad-based people-management soft skills as well as the technical hard skills competencies in the marketing function. According to proponents of the transdisciplinarity requirement for the future workforce, "people who can correlate material from diverse knowledge bases and extract tangible results will be prized in the workplace of the future" (Fraleigh, 2012, p. 32). Because BIO participants had been exposed to the GROW learning program and other GLC educational efforts

prior to this study, it was important to gain a better understanding of how they had applied their knowledge in their work.

Research Sample

One of the primary methods selected for this study, the in-depth interviews, required a sample selection. A purposeful criterion sampling procedure was used to select this study's sample. Procedural details are provided in the following sub-sections. In summary, product management (PM) participants who experienced three or more of the seven foundational courses in the GROW learning program were targeted for qualitative interviews. Out of the 45 PMs who met the selection criteria, 14 responded with a willingness to participate in the study. All were interviewed regardless of whether their primary discipline of expertise was science or business. This approach minimized researcher selection bias prior to the interviews, and allowed me to delve deeper during the interviews to explore transdisciplinarity, specifically related to the issue of cross-training staff in areas that may or may not be outside their primary discipline of expertise.

Description of participant sample. Purposeful sampling was employed for the interviews, which targeted employee-learners who participated in at least three of the seven foundational GROW courses. Similar blended learning delivery approaches were used for all seven courses. The course content was the same; however, the instructors differed at eight sites worldwide. Although the job roles of the GROW course participants vary at each site, purposeful sampling was used to identify interviewees in one particular job role: product management. Product Managers (PMs) were targeted for interviews because BIO had identified the PMs as primary candidates for the GROW learning program. Furthermore, the PM role is a critical leadership position in most

industries because PMs are responsible for strategic product development, as well as setting the price and capturing profitability for new and existing products. The priority of the PM role was emphasized in several meetings with top BIO executives who commented, “Product Managers need to drive everything from new product development to managing mature products to obsolescence and need to work closely with everyone from R&D to Manufacturing to the Regions, etc.” Most important, executive leaders within BIO had expressed concern about the GLC status of the existing PMs noting that: “Global PMs aren’t developing the products I need for my region because they don’t understand it. Our market sensing isn’t where it needs to be; and our innovation portfolio is not robust enough.”

At least 75% of the existing employees in the PM roles in BIO were deemed by Human Resources data reports to be scientists or scientists with some industry experience (classified as “dual” in this study). Because this is common in the biosciences industry, uncertainty exists as to whether scientists can be cross-trained and upskilled to be marketers, or whether they should be replaced by classically educated marketers with primarily business backgrounds. Because BIO had introduced the Leadership T marketing competencies as an example of advancing the transdisciplinarity dimension of scientists in PM roles, it was presumed that PMs would have the ability to adapt concepts and lessons from outside of their fields of biology and other physical sciences to develop their GLCs as the T-shaped leaders that will be needed for a 2020 workforce (Davies, 2011; Fraleigh, 2012; ManpowerGroup, 2012). The GROW blended learning program was designed to address the GLC learning needs of all marketers, regardless of role, educational background, or work experience.

Part of the qualitative inquiry included an investigation of whether the courses were offered at the right knowledge and application level for the PMs based on their perceptions of the relevancy and rigor of the courses given their educational and work experience backgrounds and GLC proficiency levels. For the purpose of informing future practice and research, this study preceded a more rigorous process that may be instituted by BIO to create ideal PM Profiles (Figure 8) used in candidate profile screening. These profiles may be used as part of a multi-trait, multi-method approach for assessment screening of new PM candidates and to determine best fit for existing staff assignments. Because this PM profiling initiative was in its early stages at BIO, it was not surprising to the PMs interviewed for this study that their background profiles would be examined thoroughly during the interview process for this study.

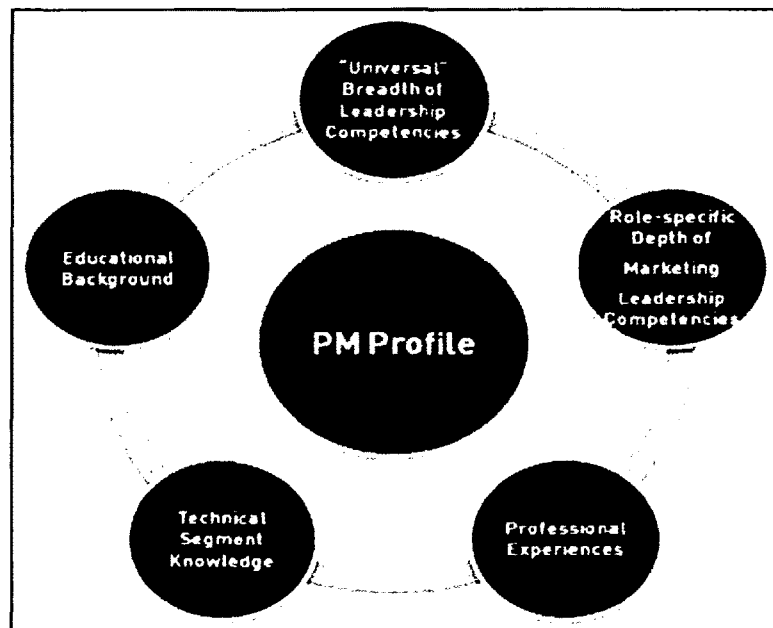


Figure 8. Product Manager (PM) profile

Sample selection. Stake (2011) asserted that for qualitative fieldwork nothing is more important than making a representative selection of cases to represent some

population. The goal in this study was to obtain a representative sample from the total population of PM course participants. The purposeful criterion sampling required that PMs would have participated in three or more courses to be invited as interviewees. Invitations for voluntary participation were sent via email and explained the nature of the research study, as well as offering date options for the interviews. Given that the targeted PM population was approximately 90 members, the recruitment invitation was sent only once to the entire sub-set of 45 PMs who met the criteria of prior participation in three or more courses. From the 14 respondents who indicated a willingness to participate in the study, initial profile information regarding their science or business background was requested. Although there was not an equal number of participants with scientific versus business backgrounds, the backgrounds were representative of the proportion of the entire PM population. Eleven, or 78% of the 14 interviewees, reported to have science or dual backgrounds. This was in proportion with the human resources data reports that indicated at least 75% of the existing employees in the PM roles at BIO were scientists or scientists with some industry experience (classified as dual in this study). The other three interviewees reported that their backgrounds were in business. Interviews were conducted with all 14 interviewees to avoid sample selection biases. The interviews examined employee-learner perceptions of how their GLCs were being developed within BIO.

Each interviewee was representative of the gender and generational mix in the GROW classes conducted to date, and more important, each represented the scientist and/or business type of profile being questioned as ideal. This helped explore whether the transdisciplinarity development via the T-shaped GLC model and GROW program

was having the intended impact on learning behaviors and leading indicators of business results. For instance, if interviewees representing one profile type provided more specific examples of applied learning in a broader array of GLCs versus the other profile, it may have suggested that a certain background profile served as a favorable antecedent and predictor for GLC proficiency development as a PM. Furthermore, this purposeful sampling made sense for selecting information-rich cases that can be studied in depth (Patton, 1990; Stake, 2011).

To summarize, a purposeful criterion sample of participants in the PM role were invited to be interview participants. All 14 of the 45 invitees who met the sampling criteria and expressed interest were interviewed. Procedures for involving participants in each phase of the study are described in the data collection methods section below.

Interview site setting. Seven face-to-face interviews were conducted at BIO facilities in southern California because half of the willing participants were based in this location. The other seven interviews were conducted by phone and WebEx for participants not based in the southern California location. WebEx was used to facilitate the visual display of various job aids or documents to assist in aided memory recall for the Leadership T framework, as well as the new product management training roadmap.

Summary of Document Review

In addition to my role as the researcher for this study, I had been an internal employee consultant involved in designing, developing, and implementing the GROW learning program over 3 years prior to this study. Therefore, it is important to note that my work prior to this study included a review of documents that informed my analysis of the aggregate learning program evaluation data and the interviews conducted with the 14

global product managers (PMs). The aggregate learning program data—albeit composed of responses from other marketers beyond PMs—was helpful in providing me with an understanding of learning program factors that participants rated as relative areas of strength versus potential gaps. These areas piqued my curiosity to explore in greater depth during the PM in-depth interviews. For instance, although I learned that the learning factor *managerial support* was consistently ranked as the lowest scoring area for every course, I was curious to dig deeper and explore how this may have been affecting GLC development.

In seeking to understand how the PMs perceived their GLC development, five research questions were explored to gather the information needed. This study's conceptual framework guided the documents I chose to review prior to the interviews. These documents spanned the three categories of the conceptual framework: (a) leadership, (b) learning, and (c) transdisciplinarity. The specific documents included course syllabi and learning objectives, course evaluation data, field observation notes, and materials related to the Leadership T framework for developing GLCs.

The course syllabi and learning objectives associated with the seven foundational courses were helpful to review to gain insight into the intended knowledge, skills, and attitudes that were meant to be taught to course participants. Among other factors, employee perceptions of their GLC development as well as the alignment and impact of the learning program were explored via individual course evaluation data reports. The course evaluation data included the learning factors considered within the context of The Kirkpatrick Model: business results, courseware, instructors, job impact, learning effectiveness, return on investment, and managerial support.

In addition to course syllabi, learning objectives, and course evaluation data, I reviewed my copious field observation notes. Since I started my doctorate program and work at BIO in 2010, I observed all seven courses in 40 separate classes consisting of over 640 hours of face-to-face instruction taught in multiple locations around the globe. Over 1600 pages of detailed notes were typed by me to capture areas of perceived alignment and gaps with the learning objectives and actual conversations in the classroom. The field observations were treated in this case study as additional documents that I reviewed, which informed the focus of the interview questions.

The final set of documents I reviewed prior to this study included the materials related to BIO's Leadership T GLC Model. These documents included the model, the GLC development guide describing the uses for this model, the definitions for each competency, and the behavioral anchors associated with the proficiency levels for each competency. These documents informed my thinking and shaped this case study's research and interview questions.

Data Collection Methods

The use of multiple methods and triangulation were critical in obtaining an in-depth understanding of the phenomenon under study. By leveraging document review, learning program evaluation analysis, and interviews, this strategy added rigor, breadth, and depth to the study and provided corroborative evidence of the data obtained and presented in Chapter Four (Creswell, 2009; Denzin & Lincoln, 2005; Patton, 1990). The following sub-sections provide in-depth detail regarding the learning program evaluation data and interviews. This case study focused on an analysis of learning program evaluation data and interviews because it was appropriate that the "information gathered

from interviews and observations may be considered alongside the results of a survey” (Borman, 2006, p. 126), which informed my data analysis and interpretation.

Learning program evaluation data. Descriptive statistics at the aggregate level were analyzed from the GLC learning program with the pseudo-name of “GROW”. The demographics of the GROW learning program participants and other learning program course evaluation data were analyzed at the aggregate level to gain a better understanding of the employee-learner perspectives of the GROW learning program, which was entering its third year of implementation. At the time of this study, the GROW learning program consisted of seven live, instructor-led courses complimented by over 30 e-learning courses, as well as case studies, experiential exercises, online support tools, and on-the-job applications offered through the GROW learning program.

Prior to the start of this study, the GROW learning program evaluation data were collected and aggregated using an online software tool to determine participant perceptions of various learning factors associated with each of the courses (i.e., business results, courseware, instructors, job impact, learning effectiveness, etc). During this study, the learning program’s descriptive statistics were used as a basis for comparison to similar data that were gathered during the 14 interviews. To assess participant perceptions regarding the learning curricula factors, the element of course evaluation research was included for the reasons Borman (2006) described: to make judgments about the value of an intervention and because the agenda is set by the stakeholders whose questions the evaluation seeks to answer. As noted by Saldaña (2009), because conceptual values, attitudes, and beliefs may not always be directly observed or stated by participants, questionnaires and survey instruments, such as Likert scales, provide

intensity of qualitative responses along a linear continuum of response (e.g., *strongly disagree* to *strongly agree*). The course evaluation survey instrument used for this study was based upon research and industry best practices for measuring various levels of learning within a business environment (Kirkpatrick & Kirkpatrick, 2007), which will be furthered described in the data analysis section.

Within the survey instrument used to collect learning program evaluation data prior to this study, as well as the interview protocol used during this study, demographic information was gathered, as well as 13 statements on a 7-point scale and four questions on a 10-point scale in areas including, but not limited to, the learner's perspective regarding: the instructor, relevance and applicability of the courseware, learning effectiveness, managerial support, and job impact. Participants were asked to rate their agreement level from *strongly disagree* to *strongly agree* to statements such as "I will be able to apply the knowledge and skills learned in this class to my job." Additionally, several open-ended questions asked respondents to provide information regarding their perceptions of the blended curriculum for each course, such as whether they found the e-learning or pre-read case studies helpful prior to the instructor-led portion of the course. To maximize response rates, the instructor ensured the online course evaluation survey was completed by each participant, prior to distribution of course completion certificates.

Interviews. Qualitative interviewing allowed me the opportunity to delve more deeply with interviewees into the qualitative themes gleaned from prior field observations and document review. The interview protocol (Appendix A) was designed to gain insight about the interview participants' perceptions of the definition of GLCs, learning program alignment with the BIO GLC Leadership T model, organizational factors that enhanced

or inhibited participants' learning experience, as well as explore their training roadmap perspectives and insights into transdisciplinarity development. Although some similar questions were asked during the course evaluations, online surveys often do not generate the same depth of responses as interviews. Therefore, I started the interview with familiar survey questions about the learning program and then broadened the scope of the interview to include interviewee comments regarding the Leadership T model, organizational factors supporting or impeding their GLC development, and recommendations for a PM training roadmap. This interview approach yielded richer and deeper contextual data than the course evaluation surveys or pilot focus groups conducted prior to this study.

Because I was responsible for both informing and protecting respondents, the research process involved enlisting voluntary cooperation. Using the Research Participant Consent Form (Appendix B), all participants were informed about the study's purpose, assured confidentiality, and asked to provide written or verbal consent before the interview began. Informed consent remained a priority throughout the study, as participants' rights and interests were considered regarding the reporting and dissemination of data. I committed to keeping the names of the organization and interview participants confidential with pseudonyms. Cautionary measures were taken to secure the storage of research-related records and data so that only I had full access to this material.

The semi-structured interviews generally followed the same sequence of questions for each participant with probing questions varying based upon responses. Also, a conversational approach allowed other insights to emerge. For instance, when

participants were describing certain tasks related to conducting a self-assessment of their GLCs, language from several participants was similar—that it was a “check the box” exercise. Further conversation exploring the meaning of this language indicated the GLC career development process lacked some *buy-in* from the PMs as stakeholders, which is consistent with the findings in the literature (Kanaga, 2007; Patton, 1990). According to Patton (2002), one of the advantages of qualitative inquiry is that the results unfold in a way that takes into account idiosyncrasies, uniqueness, and complex dynamics rather than imposing a predetermined model or hypotheses. The quotes and themes in the findings section will expose some of the unique experiences and stories of the participants.

During each of the participant interviews, after approximately 30 minutes of questions related specifically to their profile backgrounds and perceptions of the GROW learning program’s blended curricula, various job aids or visual documents were incorporated from presentations and other GLC materials that participants might have remembered seeing previously. As planned in the interview protocol, these artifacts assisted memory recall and often triggered additional questions or comments related to the GLC framework. Also, during this portion of the interview, participants were asked to review a draft version of a “PM Training Roadmap”. Although they were only exposed to the document for a few minutes and asked to provide their initial perceptions and recommendations, all participants readily agreed to do so.

Interviews were audiotaped with the permission of the participants and lasted 60 to 90 minutes using the semi-structured interview protocol (Appendix A). Participants were interviewed at BIO facilities in Southern California and over the phone. During the

interviews, I typed notes on my laptop, and these notes were supplemented with digital recordings of all interviews. To ensure accuracy of notes, audiotapes were transcribed by a professional transcriptionist service within 2 weeks of each interview. As interviews progressed, slight modifications were made to the interview protocol to ensure appropriate probing questions were asked. This also informed my analytic memos and reflexivity following each of the interviews. Member checking during and after the interviews was conducted whenever there was uncertainty in the meaning of any of the responses (Glesne, 2006).

To summarize the data-collection methods, although all 714 learning program evaluation responses were included in the data collection and aggregate learning program analysis, a purposeful criterion sample of participants in the PM role was used to select participants for the interviews. All 14 of the 45 PM invitees who met the sampling criteria and expressed interest were interviewed. Procedures for data analysis are described in the section below.

Data Analysis Methods

The aggregate learning program evaluation data and interview transcripts were analyzed to gain a better understanding of how employee-learner participants perceived their GLC development. The findings presented in Chapter Four were organized according to the five research study questions. Before organizing into the five analytic categories, the below methods were used for data analysis.

Data analysis methods for the GROW learning program. . The analysis of the GROW learning program included: (a) aggregate level data from online post-class evaluations and (b) responses from PM interviews. Both the course evaluation data and

PM interviews included Likert-scale ratings for seven different learning factors associated with each course and qualitative open-ended responses. The courses within the GROW program that were analyzed were: Campaign Development, Market Analysis & Research, Pricing & Profitability, Digital Marketing, Portfolio Planning, & LifeCycle Management, Marketing Strategy Simulation, and Positioning & Segmentation. These courses were selected because these were the foundational courses designed and implemented for the GROW program, which was intended to upskill employees in the “Leadership T” meta-competency areas of “Thought Leadership,” “Results Leadership,” and “Marketing Leadership.” The organization determined these were the primary GLC areas of focus for the GROW program and not the “People Leadership” category because this area was to be addressed by Human Resources.

The GROW learning program courses were analyzed based upon seven different learning factors: business results, courseware, instructor, job impact, learning effectiveness, return on investment, and managerial support. These factors were selected because they are the standard criteria used in The Kirkpatrick Model, which has been adopted by most learning and development practitioners and chosen as one of models to operationalize this study (Kirkpatrick & Kirkpatrick, 2005, 2007; Kirkpatrick & Kirkpatrick, 2011).

During the analysis of the program evaluation data, it was important to “understand the major objectives and goals of the program under evaluation, determine the major stakeholders and audiences for the research, and delimit the scope of the project in line with resources available” (Borman, 2006, p. 127). Therefore, this study was limited to obtaining perceptions from the employee-learner perspective as this was

one of the gaps in the current GLC literature. Ultimately, in determining the effectiveness of a learning program and making decisions about its future, it is important to understand as Patton (1990) advises that “well-crafted case studies can tell the stories behind the numbers, capture unintended impacts and ripple effects, and illuminate dimensions of desired outcomes that are difficult to quantify” (p. 152).

Furthermore, the scope of the learning program analysis of course evaluation data included information that assisted in the process of modifying the program while it was being implemented (Patten, 2002). The information collected included the *process* of implementing a program and its *progress* toward achieving its ultimate goals. This analysis may help shape the learning program under investigation to improve its outcomes in the future. For instance, such evaluation could “provide evidence of how the program itself measured up to the goals, parameters, and expected outcomes that were imbedded in the design of the intervention” (Borman, 2006, p. 127).

This case study, which used employee evaluation data, helped to answer the overriding research question: *how does a biosciences company develop the GLCs of their Product Managers?* As referenced in the literature review and in the data collection section, most learning and development professionals have accepted for 50 years that the industry standard for learning evaluation is the Kirkpatrick four levels of learning (Kirkpatrick & Kirkpatrick, 2007). This is relevant to this case study in that BIO uses The Kirkpatrick Model (Figure 9) as the foundation of what to measure in the GROW learning program course evaluations.

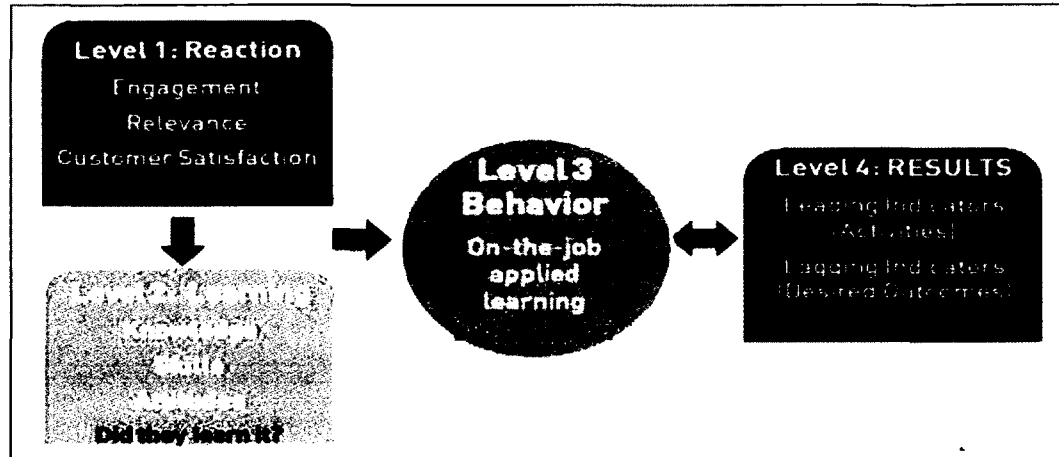


Figure 9. The Kirkpatrick Model: four levels of learning. Used with permission.

In The Kirkpatrick Model, it is recommended that industry practitioners strive toward learning program evaluation that centers upon Level 3 behaviors, which demonstrate they are applying what they have learned during their on-the-job practices. For instance, a PM is expected to set pricing using value-based pricing methodology, rather than cost-plus pricing. Simply having a Level 2 knowledge of the difference in these two types of pricing is insufficient; the PM must actually demonstrate Level 3 behavior that the value-based pricing knowledge was applied (i.e., doing qualitative research to ask customers about their willingness to pay based on their perceived value of a product). Ultimately, the PM should achieve the Level 4 desired outcomes (i.e., increased market share) because this would suggest the PM has set the price of product in such a way that customers purchase more of a BIO product than competitors' products.

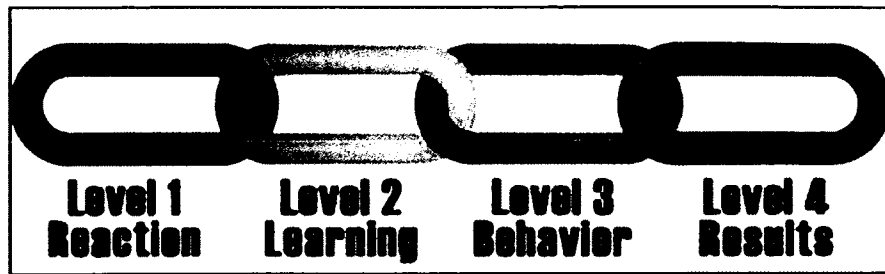


Figure 10. Chain of evidence for Kirkpatrick Model four learning levels. Used with permission.

Following the chain of evidence of progressive learning levels depicted in the above continuum in Figure 10, no longer is it sufficient for employees to report a positive Level 1 reaction to the education they are receiving, nor is a Level 2 learning exercise or knowledge test adequate to demonstrate one’s development of GLC proficiency levels. Instead, the Kirkpatricks (2011) encourage practitioners to determine on-the-job applications of Level 3 behaviors that can be assessed. Ultimately, the longer-term evidence of GLC mastery is attaining the Level 4 “results” metrics (i.e., market share, profitability, etc.) that are typically difficult to obtain and show causal relationship between learning programs and desired business outcomes.

The Kirkpatricks (2011) argued that even if these ultimate business outcome metrics cannot be measured or causally linked to the influence of the learning program, researchers and practitioners might be able to find correlations with “leading indicators” of Level 4 results. Leading indicators are short term observations and measurements that suggest critical behaviors are on track to create a positive impact on the desired results (Kirkpatrick & Kirkpatrick, 2011). For example, in this case study, using the above price-setting example, behaviors in the “value capture strategy” competency might be exposed in responses that indicated a conjoint analysis survey was conducted to assess customer perceptions of the value of a product (Level 3 behaviors). These activities may

have led the PMs to change their value-mapping or price-setting implementation (Level 4 leading indicator results), which may have increased sales (Level 4 lagging indicator results). Such Level 3 behaviors and Level 4 results mentioned by the PMs would indicate improved proficiency levels for the “value capture” competency in the Leadership T. Because all Leadership T GLCs are defined by behaviors that demonstrate proficiency in knowledge, skills, and attitudes, I evaluated and coded responses based on The Kirkpatrick Model four levels of learning. To summarize this example for price-setting, the Leadership T competency of “value capture strategy” would be coded with Level 3 (behaviors) and Level 4 (results) using The Kirkpatrick Model.

Beyond the coding for Leadership T competencies and Kirkpatrick levels of learning, it was helpful to look for themes within the interview data. For instance, there was a theme of tension in one’s own background of science versus business. This influenced whether participants believed the learning program met their needs or not based on their background and their impressions of what type of competencies should be exhibited on the job. The rationale for using this data is because “it is applied research in which researchers wish to apply the findings directly to such *practical* decisions as whether to continue funding the program and whether to modify it” (Patten, 2002, p. 23). The analysis of this type of data will be important to advancing the field of learning and development across sectors, especially since the GROW program focuses upon teaching PMs the essential transdisciplinary knowledge, skills, and attitudes related to the hard skills of technical/functional leadership in marketing, while simultaneously developing their soft skills competencies in areas such as thought leadership and results leadership.

Data analysis methods for interviews. As Mathison (1998) suggested, using multiple methods of data collection takes into account that the value of triangulation lies in providing evidence, whether convergent, inconsistent, or contradictory, such that the researcher can document the different ways that different groups and individuals have constructed reality, which may help to construct good explanations of the social phenomena that arise. The analysis of aggregate Likert scale responses and open-ended comments from the post-class course evaluation surveys served as one perspective regarding all 714 employee-learner perceptions of how the GROW learning program was helping to develop their GLCs. This information informed and shaped the thinking during the analysis of the semi-structured interviews with PMs.

The interview guide (Appendix A) was designed to gain insight about the interview participants' perceptions of the GLC definition, learning program alignment with the GLC framework's competency-based KSAs (knowledge, skills, and attitudes), organizational factors that enhanced or inhibited participants' learning experience, as well as explore their training roadmap perspectives and insights into transdisciplinarity development. Although some similar questions were asked during the course evaluations, online surveys often do not generate the same depth of responses as interviews. Therefore, starting the interview with familiar survey questions and broadening the scope of the interview to include document analysis yielded richer and deeper contextual data than the course evaluation surveys or pilot focus groups produced.

During the interviews, typed notes were supplemented with digital recordings of all interviews. Audiotapes were transcribed verbatim by a professional transcriptionist service within 2 weeks of each interview. As interviews progressed, slight modifications

were made to the interview protocol to ensure appropriate questions were asked. This aided in my reflexivity, as well as for the interview participants. For example, it occurred to one participant that he had never thought about how or why he was interested in developing his own GLCs and through this interview, he felt he gained tremendous insight about himself and his motivations. His motivations were consistent with the literature surrounding adult learning theory and self-directed learners.

Over 600 pages of interview transcripts were analyzed by me according to first and second cycle coding methods (Saldaña, 2009). First cycle coding methods included descriptive, in vivo, values, magnitude, and evaluation techniques, which generated over 160 initial codes. Ultimately, these codes were condensed and reduced to 52 different codes that were analyzed and summarized as follows: seven learning factor codes to assess perceptions of the learning program; 34 codes to represent three different types of participant backgrounds and 31 competencies in the Leadership T summarized in a coding matrix; four codes to indicate Kirkpatrick levels of learning for competency examples; and seven codes for themes summarized in a persona quote matrix. Coding approaches are described below.

Learning factor summary table. Seven codes were used for the seven learning factors associated with the GROW learning program: business results, courseware, instructors, job impact, learning effectiveness, return on investment, and managerial support. These learning factors were analyzed within the course evaluation data and during the interviews, and the findings were summarized in a table in Chapter Four.

During the interviews, Likert scaling questions similar to the course evaluation surveys were asked to determine direction and intensity of the value, attitude, or beliefs

related to the factors associated with the blended learning courses or GLC proficiency development (Saldaña, 2009). This use of Likert scaling within the online surveys combined with Likert scaling of participant responses during interviews was intended to provide a contextual comparison of the PM interview participants to the entire population of class participants for showing how PMs perceived the learning program versus the perceptions in the larger marketing population.

As noted by Saldaña (2009), because conceptual values, attitudes, and beliefs may not always be directly observed or stated by participants, questionnaires and survey instruments, such as Likert scales, provide intensity of qualitative responses along a linear continuum of response (e.g., *strongly disagree* to *strongly agree*). Similar to the data collection resulting from the post-class online evaluation surveys, statements on a 7-point scale were used for responses to interview questions that examined the learner's perspective according to the degree of their assessment of the instructors, relevance and applicability of the courseware, learning effectiveness, managerial support, and job impact. Participants were asked to rate their agreement level with specific interview questions from *strongly disagree* to *strongly agree* with statements such as "I will be able to apply the knowledge and skills learned in this class to my job." As with the online survey course evaluation data, responses from the interviews were analyzed for themes related to learning factors associated with each of the courses (i.e., business results, courseware, instructors, job impact, or learning effectiveness). This Likert-scaling approach provided a better sense of meaning with the values and magnitude coding analysis completed after the interviews. Responses with the 1-7 ratings provided a sense of magnitude, which was helpful for me to assess perceptions of various factors related to

the learning program, which may inform decisions about future GROW programming at BIO, as well as provide insights to other scholars and practitioners.

Competency code matrix. The first cycle codes used for analysis are summarized in a competency code matrix in Appendix C. The competency coding scheme consisted of 34 codes to represent the three different types of backgrounds of PM interview participants (science, business, and dual), as well as the frequency of mentioning each of the 31 different competencies in the Leadership T. As described earlier in this chapter, a second cycle of coding used the four Kirkpatrick levels of learning to determine what level of learning was described when competency examples were provided by participants.

When coding for competencies, alphanumeric symbolic codes or sub-codes were used to map alignment of the GROW learning program evaluation data and interview responses with the GLC framework. During the interviews, participants were asked which, if any, of the competencies were being addressed by courses within the GROW program. For instance, as they looked at the graphic of the Leadership T, they commented as to whether or not the learning program addressed category competencies such as thought leadership, results leadership, or marketing acumen. This meant that in some cases, depending upon the participant's perceptions and decision-making process, it was conceivable that a participant may indicate that several different categories and competencies within that category were covered during particular courses, whereas other categories and/or individual competencies (i.e., People Leadership: Authenticity) were not addressed at all. After coding was completed, frequencies were noted in parentheses

in the coding matrix, which represented the number of times that individual competencies were mentioned as related to a given course.

Using this coding scheme, not only was it possible to determine interviewee perceptions of alignment between the GROW curricula and the GLCs, this was also be “a way of ‘qualitizing’ a phenomenon’s intensity, frequency, direction, presence, or evaluative content... for assessing variability and dimensions of a code, sub-code, or category” (Saldaña, 2009, p. 60). Depending upon the nature of the data collected, it was possible to code the frequency that x was mentioned and sometimes the Kirkpatrick level of learning that was described. The magnitude coding matrix was constructed as “supplemental shorthand to add texture to codes, subcodes, and categories,” because “sometimes words say it best; sometimes numbers do; and sometimes both can work in concert to compose a richer answer and corroborate each other” (Saldaña, 2009, p. 58). The sub-coded categories and frequency counts in the coding matrix worked together to expose where there was or was not alignment by comparing the responses of each of the 14 participants. Ultimately, the coding matrix provided a visual way to see patterns of consistency and divergence in the way that participants perceived alignment of the GROW curricula with the GLC framework. These patterns and themes will be discussed in the Chapter 4 findings.

Persona quote matrix. Seven codes were used for a quote matrix of themes related to: course registration motivation, experience with the course pre-work, most useful course elements, least useful course elements, course improvement suggestions, course applications, and course expectations. A quote matrix presented in Chapter Four

simplified the data display for three types of personas that represented the variety of themes that emerged within these seven areas.

Ethical Considerations

Because I was responsible for both informing and protecting respondents, the research process involved enlisting voluntary cooperation. Using the Research Participant Consent Form (Appendix B), all participants were informed about the study's purpose, assured confidentiality, and asked to provide written or verbal consent before the interview began. Informed consent remained a priority throughout the study, as participants' rights and interests were considered regarding the reporting and dissemination of data. I committed to keeping the names of the organization and interview participants confidential with pseudonyms. Cautionary measures were taken to secure the storage of research-related records and data so that only I had full access to this material. Furthermore, the information reported in this study was carefully balanced with the needs for confidentiality and protection of Intellectual Property of BIO.

Researcher positionality. As both the researcher for this study and an internally employed consultant within BIO, there were advantages and disadvantages associated with my positionality. Establishing rapport with research participants can take a long time. Therefore, I entered BIO as an outsider 2 years prior to this study. Before accepting employment at BIO, I fully disclosed the desire to conduct doctoral research within the company and have access to data and participants to help facilitate the research process. Although I was involved in the design, development, and delivery of courses, including the hiring and training of external instructors, I only served in a facilitator capacity and observer from the back of the classroom, unless emergencies required that I

substitute as an instructor. I chose this approach intentionally to mitigate conflict of interest and researcher bias. As evidenced by interview responses to a question regarding their perception of my role, I was viewed as a trusted colleague and peer, rather than in a supervisory or authority role. In response to a reflexive question at the end of the interview protocol, most of the interview participants acknowledged they were more candid in their responses than they would have been with some other internal employee or an external researcher. Beyond the 3 years of real-time field observations and building rapport as a colleague, another advantage of lengthy field experience was witnessing the business transformation processes unfolding (Anderson-Levitt, 2006).

Despite the advantages of increased access to data and participants, there were potential disadvantages as an insider. *Although starting as an outsider, the longer I remained an employee of BIO, the more likely it may have been to remain objective.* This is prone to happen when researchers so closely identify with their participants that they do not maintain a professional distance, but instead report and interpret everything from their participants' perspectives and risk 'going native' (Kvale & Brinkmann, 2009). Also, given that culture, context, and my position as an insider researcher could influence assumptions, questions, findings, and interpretations (Banks, 2006), I exercised caution and reflexivity. As Anderson-Levitt (2006) advised, it is important to balance a dual perspective: "understanding the insiders' points of view to grasp the logic of their actions, but stepping back to take the outsiders' distanced perspective that makes visible what insiders would otherwise take for granted" (p. 290). Other scholars echo this same point, asserting that the biggest challenge as an insider researcher is making the familiar strange

so as to make it visible while distancing oneself as an observer (Banks, 2006; Borman, 2006).

Given the desire to balance an insider-outsider perspective, minimize researcher biases, enhance researcher trustworthiness, and strengthen the study's conclusions, triangulation procedures were used to increase validity from a qualitative standpoint and provide diverse ways of looking at the same phenomenon (Mathison, 1988). These triangulation procedures included multiple data collection methods: (a) three years of prior work consisting of document review and analysis, extensive field observations, online course survey analysis, and pilot focus group interviews, and (b) the current study consisting of learning program evaluation analysis and in-depth interviews. To ensure accuracy with the depth and breadth of information covered during the 14 interviews for this study, I supplemented my own note-taking during the interviews with digital recording, verbatim transcribing provided by an external professional service, as well as coding, member checking, reflexivity, and analytic memo writing.

Limitations

This study contained certain limitations, some of which are related to the common critiques of qualitative methodology, including but not limited to: small sample size, limited reliability in the traditional scientific sense of replicating research findings, lack of generalizability, and researcher subjectivity (Bloomberg & Volpe, 2008; Charmaz, 2006; Creswell, 2009; Denzin & Lincoln, 2005; Eisenhart, 2006; Patton, 1990; Stake, 2011). Other limitations inherent in this study's research design were: limiting the interview sample to only one role function (PMs) within only the marketing functional area of the company; lack of longitudinal data including objective pre- and post- course

assessments, limiting the interviews to the voluntary employee-learner perspective rather than the entire system view of a 180-degree or 360-degree process, and no company documentation of evidence-based links of learning applications to business outcome metrics (i.e., market share growth or profitability). Where possible, actions were taken to minimize the impact of these limitations. These actions are described below.

As a case study, this research was restricted in that it explored only one organization with interview participants selected from only one role function (product management) within only one functional area (global marketing). Recognizing this limitation, the learning program evaluation data, which covered the span of a full year and 714 employee-learner responses, provided another method of data analysis to compare the responses of the smaller subset of interview participants to the larger employee population.

Although the study's findings will in no way be generalizable in the traditional scientific sense, the generalizability problem is aggravated even further by the organization's modest size and its newness in an emerging industry. However, several opportunities during the timeframe of this study allowed me to present the research problem and preliminary findings to audiences of scholars and practitioners representing a wide range of bioscience firms, as well as other industries and other sectors. Colleagues' feedback confirmed that the knowledge from this study could be applied appropriately in other contexts, especially given the increasing interest in determining whether there is a benefit to address the current global talent shortage by cross-training existing staff in a transdisciplinary fashion. Donmoyer (1996) suggested that although generalizability is not the goal of qualitative research studies, it is possible to address the

issue of *transferability* of findings. Not only might this approach create a shared connection with the readers of this study around reality, it may frame the case study examples in a way that suggests that the research findings are merely working hypotheses about the likelihood that similar things may [or may not] happen in similar contexts. Only the consumers of research can determine whether findings may be transferable to their own situations and whether the diversity of settings will be perceived as a liability or potential asset.

Limitations also existed in this particular study with regard to the lack of: longitudinal data, the whole system perspective, objective competency assessments, links to business outcome metrics, and use of validated instruments. Ideally, if BIO had continued using a validated objective competency assessment that was used for a baseline measurement in 2010, it would have been interesting to explore whether longitudinal data would have produced findings that correlated positive GLC development for PMs who participated in the GROW program when compared to those who did not. Likewise, if resources had permitted a larger research staff, more interviews could have been conducted within this study's timeframe to obtain a whole system view—including 180- and 360-degree GLC assessment of PMs provided by their direct reports, peers, and superiors. It is important to note that although this was outside the scope for this particular study, a whole system view had been explored within BIO 1 year prior to this study. An external consulting firm interviewed 15 executives in BIO to gain better understanding of their perceptions of PM skill levels and gaps, and a different external consulting firm interviewed 20-30 senior leaders within BIO to learn what specific PM competencies they thought needed to be developed and prioritized.

To address another limitation, if better business outcome metrics existed at BIO and were tied directly to PM performance and applied practices, there would have been documentation to validate assumptions or findings that arose during the interviews. In particular, it would have been helpful to explore potential correlations where interview participants actually progressed in their knowledge and competency proficiencies by exhibiting Kirkpatrick Model Level 3 behaviors and Level 4 results outcomes. As with some of the other aforementioned limitations, this issue may be addressed with post-doctoral research as the organization evolves.

Another potential limitation of this study was the nature of subjectivity and positionality as both the researcher and as an employee of the organization. As described in detail earlier in this chapter, being an internal consultant for BIO enhanced my access to data, credibility, trustworthiness, awareness, and curiosity as a researcher, learner, and co-collaborator with the research participants. In fact, it was this insider perspective that contributed to the hermeneutical circle, a virtuous research spiral that implies continuously deepening understanding of meaning by moving back and forth between the parts and the whole (Kvale & Brinkmann, 2009). This was balanced with the limitations that could diminish the virtuous capacity due to the nature of subjectivity in qualitative research.

Peshkin (1988) cautioned that subjectivity must be carefully managed to minimize the potential that this becomes a liability when studying the social world. He stated that “subjectivity can be seen as virtuous, for it is the basis of researchers making a distinctive contribution, one that results from the unique configuration of their personal qualities joined to the data they have collected” (p. 18). Yet, Peshkin also suggested that “one’s

subjectivity is like a garment that cannot be removed” (p. 17). Although it was my good intention to have an unbiased perspective, because analysis ultimately resides with the thinking and choices of the qualitative researcher, I had my own *a priori* assumptions as an insider researcher related to how BIO was addressing GLC gaps with the GROW learning curricula and other initiatives. Also, because I experienced the culture firsthand, I possessed empathy toward the cultural sensitivities and concerns expressed by employee participants. This may have had the unintended consequence of shaping probing questions that I may or may not have pursued during the interviews. Likewise, because the participants knew me, their responses may have been influenced or affected based on their desire to offer helpful responses they perceived I was seeking or to share information they hoped I would represent on their behalf to BIO. Alternatively, some interviewees may have been guarded or mindful of impression management when speaking with me as another internal colleague.

Recognizing the limitations of being an insider researcher, I undertook several measures including: the aforementioned methods of triangulation of data collection and analysis, the statement of the research agenda and assumptions up front with the participants, developing coding schemes that were scrutinized by advisors and through peer review, and removing participant names during the coding of interview transcripts to minimize the association of data with a particular individual. Furthermore, to address the problem of participant reactivity, I continued to reflect on how and in what ways participants might be influenced. In addition to making a conscious attempt to create an environment that was conducive to honest and open dialogue, I reminded interviewees that no one would be aware of their participation as protected by the IRB. Through these

efforts, as well as continued mindfulness and reflexivity regarding researcher subjectivity, systematic monitoring of self mitigated these limitations and added to the trustworthiness of the study (Wolcott, 1990).

In summary, this chapter provided a detailed description of this study's research methodology. Qualitative case study methodology was employed to illustrate the phenomenon of how a biosciences company develops the Global Leadership Competencies of their product managers. The participant sample consisted of 714 responses included in the learning program evaluation data, as well as 14 purposefully selected individuals for in-depth interviews. The primary data collection methods included the analysis of descriptive statistics related to learning program evaluation data, as well as interviews. Researcher positionality and limitations of the study were acknowledged, and where possible, I described the actions that I took to minimize the impact of these limitations. Although generalizability is not the goal of qualitative research studies, it is hoped that this study will be of value to scholars and practitioners seeking to better understand the development of Global Leadership Competencies across a variety of sectors.

CHAPTER FOUR

FINDINGS

Following a brief review of the study's purpose and research questions, this chapter describes findings that emerged from the learning program evaluation analysis and the 14 in-depth participant interviews. Prior to this study, documents were reviewed including: course syllabi, learning objectives, field observation notes, competency framework materials, and course-level evaluation data. The review of those documents informed this study, although the findings presented in this chapter will be focused on an analysis of the aggregate learning program evaluation data and interviews conducted with global product management personnel.

The analysis of aggregate learning program data was helpful in providing me with an understanding of learning program factors that participants rated as relative areas of strength versus potential gaps. These areas piqued my curiosity to explore in greater depth during the PM in-depth interviews. For instance, although I learned that the learning factor of *managerial support* was consistently ranked as the lowest scoring area for every course, I was curious to dig deeper and explore how this may have been impacting GLC development.

This chapter provides a brief analysis of the demographic data associated with the 714 responses in the learning program evaluation data and the 14 purposefully selected individuals for interviews. Additionally, findings are presented within analytic categories related to the five research questions for this study. The discussion sections explore the themes that emerged within and across the program evaluation data and interviews.

Review of Study Purpose and Research Questions

The purpose of this study was to gain an understanding from the employee-learner perspective of one organization's efforts within the bioscience industry to develop GLCs as part of a larger business transformation initiative. This study explored the successes and challenges in providing a learning and development program designed to upskill employees, particularly those serving in global marketing roles. The organizational context was important to consider since the learning program was embedded within a larger business transformation initiative. Part of this transformation entailed an intensive focus in improving individual and organizational GLCs that required transdisciplinary cross-training of scientists and business people in their roles as global product management leaders. Findings related to the impact of the learning program as part of the larger transformation initiative will be presented.

Currently, it is unknown within the industry as to whether classically educated scientists are able to develop the business skills and other GLCs to become successful global product management leaders. Likewise, it is uncertain whether classically trained business people can learn the requisite scientific knowledge and other GLCs they may need to be successful in a product leadership role. Bioscience companies currently employ product management (PM) personnel with backgrounds and work experience primarily in science as opposed to business. However, it is important to gain a better understanding of how to develop and cross-train the existing talent pool by acknowledging the evolving global nature of the PM role which may require differing levels of expertise in the science and business disciplines and other GLCs.

The research goal for this study was to answer this question: *How does a bioscience company develop the GLCs of their Product Managers?* Additional research questions guiding this study were:

1. How do employees define GLCs within the context of their own professional development as global product management leaders?
2. What organizational factors do employees perceive as supporting or impeding their GLC development, particularly as global marketers within the product management function?
3. What are the employees' perspectives regarding the alignment of the company's GLC development program and the actual competencies that employees feel they need to learn to develop proficiency in the applied practice areas of their work?
4. What type of product management GLC training roadmap might employees recommend based upon their educational and experiential background, and what might this reveal about future learning program recommendations for product management roles?
5. How might employees build upon their strengths within their discipline(s) of expertise and address gaps by developing cross-functional GLCs within the product management role?

Employee-learner perceptions of the existing learning program and their GLC development were studied to gain a better understanding of how employees make sense of their own development and apply GLCs in their work. By identifying themes that emerged from the data, I expected to gain a better understanding of the process and

impact of developing GLCs in this bioscience company. From this understanding, other scholars and practitioners may be able to proceed from a more informed perspective of how employees define GLCs and view the design and delivery of learning programs and other GLC developmental mechanisms.

In this chapter, I document the broad range of learning and development experiences of the participants from their own perspective. Quotations were taken from interview transcripts and are presented as evidence of multiple participant perspectives to expose the richness and complexity of the subject matter. Analysis of the learning program evaluation data is included to augment and deepen the discussion.

Participant Demographics

Table 1 provides demographic information for all 714 of the participants who completed post-class online evaluations for the 2012 GROW learning program, as well as the sample of 14 Product Managers (PMs) who participated in the interviews. As described in Chapter Three, the 714 learning program respondents were participants in one or more of the seven foundational courses in the GROW learning program and represented a cross-section of employees primarily in marketing roles (i.e., global product management, regional marketing, global marketing development, corporate marketing). The purposeful criterion sampling for the interviews required that PMs would have participated in three or more courses to be invited as interviewees. All PMs that met the sample criteria and indicated a willingness to participate were interviewed.

Table 1

Participant demographics

Learning Program Evaluation Respondent Demographics	% (N=714)	Product Manager Interviewee Demographics	% (N=14)
Generation		Generation	
Millennial (born after 1979)	30% (214)	Millennial (born after 1979)	7% (1)
Generation X (born 1965-1979)	58% (414)	Generation X (born 1965-1979)	93% (13)
Baby Boomer (born 1946-1964)	12% (86)	Baby Boomer (born 1946-1964)	0
Gender		Gender	
Female	57% (407)	Female	36% (5)
Male	43% (307)	Male	64% (9)
Highest level of education		Highest level of education	
Bachelors	27% (193)	Bachelors	28% (4)
Masters	37% (264)	Masters	36% (5)
PhD	22% (157)	PhD	36% (5)
Years with BIO		Years with BIO	
0-2 years	29% (207)	0-2 years	7% (1)
2-5 years	31% (221)	2-5 years	29% (4)
5-10 years	24% (171)	5-10 years	29% (4)
10+ years	16% (114)	10+ years	36% (5)
Self-classification of background		Self-classification of background	
Science	22% (157)	Science	29% (4)
Business	30% (214)	Business	21% (3)
Other (not necessarily "dual")	48% (343)	Dual (primarily science + business)	50% (7)

In general, the sample of PM interviewees skewed older, held more advanced degrees, and had greater years of experience with BIO than the total population of learning program respondents. This is not surprising because the PM role is one of the most critical leadership positions in BIO, and therefore, the role requires greater levels of experience and education. Likewise, the skew toward science and dual backgrounds is consistent with the type of backgrounds that have been historically hired at BIO for the PM role. The above PM interviewee sample data is reflective of the demographics of the larger population of PMs at BIO based on human resources employee data reports.

Data Analysis, Interpretation, and Synthesis of Findings

This research study used qualitative inquiry to collect data via learning program evaluation data and in-depth interviews. Respondents to the learning program evaluations provided 714 data points, which provided contextual comparison for the responses provided by the 14 product management employees during their interviews. Learning program evaluation respondents and PM interviewees responded to questions about the learning program alignment with GLCs (Research Question #3). However, only PM interviewees were asked to provide responses related to the four other research questions.

The data were coded and then analyzed for themes to construct findings organized by research question. The findings are presented below within analytic categories that directly relate to each of the five research questions: (a) GLC definitions as described from the employee perspective, (b) organizational factors, such as managerial support and organization structural changes, that employees said were supporting or inhibiting their GLC development, (c) learning program factors, such as the courseware (course content and materials) and job impact relevance, as well as the employee perceptions regarding alignment of the GROW learning program with their GLC developmental needs, (d) training roadmap insights, such as the knowledge and skills needed in the PM role, and how employees envisioned the process to fill gaps with a training roadmap, and (e) transdisciplinarity insights, such as developing expertise in the disciplines of science and business, and how employees described their needs and experiences with transdisciplinarity in the PM role. The interpretive discussion sections are interwoven with the participant quotations to explore the themes that emerged.

RQ #1: GLC Definitions

When employees were asked to define GLCs within the context of their own professional development as global product management leaders, the majority of the interview participants (10 of 14 [75%]) indicated a varied understanding of the definition of GLCs. At BIO, the goal of the cross-training was to develop both the science and business technical hard skills as well as the relational soft skills needed for global leadership. Although some PMs defined GLCs as related to the universal soft skills of leadership, such as global mindset, inspirational leadership, or authenticity, most participants were more inclined to describe the technical or functional hard skills in the marketing discipline, such as business and financial acumen, product lifecycle management, or segmentation. Only a couple (2 of 14 [15%]) mentioned an integrated combination of both hard and soft skills. Half (7 of 14 [50%]) elaborated on the breadth and depth of GLCs; in some cases, participants identified competencies that are not specifically mentioned in BIO's Leadership T model, such as empathy, influencing, and collaboration with others.

When asked to define GLCs within the context of his role as a PM leader, Hank, who has primarily a science background with 5-10 years of business experience, responded that he had a vague recollection of BIO's Leadership T model, but was not exactly sure of the categories or competencies in it:

I couldn't tell you what's in the T right off the top of my head, but I've seen it. I know it's like a leadership component and then like a thought, a knowledge component, a *doing* component and another component. (Hank)

He expressed his understanding of GLCs for a PM in areas that were task-oriented and specifically directed toward product management skills. He also had a notion of

“levels” of GLC proficiency based on one’s experience as a PM and the greater degrees of responsibility at higher levels of product management:

I think it depends on the level of the product manager, right. So, for example, an associate product manager, the expectation of competency may be an understanding of your product line with limited impact on other related products. I don’t know how the company defines it but that’s my impression. (Hank)

Although Hank said he really did not know how the company defined GLCs, he still had a sense of what hard skill technical dimensions were needed in the PM role.

When questioned further, the *doing* component (what someone actually does in a daily job), which Hank referenced, meant marketing competencies such as business and financial acumen, market and competitive knowledge, customer insight, segmentation, value proposition, and lifecycle management. He felt strongly that these were “more important” because he thought these hard skills could be measured and trained whereas soft skills could not. “...people leadership: authenticity? I think that sucks as a metric because there’s no way to measure that.”

Larry, who has a science background, also initially defined GLCs as the *doing* competencies: “the skill sets that you have acquired in order to be able to perform a particular job or task.” Consistent with other respondents, Susan, who has a dual background of science education and on-the-job business experience, also privileged the hard skills when defining the successful acquisition of GLCs. She offered specific examples such as financial and marketing abilities as some of the *doing* GLCs or hard skills:

Well, you have to have some *financial ability*, I would think, to be able to take a look at finances. You should probably have some *marketing ability* to be able to assess a wide variety of markets, be able to do some level of *analysis on maybe competition*, maybe some business around the *licensing* and *patenting* roles. (Susan)

As evidenced by the prior examples, most interview participants were inclined to describe the technical or hard skills needed for PMs. However, Mike, who had science and business background and considerably less experience with BIO than other interviewees, described his definition of GLCs much more broadly within the overall context of the Leadership T. Mike mentioned that he recalled this BIO model through recent exposure during new hire orientation and remembered the importance of: “developing skills and competencies across a lot of different areas and then also...the deeper competencies - in one particular field specifically around a role.” He also described the soft skill of *influencing*, which was mentioned by other PM interviewees. Interestingly, this soft skill is not included as a competency within BIO’s model, yet the interviewees said influencing is a critical competency that is necessary for PMs. Mike expressed the influencing aspect in this way:

The whole concept of the product manager, you really don't have control over anybody. You just have to have influence on a lot of people. That's what I think of. It's just being able to be... good, competent at influencing others in a positive way. (Mike)

Ken, who had primarily a background in science with 5-10 years of on-the-job business experience, shared a similar insight by noting the soft skill of influencing as a GLC:

you have all the accountability in the world, but you have no one responsible for the actions directly other than yourself ... you're relying on so many other functions to help you execute on that strategy - whether it'd be R&D or manufacturing or quality or tech support or the sales team or market development. It really is a role that's so dependent on other functions around you to be successful that - to be a leader and to drive growth of a portfolio, or to drive gross margin dollars at certain amounts, it's not a direct result of what I do as a product manager. *It's an indirect result of my ability to influence people around me.* (Ken)

Gwen, a very experienced PM with more than 10 years of experience with BIO, answered initially with a general definition of *competencies* as “the things that you’re good at or you have a good knowledge base for.” However, unlike other interviewees, Gwen is an example of how some PMs integrated both dimensions of the Leadership T model in their responses by referencing both the specific horizontal soft skills and vertical hard skills. For instance, Gwen elaborated upon her initial definition of GLCs by saying, “things you need to know to be successful as a product manager with a view to what’s going on holistically throughout the whole globe.” Providing specific examples, she stated: “you have to have the basic skills on how to practically manage a product portfolio, understand the customer, and define your market, so that you can strategically position your products within that market.”

On the surface, Gwen’s description of competencies might be perceived as the hard skills or functional/technical skills dimension of the Leadership T. However, these also fit within the “Thought” and “Results” categories in the horizontal soft skills dimension of the Leadership T and specifically address the competencies of: strategic agility, global mindset, know the customer, and know the market.

Other interviewees went beyond naming the soft skills and hard skills in their definition of competencies as they spoke in detail about the *global* aspect of *global* leadership competencies versus *domestic* leadership competencies. For instance, Barb, who has a dual background of science and business, described her sense of what GLCs meant to her as a global PM in the following way:

global leadership is you have the product outside of just the US and you have your knowledge area *across the globe*, so in all of the other regions [i.e., Europe, Asia, Africa]. But being a leader is being able to actually demonstrate the knowledge of those regions and having the expertise in them to speak about

where your product positioning is, as well as where your competitors are, because there are much different regional alignments. *It's not all US-centric.* So [GLCs demonstrate] that knowledge and awareness of a much broader base and being able to implement different strategies within the regions (Barb)

Because *global mindset* is one of the soft skills in the horizontal dimension of the Leadership T, Barb was saying that the knowledge and awareness of one's global responsibilities also must be able to result in an application of this competency and, in this instance, implementing different product positioning strategies within different regions of the world. Similar to Barb's emphasis of the *global* aspects within her definition of GLCs, Larry gave a rather detailed response that focused on what he perceived as the *global* leadership competencies that PMs need to possess:

On the product development side, it's being able to look at the market and then gather information from customers at a *global* level...being aware that what will work in one place does not necessarily work everywhere and keeping that in mind when you reach out to your partners in the different regions to put together the programs that you need...dealing with our counterparts in manufacturing and operations who might not be in the same country or time zone as you are...the skill sets that you need to be able to communicate with them both efficiently due to time differences and just cultural differences. We do have a lot of interactions with customers for either collecting data or troubleshooting...keeping in mind that you have to deal in the proper way with a customer who might not be happy but on top of that, somebody who's not happy and is halfway around the world.
(Larry)

The above response pointed out very specific examples consistent with the GLC literature (Mendenhall et al., 2013) that make *global* leadership competencies different than domestic leadership competencies in both the *degree* and *kind* of competencies across three dimensions: (a) increased *complexity* from a contextual standpoint, (b), increased *flow* of communications and interactions from a relational perspective, and (c), increased *presence* needed from a spatial dimension.

In addition to providing examples regarding the *global* dimension of GLCs, Larry's above quotation spoke about the *transdisciplinarity* involved in the PM role (i.e.,

“dealing with our counterparts in manufacturing and operations who might not be in the same country or time zone as you are”). This example highlights that PMs need to know more than just science or business/marketing skills. Larry further expressed his insights as to what a globally competent leader must be able to do from a *transdisciplinary* perspective:

[know] how your particular solution fits into the company offering overall...you need to deal with sales reps, you need to deal with financiers, you need to deal with service, you need to deal with legal, you need to deal with compliance, you need to deal with regulatory, you need to deal with R&D, manufacturing, quality – I don't know, I mean so many different groups that you need to also not only try to keep them all straight in your head ...just be able to understand what everybody is doing at a global company level, just understand where the different pieces fit so that you can not only avoid issues but if something comes up, know who to talk to and then also understand their perspective which is even harder given that you might not have necessarily ever been in their shoes. (Larry)

Larry's responses expose the complexities of what it means to develop GLCs from a *transdisciplinary* perspective beyond the required PM expertise in science and business by citing the need to “deal with” multiple disciplines simultaneously: sales, finance, operations, legal, compliance, regulatory, research and development (R&D), manufacturing, and quality. Additionally, several of his comments in the above quotation speak to *collaboration with others* and *empathy*, which are two competencies that are often found in other GLC models (Goleman, 1995, 2004; Handin & Steinwedel, 2006), yet missing from BIO's framework.

To summarize the findings related to GLC definitions: the primary finding exposed the varied GLC definitions expressed by interview participants, which is significant in that the majority of participants (10 or 14 [75%]) were able to provide a general understanding of what is meant by competencies. Although some defined GLCs as related to the universal soft skills of leadership, which are represented in the horizontal

dimension of BIO's Leadership T model, most participants were more inclined to describe the technical or functional hard skills in the marketing discipline, which are represented in the vertical bar of the Leadership T. Although only a couple (2 of 14 [15%]) mentioned an integrated combination of both dimensions, a somewhat unexpected finding was that half (7 of 14 [50%]) elaborated on the need for demonstrating transdisciplinary aspects of GLCs across multiple disciplines simultaneously, such as science, marketing, sales, operations, manufacturing, R&D, legal, or finance. In several instances, interviewees provided specific examples of transdisciplinarity in their GLC definitions even though the term *transdisciplinarity* had not been taught to them by BIO.

In some cases, interview participants identified competencies that are not in BIO's Leadership T model, such as *influencing*, *collaboration with others*, and *empathy*. This finding is interesting to note because these may be competencies for BIO or other bioscience firms to consider adding in a future version of their GLC model, given the relative importance that these respondents assigned to them. None of these findings contained differences in GLC definitions based on whether someone had a science versus a business versus a dual background. Regardless of background, interview respondents stressed the importance for acquiring cross-functional knowledge and applying GLC behaviors that demonstrated a transdisciplinary perspective.

RQ #2: Organizational Factors: Influences on GLC Development

When employees were asked which organizational factors they perceived as supporting or impeding their GLC development, particularly as global marketers within the product management function, all 14 participants (100%) expressed an appreciation for the GROW learning program as a supportive influence in their GLC development.

Some (4 of 14 [30%]) mentioned managerial support as a supportive factor, whereas the majority (10 of 14 [75%]) mentioned this factor as impeding or nonexistent in their GLC development as PMs. The majority of participants (10 of 14 [75%]) also indicated that the organizational structure and transformation initiatives were sometimes helpful, but often were hindrances to their GLC development and daily work performance. A couple of participants also mentioned budget, alignment, and culture as hindrances.

GROW learning program. The unanimous response of participants who mentioned their appreciation for the GROW learning program as a supportive factor is not surprising given the learning program was developed specifically to address GLC upskilling in the global marketing area. All 14 of the participants described the GROW learning program as something needed and appreciated in their role development as PMs. Although their specific reasons varied, they found GROW to be supportive in their development. Mike, who has a dual science and business background, appreciated the GROW learning program and had this to say:

I really like the concept of those, the GROW classes. The fact that there is the realization that people don't have to come in knowing what they need to know to get a job done, that there are ways of learning it, and people – I mean the company—is willing to invest in teaching you what you need to know (Mike)

Although Mike's sentiment was similar to the other PM interviewees with science and dual backgrounds, I was curious as to whether the three individuals with only business backgrounds (the minority of PM interviewees) would have different perceptions of the GROW learning program. My assumption was that the marketing classes would be too basic for them because they would have learned those concepts in their undergraduate or MBA programs. Surprisingly, Bill, who had 5 years of experience with BIO and significant business experience in marketing, said that he was “a big fan of

the GROW learning program” because of the relevant PM-related competency areas being addressed in the classes. Ron, another PM with only a business background, elaborated by saying:

While I may have learned about some of the [business] concepts and theories in my masters program...more specific marketing skills are taught in the GROW program...and now I have the opportunity to apply them in my work. The GROW courses combine the benefit of theories, external case studies, and customized case studies and examples demonstrating how we apply the concepts at BIO. (Ron)

Although one’s background did not appear to make a difference on the overall positive perception of the content and relevance of the GROW learning program, one of the areas that did seem to differ was the perception related to the mix of participants enrolled in the classes and the impact this may have had on one’s learning experience. In the seven foundational courses for the GROW learning program, PMs were being developed with colleagues in other roles due to BIO’s objective to upskill all employees. Although courses were targeted to employees currently serving in marketing roles (i.e., product management, market development, regional marketing, corporate marketing), the open enrollment registration process did not exclude employees from non-marketing roles (i.e., sales, R&D, finance, or operations). Some PMs appreciated that there was cross-functional representation in the GROW courses. For instance, Carol, with a dual science and business background, thought that this was an additional benefit of how the GROW learning program was a supportive factor in developing GLCs across BIO:

I think one of the best supporters is that these [courses] are offered. I think it’s good to have that. I think it’s that universal language that we’re all kind of coming to and because I see so many other people within the organization coming to it [the GROW courses]—it’s not just product management and market development. There are regional managers [marketing personnel from other countries] who’ve come and global commercial marketing [i.e., corporate/brand marketers], whatever they’re called now, and then even outside that [i.e., sales,

R&D, operations], right, the analysis people [financial analysts, marketing analytics and research personnel]. (Carol)

Although Carol and other PMs with dual or science backgrounds appreciated the cross-functional mix of class participants and felt this positively affected the learning experience and supported GLC development, the PMs with a business only background thought differently. These PMs expressed that some participants brought down the caliber of the class discussion. For instance, Kip, a PM with a business only background, said he was irritated by people in non-marketing roles participating in the GROW learning program:

I understand there are other reasons people enroll in the classes...networking and all that stuff, but it brings down the overall level of quality when somebody doesn't understand it [the course content], and is there to check a box so they can get into marketing [into a new role/career different than their current role]...that's annoying. If you don't have the fundamental skills to know what some of these things are, this [the GROW learning class] isn't your first entry point to it. Come later on after you've actually done the job and actually have some basic marketing knowledge. (Kip)

Kip's statement highlights a frustration that he experienced when he was in classes with colleagues lacking his marketing knowledge or experience, including learners with different motivations for registering for the GROW learning courses. The different motivations were apparent in the aggregate learning program evaluation data representing all GROW participants. Whereas participants already in a marketing role indicated in their course evaluation feedback that their motivations for taking the courses were related to an internal desire to acquire and apply new knowledge; other employee-learners were motivated by external drivers. For instance, they were motivated by the possibility of networking with other classmates, enrolling in a class at the direction of their boss, or taking courses toward a marketing certificate, which would look good on their resume. These different motivations are consistent with Adult Learning theory and

Knowles' argument proposed in the 1970s that as people mature, they become more motivated to learn based on internal drivers, such as their own personal desire to learn, rather than external drivers, such as someone telling them they need to learn. Knowles further postulated that as people mature, and *experience* becomes an increasing resource for learning, people seek competency-based learning opportunities to apply new insights immediately to solve problems (Knowles, 1970, 1984).

Kip's sentiments may have reflected his internal frustration with being a PM with relevant educational and work experience and a desire to fulfill his own internal drivers to learn. This was further evidenced by his comments that he "wanted to share my own knowledge and learn from other PMs with experiences directly related to daily work problems, as opposed to hearing unrelated stories" from colleagues with less relevant experience and who were motivated by external drivers (e.g., networking). Kip's insights also exposed an interesting organizational struggle in determining which employees to include or exclude from foundational courses to ensure that everyone's learning needs are being met regardless of which discipline or role an employee may currently occupy. In the true spirit of developing all employees with the Leadership T, it seemed to be problematic for some employees that BIO made courses available to the entire employee population, especially when backgrounds varied so greatly. PMs said they appreciated that pre-registration communications reinforced that the courses were targeted to employees currently serving in marketing roles and that there would be accountability for applied learning within the class and on-the job. However, PMs also indicated they would like managers to be engaged more fully in the development of employees including the reinforcement of expectations and applied learning from the GROW

courses. Yet, based on findings in the next section, the lack of managerial support was often a hindrance.

Managerial support. Although 100% of participants perceived the GROW learning program to be a supportive factor, a major finding indicated that managerial support (or lack thereof) was a hindrance. Managerial support was assessed by all learning program participants and PM interviewees based on their ratings and comments associated with the following three statements: (a) my manager and I set expectations for learning prior to attending the course; (b) after the course, my manager and I will discuss how I will use the learning on my job; (c) I will be provided adequate resources (time, money, equipment) to successfully apply this training on the job. The majority (75%) of PMs did not believe managers were supporting their GLC development based on ratings of less than 5 on a 7-point scale, as well as evidenced by their comments. This finding among PM interviewees was consistent with the data from all learning program participants.

Susan, a generally positive and well-regarded leader by her colleagues, explained how the significant managerial changes in 10 years at BIO resulted in having leaders who lacked integrity. She described her feelings as follows:

There is a lack of any clear leadership within the company...I have very high levels [standards] of what I consider a good leader though...people that lead with integrity and lead with influence, not just with B.S., and I feel like we're very weak in the area of people that have any level of integrity that I've seen in a leadership position and I do believe that that's why you're starting to see people turn over in a very toxic culture. I feel like there's a lot of fluff and there's no action, but there's a new template, a new set of competencies to learn, but I don't necessarily see the leaders in those positions behaving like they should [to model these competencies or best support the development in others] for those competencies. (Susan)

Hank, although newer to the company than Susan, echoed similar sentiments as to how managerial support was a hindrance and added his insight regarding the low priority among BIO's leaders on developing people:

in terms of the *planning* or *doing*, we're very heavy on the *doing* it at times. Not that we don't plan but *people planning* takes a back seat to 'what are you *doing* to get this done? What are you *doing* to get that done?' It's not, 'How did that course go?' (Hank)

Hank's comments are similar to what is often referenced in the leadership literature (Kotter, 2001) regarding the imbalance toward the management of doing daily tasks rather than demonstrating leadership to prepare people for change and helping them cope as they struggle through it. In analyzing Hank's statement, he gets at the heart of Kotter's statement, "most U.S. corporations are overmanaged and underled. They need to develop their capacity to exercise leadership. Successful corporations...actively seek out people with leadership potential and expose them to career experiences designed to develop that potential" (Kotter, 2001, p. 85). Hank's and Susan's comments both seem to suggest that BIO may be lacking the analysis and implementation steps to develop their current and future leadership pipeline, which could be resulting in a default of task management and less effective leadership.

Bill, one of the PMs with a business only background, further explained his need for managerial support and leadership by commenting that he would "like to see a little bit more mentoring, not just manager task mentoring...but maybe specifically around marketing and product management across business areas to bring together people with different backgrounds and also combine both sides of the T." What Bill may have been suggesting was a more holistic approach toward developing people by bringing together cross-functional backgrounds and integrating the vertical hard skills functional dimension

of the Leadership T with the horizontal soft skills relational dimension. Rather than only focusing upon the task orientation with the job function or managerial administrative responsibilities, Bill expressed the desire for what is described in the literature regarding transformative organizations that are developing transdisciplinary leaders for the future (Choi & Pak, 2006; Davies, 2011; Kelley & Littman, 2005; Max-Neef, 2005; McGregor, 2009). Given that some PMs perceive that BIO's leaders are not demonstrating transdisciplinary expertise or integrating the humanistic soft skills *with* the business/science/technical hard skills, Bill's comments and others suggest how managers may be hindering GLC development and what opportunities might exist.

Although the majority commented that managers were a hindrance to their development, it is important to note that a minority of PMs felt supported by their managers. These PMs were equally as passionate in their praise and appreciation of managers as supportive factors in their GLC development as those PMs who were disappointed in the lack of managerial support. For instance, Gwen, who has greater than 10 years of experience with BIO and has experienced similar shifts in the organizational restructuring that Susan had mentioned, did not feel as adversely affected by the managerial changes but rather, said:

I felt that my manager was interested in my growth potential and supported my wants and needs to gain more skills and be a more efficient employee and overall improve the way that I interacted [as a leader]...with my fellow colleagues. That [example of managerial support] to me seemed like the company cares enough...that they were providing value to me. (Gwen)

Given the mixed employee perceptions of managerial support, there appeared to be individual experiences that shaped the PMs' overall outlook on whether or not they felt they were being supported directly. Some of the PMs' experiences with their direct

managers may have been influenced by their own and/or their managers' perceptions and reactions to larger organizational changes and transformation initiatives.

Organizational structure and transformation initiatives. Similar to the mix of perceptions regarding managers as a hindrance or support, the majority (75%) of participants claimed that organizational structure and multitude of transformation initiatives were both impeding and supporting their GLC development.

The organizational structure of BIO has been in a state of constant flux, in part due to the 35 mergers and acquisitions since its inception. PM participants were aware of the challenges inherent with growing and evolving as a company, and they pointed to the supports and hindrances that accompany the growing pains of an evolving company in a new industry. Ken, a dual background PM with almost 10 years experience at BIO, understood the need for change in an evolving company, yet questioned some of the organizational structural changes that seemed to result in more role ambiguity and adversely affected how PMs could drive decisions. At the same time, he also appreciated the support tools that were introduced as part of BIO's marketing transformation initiatives. He expressed his mixed perceptions of the organizational structure and transformation initiatives in the following way:

Actually the organization itself, the way it's structured, is doing both. They are supporting and hindering. They are supporting by trying to give us the tools that they think we need to be successful which is great. They are hindering because of organizationally the way we're structured. It's very difficult as a product manager to be effective in your role without having direct responsibility for the people that support you or for example, back in the day, a product manager at this company used to do everything from what market development does today to regional marketing and product managers...it was all one role. I'm not saying that was the right thing because that's a lot of work. It sounds like a lot of work now. The PMs back in the day were more focused on very small product lines or product areas. With marketing transformation that occurred at this company [from 2011-present] and this delineation of what the PM role is [and isn't], it's

like, 'Okay, you PM stop at this point now. You [Market Development or Regional Marketing] pick it up and you [sales or technical support or R&D] do this.' That's created some hindrances, right, from in terms of how effective you can be as a product manager in terms of really driving decisions (Ken)

What Ken is describing is reflective of the evolution of the PM role and other roles in the company as BIO evolved from a small entrepreneurial start-up to a larger conglomerate of many small companies. Although the tools that have been provided to PMs are appreciated by Ken, he is not as satisfied with the organizational structure changes that have resulted from the business transformation initiatives. As BIO has grown, new roles within the marketing organization were created, but Ken has struggled in knowing what roles and responsibilities still fall within PM boundaries versus what should be delegated to other roles in the organization. According to Ken, the less control a PM has over all of the end-to-end product development and marketing tasks that were previously in their job description, this has an impact on how effectively a PM can drive decisions. Ken's comments related to PM role ambiguity and the delegation to other roles (i.e., Market Development, Regional Marketing, Sales) combined with his statement that "it's very difficult as a product manager to be effective in your role without having direct responsibility for the people that support you," reinforce his perception that effective decision-making has been hindered as a result of the organizational changes.

Susan mentioned the organizational changes also resulted in a lot of "shake up," inconsistencies, and ambiguity, as well her perceived feeling of "shock and awe" tactics:

It's been tough: we've had a lot of shake up in our organization, org charts come out, shock and awe, go back, get reworked, and then shock and awe again. Nothing's consistent. The word coming from the new GM is not clear. It might say the right thing for the right people above but what's getting translated below is 'Oh my god. [Laughter] Really? We waited this long and this is what we got?' ... Management has taken their eye off the ball of the people (Susan)

Susan elaborated that the “shock and awe” she referenced was indicative of the constant reorganizations that were creating a “fear-based culture,” where employees were never certain when they would be told they would be laid off or when other colleagues had been let go. Many interviewees mocked BIO’s executive leadership mantra that everything is “business as usual” which meant employees were expected to keep working 16-20 hour days as usual until they received a notice that their services were no longer needed.

Whereas comments like Susan’s were not uncommon, there were a couple of PMs who acknowledged that the organization was making some progress in structure. Bill was one of the few PMs with a business only background, and he offered a different perspective than the PMs from a science or dual background. Unlike other PMs who had expressed frustration and anxiety regarding the lack of a stable structure and clearly defined roles and responsibilities, Bill had this to say:

I think organizationally we’ve come a lot more to building out the product management function. We’ve really focused I’d say over the last couple of years [on] more of functional development of which product management is one of those. So, I think that [organizational structure changes and marketing transformation initiatives] actually really supported that [PM GLC development] pretty well. I think that it - maybe potentially there’s more we can do around career pathing and developing the career path for product managers. I think we’re starting to address that and I think that was a little bit of competency work that I just mentioned earlier. That’s been a big gap for us for awhile and we’re just taking baby steps towards that (Bill)

Bill’s sentiments reflect the intentional efforts that BIO had implemented to focus on the development of PMs. BIO’s transformation initiatives (including the competency tools and GROW learning program) were designed to support the GLC developmental needs of PMs, particularly as business needs and the organizational structure evolved.

Bill and other PMs recognized that although the development and implementation of career path tools would take time, progress had been made.

Budget, business alignment, and culture. In addition to managerial support, organizational structure, and business transformation changes, two of the participants mentioned that budget, business alignment, and culture were hindrances to their GLC development. William, a PM with a science only background, considered these three factors were somewhat related:

Budget and business alignment seem like two major hurdles to try and get over especially if budget and business alignment are cultural... there is a feeling within this company but especially across the top of the T that these are non-trainable and I do get that's a cultural problem across this company... I think that we have a culture that isn't necessarily geared towards people development as a way to drive business. (William)

In analyzing William's statement within the full context of his response related to potential supports and hindrances in his GLC development, he was focusing on the horizontal dimension of the Leadership T soft skill competencies. His complaint that there was not a budget available to him to travel to customers in other countries exposed a cost-containment culture within BIO that was hindering his ability to gain a firsthand understanding of customer needs outside of the US. Consequently, he felt this contradicted BIO's business goals for PMs to be customer-centric and have an intimate understanding of the global marketplace. Furthermore, he believed there was a company perception that the Leadership T soft skill competencies such as "developing a global mindset" or "know the customer," were non-trainable, which impeded him from pursuing developmental opportunities for specific GLCs that BIO and individual PMs deemed as essential to be successful.

Likewise, Ken offered similar examples of factors that were hindering the development of GLCs in the PM role. He explained that PMs were somewhat frustrated that they lacked the budget or other resources to optimize their understanding of the global marketplace due to the restrictions placed on traveling internationally and/or communicating with internal and external colleagues in other regions of the world:

Product Managers here at BIO have a lot of distance between them and the customer and even more distance between them and their regional counterparts. There are a lot of layers between us and the people we really need to get to and talk to, so that's created some challenges in terms of getting that information directly from the source. (Ken)

Ken's above response revealed challenges beyond the budget and access issues to *external* customers in regions outside of the US. He was also concerned about the lack of access to his *internal* colleagues within BIO in other countries, which he felt was needed to understand the global market. For a variety of reasons, BIO restricted PM access to some internal colleagues. In an example provided by Ken, one regional marketing manager in China would have to communicate with over 100 different PMs to understand all of the nuances of each product. Not only was that an unrealistic expectation from a communication perspective, it did not align with business priorities because not all products had equal importance from a revenue perspective. Additionally, most PM interviewees acknowledged they did not have the cross-cultural or international marketing acumen expertise to work with regional marketers serving over 150 countries where BIO conducts business. It would be impractical for each PM to develop an in-depth understanding of the market and business practices in every region of the world, even if they acquired a working knowledge of several individual countries.

Although the budget, business alignment, and cultural factors were potential hindrances in GLC development, Ken acknowledged that BIO is considering support to

address these issues. For instance, one support solution involved hiring PMs who would be located physically in other countries in each of the major regions outside the US. Ken described what is underway and why he felt there could be potential upside benefits:

actually piloting regional product managers right now in areas like India and China with the intention that they're actually going to probably tailor some of the existing products and maybe reposition them for those regions and really be the feet on the street - the product manager - not virtually but physically there in that region...All of our product managers, for the most part, are here in the US. They have global responsibility, but you're seeing that need now to actually have people - feet on the street - that grew up, were born in that country, native to that country, understand the marketplace and physically live there. (Ken)

Ken's above quote suggests that hiring some PM personnel within their native countries may be a support for developing GLCs such as *global mindset*, whereas William felt additional budget was needed for U.S.-based PMs to travel to other countries to learn the marketplace. Both perspectives offer potential solutions for other global organizations struggling with these similar hindrances to GLC development.

To summarize the findings in this section, the overwhelming majority of participants expressed an appreciation for the GROW learning program as a support in their GLC development. Some mentioned managerial support as a supportive factor, whereas the majority indicated the lack of management support as a hindrance to their GLC development. The majority of PM interviewees indicated that the organizational structure and transformation initiatives were sometimes helpful, yet cited examples where these were often hindrances to their GLC development because of role ambiguity, organizational and job security instability, and adverse impacts on PM decision-making.

Finally, a couple participants mentioned that budget, business alignment, and culture were hindrances to their GLC development in that it was challenging to develop some competencies, such as *global mindset*, without having the appropriate support

mechanisms in place to address specific GLC gaps. Although not all gaps could be addressed by the GROW learning program, the next section explores how some of the learning program factors may or may not have aligned with developing GLCs.

RQ #3: Learning Program Factors and Alignment with GLC Development

Although the GROW learning program was perceived by all participants as a supportive factor in their GLC development, this section explores participants' perceptions of how the specific factors associated with the learning program aligned with the development of their Leadership T GLCs. Employees were asked for their perspectives regarding the alignment of the company's GROW learning program and the actual competencies that they felt they needed to learn to develop proficiency in the applied practice areas of their work. The majority of PM interview participants (10 of 14 [75%]) indicated that there was alignment of the company's GROW learning program with the GLCs in the Leadership T. This was evidenced by high ratings for the learning program factors that measured whether KSAs (knowledge, skills, abilities/attitudes) were being developed for relevant GLCs. The alignment findings from the PM interviews were consistent with the findings in the 714 responses from the aggregate learning program evaluation data, with an overall summary rating of 5.95 on a 7-point scale by PMs and 5.99 for all course participants. The PM interviewees also provided specific examples where they perceived the Leadership T competencies were or were not being developed by the GROW learning program. Four of the 14 [30%] PM interview participants indicated where there were gaps related to developing soft skills in the GROW learning program. An additional finding was that although a majority of participants (10 of 14 [75%]) provided responses indicating their levels of learning had

progressed to at least a Level 2 or 3 within The Kirkpatrick Model framework, no responses indicated Level 4 outcomes. Perhaps this meant that respondents could not recall examples or thought they could not attribute specific outcomes to their learning.

Learning program factors. To determine whether employees felt they were receiving the type of development needed through the GROW learning program, participants were asked: (a) to what degree did they perceive specific learning factors as enhancing or inhibiting their learning experience and (b) what outcomes or impact resulted from their participation in the learning courses. Participants were asked to focus specifically on the GROW learning program factors and the impact of the program on developing their GLCs, rather than other organizational factors. Therefore, all GROW learning program participants, including the PM interviewees, were asked to rate and comment about their experience of the GROW learning factors and how these factors aligned or not with their overall GLC development.

Table 2 provides a summary which compares the ratings of seven learning program factors associated with the GROW learning program. These factors within the Kirkpatrick framework for learning evaluation and measurement are embraced by most industry practitioners (Kalman, 2013), and therefore, shaped the questions related to these factors in the course evaluations and interview protocol (Appendix A). The 714 course evaluation responses were compared to the 14 PM interview responses. An analysis of the findings is described below the table.

Table 2

Learning Program Factors

Learning Program Factors	Course Evaluation data (N=714)	PM Interview Responses (N=14)
Business Results	5.89	5.73
Courseware	6.05	6.35
Instructor	6.25	6.05
Job Impact	6.19	6.35
Learning Effectiveness	6.13	6.25
Return on Investment	6.19	6.03
Managerial Support	5.25	4.90
Overall Summary	5.99	5.95

Findings from the GROW learning program course evaluation surveys (found in Table 2) showed that the “qualitized” magnitude coding for Learning Factors on the 7-point Likert scales (with 1 equating to the most unfavorable scores and 7 most favorable scores) were fairly similar across all learning program respondents and PM interviewees in the seven key categories: business results, courseware, instructor, job impact, learning effectiveness, return on investment, and managerial support. When comparing *all* course participant responses to the PM responses, the overall summary mean scores for these learning factors were very similar. The 714 respondents evaluating all seven factors in

all seven courses comprising the GROW learning program rated the overall summary at 5.99, and the 14 PM interview respondents rated the overall summary at 5.95.

Notably, the highest learning factor among all course evaluation respondents was in the category of instructors at 6.25. This was rated slightly lower by PM interview participants at 6.05, likely due to the variation of instructors introduced in 2012. PMs were more astute in recognizing when lower caliber instructors had been hired for less critical courses in the curriculum versus the PhD marketing instructors hired from a local business school. When relatively higher instructor scores were given by some PMs, they were able to differentiate as to why they thought some instructors rated highly. Not only was it due to a perception of the instructor's higher level of expertise, it was often for the reason Bill mentioned: "I thought in that case [the Marketing Strategy Simulation course] the instructor did a great job of really kind of bringing out and facilitating a good discussion with the students." Bill's statement is reflective of others who appreciated that the higher caliber instructors were able to facilitate a conversation to help the PMs learn by expressing themselves and applying the learning, rather than listening to a lecture.

Not surprisingly, managerial support received the lowest rating by all course evaluation respondents and PM interviews at scores of 5.25 and 4.90 respectively. Managerial support was assessed by all learning program participants and PM interviewees based on their ratings and comments associated with the following three statements: (a) my manager and I set expectations for learning prior to attending the course, (b) after the course, my manager and I will discuss how I will use the learning on my job, (c) I will be provided adequate resources (time, money, equipment) to successfully apply this training on the job. As reported previously in findings associated

with RQ#2, the majority (75%) of PMs did not feel managers were supporting their GLC development as evidenced by their ratings of less than 5 on a 7-point scale. This finding among PM interviewees was consistent with the data from all learning program participants. What this may mean for BIO is that regardless of the alignment of other learning program factors that are supporting the developing of GLCs, if managerial support is lacking, less than ideal applied learning would be evident on-the-job following course completion. Additional learning factor insights will be discussed in the next section.

Learning factor insights: themed personas. Beyond the learning factor findings summarized in Table 2, other learning factor insights emerged within the open-ended survey evaluation comments and the PM interview responses. The quote matrix (found in Table 3) summarizes some of the emergent themes related to the learning factors that may have enhanced or hindered learning. After categorizing the statements, then summarizing the essence of the quotes into key phrases, I established three personas called Joe “Just a Job,” Moe “Motivation Matters,” and Loe “Life-Long Learner.” The names are pseudonyms, yet the personas captured the essence of the data coding and my analysis of participant comments in the learning program course evaluations and the PM interviews.

Table 3

Learning factor insights: Themed personas

Factor	JOE “Just a Job”	MOE “Motivation Matters”	LOE Life-Long Learner
Course Registration Motivation	<i>“BOSS TOLD ME”; “easy way to get credits; figure out if marketing might be good role for me”</i>	<i>“MIGHT LOSE MY JOB?”; “improve my understanding of concepts, develop skills; learn to drink the corp kool-aid”</i>	<i>“BUILD UPON MY STRENGTHS”; “graduate level credits!; develop my knowledge and skills”</i>
Experience with the pre-work	<i>“Didn’t do it; took too much time; too easy/difficult; didn’t apply to me/my role”</i>	<i>“only had time to read case study—really enjoyed”</i>	<i>“adult learning options; all of the pre-work useful; e-learning always good refresher”</i>
Most useful course elements	<i>“meeting other people, learning about the company and other roles”</i>	<i>“New concepts and company specific applications”</i>	<i>“New concepts (value-based, strategic), models, case study”</i>
Least useful course elements	<i>case study, frameworks and “models—too many & not relevant to me”</i>	<i>“some of the discussions that weren’t on point, energy level of instructor”</i>	<i>“can’t think of anything; all useful”</i>
Course improvement suggestions	<i>“include applications for Sales, R&D, etc”</i>	<i>“more specific company applications and case studies; better instructor”</i>	<i>“more specific company applications, case studies, & networking time”</i>
Course applications	<i>“Not sure if relevant in my current role”</i>	<i>“new ways of applying new tools”</i>	<i>“new ways of applying new tools and working with peers”</i>
Course expectations	<i>“didn’t help me negotiate pricing with customers”</i>	<i>“met stated objectives for the course”</i>	<i>“exceeded my expectations; terrific professor and content”</i>

The Moe “Motivation Matters” persona and the Loe “Lifelong Learner” persona expressed the majority of excerpted quotes and themes from the learning program course

evaluation respondents and from some of the PM interviewees. However, the Joe “Just a Job” persona emerged more explicitly from the learning program survey responses, but was more implicitly inferred from the responses provided by PM interviewees. For instance, where the theme arose related to “not sure if relevant in my current role,” a non-PM (i.e., a financial analyst) responding to a course evaluation for the Market Analysis and Research class would not see an immediate application for conducting conjoint survey analysis because this is not part of his role function. However, a PM might understand the relevancy for learning about that type of analysis, yet due to the role ambiguity and organizational changes described in the RQ#2 findings, PM respondents may not have been sure whether it was their job or someone else’s role to learn how to use a software tool to conduct the actual survey or just interpret the survey results.

Moving back and forth between the “qualitized” data from the online course evaluation data and the PM interviewee responses, the above thematic quote matrix captured similar and different opinions expressed by all 3 personas. To highlight one area of differentiation, Moe’s motivation in registering for the GROW courses was influenced by concerns of losing her job if she did not learn the requisite information from the courses and develop her competencies. She wanted to improve her *understanding of concepts and frameworks, develop her skills, and “learn to drink the corporate kool-aid”* which meant she would be compliant with whatever BIO was implementing for learning programs and GLCs. In contrast, Loe’s motivation for taking courses was to “build upon my strengths” while earning graduate level credits and developing knowledge and skills. As a self-proclaimed *life-long learner*, he embraced all learning opportunities and said he was very appreciative of the GROW learning program.

In interpreting these different persona perspectives, each category had important insights to consider. For instance, in the category of *course registration motivation*, Moe's motivation was primarily externally driven, whereas Loe had an internal passion for learning and development. External versus internal motivation factors surrounding personal, professional, and career development may be a contributing theme for how participants perceived the other learning factor categories, as well as the course curricula and GLC framework. However, more research delving into this working hypothesis would be needed. The adult learning literature certainly supports that there are differences in motivation among learners which may help to explain some of the differences in their learning orientation (Knowles, 1990; Merriam, 2001). For instance, as a person matures, the motivation to learn is internal. People need to know why they need to learn something. If they know why they are learning and if the reason fits their needs as they perceive them, they will learn quickly and deeply (Knowles, 1970, 1984).

Beyond the motivation insight and its connection to adult learning theory, the other insights derived from Table 3 are important considerations for practitioners seeking to improve the learning program's relevance and its overall impact on GLC development from the employee-learner perspective. For instance, within the *course improvement suggestions* category, a theme appears across all three personas that learners are seeking company-specific applications. What this means from a course design perspective is that the employees want to learn about best practices within BIO rather than only the theories, conceptual models, and examples from other industries. Given my firsthand knowledge of how these courses were developed initially by academics, and why BIO executive stakeholders made an intentional decision to refrain from using too many of their own

application examples, my document review of course content confirmed the academic nature of these foundational courses. When these courses were initially designed in 2010-2011, the majority of existing marketers within BIO came from scientific backgrounds. BIO stakeholders and the external professors developing these courses believed that the marketers needed to learn the business models taught in MBA programs. Additionally, because neither BIO stakeholders nor the professors were convinced that BIO's internal examples would qualify as best practices, they opted to focus course content primarily on academic business models and case study examples from other successful companies (i.e., Apple, Amazon, or Google). This approach may have sufficed during the first couple of years of the GROW learning program. However, based on the data insights from the 2012-2013 learning program evaluations and PM interviews, the initial decisions regarding course design might need to be revisited if BIO would like to improve the learning program's impact upon future GLC development.

Ultimately, the qualitative insights gained from the open-ended survey questions and PM interviews were helpful in identifying some of the learning factors that enhanced or hindered learning, as well as some of the successes and problems with the implementation and ongoing development of the GROW learning curricula and how it aligns with employee perceptions of their GLC development. Although the learning factor insights were helpful to gain a better understanding of what factors enhanced or hindered learning, more specific information was needed to establish the relationship between the GROW learning program and the GLC Leadership T framework. This type of data analysis, which is provided in the next section, was important to gain a better understanding of what gaps might exist from the employee-learner perspective regarding

the GLCs they felt they needed to develop versus what is currently offered in the GROW learning program.

Alignment between GROW learning program & GLC framework. In response to questions surrounding familiarity with the Leadership T GLC framework and perceptions of how it is being used within BIO, a somewhat surprising insight was that there was general dissatisfaction with the communications and implementation of the Leadership T GLC model, albeit for different reasons. For instance, Susan was very concerned about job security:

I was worried when it [Leadership T] got rolled out, so I didn't know if like wow—if you don't have these, will you not have a job—because each bucket [of competency categories] is a little different than what people actually do. If this is what I'm supposed to be doing, I'm next on the cut list—right? Because this is not what I'm doing on a day-to-day-basis...If I'm being judged on this? I'm S.O.L. So I better take a class to start drinking that kool-aid [chuckling nervously]—I kid you not! (Susan)

Others, such as William, were similarly frustrated by the implementation of the GLC framework for reasons related to “jargon” and concerns about holistic development as a human being:

When I watched the e-learning modules about Career Development, I glazed over with the jargon--what does this Leadership stuff mean?—it seems buzz wordy...You need to find the passion on where someone is growing and what demotivates them--I want to grow as a person—not just a marketer. (William)

The above comments suggest that *how* the competency development initiative is communicated is important and that there are GLCs, which may or may not be the types of competencies PMs feel they need to develop in their current or future roles. Susan and William both stated that if PMs are not mastering the competencies expected of them, particularly in the marketing hard skills, they are feeling the pressure to learn “what I'm supposed to be doing” to keep their current job. Yet, both alluded to important aspects of

career development that they perceived have not been communicated within BIO.

Employees are not expected to have mastered all of the competencies in the Leadership T GLC framework, and it is acceptable that employees may desire to develop their skills in other areas. As William indicated, PMs may be seeking to grow in other ways or roles beyond marketing, and they are curious about “this leadership stuff.” However, they may not be making the connection of how they can grow in soft skills simultaneously with other hard skills if the human resources initiatives designed to communicate the holistic developmental nature of the Leadership T GLC framework are not helping managers and employees to understand these connections. The apparent lack of clear communications may be undermining BIO’s good intentions to develop GLCs across the organization. To delve more deeply into this phenomenon, I was curious to gain a better understanding regarding PM perceptions of the specific alignment between the GROW curricula and the entire GLC Leadership T framework.

As described in the Chapter Three methodology, I used a competency-coding matrix to analyze PM perceptions of alignment between the learning program and GLCs in the Leadership T framework. Specifically, I asked participants to map alignment of the GROW learning program courses with a document containing a visual display of the categories and competencies in the Leadership T GLC framework. By doing so, not only was it possible to determine interviewee perceptions of alignment between the GROW learning program curricula and the GLCs, this was also a way of qualitzing the degree or frequency of alignment mentioned by respondents to assess variability and dimensions of coding by category or competency sub-codes (Saldaña, 2009). The Competency Coding

Matrix in Appendix C presents some of the findings associated with the PM participants' coding results.

Convergent and divergent findings emerged in the Competency Coding Matrix and helped me to see the patterns of where similarities and differences existed. For example, although the participants were interviewed independently, their alignment responses were strikingly similar in that an overwhelming majority (95%) of participants indicated the GROW learning program addressed 4-5 marketing competency categories and an average of 9-12 of the 15 marketing competencies within the vertical dimension or hard skills in the Leadership T. This was to be expected, as the curriculum was designed specifically to address the competencies in the technical or functional discipline of marketing. In most cases, the minority of PMs that did not indicate that the GROW learning program was aligned with all 15 marketing competencies had said that they only had taken three or four of the seven courses, and therefore, they could only speculate that the remaining courses covered the competencies they had not learned about in their completed courses.

Surprisingly, several of the participants indicated that they perceived that the GROW learning program actually addressed some of the 16 competencies in the "Thought," "People," and "Results" leadership categories across the horizontal dimension or soft skills in the Leadership T. For instance, all but one of the 14 interview participants indicated the learning program addressed the Results Leadership competencies of *Know the Customer* and *Know the Market/Competition*. Although this intuitively makes sense that a marketing curriculum should address these competencies, the Human Resources department within BIO had communicated that they were

responsible for educating employees on the horizontal dimension of the Leadership T. However, because their budget had been cut for soft skill courses, it was enlightening to hear from PM interview participants that the GROW learning program was teaching some of these soft skill GLCs that applied directly to marketing. Of course, as duly noted by all of the PM participants, none of the courses in the GROW learning program addressed some of the “People Leadership” competencies such as *authenticity, inspirational leader, people development, or hiring talent*. Given that these GLCs were part of the Leadership T framework, yet not within the scope of the GROW learning program, I was curious to hear whether or not PMs would know how or where to develop these GLCs, if they felt there was a need to do so. None of the PMs indicated that they knew where or how they would develop “People Leadership” competencies if needed. This finding seems to indicate that BIO’s efforts are falling short in developing employee GLCs in the “People Leadership” area.

Learning program gaps. In addition to the expected gaps of the GROW learning program in not addressing some of the “People Leadership” competencies, there were other GLC areas that PMs suggested for improvements in order to achieve greater proficiency in the Kirkpatrick levels of learning. Although the findings related to the Kirkpatrick learning levels will be discussed in greater depth in the next section, it was important for me to hear the gaps expressed in words from the employee-learners, rather than impose the Kirkpatrick language upon them. Ken, a PM who has 5-10 years of experience with BIO and a dual background in science and business, offered this insight regarding a gap area in the area of applied learning:

Going back to the classes, they’re definitely supportive but what they lack is [giving us] the ability to actually go and apply it, right? ...I think what’s really the

true measure of the competency is your ability to take some of those theoretical discussions and some of those examples that they talk about and actually apply it in your job. I think that's when you become competent, right? (Ken)

Given that adult learning theory and The Kirkpatrick Model substantiate that there are successive levels of learning, Ken's instinct was accurate regarding knowledge application as the next level of learning beyond knowledge acquisition. However, according to the learning and leadership literature (Boyatzis & McKee, 2005; Knowles, 1975; Lombardo & Eichinger, 2011) formal courses are not the most appropriate mechanism to teach someone the ability to apply the learning; rather, as Ken aptly described self-directed learners: "the true measure of the competency is your [the learner's] ability to take some of those theoretical discussions and some of those examples that they talk about and actually apply it in your job."

Although Ken seemed to understand the learner's accountability for applying learning from courses on-the-job, many employees do not understand that formal instructor-led classes are meant to be only a small fraction of how to learn within the organization. This notion has been translated into what is commonly accepted, although not empirically validated as effective, by industry practitioners as the 70:20:10 approach to learning, where 70% of learning is experienced during on-the-job experiences, 20% involves learning from other people (i.e., managers and peers), and 10% from formal learning coursework (McCall et al., 1988). BIO has adopted this 70:20:10 model, and therefore, suggests to employees that "formal" classes should only be 10% of the learning mix. However, based on the aggregate learning program evaluation data and PM interview responses regarding how they are currently learning how to do their jobs at BIO, the percentages are definitely skewed higher than the recommended 10% of learning in formal courses. BIO's data revealed that there is an expectation that 30-40%

of learning should (or is) coming from formal courses because many employees are not receiving the coaching support from their managers and do not have a sense of how to structure on-the-job learning experiences. This significant gap was identified by many of the PM interviewees and an area that warranted further exploration using the Kirkpatrick levels of learning described in the next section.

Kirkpatrick levels of learning. A significant finding pertaining to the GROW learning program and its impact on developing GLCs was that a majority of participants (10 of 14 [75%]) provided responses that indicated their levels of learning had progressed to at least a Level 2 or 3 within The Kirkpatrick Model framework. This finding means they had acquired new knowledge or skills and applied this learning on-the-job.

Although some mentioned activities associated with Level 4 leading indicators, none of the responses indicated that respondents were able to achieve Level 4 *results-oriented outcomes*. This meant that they did not articulate specific examples of how their leading indicator activities (i.e., analyzing survey responses to establish appropriate product prices) led to lagging indicators that resulted in desired outcomes (i.e., increased market share, revenue, etc). Although this does not necessarily mean that Level 4 outcomes-based learning had not been achieved by any of these PM participants, there were not any examples found in their responses that indicated their learning applications and activities achieved the type of results-oriented desired outcomes that are expected by BIO.

Assessment of participants' levels of learning via The Kirkpatrick Model was determined by reviewing the examples provided by employee-learner participants regarding their perceptions of how they applied their learning from the GROW courses. As described in the literature review and methodology chapters, the framework for

learning evaluation and measurement embraced by practitioners across most industries is The Kirkpatrick Model (Kalman, 2013; Kirkpatrick & Kirkpatrick, 2007). This is relevant to this case study in that BIO uses The Kirkpatrick Model (Figure 11) as the foundation of their GROW learning program course evaluations.

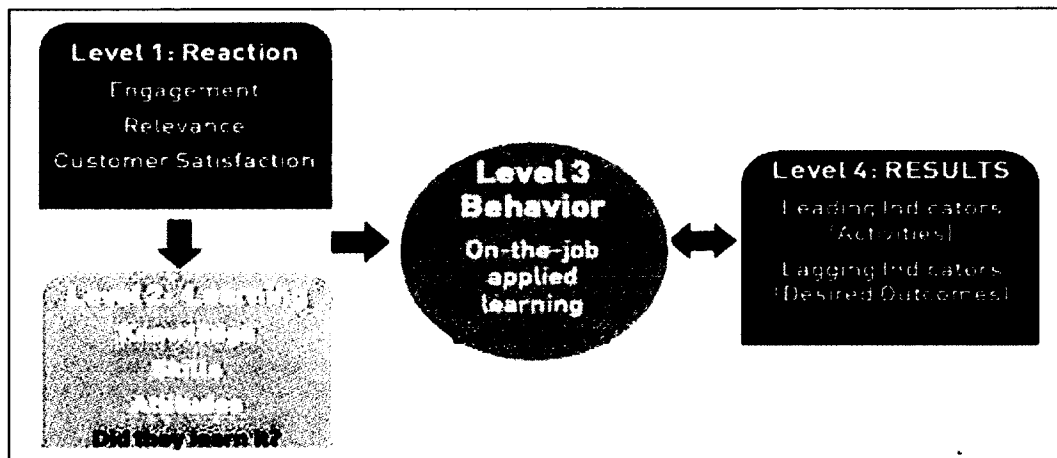


Figure 11 Kirkpatrick Model: four levels of learning. Used with permission.

In The Kirkpatrick Model, it is recommended that industry practitioners strive toward learning that centers upon Level 3 behaviors. This level demonstrates applied learning during on-the-job practices. For instance, a PM is expected to set pricing using value-based pricing methodology, rather than cost-plus pricing. Simply having a Level 2 knowledge of the difference in these two types of pricing is insufficient; the PM must actually demonstrate Level 3 behavior that the value-based pricing knowledge was applied (i.e., doing qualitative research to ask customers about their willingness to pay based on their perceived value of a product and then setting the pricing accordingly). Ultimately, the PM should achieve the Level 4 activities and desired outcomes (i.e., increased market share because the PM has set the price appropriately).

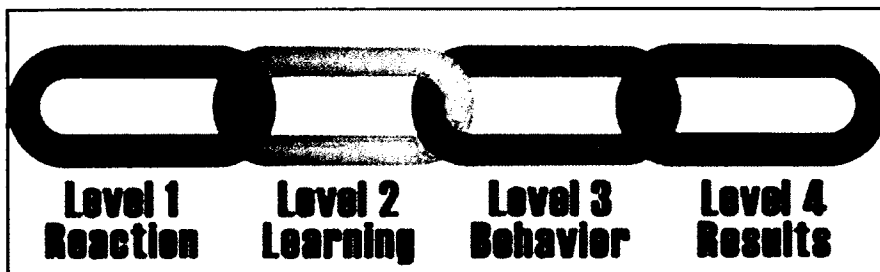


Figure 12. Chain of evidence for Kirkpatrick Model four learning levels. Used with permission.

Following the chain of evidence of progressive learning levels depicted in the above continuum in Figure 12, no longer is it sufficient for employees to report a positive Level 1 reaction to the training or development they are receiving, nor is a Level 2 learning exercise or knowledge test adequate to demonstrate one's development of GLC proficiency levels. Instead, the Kirkpatrick (2011) encouraged practitioners to determine on-the-job applications of Level 3 behaviors that can be assessed. Ultimately, the longer-term evidence of GLC mastery is achieving the Level 4 results-oriented desired outcomes that can be measured (i.e., market share, profitability). The Kirkpatrick acknowledged it is difficult to prove a direct causal relationship between learning programs and desired business outcomes because there are many factors that can influence the business environment. However, a learner should be able to link the chain of evidence from knowledge acquisition to applied learning behaviors to activities that have or will have achieved specific desired outcomes.

In this study, there were several instances where PMs provided Level 2 examples of knowledge, skills, or abilities they had acquired in the GROW learning program. For instance, Nico had this to say about what he learned in the Positioning & Segmentation course:

I didn't know a thing about segmentation. I learned about conjoint analysis. I just learned about why there is a need for segmentation. I learned about – related to –

when you think about segmentation – what are the approaches that people took? How does that whole process work? What do you get in the end?– I think now I understand that after segmentation you have to do targeting - market targeting and market positioning. I did get some elements of that very clearly through the course, which was new for me. (Nico)

Nico itemized a number of things he learned, but his responses would qualify as Level 2 knowledge acquisition in The Kirkpatrick Model because he offered no examples of Level 3 applied learning or Level 4 results achieved. Even when probed for Level 3 or Level 4 examples, Nico’s comments remained at Level 2 learning for other courses such as the Marketing Strategy Simulation course:

It takes you about two or three years in this role to really understand how what you do has an impact. But that Market Strategy Simulation course was very, very rich in terms of how it was able to help me understand how different channels, how different people, how you can drive towards – again, ultimately driving your product revenue or even the stockholder value. (Nico)

Nico’s above response alluded to the type of Level 4 desired outcomes (i.e., product revenue and shareholder value); however, he did not indicate that he had set Level 4 goals or achieved such results in his role as a PM. Nico was not alone in his failure to provide Level 4 results-oriented examples of applied learning. In fact, none of the 14 PM participants provided any examples of a successful results-oriented desired outcome. However, there were some examples of Level 3 behaviors and references to Level 4 activities that demonstrated PM were attempting to apply the learning from one or more of the GROW learning program courses. For instance, Ron gave an example of how the Market Analysis & Research course provided him with the knowledge he needed to learn (Level 2) to apply it in new ways on-the-job. He expressed his applied learning behavior (Level 3) in the following way:

It was a coincidence that I had to do a survey right after the class. I was familiarized with various techniques and I was able to analyze and determine which techniques to use and I was able to apply those and write the best survey

I've ever done and we got incredibly satisfying results... Out of surveying 25,000 people, we got 708 responses which were statistically significant and it validated our hypothesis in effect... it did inform us in terms of what would customers value. We summarized all those hundreds of features and functionality into what I call 'the four killer apps.' (Ron)

Although Ron articulated a complete chain of evidence across the progressive levels of learning, what is lacking in Ron's above response is the linkage of Level 4 leading indicator *activities* to lagging indicator *outcomes*. His Level 2 learning acquisition was linked to the Level 3 applied behavior of analyzing various techniques for customer research and writing a survey. Although he mentioned that the survey had statistically significant responses, which informed him of what customers would value, he did not provide evidence that the product features and functionality offered in the marketplace actually achieved the desired business outcomes (i.e., increased sales, market share).

Ron also gave very specific examples of behavioral changes related to on-the-job learning applications and activities resulting from the Pricing & Profitability course:

we ended up doing a Van Westendorp meter to be sure our price was right because look, the product was already cast. It didn't really matter what groups of features customers valued more than other groups. It was too late for that. But what we did do was we revalidated that certain fundamental groupings or workflows resonated and were valued and that was important because if those fundamentals weren't valued and didn't resonate, we had no business launching a product at any price. (Ron)

Again, in the above example, Ron did not speak about whether there were any anticipated Level 4 desired *outcomes* (i.e., increased sales, market share). Although he articulated his newly acquired Level 2 knowledge from the course and demonstrated Level 3 applications (i.e., conducting a survey via a Van Westendorp price sensitivity analysis), he did not go the next level to indicate when or how he would know that he had set the right price. A Level 4 outcomes-oriented answer would have indicated that Ron

would know if the pricing strategy did or did not work based on goal achievement of a specific forecast related to sales or market share. Even when probed during furthering questioning, it did not appear that Ron had a clear sense of specific outcomes-related goals. Understandably, it sometimes takes several months to years to realize desired business outcomes. However, when employee-learners are not being mindful and intentional about measuring desired business outcomes, BIO executive stakeholders are not convinced that they are changing their behaviors in ways that result in a positive impact for the business.

The Kirkpatrick (2011) argued that even if the ultimate lagging indicator business outcome metrics are not readily available or can't be causally attributed solely to the influence of the learning program, researchers and practitioners might be able to find correlations with the Level 3 applied learning behaviors and the leading indicators of Level 4 activities. Leading indicators are short term observations and measurements that suggest critical behaviors are on track to create a positive impact on the desired results (Kirkpatrick & Kirkpatrick, 2011). With Ron's above examples, some behaviors included conducting a conjoint analysis survey that determined customer perceptions of the value of a product and using a pricing analysis technique that validated price-setting strategy for a product launch. If Ron had mentioned in either of these examples that leading indicators were on track to have a positive impact on sales or market share, this would have demonstrated the connection to Level 4 results-oriented outcomes.

By demonstrating the progressive levels of learning in the Marketing Acumen, Market Insight, and Category Planning competency categories of the Leadership T, Ron's use of market research surveys and his ability to analyze responses and apply the results

in setting a pricing strategy were examples of how he is increasing his proficiency levels associated with GLC behaviors. BIO expects employees and managers to assess their GLC behaviors and measure results to determine the level of an employee's competency. Ultimately, competency assessments factor into career development plans, performance evaluations, and talent calibration across the organization to determine promotions and compensation decisions. Therefore, if employees would like to earn favorable performance ratings, promotions, and pay increases, they need to demonstrate increasing levels of GLC proficiency as evidenced by Level 3 applied behaviors and Level 4 results-oriented outcomes. Given the importance of developing GLCs on one's career, the following section explores training roadmap insights offered by PMs.

RQ# 4: Training Roadmap Insights

During the interviews, PMs were asked to describe their work and educational backgrounds and then provide feedback and recommendations regarding a product management training roadmap. This roadmap contained a sequence of courses and experiential learning designed to develop GLCs as employee-learners increased their levels of proficiency. Questions regarding the training roadmap were asked to reveal insights about existing and future learning program recommendations for PMs at various competency proficiency levels. The overwhelming majority (13 of 14 [95%]) of participants expressed understanding and agreement with the content and flow of the proposed PM Training Roadmap. Some (4 of 14 [30%]) were able to provide additional recommendations to improve the roadmap.

The proposed PM Training Roadmap was a one-page document that contained all existing learning opportunities offered by the GROW learning program. The offerings

were categorized by levels of proficiency (i.e., foundational/basic, proficient, and master) and then color-coded based on the delivery mechanism (i.e., red for customized e-learning, blue for non-customized e-learning, green for instructor-led courses, and purple for experiential hands-on training related to tools, systems, and processes). Susan's comments reflected the majority of PM interviewee perceptions regarding the content and flow of the proposed PM Training Roadmap. She had this to say:

there's nothing on here that doesn't look impressive. It just depends how I guess it would be used, in what context, but it's got all the right mix of things between strategy and marketing and the different areas where you can use them and then it's so many different dimensions to this, so right now it looks good. The foundational learning, yes, check, check, check – I've checked all those boxes. [Laughter] I've used the big blue box [e-learning courses] from the things I've learned and checked off... I'm basically doing the purple [experiential training] with my UCI project and I'm waiting for those advanced product management classes to get on the schedule. (Susan)

Gwen echoed Susan's satisfaction with the proposed PM Training Roadmap and offered a suggestion for the inclusion of survey development:

It [the PM Training Roadmap] looks pretty comprehensive to me. The only thing like I think that we all have a lot of challenges is around development of good surveys. Like I know we've talked in a couple of classes a lot of people have had those questions about, 'Okay. What makes a good survey? What kind of questions makes a good survey?' A lot of our quantitative data comes from surveys and I think that that's perhaps maybe a competency that we could gather or even if there's best practices that could be shared throughout the community. (Gwen)

Gwen's suggestion was consistent with similar requests provided on the learning program evaluation data, which indicated that the foundational Market Analysis & Research course was suitable to address the basics, but a more advanced *how-to* course was needed to teach the process of survey development and analysis. Introducing such a course would advance employee-learners from Kirkpatrick Model Level 2 learning acquisition to Level 3 applied behaviors. Ultimately, these applied behaviors should be

linked to Level 4 results-oriented outcomes (i.e., increased sales, market share) which would provide evidence that learners had mastered specific GLCs related to marketing acumen and market insight.

Ken offered another suggestion echoed by a couple of other PMs in the competency area of developing a global mindset. Ken elaborated further by saying:

we tend to rely on a proximity with a North American customer base as a proxy for the rest of the world, but the reality is that's not really a good proxy because there's a lot of regional needs, especially around perceptions on quality of product, pricing, and just what they value in terms of addressing the research needs. We like to say that we have a global lens on, but the reality is we don't do it as much as we probably should until it's too late - until we launch a product and then we realize - we're usually thinking about it in a context based on feedback from customers in North America and Europe, the two mature regions—less on emerging markets like China & India. That is a deficiency, for sure. (Ken)

Although Ken did not offer any solutions regarding courses that might address developing a global mindset, it is one of BIO's GLCs required for any global leader. It is particularly important for global PMs who have the responsibility and accountability for understanding marketplace dynamics that influence product performance across the world.

A final suggestion came from Kip, who is one of the three PM interviews with a business only background. Due to his unique background versus the 11 interviewees with heavy science backgrounds, he detected an important gap that may become increasingly more important as BIO hires PMs with business backgrounds rather than science backgrounds. Kip astutely noted that the proposed PM Training Roadmap was geared toward those PMs with a deeper background in science:

This training roadmap -- it doesn't have anything about sciences on it. It looks great if you are a scientist learning to be a product manager... it doesn't have the --like an eight-hour course on what is Life Sciences. How does everything fit together? If you say you're doing drug discovery, what does that mean? So

you're working qPCR, what is that? How those things fit together I think should be part of it [the training roadmap]. (Kip)

Kip's insightful comment spoke directly to the main research question being addressed in this study: *how does a bioscience company develop the GLCs of their PMs?* Given that the majority of existing PMs are scientists by background, and yet those with business backgrounds are being hired, this emphasizes the increasing importance of addressing the issue of how best to cross-train employees from a transdisciplinary perspective. As BIO's business evolves, and employee demographics related to work and educational backgrounds may change over time, training roadmaps will need to adjust accordingly.

RQ# 5: Transdisciplinarity Insights

Transdisciplinarity is defined as the ability to adapt concepts and lessons from outside one's field of experience to challenge one's core proficiency, which "can provide counterintuitive solutions to elaborate challenges in the workplace and the world at large — and can prepare an organization for the unpredictable years ahead" (Fraleigh, 2012, p. 32). It is theorized that when people can bridge different disciplines, they can approach problems and opportunities with a wider range of possible solutions. This is a particularly important concept when considering how to develop the GLCs of the global product management (PM) leaders that were the focus for this study.

Interviewees were asked what they perceived to be the ideal background for developing GLCs as a PM, and how they might build upon their strengths within their discipline(s) of expertise and address gaps by developing the cross-functional GLCs within the PM function. Although the word *transdisciplinarity* was not used as part of the interview question, the concept was discussed during the interview as having a depth

of education and/or experience in one discipline, such as science, while developing in other areas of expertise, such as marketing, finance, operations, or sales. As this was one of the last areas explored during the interviews, interview respondents had already reflected upon their journey of learning through the GROW learning program and had provided some examples of their GLC proficiencies. Therefore, most had expressed an awareness of their strengths and gaps, which were often reflective of areas they had or had not developed in their prior education and work experience.

When asked about their perceptions of what type of background might best prepare someone to be a successful PM, an overwhelming majority of interview respondents (13 of 14 [95%]) expressed a bias toward their own educational or experiential disciplinary background as being ideal for PMs. Although there was tension in speculating about the pros and cons of a scientific versus business background, the majority indicated a combination of both would be helpful, as would the development of the breadth and depth of soft skills and hard skills. Some (4 of 14 [30%]) cited examples of building upon strengths within their discipline(s) of expertise and addressing gaps by developing cross-functional GLCs within the PM function. Beyond the formal learning opportunities, a majority of participants (10 of 14 [75%]) indicated that they relied upon informal on-the-job learning opportunities and support from colleagues to supplement their educational or experiential backgrounds. Another interesting and surprising finding indicated participants' potential resistance and skepticism as to how the concept of developing transdisciplinary GLCs was being taught at BIO.

Chelsea, who has a dual background with deep academic and work experience as a scientist, expressed the bias for her scientific background as the ideal PM profile by

saying, “I think it may be easier to teach business to a science person than the other way around.” She elaborated by providing specific examples of where the scientific background provided advantages:

The people who don't have a science background struggle a lot when they're trying to do product development. They don't have a strong enough understanding of what R&D is doing that they can have a voice to say, ‘That’s not right,’ or have a voice against manufacturing to say, ‘No, you need to change something.’ ...It’s not just the science because it’s also a deep understanding of the customer that you innately have by coming from science. If you come from business, it’s not to say that you can’t learn it. But if you don't understand what it’s like to work in a lab or understanding what it’s like to develop drugs, you not only have to learn the nitty-gritty of science but you do need to understand the customer. (Chelsea)

Other PM interviewees with primarily a science-based background were also insistent that they had a background superior to those with a business background. For instance, Carol expressed this sentiment as follows:

In my very humble opinion, I would say that it’s probably harder for somebody with a marketing background to come in and learn science than it is for a scientist to come in and learn marketing, especially within this organization ... when you're a scientist here, you know you're building products to sell and that you understand – we [scientists] talk the language here on who are your customers (Carol)

Although both Carol and Chelsea vigorously defended their science-based background as being more ideal than a business background, Mike was a minority voice who thought his science background could be a gap so he went back to school to complement his science background with an MBA to understand the business implications of why the science matters:

People who have a science PhD, are changing [their] mindset from *doing* the research to *understanding* ... a better understanding of *how* this particular organism lives or *how* these [biological] pathways function. [Shifting the PhD scientist mindset to business involves a different lens:] ...*you do this experiment to make money. If there is no direct path on how it’s going to benefit us financially then it’s a waste of time, money, of a lot of things.* (Mike)

Hank, who came from a dual background, suggested that a dual background seems to make the most sense since those with the MBA may still struggle with some of the basics needed to understand the scientific workflow and connections across products:

It seems like we're putting much greater emphasis on a business background. I don't know if that's good or bad. This is purely my opinion that it's good to have a mix of the two because obviously, if you don't have any business background, it's hard to make good business decisions. From what I've seen at least from a very small number of people that have an MBA and not a strong or very little science background, it's sometimes hard for them to grasp basics that are needed to have a full understanding of what they're working on so that they understand if I want to sell Product X, I still need to sell A, B, and C to support that and you can't just sell X even if that's what the customer's [initial] need is. (Hank)

Even though a majority of PMs generally felt a bias toward their own backgrounds, there was a subtle tension that Chelsea mentioned, which was expressed by other PMs with a science background. During the interviews, some of the scientists mentioned they had to struggle in silence for a long time as they were learning and developing business expertise. Chelsea said, "I didn't know what I was doing [in the role as a PM] for—I'll go ahead and tell you—two a half, three years, where I was always learning new things...for three years, I wouldn't say I was a very effective product manager."

Just as Chelsea acknowledged the long delay in becoming effective was due in part to her lack of a business background, Bill admitted that although he felt strongly that his business-based background served him well, he also had to spend a lot of time filling in the gaps by immersing himself in on-the-job opportunities and learning from his scientific colleagues:

When I first started, I tried to really learn a lot about the portfolio and as I've picked up new portfolios, engage with tech service, engage with R&D...certainly work very closely with my R&D partners---I would say [scientific] peers and partners helped me 90% of the time. (Bill)

Mike echoed Bill's comments, even though Mike came from a science-based background. He said he still needed to build on the strengths of his science discipline while learning the practical parts of the business. He provided specific recommendations of how he believes all PMs could become more effective in their jobs:

Go out there and fill tubes in operations, figure out how things are going. Go in there and be in the sales with the salesperson to figure out how they sell, what they have to go through and understand what they're doing in day-to-day operations. Go in and just figure out what the R&D people are doing, what they're dealing with.... We have to interact with all of these people day in, day out and everybody has their own concept of what they're doing and what everybody else is doing but nobody really knows unless you've actually transitioned from one position to the next. (Mike)

By engaging in the informal on-the-job experiences and working with colleagues with different backgrounds, Mike felt this strategy was the best way to upskill all PMs. Susan also recommended that PMs should consider developing both the science and business aspects simultaneously:

I think it's just going about learning the science, the business, the expectations and the communications and going out to learn about your customer, learn about your market, understanding what's going on with them. It's very different between China, Latin America and even different regions in Europe...and it's going to be that way because that's how cultures develop and it's just understanding how you position and market and work within those cultures so you find opportunities, challenges and in areas that you can develop. (Susan)

When participants were probed further about whether they had learned about using the Leadership T GLC model to develop transdisciplinary skills in science and business, some were aware that although e-learning courses existed that explain the Leadership T and how to apply it in their career development, they admitted they did not have time to complete these courses. However, an interesting and surprising finding was that two different participants who had completed the career development e-learning courses did not remember the Leadership T, yet both had raised similar concerns

regarding one of the points in one of the modules. Although the e-learning course was not meant to focus on transdisciplinarity, the way in which the *process of how* to develop transdisciplinarity in one's career did not resonate well. Hank had this to say about the tone he recalled from the e-learning modules:

They were like, 'well, if you want to advance, maybe you should consider going down a pay grade and into a different function.' [eyes rolling] I thought that was demeaning personally because I mean, one, most people can't afford to go down in a pay grade. Then, it's saying that the only way to get promoted is to take a pay cut, to bleed for the team so to speak...ridiculous. (Hank)

Likewise, Carol, a PM with a dual background and over 10 years with BIO, expressed almost the identical concern as Hank had raised.

the one that aggravated me the most was that there was this whole thing about - oh gosh, I don't even know if I should say this, but the whole one about how you can move up but maybe you don't really want to move up. Maybe you want to move across [laughter] and you want to learn other things in the company. Maybe that's a better path for you...but I think everybody wants to move up. [Laughter] (Carol)

After analyzing these statements and their non-verbal communications, it was clear that although the company might be advocating cross-training of their employees by suggesting lateral moves, or even taking steps down in their career to learn a new discipline, the way in which this was being communicated was not appreciated by the employees. BIO may not have considered that employees might be interpreting that the pursuit of transdisciplinarity would entail more downside risk as a potential career-limiting move, rather than potential upside benefits for career advancement. If the strategy of cross-training employees is one of the primary ways that BIO hopes to address the current talent shortage, the organization may need to consider how to mitigate the employee concerns raised by Hank, Carol, and other PM interviewees who may have left this point unspoken. Although no one admitted that having an advanced science or

business degree entitled them to certain positions in the company, their use of words like *demeaning*, *degrading*, and *ridiculous*, as well as their occasional eye rolls and laughter, indicated that BIO's recommendations for lateral moves and lower level positions might be met with resistance and skepticism.

The findings in this chapter may inform the ways in which practitioners and scholars support the development of GLCs in individuals, teams, and organizations. Conclusions and implications, as well as recommendations, will be discussed in detail in Chapter Five.

CHAPTER FIVE

CONCLUSIONS & RECOMMENDATIONS

The purpose of this study was to gain an understanding—from the employee-learner perspective—of one organization’s efforts within the bioscience industry to develop GLCs as part of a larger business transformation initiative. This study explored the successes and challenges in providing a learning and development program designed to upskill employees, particularly those serving in global marketing roles. The organizational context was important to consider since the learning program was embedded within a larger business transformation initiative. Part of this transformation entailed an intensive focus in improving individual and organizational GLCs that required transdisciplinary cross-training of scientists and business people in their roles as global product management leaders.

The conclusions from this study follow the research questions and the findings and therefore address five areas:

1. How do employees define GLCs within the context of their own professional development as global product management leaders?
2. What organizational factors do employees perceive as supporting or impeding their GLC development, particularly as global marketers within the product management function?
3. What are the employees’ perspectives regarding the alignment of the company’s GLC development program and the actual competencies that employees feel they need to learn to develop proficiency in the applied practice areas of their work?

4. What type of product management GLC training roadmap might employees recommend based upon their educational and experiential background, and what might this reveal about future learning program recommendations for product management roles?
5. How might employees build upon their strengths within their discipline(s) of expertise and address gaps by developing cross-functional GLCs within the product management function?

The above research questions guiding this study provided a basis for the five analytic categories: (a) GLC Definitions, (b) Organizational Factors Supporting or Inhibiting GLC Development, (c) Learning Program Factors and Alignment with GLC Development, (d) Training Roadmap Insights, and (e) Transdisciplinarity Insights. Following is a discussion of the major findings, conclusions, and implications drawn from this research. The discussion is followed by recommendations and a final reflection on the limitations and significance of this study.

Conclusions and Implications

GLC definitions. When employees were asked to define GLCs within the context of their own professional development as global product management leaders, the majority of the interview participants indicated a varied understanding of the definition of GLCs. Although some defined GLCs as having competencies related to the universal soft skills of leadership, others were more inclined to ascribe GLCs to the technical or functional hard skills related to marketing. Very few mentioned a combination of both. The inconsistent GLC definitions were not surprising because such definitions vary widely in the academic literature. As discussed in-depth in the Chapter Two literature

review, research on GLCs lacks a consensus regarding the definitions and classifications of such fundamental terms as *global*, *management*, *leadership*, and *competency* (Jokinen, 2005). Furthermore, given the 35 different merged companies that have formed BIO since its inception, it will take time for the organization to educate employees regarding the entirety of its Leadership T GLC framework and the intention to develop soft and hard skills simultaneously.

At BIO, the objective of the Leadership T was to provide an operational framework for cross-training the functional or technical hard skills across disciplines, such as science, marketing, sales, operations, or finance, as well as the relational soft skills. Although some PMs defined GLCs as related to the universal soft skills of leadership, such as global mindset, inspirational leadership, and authenticity, most participants were more inclined to describe the technical or functional hard skills in the marketing discipline, such as business and financial acumen, product lifecycle management, or segmentation. Only a couple PM interviewees mentioned an integrated combination of both hard and soft skills.

When employees defined GLCs differently, it could be concluded that PMs might prioritize or engage in developing *either* the soft skills *or* hard skills differently or exclusively, which might lead to missed opportunities to develop holistically with increasing levels of mastery in the requisite GLCs expected of them by BIO. In contrast, those PMs who have taken the opportunity to invest in development in both the soft *and* hard skills, including the functional skills across multiple disciplines, may be better positioned not only to excel in the PM role, but potentially in other roles at BIO or other companies.

The implication remains that if employees are able to understand a consistent definition of what GLCs mean within their own organization, and how this may relate to other organizations, and if they demonstrate that they have developed cross-functional hard skills in various disciplines *and* the relational soft skills, they will likely perform better in their jobs, earn promotions, higher compensation, and job security throughout their careers. For organizations, what emerges from the finding that employees are defining GLCs differently is that better communications and training are needed surrounding the GLC framework itself and exposure to opportunities available for developing all GLCs. Additionally, it would be helpful if executive stakeholders, Human Resources, and managers would clearly communicate *why* holistic GLC development is necessary and *how* to develop those GLCs with internal and/or external career development opportunities. Not only might this help employees understand “what’s in it for me” but also “what’s in it for the organization.”

Ultimately, if the organization is not clear about the definitions of what GLCs it deems necessary or is unable to develop a consistent understanding about GLCs in its employees, the organization may not be able to sustain a competitive advantage in the marketplace. Consequently, the organization will cease to exist in its current form, which often means it will acquire new talent to replace the existing staff, purchase another organization with the requisite GLCs within their employee population, or sell to another organization and lay off redundant employees or those lacking the needed GLCs. In any of these scenarios, corporate sustainability and job security are highly motivating factors for organizations and individual employees to care about developing GLCs, even when it may seem difficult to develop soft skills and hard skills simultaneously, as well as cross-

functional GLCs in multiple disciplines. This becomes an increasingly important consideration as organizations wrestle with a buy (acquire) or build (develop) talent strategy.

Organizational factors: What helps or hinders learning. In exploring which organizational factors supported or impeded GLC development, the overwhelming majority of participants expressed appreciation for the GROW learning program as a supportive factor. This was not surprising as the learning program was designed to meet the specific competency-based needs of a marketing employee population that included PMs who had backgrounds primarily as scientists. Although specific conclusions and implications related to the GROW learning program and its alignment with GLCs will be addressed in the next section, what is important to note here is that prior to the launch of the GROW learning program, no formal courses were available to develop the business skills for global marketers, including PMs. Because the data from this study showed an overwhelming positive response to the GROW learning program, one potential implication is that BIO should continue funding and developing the program, as well as using it as a model for developing similar programs in the other functional areas of the company. In that way, global marketers can learn other functional area knowledge in the same way that they and non-marketers in other functional areas have benefited from the GROW learning program courses.

An additional finding related to the GROW learning program was the differing perceptions related to the mix of participants enrolled in the classes and the impact this may have had on their learning experience. Some PMs felt that having colleagues with less relevant experience from other functional areas brought down the caliber of the

discussion in the classes, whereas others appreciated the cross-functional networking opportunities and learning from different perspectives. In trying to balance the internal and external motivations for learning as well as the varied backgrounds of employees within BIO, an organizational struggle was exposed in determining which employees to include or exclude from foundational courses to ensure that everyone's GLC developmental needs were being met. The implication is that the challenge for meeting the cross-functional disciplinary needs may continue to exist or even increase, if BIO chooses to pursue a strategy for cross-training employees to develop transdisciplinary skills. If so, BIO will need to consider adding resources—people and budget—to develop learning programs and other developmental opportunities to accommodate different levels of learners within each of the functional areas of the company (i.e., marketing, sales, finance, operations, or manufacturing) as well as in the soft skills human resources learning and development programs.

There were also findings related to the organizational factor of managerial support and its potential impact on GLC development. The majority of PMs and learning program evaluation respondents did not feel managers were supporting their GLC development. Some managers were perceived as not modeling and mentoring from a holistic perspective in demonstrating and developing both the soft skills and hard skills in the Leadership T, as well as cross-functional expertise. The implication that emerges is that managers may need additional training and coaching for how to develop these GLCs in themselves while developing others. Also, it is possible that BIO may be lacking the analysis and implementation steps to develop their current and future leadership pipeline, which could be resulting in the employees' perception that there is an overreliance on

task management and less effective leadership. A potential implication here is that human resources personnel, processes, and technological systems need to be improved to assist people leaders and executive stakeholders with the analytic tools and implementation steps to ensure successful development of GLCs within employees at all levels of learning. Because there were some positive perceptions of managerial support, individual experiences appeared to shape the PMs' overall outlook as to whether or not they were being supported by managers, particularly as the organization evolved. Therefore, one conclusion might be that the PMs' experiences with their direct managers may have been influenced by their own or their managers' perceptions and reactions to larger organizational changes and transformation initiatives. Again, a potential implication is that human resources personnel should help to identify and develop leaders who are able and willing to help others cope with change.

The multitude of organizational changes and transformation initiatives were organizational factors often perceived as hindrances to GLC development and daily work performance effectiveness. Several PMs viewed the organizational changes as resulting in role ambiguity and adversely affecting how they could drive direct decision-making. They cited examples of the PM role shifting toward influencing and delegating decision-making responsibilities to other colleagues within BIO, yet the PMs were still being held accountable for results. Because GLCs such as *influencing* and *collaboration* were not part of the Leadership T framework, there was a gap with developing some GLCs that PMs thought they needed. An implication from this finding is that BIO may need to revisit the GLCs in the Leadership T framework that was developed over 5 years ago and determine if those or other GLCs are appropriate for what is needed today. Furthermore,

because findings also indicated that the constant reorganizations were creating a fear-based culture around job security for some PMs, BIO needs to explore whether this may be driving employees to work harder and risk burnout or disengagement. Either way, because it was apparent from the data that PMs knew there was an expectation for them to develop their GLCs if they wanted to remain part of the organization, BIO might consider whether there are ways a healthier work environment could be created, rather than a culture motivated by fear of job loss.

Finally, a couple of participants mentioned organizational factors of budget, business alignment, and culture as hindrances to their GLC development. They felt the appropriate resources, such as budget to travel to customers in other countries or access to colleagues in other regions, were not available to support their business goals. They perceived a cost containment culture as inconsistent with a culture to develop people. Such an inconsistency could negatively affect BIO, particularly if PMs lacked the support to develop required GLCs such as *global mindset* or *know the customer*. One potential implication is to address this issue with various alternative solutions. For instance, BIO is pilot testing an initiative to develop PM personnel within their native country. Although this would ensure the organization develops a better sense of a global mindset and knowing the customer more intimately in different regions of the world, it may not upskill individual PMs desiring to develop those GLCs. One PM concluded that truly developing a global mindset would require additional budget for PMs to travel to other countries to learn the marketplace in key regions, which is important for developing a global strategy for the product. Whether the travel was for short-term visits or via an

expatriate immersion program, this offers potential solutions for BIO and other global organizations struggling with these similar hindrances to GLC development.

Learning program factors and alignment with GLC development. When asked about the alignment of the company's GROW learning program with the actual competencies that employees felt they needed to develop in their work, the majority of PM interview participants indicated that there was alignment. This was evidenced by high ratings for the learning program factors that measured whether KSAs (knowledge, skills, abilities, or attitudes) were being developed for relevant GLCs. Findings from the GROW learning program course evaluation surveys showed that the qualitized magnitude coding for Learning Factors were fairly similar across all learning program respondents and PM interviewees in the seven key categories: business results, courseware, instructor, job impact, learning effectiveness, return on investment, and managerial support. The alignment findings from the PM interviews were consistent with the findings in the 714 responses from the aggregate learning program evaluation data, with an overall summary rating for the entire learning program of 5.95/7.0 for PMs and 5.99/7.0 for all course participants. The conclusion can be made that course participants perceived that the courses were well designed and delivered in alignment with the GLC Leadership T framework and business goals. Given that the return on investment and overall course summary courses were rated very high, the implication is that BIO made a sound investment in developing the GROW learning program from the employee-learner perspective.

Notably, and similar to findings associated with organizational factors that were potential hindrances to GLC development, the lowest scoring factor associated with the

learning program was managerial support. The majority of PMs did not feel managers were supporting their GLC development as evidenced by their ratings of less than 5/7 on questions related to whether managers set expectations and discussed on-the-job learning applications before or after participation in the courses. This finding among PM interviewees was consistent with the data from all learning program participants. Regardless of the alignment of other learning program factors that are supporting the development of GLCs, if managerial support is lacking, there may be less than ideal applied learning on-the-job following course completion. Therefore, BIO might wish to consider developing and implementing a strategy to hold managers accountable for conducting meetings with their employee-learners before and after participation in the courses to ensure that on-the-job learning applications are identified and reinforced.

Although there was overall strong alignment between the GROW learning program and the marketing functional GLCs, which meant course content was relevant and at the appropriate level, there were also GLCs not being addressed by the GROW learning program. Where gaps were mentioned, they were related to: (a) developing the people leadership soft skills in the horizontal dimension of the Leadership T GLC framework, such as *authenticity, inspirational leader, and people development*, or (b) GLCs not included currently in the Leadership T such as *collaboration, influencing, and empathy*. This meant that although the GROW learning program was perceived as supportive in developing the functional hard skills in the Leadership T GLC framework, BIO's efforts were falling short to identify and develop the needed universal soft skills or horizontal dimension of the Leadership T GLCs. To remedy this issue, the human resources department might consider re-designing their learning program to develop the

existing soft skill GLCs that are not being addressed and consider the addition of the other soft skill GLCs suggested by employees.

Other insights derived from the persona quote matrix yielded important considerations for improving the GROW learning program's alignment and its overall impact on GLC development from the employee-learner perspective. For instance, within the category of *course improvement suggestions*, a theme emerged across all three personas that learners were seeking company-specific case studies and applications. From a course design perspective, this means that the employees want to learn about best practices and lessons learned within BIO rather than only the academic theories, conceptual models, and examples from other industries. Based on the data insights from the program evaluations and PM interviews, the initial decisions regarding course design might need to be revisited if BIO would like to improve the learning program's impact upon applied learning and future GLC development.

Another finding revealed that PMs expect that 30-40% of learning should (or is) coming from formal courses because many employees are not receiving the coaching support from their managers and do not have a sense of how to structure on-the-job learning experiences. Again, the lack of managerial support and on-the-job learning applications were recurring themes that emerged several times throughout this study. Perhaps this finding regarding the high percentage of employee reliance on formal courses is due to the sub-optimal managerial support, which is also related to helping employees with on-the-job learning applications. The literature recommends that 70% of learning should come from on-the-job experiences, 20% from managerial coaching, and only 10% of learning should come from formal learning courses (Lombardo & Eichinger,

2011). If BIO intends to follow the 70:20:10 model and address employees' expressed needs for greater managerial coaching and on-the-job experiences, resources may need to be shifted from the formal learning courses to the other types of applied learning.

The employee-learners' expressed need for more structured on-the-job applied learning was reinforced with other findings related to The Kirkpatrick Model framework. Although a majority of participants provided responses that indicated their levels of learning had progressed to at least a Level 2 of knowledge acquisition or Level 3 of applied behaviors within The Kirkpatrick Model framework, no responses indicated they had achieved Level 4 results-oriented outcomes. Perhaps this meant that respondents could not recall specific examples or felt they could not attribute specific outcomes to their learning. Regardless, when employee-learners are not being mindful and intentional about measuring their impact on desired business outcomes, BIO' executive stakeholders are not convinced that they are changing their behaviors in ways that result in a positive impact for the business. BIO expects employees and managers to assess their GLC behaviors and to measure results to determine the level of an employee's competency. Ultimately, competency assessments factor into career development plans, performance evaluations, and talent calibration across the organization to determine promotions and compensation decisions. If employees would like to earn favorable performance ratings, promotions, and pay increases, they need to demonstrate increasing levels of GLC proficiency as evidenced by Level 3 applied behaviors and Level 4 results-oriented outcomes.

Training roadmap insights. Given the importance of demonstrating increasing levels of GLC proficiency, several findings related to a proposed PM training roadmap

revealed insights about existing and future learning program recommendations specifically for the PM role. The PM training roadmap contained a sequence of courses and other experiences recommended for developing GLCs as PMs increased their levels of proficiency. The majority of participants understood and agreed with the existing content and flow of the proposed roadmap. The PM interviewees felt that the existing and/or proposed courses and experiential learning were meeting their current needs. They also thought this was a good roadmap for other PMs to follow, regardless of what level of proficiency they started with or aspired to attain.

However, another finding revealed that some interviewees identified gaps on the roadmap where additional course content recommendations might improve the roadmap. For instance, one PM suggested more advanced level courses including application classes for survey design and analysis. Introducing such classes might advance employee-learners from Kirkpatrick Model Level 2 learning acquisition to Level 3 applied behaviors. As suggested in other findings related to the alignment of the learning program with GLC development, if BIO chooses to introduce application classes, the applied behaviors should be linked to Level 4 results-oriented outcomes (i.e., increased sales or market share), which would provide evidence that learners had mastered specific GLCs related to marketing acumen or market insight.

PMs also suggested the training roadmap was lacking courses or other opportunities for the “global mindset” GLC. Having a global mindset is one of BIO’s soft skill GLCs required for any global leader, and particularly for global PMs who have the responsibility and accountability for understanding marketplace dynamics that influence product performance across the world. Yet, findings related to organizational

hindrances suggested budget and access issues to customers and internal colleagues in other countries might be preventing GLC development of a global mindset. What this may mean is that BIO will need to identify other ways to offer employees an opportunity to develop a global mindset that will not require excess budget or interfere with policy decisions regarding access to customers or employees in other countries. Furthermore, *global mindset* falls within the soft skill GLCs to be developed by the human resources learning program, as opposed to the GROW learning program designed to address marketing functional GLCs. Therefore, human resources will either need to develop and deliver courses to address the global mindset GLC or collaborate with the GROW learning program and other functional area learning programs to ensure this GLC is imbedded into their curricula.

A final insight regarding the training roadmap was offered by one of the PMs who suggested the inclusion of science courses for existing and new PMs hired without scientific expertise. The majority of existing PMs were scientists by background, and yet those with business backgrounds are being hired in increasing numbers. Therefore, it is becoming more important to address the issue of how best to cross-train employees, which will be discussed further in the following section. The important conclusion to note here is that as BIO's business evolves and employee backgrounds may change, training roadmaps will need to adjust accordingly to meet the GLC needs of an employee mix with varied educational and work experiences, particularly if BIO chooses to pursue a transdisciplinary strategy to upskill their existing staff and new hires.

Transdisciplinarity insights. *Transdisciplinarity* is defined as the ability to adapt concepts and lessons from outside one's field of experience to challenge one's core

proficiency, which “can provide counterintuitive solutions to elaborate challenges in the workplace and the world at large—and can prepare an organization for the unpredictable years ahead” (Fraleigh, 2012, p. 32). It is theorized that when people can bridge different disciplines, they can approach problems and opportunities with a wider range of possible solutions. This is a particularly important concept when considering how to develop the GLCs of the global product management (PM) leaders who were the focus for this study.

During the interviews, PMs were asked to describe their backgrounds in detail and whether they felt there was an ideal background for a PM based on prior academic or work experience (i.e., science or business). They were also asked to provide examples of *how* they had learned and applied GLCs that may not have been within their primary discipline of expertise. A majority of participants expressed a bias toward their educational or experiential disciplinary background as being ideal for developing GLCs as PMs. They also acknowledged a combination of both science and business would be helpful, as would the integration of the breadth and depth of hard skills and soft skills. Some participants cited examples of addressing their knowledge and experience gaps by developing cross-functional GLCs within the PM function. For instance, if their background was primarily science, they focused on learning business concepts; if business was their primary background, they sought opportunities to learn science. In some cases, they spoke about the need to learn about other disciplines, such as sales, finance, manufacturing, operations, and regulatory affairs because the PM role involves understanding how to work with colleagues in these and other roles.

An important conclusion is that PMs recognized the importance of being trained from a transdisciplinary perspective, and without exception, all of the PM interviewees indicated they were eager to learn to be more effective in their jobs. Beyond the formal learning opportunities, a majority of participants indicated that they relied upon informal on-the-job learning opportunities and support from colleagues to supplement their educational or experiential backgrounds. This indicates that they were resourceful in reaching out to others for the help they needed even without formally structured on-the-job learning exercises provided to them. A potential implication is that BIO might consider leveraging technology to provide opportunities for internal social networking and cross-functional collaboration where self-directed learners might be able to benefit from just-in-time learning tools for specific on-the-job applications.

When questioned about whether they had learned about the importance of developing cross-functional GLCs from BIO's career development e-learning courses, an interesting and surprising finding related to potential employee resistance was exposed. Two different interviewees raised similar concerns regarding the way in which the *process of how* to develop transdisciplinarity in one's career was explained. It was clear that although the company might be advocating cross-training of their employees by suggesting lateral moves, or even taking steps down in their career to learn a new discipline, the way in which this was being communicated was not appreciated by the employees. If the strategy of cross-training employees is one of the primary ways that BIO hopes to address the current talent shortage, the organization may need to consider how to mitigate the employee concerns. In particular, if BIO is recommending that employees consider lateral or lower level positions with less pay to learn new skills in

other functional areas, the findings from this study suggest that such an approach might be met with resistance and skepticism. Although BIO and other global businesses may be thinking that developing transdisciplinarity within their existing employee ranks is a better approach than hiring external talent, this strategy might be difficult to execute if the perception held by employees is similar to the comment expressed by one PM: “the only way to get promoted is to take a pay cut, to bleed for the team.” Although transdisciplinarity may sound good in theory, as with the leadership and learning theories, the theoretical models do not always result in sound strategies for execution in practice.

Recommendations

This research sheds light on the intersection of three key theoretical constructs that shaped the conceptual framework for this study. The first entails leadership theories and the importance of global leadership competencies that are both deep and broad (as exemplified in BIO’s Leadership T framework). Leadership theories intersect with learning theories (as exemplified by The Kirkpatrick Model) which show how to measure competency development as GLCs are broadened and deepened. Finally, both the leadership and learning frameworks intersect with the theoretical construct of transdisciplinarity, which explains why developing the depth and breadth across various functional disciplines is important. By exploring these constructs within BIO and answering the research questions, the findings provide some insight into the pressing challenge that multi-national companies face of whether to buy versus build in their talent development strategies. This investigation showed not only what is happening in vivo from a business perspective of the employee-learners, but also suggested that developing internal leaders may have some strategic advantage over acquisition of external new

hires. A June 2012 report from the McKinsey Global Institute predicted that employers worldwide could face a shortage of 85 million workers with high- and midlevel skills by 2020, which means that organizations will be unable to successfully execute on one or more business strategies because of talent constraints (as cited in Parker, 2013). This same report recommended that due to the talent shortage: "... organizations must build, not buy, the talent they need to be successful" (Parker, 2013, p. 49). To do so, the findings in this research study at BIO demonstrate the importance of communications regarding how to pursue transdisciplinarity, which is a key part in this process of developing GLCs. Poor communication and poor execution of well-intentioned talent development strategies may backfire if the pursuit of transdisciplinarity is perceived by employees as entailing more downside risk as a potential career-limiting move, rather than potential upside benefits for career advancement.

The above conclusions and implications may inform the ways in which practitioners and scholars support the development of GLCs in individuals and organizations. Recommendations offered in this section are based on the findings, analysis, and conclusions of this study. The recommendations that follow are for corporate executive stakeholders and practitioners interested in talent management, organizational development, learning, or human resources, as well as scholars seeking to advance further research in understanding the process of how to develop GLCs.

Recommendations for practitioners. Since the global recession started in 2007, companies have been facing increasing pressure to do more with less, including operating with fewer people, producing results in less time, and using less capital. Hence, non-customized off-the-shelf domestic competency models and learning programs are sold to

organizations by vendors and consultants even if these are not the right resources to address a company's specific global needs. Within the fledgling bioscience industry, this approach often appeals to stakeholders because it appears to be an expedient solution to address the global talent shortage problem. Yet, within a couple of months to years of heading down an unprofitable path, bioscience companies realize that the recycled traditional domestic leadership models are insufficient to understand global market forces that significantly increase the complexity of global leadership development initiatives.

Given that there are multiple factors that contribute to the development of GLCs within organizations, it is important to understand the context-specific situation of the macro-environment, the industry, the company, executive and managerial stakeholders, and the employee-learners. The recommendations put forth here are a combination of my own insights as well as those supported by the literature and should be considered for their appropriateness based on the context:

1. Design, develop, and deliver GLC frameworks and learning programs in tandem, rather than as disjointed efforts. Where possible, include the employee-learner perspective to ensure the language does not become inaccessible or irrelevant jargon, and ensure that there are periodic checkpoints to ensure consistent understanding and assessments of GLC definitions, behavioral anchors, and expected business outcomes. As indicated by the data in this study, some GLCs, such as *empathy*, *collaboration with others*, and *influencing*, were not included in the current framework, yet were offered as suggestions by employee-learners who recognized these as important in their daily job function. Therefore, the

content of GLC frameworks should be updated as needed as the external environment, organizational needs, or employee-learner needs change.

2. Ensure that organizational factors are designed to support the development of hard skills and soft skills simultaneously from a global leadership perspective. Given that the data in this study indicated that PMs were seeking an integrated holistic approach to the development of GLCs, organizational factors that are perceived as hindrances should be addressed with employee input. For instance, to develop a global mindset, provide employees with the tools, budget, and organizational alignment support to help them succeed globally. If they have global responsibility, consider allowing 3-6 month expatriate assignments to live and work in other countries that represent business critical markets. If expatriate assignments are not possible, allocate sufficient budget for periodic business trips designed to immerse employees in the business and cultural environment of their colleagues and customers. At the very least, leverage technology and open door policies to allow access to colleagues and customers in other parts of the world. Also, consider instituting a robust managerial coaching program to explain to people leaders how to use career development tools and processes to guide employees through career pathing, navigate fluctuating organizational structures, and cope with change.
3. Invest in learning program resources beyond basic, foundational, instructor-led courses and e-learning. As suggested by the findings in this study, although employee-learners were pleased with the current curriculum, after they had finished the foundational courses, they had a need for more advanced

learning applications. Therefore, organizations should allocate sufficient resources toward learning and development programs including budget for internal staff and external program partnerships to design and to implement on-the-job opportunities for applied learning linked to measurable business outcomes. Also, learning opportunities should be linked with social networking to allow for peer and managerial coaching. As revealed in this study, there was an expectation by employee-learners that 30-40% of learning should (or is) coming from formal courses because many employees are not receiving the coaching support from their managers and do not have a sense of how to structure on-the-job learning experiences. By providing more structured support for social networking, coaching scenarios, and on-the-job learning experiences, employees may be able to progress from mere knowledge acquisition to applied learning, mastery of higher levels of competency proficiencies, and ultimately, achieve desired outcomes for business results.

4. To address the need for a transdisciplinary workforce, consider whether a talent strategy of build versus buy, meaning the development of internal employees versus acquiring the skills from external hires, or a hybrid philosophy would work best for the organization. In some cases, it may make sense to build the skills of the existing staff in a transdisciplinary fashion so that they have the requisite cross-functional competencies along with the universal soft skills for people leadership. In other cases, it may be a better strategy to hire externally to acquire the outside skills needed as an

organization or industry evolves. With a hybrid approach, organizations typically develop their current internal staff while hiring externally.

Regardless of the preferred strategy to achieve transdisciplinary, it requires creating a culture of talent development that will support employees' growth trajectory throughout their career. Based on the data in this study, although employees may recognize the importance of transdisciplinarity for developing in one's career, it is also important for organizations to be mindful of how to communicate why and how employees should develop transdisciplinary GLCs. In particular, if organizations are recommending that employees consider lateral or lower level positions with less pay to learn new skills in other functional areas, the findings from this study suggest that such an approach might be met with resistance and skepticism. Organizations may need to consider that employees might be interpreting that the pursuit of transdisciplinarity would entail more downside risk as a potential career-limiting move, rather than potential upside benefits for career advancement.

As mentioned previously, transdisciplinarity may sound good in theory, as with the leadership and learning theories, but the theoretical models do not always result in sound strategies for execution in practice. Therefore, if the concept of transdisciplinarity is to be useful, the following recommendations for scholars may help to bridge the gaps between research and practice.

Recommendations for scholars. As employers increasingly recognize that the global leadership talent shortage threatens their ability to compete, they are still frustrated by the lack of straightforward sustainable solutions to develop GLCs from a scholar-

practitioner perspective. GLC definitions, models for development, and assessments remain a blend of speculation and confusion. This provides a tremendous opportunity for researchers to provide evidence-based practice data that can help organizations determine how to develop GLCs. As suggested by other scholars (Mendenhall et al., 2013), global leadership is still an emerging field, and there are many gaps to fill including the following:

1. Developing a sound construct around the definitions and contextual nuances of what global leadership and GLCs really mean. In doing so, greater consistency in research designs and application of relevant study findings and conclusions will be possible.
2. Conducting “more exploratory empirical research, with multiple paradigmatic approaches, on the multidimensional global leadership construct—cross-cultural relationship skills, traits and values, cognitive orientation, *global business expertise*, global organizing expertise, and visioning.” (Osland, 2013b, p. 78).
3. Analyzing factors that support or hinder global leadership effectiveness and development, which includes the determination of measures for effectiveness reflected in The Kirkpatrick Model levels of learning linked to business outcomes.
4. Conducting empirical research on how GLCs influence one another or can be weighted or prioritized based on one’s role function.

5. Studying business environments conducive to long-term longitudinal studies that could yield transferable findings for GLC developmental processes and best practices.

Although there are many more possible recommendations for future research, any steps to address the above possibilities would be a welcome contribution to research and practice in this important and nascent field of developing GLCs.

Limitations and Significance of the Study

This study contained certain limitations, some of which are related to the common critiques of qualitative methodology, including but not limited to: small sample size, limited reliability in the traditional scientific sense of replicating research findings, lack of generalizability, and researcher subjectivity (Bloomberg & Volpe, 2008; Charmaz, 2006; Creswell, 2009; Denzin & Lincoln, 2005; Eisenhart, 2006; Patton, 1990; Stake, 2011). Other limitations inherent in this study's research design were: limiting the interview sample to only one role function (PMs) within only the marketing functional area of the company; lack of longitudinal data including objective pre- and post- course assessments, limiting the interviews to the voluntary employee-learner perspective rather than the entire system view of a 180- or 360- process, and no company documentation of evidence-based links of learning applications to business outcome metrics (i.e., market share growth or profitability). Where possible, actions were taken to minimize the impact of these limitations and were described in detail in Chapter Three.

Despite the limitations, this study represents an incremental step in advancing the understanding of the development of GLCs and how a learning program may contribute toward that development. The findings from this study may contribute to the growing

nascent sub-field of global leadership in an important emerging bioscience industry. Although the scope of this study was limited in that it addressed only one organization with a limited sample size for in-depth interviews, there is great value in the knowledge that comes from a full and thorough exploration of one case, which can be useful as researchers explore similarities and differences in other cases (Borman, 2006; Patton, 1990; Stake, 2011).

Because BIO is a leading company within the growing and important biosciences industry, the implications of the findings regarding employee development could contribute to the expanding field of knowledge and GLC literature in both scholarly and practitioner outlets. This study offered the unique opportunity to share the voices of the study participants, and it provided greater appreciation for the lived experiences of others who may share similar worldviews or contexts in which they work. It also provided a scalable methodology for further comparative analysis and expanded the theoretical understanding of leadership and learning in the corporate context. Finally, understanding the development of GLCs from a transdisciplinary perspective may be helpful in developing training roadmaps for various roles across sectors.

The value of this study is in the substantive rather than statistical findings it offered (Patton, 1990), and it is those substantive findings which may be the very issues and implications for further research. When considering the significance of this study or future research, it is important to reconceptualize external validity or generalizability by assuming that contexts are idiosyncratic and ever-changing. Consumers of research for this study may include executive stakeholders, learning and development practitioners, human resources professionals, employees interested in developing transdisciplinary

GLCs, and other readers interested in transferability of findings to their own contexts. To assist them in problem-framing and understanding the GLC development process, the potential for creating new cognitive categories is part of the potential significance for this study (Donmoyer, 1996). Using the notion of transferability in similar settings, Donmoyer argued that knowledge transfer may occur across different settings. Enabling this knowledge transfer was one outcome of this study.

In summary, the findings of this study connected complementary streams of literature related to GLCs. Theoretical frameworks associated with leadership, learning, and transdisciplinarity were explored to gain a better understanding of how organizations and individuals develop GLCs. The significance of this study is applicable across a diversity of sectors (i.e., other businesses, non-profit, higher education, government, etc.), especially when considering whether to build or buy the talent needed for organizations to be successful. Not only does this study contribute to the nascent field of global leadership and the emergent biosciences industry, it extends theory and applied research with a scalable methodology for other comparative work.

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APPENDIX A
Interview Protocol Excerpts

Interview Protocol Excerpts

Section 1: Demographics, Education, & Experiential Background

What areas of education (degrees/certificates) you have completed?

How many years have you been with BIO? Tell me about your career with BIO and prior work experience.

- Less than 2 years
- 2 - 5 years
- 5 - 10 years
- More than 10 years

What Generation are you?

- Traditionalist (Born before 1946)
- Baby Boomer (Born 1946 - 1964)
- Generation X (Born 1965 - 1979)
- Millennial (Born after 1979)

What is your primary job function or role as a PM? Tell me a little bit about what you do on a daily basis.

Please rate your Marketing Education/Knowledge prior to taking the “GROW” courses.

- None
- Some (< 2 years)
- Considerable (2 - 5 years)
- Extensive (5+ years)

Please rate your Marketing Experience prior to taking the “GROW” courses.

- None
- Some (< 2 years)
- Considerable (2 - 5 years)
- Extensive (5+ years)

Prior to the “GROW” courses, when was the last time you had a learning & development course?

- In the last 6 Months
- 6 - 11 Months ago
- 1 - 3 Years ago
- 3 - 5 Years ago
- More than 5 Years ago
- Never

How representative do you think you are in comparison to other Product Managers here at the company? Explain.

Section 2: GROW learning program perceptions

Which of the existing courses have you participated in & when?

I am curious to gain a better understanding of the FACTORS that enhanced or hindered your learning experience with the GROW learning program.

Please let me know your thoughts and feelings regarding your experiences in learning program (as a whole—considering all completed courses) for each of these learning factor areas.

After I provide specific statements for each of the following categories, please indicate your level of agreement on a scale of 1-7 with 1 being *strongly disagree* and 7 *strongly agree* as a factor that enhanced or hindered your learning. I will also capture any additional comments you may have related to these learning program factors.

Instructor

Courseware

Learning Effectiveness

Job Impact/performance

Alignment

Business Results

Managerial Support

Return on Investment

Kirkpatrick Levels of Learning –additional probing questions:

1. What about the courses was most useful to you?
2. What about the courses was least useful to you?
3. How can the courses be improved to make them more relevant to your job?
4. If you applied the learning from the courses, please provide a few tangible examples of how you applied it.

5. What challenges/barriers did you encounter (do you anticipate) that have (might) prevent you from applying what you learned? What might help to overcome those barriers?
6. What outcomes are you hoping to achieve as a result of your learning efforts? (probe for leading and lagging indicators)

Section 3: Organizational Factors

How much of the improvement in your job performance will be a direct result of the GROW learning program courses, as opposed to other factors?

What other factors beyond this course might improve your job performance and overall knowledge, skills, and abilities? Explain (dialogue with probing questions)

Given a total of 100%, allocate the % of knowledge and skills you have learned from “formal” courses vs. peers/colleagues/manager vs. on-the-job learning? Explain.

Section 4: Global Leadership Competencies & Alignment of GLC Competency Framework with GROW learning program

In your own words, what do Global Leadership Competencies mean to you? How would these apply specifically in your leadership role as a PM?

Were you able to watch the e-Learning modules (5-6 of them) regarding career development and competency development? If so, what was that experience like?

To what extent has your manager engaged in dialogue with you around competency development? What have those conversations entailed?

Have you heard of the “Leadership T?” (unaided recall). Have you seen something like this? (aided recall; show graphic)

Are you familiar with these 3 “buckets” (meta-competencies in graphic): Leadership Behaviors (Thought Leadership, People Leadership, Results Leadership) to represent the breadth of leadership capabilities required?

Various functions throughout the organization add on functional competencies to represent the depth of functional expertise required. Have you heard about “Marketing Competencies?” Do any of these visuals look familiar to you (aided recall with the following):

- ✓ Marketing Competency Model: Structure (with Categories, Competency definitions, Behavioral Anchors, Proficiency definitions)

- ✓ Marketing Competency Model: Categories (bulleted description of meta-categories)
- ✓ Marketing Competency Model: Competencies: 5 meta-categories with 15 individual competencies

What has your experience been to date with how the GROW learning program may or may not align with the competencies in the Leadership T? For instance, based upon courses you've taken (and/or have yet to take), which of the following competency areas is the "GROW" curriculum addressing?:

- People Leadership
- Thought Leadership
- Results Leadership
- Marketing Acumen
- Market Insight
- Brand & Marketing Communications
- Category Planning
- Channel Management

If you were successful in applying "GROW" course content toward your "competency development" please provide a few tangible examples of how you applied it. (probe again for Kirkpatrick levels of learning)

What organizational factors have been supports or hindrances for you to demonstrate the "desired" behaviors in each of the competency areas?

Section 5: Insights for PM Training Roadmap & Transdisciplinarity

What recommendations would you have for a PM Training Roadmap?

Does the proposed training roadmap (show visual) make sense? Are there any gaps? (ask probing questions and dialogue to explore RQ#4 for Training Roadmap insights)

How might you describe what it means to be a successful leader in your role as a PM?

What type of background (science, business, dual, other; your own; someone else's) do you think is "ideal" to be a successful PM in this industry (and at BIO)? (ask additional follow-up questions regarding academic and experiential strengths/gaps/biases and thoughts regarding transdisciplinarity—probing questions and dialogue to explore RQ#5)

Section 6: Post-interview reflexivity questions

What recommendations would you have for improving this interview protocol—what worked, what didn't make sense, what was missing?

As a reminder, you are assured confidentiality under the IRB protection we reviewed prior to this interview. How candid/honest/comfortable were you in answering these questions? Based on my role in the organization, would you have answered these interview questions any differently had I been in a different “insider” role or an external interviewer?

APPENDIX B

Research Participant Consent Form

Research Participant Consent Form

I. Purpose of the research study

Andrea McMullen is a student in the School of Leadership and Education Sciences at the University of San Diego. You are invited to participate in a research study she is conducting. The purpose of this research study is to explore how to develop GLCs.

II. What you will be asked to do

If you decide to be in this study, you will be asked to:

- Provide demographic information about your generation, educational background, work experience, geographic work location, and job function.
- Participate in a private interview about your experiences with the learning curriculum and competency development initiatives offered by BIO.

You will be audiotaped during the interview.

Your participation in this study will take a total of 60-120 minutes.

III. Foreseeable risks or discomforts

This study involves no more risk than the risks you encounter in daily life.

IV. Benefits

While there may be no direct benefit to you from participating in this study, the indirect benefit of participating will be knowing that you helped researchers better understand how to develop global leadership competencies with a customized learning curriculum.

V. Confidentiality

Any information provided and/or identifying records will remain confidential and kept in a locked file and/or password-protected computer file in the researcher's office for a minimum of five years. All data collected from you will be coded with a number or pseudonym (fake name). Your real name will not be used. The results of this research project may be made public and information quoted in professional journals and meetings, but information from this study will only be reported as a group, and not individually.

VI. Compensation

You will receive no compensation for your participation in the study.

VII. Voluntary Nature of this Research

Participation in this study is entirely voluntary. You do not have to do this, and you can refuse to answer any question or quit at any time. Deciding not to participate or not answering any of the questions will have no effect on any benefits you're entitled to, like your health care, or your employment or grades. You can withdraw from this study at any time without penalty.

APPENDIX C
Coding Matrix

1st Cycle Coding Matrix--Leadership T Competencies

Frequency of Competency Mentions by Interviewee Participants 1-14

	Part 1	Part 2	Part 3	Part 4	Part 5	Part 6	Part 7
	MA-1 (1) MI-1 (3) MI-2 (1) MI-3 (1) BMC-1 (2) BMC-2 (1) BMC-3 (2) CM-1 (2) CM-2 (3) TL-1 (4) TL-2 (3) TL-4 (4) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (1) MA-2 (1) MA-3 (1) MI-1 (2) MI-2 (2) MI-3 (1) BMC-1 (3) CP-1 (6) CP-2 (6) CP-3 (7) CP-4 (9) CM-1 (1) CM-2 (1) TL-2 (1) TL-4 (2) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (6) MA-2 (4) MA-3 (18) MI-1 (9) MI-2 (8) MI-3 (7) CP-2 (1) TL-1 (2) TL-2 (3) TL-4 (2) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (1) MA-2 (5) MI-1 (5) MI-2 (7) MI-3 (7) CP-1 (3) CP-2 (3) CP-3 (2) TL-1 (1) TL-2 (2) TL-4 (4) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (9) MA-3 (1) MI-1 (2) MI-2 (2) CP-1 (5) CP-2 (5) CP-3 (8) CP-4 (2) TL-1 (1) TL-2 (2) TL-4 (4) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (1) MA-3 (1) MI-2 (1) MI-3 (1) BMC-2 (3) BMC-3 (5) CP-1 (1) CP-2 (1) CP-3 (1) CM-1 (4) CM-2 (4) TL-1 (1) TL-2 (2) TL-4 (4) PL-2 (3) TL-2 (2) TL-4 (4) PL-2 (3) TL-4 (4) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (6) MA-2 (8) MA-3 (7) MI-1 (4) MI-2 (4) MI-3 (4) BMC-3 (1) CM-1 (1) TL-1 (1) TL-2 (2) TL-4 (4) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)
	Part 8	Part 9	Part 10	Part 11	Part 12	Part 13	Part 14
	MI-2 (2) MI-1 (1) MI-3 (1) BMC-3 (1) CP-1 (2) CP-3 (1) TL-1 (1) TL-2 (2) TL-4 (4) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	BMC-1 (1) CP-1 (2) CP-2 (2) CP-3 (2) CP-4 (2) TL-1 (1) TL-2 (2) TL-4 (4) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (1) MA-3 (1) MI-1 (2) MI-2 (1) MI-3 (3) CP-3 (1) TL-1 (1) TL-2 (2) TL-4 (4) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (1) MA-2 (1) MI-1 (1) MI-3 (2) BMC-2 (1) BMC-3 (2) CP-1 (3) CM-1 (1) CM-2 (1) TL-1 (1) TL-2 (2) TL-4 (4) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (3) MA-2 (4) MA-3 (2) MI-1 (1) MI-2 (1) CP-2 (2) CP-3 (4) CP-4 (1) TL-1 (1) TL-2 (2) TL-4 (4) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (2) MA-2 (3) MA-3 (3) MI-1 (2) MI-2 (1) MI-3 (2) BMC-2 (4) BMC-3 (3) CP-1 (1) CM-1 (1) CM-2 (3) TL-1 (1) TL-2 (2) TL-4 (4) PL-2 (3) TL-4 (4) PL-2 (3) PL-4 (3) RL-1 (2) RL-2 (2) RL-5 (3)	MA-1 (6) MA-2 (2) MA-3 (2) MI-1 (3) MI-2 (2) MI-3 (2) BMC-1 (1) BMC-2 (1) BMC-3 (1) CP-1 (1) CP-2 (1) CP-3 (1) CM-1 (7) CM-2 (7) TL-1 (1) TL-4 (4) PL-2 (3) PL-4 (3) RL-5 (3)

Competency Codes—combines below Category & Competency codes with frequency mentions in parentheses:

Marketing Acumen (MA)

1. Business & Financial Acumen (MA-1)
2. 4Ps & Marketing Mix (MA-2)
3. Analytic Ability (MA-3)

Market Insight (MI)

1. Market & Competitive Knowledge (MI-1)
2. Customer Insight (MI-2)
3. Segmentation (MI-3)

Brand & Marketing Communications (BMC)

1. Brand Management (BMC-1)
2. Communication Channels (BMC-2)
3. Marketing Communications (BMC-3)

Category Planning (CP)

1. Value Proposition (CP-1)
2. Product Guidance (CP-2)
3. Value Capture Strategy (CP-3)
4. LifeCycle Management (CP-4)

Channel Management (CM)

1. Routes to Market (CM-1)
2. Product Guidance (CM-2)

Thought Leadership (TL)

1. Strategic Agility (TL-1)
2. User-Centered Innovation (TL-2)
3. Entrepreneurial (TL-3)
4. Global Mindset (TL-4)

People Leadership (PL)

1. Authenticity (PL-1)
2. Accountability (PL-2)
3. Inspirational Leader (PL-3)
4. Relationship Building (PL-4)
5. Diversity (PL-5)
6. People Development (PL-6)
7. Hiring Talent (PL-7)

Results Leadership (RL)

1. Know the Customer (RL-1)
2. Know the Market/Competition (RL-2)
3. Decisive (RL-3)
4. Proactive (RL-4)
5. Drive for Results (RL-5)