

A Case Study of Degree Completion Graduates' Transition
from Technician to Manager

A DISSERTATION
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL
OF THE UNIVERSITY OF MINNESOTA
BY

Wendy Dittmann

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF EDUCATION
in Work and Human Resource Education

Dr. Theodore Lewis

June 2009

© Wendy Dittmann, 2009

Acknowledgements

I am grateful to the support offered by my advisor, Dr. Theodore Lewis. He offered strong direction and support during my coursework and dissertation. My chair, Dr. Rosemarie Park, stepped in to help with advice and guidance, and I am thankful to her. Dr. Darwin Hendel and Dr. Shari Peterson provided me with invaluable suggestions along the way. The direction of this study was influenced by their expertise.

I also wish to thank the Budget, Planning and Analysis Office of the University of Wisconsin-Stout for guiding me to the proper data for this research. Diane Longsdorf was a superb transcriptionist and made this seem possible. UW-Stout, and the College of Management, also supported this study. Dr. Donna Stewart is commended for launching the first incarnation of this degree and supporting its delivery today, as department chair and associate dean. Dr. Howard Lee carried the degree into the 21st Century. Personally my dean, Dr. Carol Mooney and Provost, Dr. Julie Furst-Bowe have made this worthwhile.

Throughout my degree program my colleagues, friends, and family provided support. My colleagues shared their successful journeys giving me hope. Those in the throes together found support and shared resources. My friends provided welcomed and needed diversion: breakfast, books and babies. My family was wonderfully supportive, although Laura wasn't sure until my defense just what her mother was doing. Bill picked up the slack and our family survived this too.

Abstract

This narrative case study sought to describe the experience of transition from technician to manager of graduates of a degree completion program at the University of Wisconsin Stout. It also sought to describe the career self-management practiced by these graduates that determined their current employment status. The research questions for this study asked, *What is the experience of a graduate from the B.S. in Management from UW-Stout who made the transition from technician to manager? And How did the graduate direct career self-management?* In seeking the answer to those questions 20 graduates of the degree completion program who had experienced the transition from technician to manager were interviewed. Site visits were made to the workplaces of two managers. University documents relating to the degree and its graduates were reviewed.

The interview data was analyzed and the story of the managers' career self-direction and transition to manager was revealed. The graduates had embarked on a protean career, boundaryless as well. They moved from technical education to technical jobs. Once they decided to return to UW-Stout to earn a B.S. in Management (or Industrial Management) they explained why they entered a degree program and their expectations. They tell the story of being a working adult in college and how their decisions affected their lives. The managers studied here relate their experiences on the job hunt and on the job.

The findings of this study may be used by others seeking a more protean career, universities hoping to meet the needs of adult students, and industry attempting to meet the needs of incumbent workers.

Table of Contents

Acknowledgements	i
Abstract.....	ii
Table of Contents	iv
List of Tables	vii
Chapter 1 Introduction.....	1
Statement of the problem	1
Background of the Problem	2
Organizational Benefits and Risks of Career Self-Management	6
Employee Benefits and Risks of Career Self-Management.....	7
Theoretical Background.....	8
Purpose of the Study	10
Research Questions:	10
Significance of the study.....	10
Definitions of terms	11
Limitations of the Study.....	12
Overview.....	12
Chapter 2 Review of Literature	14
Degree Completion Programs.....	14
Transition to Management	20
Previous Studies of Transition	24
Career Development Theory and Vocational Adjustment.....	28
The New Career Model.....	31
Career Adjustment Related to the Organization	37
Mid-career	41
Chapter Summary	42
Chapter 3 Methodology	44
Introduction.....	44
Research Questions:	45
Research Methodology/Research Design	48
Interviews.....	51

Interview Protocol.....	52
Institutional Review Board Approval	56
Selection of Participants	56
Role of the Investigator.....	62
Instrumentation	64
Analyzing the Data	67
Assumptions and Limitations of Study.....	73
Summary	75
Chapter 4 Results.....	77
Background.....	77
Introducing the themes.....	80
The early years: Finding an identity – a passion for the technical.....	80
First work experience.....	88
Building their skills.....	93
Different from their fellow workers.....	96
The need for more	98
Balancing college and life.....	109
Putting the degree to work	115
Building on experiences.....	120
Being a manager.....	126
Facing the challenges	128
Job Fragility Redux.....	133
The story retold.....	141
Chapter 5 Discussion, Implications and Reflections.....	144
Discussion of the findings.....	145
Careers	145
The early years: Finding an identity – a passion for the technical.....	148
Building Their Skills.....	149
Different from fellow workers	150
The need for more	150
Balancing college and life.....	151
Putting the degree to work	152

Job Fragility	155
Implications of the finding.....	156
Recommendations for further study.....	157
Reflections	158
References	160

List of Tables

Table 1 Participants	58
Table 2 Enrollments/Graduates of the BS in Management	74

Chapter 1 Introduction

Badawy (1995) wrote that the transition of “technologists into managers is one of the most formidable tasks and challenges facing management in the twenty-first century” (p. 4). The University of Wisconsin-Stout began the 21st century delivering a baccalaureate degree completion program, a Bachelor of Science in Industrial Management, building on a technical college degree.

Statement of the problem

Employers recognized the baccalaureate degree as necessary for entry-level managerial positions (Kozlowski, 2002). The degree, a Bachelor of Science in Industrial Management, attempted to prepare the technician, through career self-management and education, to obtain management skills and position themselves to be eligible to become a manager. The degree positioned graduates for the transition from technical worker to manager, but if that transition was made, the experiences of the graduates’ transition were not known.

This study attempted to describe that experience. Chapter 1 introduces the research study and describes the background information. The research problem and the purpose of the study are explained. The questions asked by this research are presented. The significance of the study is offered and relevant terms defined. The assumptions and limitations of the study are introduced in this chapter as well.

Background of the Problem

After completing a baccalaureate degree that builds on the technical college associates degree, graduates may transition into managerial positions. These graduates' experiences and decisions made in determining their career path and the transition to management were studied.

Plant closings, mergers, and the economic conditions have created an uneasy employment climate today (Hood, 1990; Patton & McMahon, 2006). Judy and D'Amico (1997) enumerated forces changing the landscape of work in the United States. They listed the rate of technological change as the first, listing the innovation on all levels of products, processes and delivery. Second, the world economy has become increasingly important. This change, they related, would benefit the highly skilled segment of the American economy. A third change they predicted was the graying of the American workforce. There will be many job opportunities for those prepared to advance. Some workers have chosen to prepare for their employment futures through career self-management, proactively and deliberately taking steps to control career choices (Hall, 2004; Hall & Moss, 1998; Thamhain, 1991).

Eisner (2000) presented five high tech *forces* that would influence employment in the 21st Century. He wrote that the information available to us is growing and the ways we use that information is changing how we behave. Artificial intelligence is on the horizon, and it is unknown how that would affect our outputs. Second, he wrote that the need for speed and responsiveness is higher

than ever before. We are limited in how fast we can process information, but the demand for more and faster information is in the forefront. The third force Eisner describes is competitiveness. Competitiveness is global and the way information is handled increases competitiveness. Force number four is “new work patterns and environments” (p. 47). Off-site work places, variable hours, and the entrepreneurial nature of work will change the workplace. The fifth force he describes is the change in loyalty and leverage. He describes his experience in the 1950’s accepting a secure job with IBM. Today, that same job is no longer secure. Down-sizing and cost-cutting has changed the employment environment. The loyalty between the labor force and the company has been downgraded.

Careers are no longer tied to the organization (Arthur & Rousseau, 1996; Hall & Moss, 1998). The career contract is the understanding of the employer-employee relationship as understood by both parties (Hall & Moss, 1998). Globally, the career contract between worker and organization does not exist, and in reality may never have existed. Preparing for a boundaryless career, one not tied to an organization, but tied to self, incumbent technical workers may choose life-long learning and return to school to obtain a baccalaureate degree (B. Brown, 1999; Arthur & Rousseau, 1996).

The protean career is one which the individual, not the organization, determines its course (Hall & Moss, 1998). Proteus is the name of the Greek god who could change shape (Hall & Mirvis, 1996). A person with a protean career can change shape by changing employer or job, or even leaving the paid

workforce. The traditional linear career at one organization is unlikely, especially so in these turbulent times.

Career self-management, taking steps to control career choices, is a vocational behavior response to the employment conditions facing the industry today (King, 2004). A career is the property of the individual, rather than the organization (Inkson & Arthur, 2001; King, 2004). While career self-management is an attempt to gain control of one's career, it is unlikely a person will have total control of something so dependent on others (King, 2004).

Career self-management can include formal education to create flexibility of job or assignment (Hood, 1990; Ruben, 2003). Developing flexibility within the workforce is an organizational strategy to create efficiency and effectiveness (Ito & Brotheridge, 2005; Pfeffer, 2005). Flexibility allows workers to take on new tasks, jobs or responsibilities. Maintaining organizational knowledge, skills and abilities (KSAs) provides efficiency while technologies continue to change (Ito & Brotheridge, 2005). Incumbent technical workers are a source of the technically trained managers.

Many of the incumbent workers have technical college backgrounds. The State of Wisconsin technical colleges graduate over 20,000 technically prepared workers annually (WTCS, 2008). Globally, more secondary technically educated students are continuing their education at the post-secondary level than in the past (Laird, Chen, & Levesque, 2000; Pair, 1994). The technical college students in the State of Wisconsin are following that trend, and over 250 students each year

for the past seven years have transferred from Wisconsin Technical Colleges to UW-Stout, seeking a baccalaureate degree (UW-Stout, 2008).

Carnevale (2000) wrote that jobs requiring advanced skills, which he defined as requiring a bachelor's degree or more education, are forecast to grow faster than less skilled jobs. These are jobs that also pay more than other jobs. The attainment of a college degree more likely leads to career advancement and economic success. The technician looks to a baccalaureate degree in order to increase his/her opportunities for continued growth in earning potential and employment mobility (Ito & Brotheridge, 2005; Ruben, 2003). The COBE report (2005) related that there is a reward for educational attainment. The greater the educational attainment, the greater the income expected during a person's lifetime. The income for a college graduate averaged \$51,000 while a high school graduate could expect \$27,000 annually. Over a lifetime the college graduate can be expected to earn almost double the income of a high school graduate.

The career pathway for the technical worker to manager is open in the United States compared to the Germany model of clearly defined training before achieving the "Meister" status (A. Brown, 1999). The UK has an open model as well, with employees being recruited into a supervisory or management position without formal training. In both the U.S. and the UK, after promotion to a management position, the organization or employer is responsible for training the new manager, often on the soft-skills in contrast to German technical training. A National Examining Board for Supervisory Management and an Institute of Supervisory Management exist in the UK which both offer certification, or

qualification, of supervisors. The number of individuals seeking these credentials is low, with no industrial incentive. The U.S. also has organizations which certify in management, but there is little incentive in this country to be certified in general management skills.

Organizational Benefits and Risks of Career Self-Management

Organizations recognize the employee as being a competitive advantage (Chakravarthy, McEvily, Doz, & Rau, 2003; Pfeffer, 2005). Developing the internal resources of the organization, the employees in this case, an organization positions itself strategically (Chakratharky et al, 2003). The technically educated worker brings industrial knowledge to the job. Career self-management prepares a worker for advancement or change, and promotion from within assures that the existing technical knowledge, skills and abilities (KSAs) remain within the organization (Chakravathrhy et al, 2003; Ito & Brotheridge, 2000; Pfeffer, 2005). The newly obtained managerial KSAs enhance the organization's ability to meet their needs (Roehling, Cavanaugh, Moynihan, & Boswell, 2000). With the competition for labor, talent management becomes a strategy for organizational success (Ito & Brotheridge, 2000).

Creating workforce flexibility provides the opportunity for advancement within the present organization or outside of it (Ito & Brotheridge, 2005). Commitment to the organization maintains the relationship between the employer and the employee, but the employee is now prepared to make a change, including

a change of employer. Organizations may be concerned that economics might overpower the commitment to the present employer.

Employee Benefits and Risks of Career Self-Management

Employee security depends on the employee's ability to adapt to change and take advantage of opportunities presented (Ito & Brotheridge, 2005; Roehling et al., 2000). By taking on at least part of the task of career development, rather than leaving it to the organization, the employee asserts agency (Inkson & Arthur, 2001). The self-managed career pathway created by the worker allows advancement within or outside the organization.

Human Capital Theory (Becker, 1975) proposed that there are economic and professional benefits of education which assist in explaining occupational behavior. By investing finite resources, time, energy and money, the individual hopes to maximize his/her return. The investment will increase personal income and well being. Drucker (1993) described knowledge as the resource having more effect on economic success than any other. Blau and Duncan (1967) hold that occupational attainment is directly related to the level of education. The increased availability of baccalaureate degrees designed for two-year degree holders creates a previous undefined career pathway (Hull, 2005). Changes in the workplace lead to changes in the way our educational systems prepare workers.

Career self-management risks exist for the employee (Ito & Brotheridge, 2005). Security is gained by employee adaptability rather than by organizational benevolence. Earning a baccalaureate degree requires an investment of time and

money. The returns may be a more prestigious job, increased income, or job security, but these are not guaranteed.

Theoretical Background

The theoretical basis of this study is Crites' theory of vocational adjustment. Crites (1969) defined vocational behavior as "all responses the individual makes in choosing and adjusting to an occupation" (p. 16). Further, he defined vocational adjustment as the change of "state or condition of the individual in relation to the world of work at any given moment after he has entered an occupation" (p. 325). An educational decision to complete a bachelor's degree is a vocational adjustment. The new condition of the graduate would be the baccalaureate attainment in relation to his or her career. King (2004) wrote that while the language used differs from that we use in career self-management, Crites' theory holds today.

Crites (1969) wrote that an aspect of vocational adjustment is that it is motivated by the desire to attain vocational satisfaction and success. An individual may be satisfied with his/her job, but have other vocational goals. The worker makes adjustments in order to reach the goals. Success and satisfaction are the two components of career adjustment (Arthur, Hall & Lawrence, 1989; Crites 1969). In this study, the attainment of a baccalaureate degree increased the opportunity for the individual to become a manager, with the intent of success and satisfaction. The decision to attain the degree was made with these goals in mind.

Crites' supposition of vocational adjustment is further defined by Super's career development theory. Super (1957) defined career as a series of jobs held during a person's life. Career development, according to Super, patterns itself on human development and is evolutionary (Osipow & Fitzgerald, 1996). The goal of career adjustment is success and satisfaction. Cytrynbaum and Crites (1989) questioned the lack of correlation between the two goals, but saw correlation when success and satisfaction were viewed as a function of career development.

Satisfaction levels follow a pattern during the career stages: establishment, management and decline (Cytrynbaum & Crites, 1989). Satisfaction is at first high, then dips and rises once again, in the establishment phase of a career. The management career stage then sees a slow decline of satisfaction. Success, on the other hand, begins low at the beginning of the career and builds over time. There seems to be little correlation between success and satisfaction, until the ages of 35-40 years old. It is interesting to note that the average age of a graduate of the program through 2006 studied was in the late thirties (University of Wisconsin-Stout, internal document).

Super (1980) defined his theory as segmented, with influences coming from development, social, and phenomenological psychology coupled with learning theory and self-concept. He pointed out the flaws in his theories and created new ones. The different stages of life, and the different spectrums of our lives, influence decisions an individual makes about career choice and career adjustment. The decision made to return to college in order to attain a degree is influenced by the stage in life and spectrum of life; family, talents, or ambition,

for instance. Self-directed career development is a vocational adjustment as defined by Crites fitting the Super model of career theory (King, 2004).

Additional career development theories will be explored in the literature review.

Purpose of the Study

The purpose of this study was to understand, from their own accounts, how graduates of the B.S. in Management program at UW-Stout made the transition from technician to manager, and career adjustments made by them as they did so.

Research Questions:

1. What is the experience of a graduate from the B.S. in Management from UW-Stout who made the transition from technician to manager?
2. How did the graduate direct career self-management?

These basic questions informed interview protocols intended to develop an understanding of the experience of the transition. To identify the challenges faced in the transition, the protocol allowed for interviews with follow-up questions aimed at unearthing deeply considered responses. The experiences examined not just work-related experience, but experiences in the personal life of the individual.

Significance of the study

The educational choice made upon high school graduation should not be the last choice a person has in education level or direction. Grubb (1996) argued that vocational education is not a terminal program for those not meant for a

college degree. It is one step in the educational journey. The transition of technically prepared workers to technically prepared managers may be the competitive advantage organizations are striving for (Ito & Brotheridge, 2005). There is an economic advantage to maintaining an incumbent worker in a new position in an organization and within an industry.

Technical college graduates bring technical experience to the workforce and to the management in a technical environment. Degree completion programs designed for technical college graduates may have played a role in the career self-management of these graduates. Opportunities for these graduates in industry are expanded through these, and other, educational programs.

Definitions of terms

Career: “A course of professional life or employment, which affords opportunity for progress or advancement in the world” (OED online, 1989, definition 5b).

Degree completion program. “Designed specifically to meet the needs of the working adult who, having acquired sixty or more college credit hours during previous enrollments, is returning to school after an extended period of absence to obtain a baccalaureate degree” (Taylor, 2000).

Manager: “A person who organizes, directs, or plots something; a person who regulates or deploys resources” (OED online, 2008, definition 1).

Technician: “A person qualified in the practical application of one of the sciences or mechanical arts; now esp., a person whose job is to carry out practical work in a laboratory or to give assistance with technical equipment” (OED online, 1989, definition 1).

Transition: The passage from an earlier to a later stage of development or formation (OED online, 1989, definition 4).

Limitations of the Study

Yin (2009) wrote that a case study illustrates decisions: the why and how of decisions. The how and why are explanatory. This case study attempts to describe the transition and career decisions made by graduates of a degree completion baccalaureate program at the University of Wisconsin-Stout. It looks at only one program at one university.

Interviews were used to collect data in this study, relying on the participants’ memory and perception of the experience described. Additionally the ability of the interviewer to draw out thick data is imperative. The interviewer had minimal experience in this area. These limitations and others will be further developed in Chapter 3.

Overview

This chapter has set forth the problem and its context. Chapter Two reviews career theory literature, literature on the transition from technician to manager, and career self-management. It includes information about degree

completion programs. Chapter Three gives the setting of the study and describe the methodology. Chapter Four relates the findings. It retells the story after developing the categories presented in the data. Chapter Five summarizes the study, relates the findings to literature, and offers implications of the study. It includes recommendations for future study and personal reflections on the research.

Chapter 2

Review of Literature

This chapter reviews the literature of the transition from technician to manager and vocational adjustment or career development, specifically, self-directed career development. Career theory is reviewed. Baccalaureate degree completion programs developed for the technician are described.

“Management is a practice that has to blend a good deal of craft (experience) with a certain amount of art (insight) and some science (analysis)” (Mintzberg, 2004, p.1). B. Brown (1999) has written of the evolutionary nature of careers, while Murdock (1999) wrote of the changing demands in the workforce. Today people change careers and careers change. The practice of management was initiated by engineers and technologists and developed into the broad field we know today (Seethamraju & Agrawal, 1999). One dimension of the management literature is the transition of engineers to managers (Biddle & Roberts, 1994; Hood, 1990; Seethamraju & Agrawal, 1999; Thamhain, 1991). There is relevance in such studies for the one being reported. Subjects in this study are technologists, not engineers. They have technical college degrees followed with a degree completion model baccalaureate.

Degree Completion Programs

Degree completion baccalaureate degrees are designed to build on a technical/vocational Associate of Applied Science degree (A.A.S.). Vocational

education benefits include “significant consequences for the nation’s workforce” (Silverberg, Warner, Goodwin, & Fong, 2002). The degree completion baccalaureate seeks to provide a seamless, articulated education system for a technical college graduate. One third of the students in a technical track education intend to transfer to a university for a baccalaureate degree (Townsend, 2002). Place-bound adult students are not admitted as freshmen, but transfer into the program after completing a program at a technical college or with significant technical work experience (Dittmann, 2007).

Typically, a completed A.A.S. degree from a technical college provides approximately one-third to one-half of the credits needed for the baccalaureate. A degree completion program does not evaluate each individual credit, but accepts the technical credits of a program as a block of credits. Murdock (1999) referred to this transferability as “enlightenment in higher education” (p. 27). Both educational systems, the technical college and the university, are valued in a degree completion model which effectively eliminates the competitive nature of the separate systems. Before these degrees were established students could transfer all credits earned at a regionally accredited technical college, but the majority would not apply toward a degree program at the university (Carnevale, 2002).

The American Association of Community Colleges (AACCC) Position Statement on the Associate Degree (Board of Directors, 1998) holds that the primary objective of an Associate degree is employment, but there is a possibility of transfer to a baccalaureate program. The purpose of degree completion

programs is to “recognize this dual possibility and to encourage students to recognize the long-term career possibilities that continued academic study would create” (Board of Directors, 1998, ¶ 9).

Hoachlander (1999) considered that definition and asked,

Is it sensible, or even possible, to conceive of a postsecondary program of career and technical education that is simultaneously limited to a pre-baccalaureate occupational education while also providing a clear systematic pathway from two-year to four-year college and continued upward mobility in the work world (p. 3)?

The degree completion baccalaureate holds that it is both possible and sensible. Education itself is not enough. Education joined with life experience creates a better manager because of the ability to manage within the context of the job (Mintzberg, 2004). The education of a technically prepared worker creates that better manager. Alan Greenspan, Chairman of the Federal Reserve, remarked at the 1999 Annual Meeting of the American Council on Education that higher education needed to be the world’s leader in “meeting the challenge to educate workers” (Federal Reserve, 1999, ¶ 22). The technical background of the incumbent worker, coupled with the baccalaureate degree, intends to meet industry’s need for the technically trained manager.

University of Wisconsin-Stout has offered a degree completion program, the Bachelor of Science in Industrial Management since May 2000, revised in 2006 to a Bachelor of Science in Management. Hoachlander (1999) has written of

the educational need beyond vocational education and for baccalaureate degree acquisition. The program authorization for the Bachelor of Science in Industrial Management, presented to the UW System in 1999, proposed the degree to meet industry's need for skilled professionals with the ability to deal with both technical and managerial issues (Stewart, 1999). The revision of the program in 2006 to a B.S. in Management (BSM) reiterated this purpose.

Degree completion students fit the category of adult/non-traditional student as defined by the National Center for Education Statistics (2002). They meet several of the criteria including: attending school part-time, working full-time while enrolled, did not enter postsecondary education in the same year graduated from high school, has dependents, and is financially independent among others. Noel-Levitz (2008) reported a 186 percent growth of adult learners enrolled in four-year institutions in the years between 1970 and 2005 and estimated the adult student population will grow another 20 percent in the next 10 years. Eduventures (2008a) reported an increasing demand for degree completion programs, including in Wisconsin. Of the 23 universities researched by Eduventures only five offered degree completion programs.

The 20,000 annual graduates of the Wisconsin technical colleges make up the prospective student population of degree completion programs. Wisconsin Technical Colleges and the University of Wisconsin System have nearly 500 articulation agreements in place (WTCS, 2007), although not all of those fit the definition of degree completion. Additionally, over 20 other institutions have articulated programs with the technical colleges in Wisconsin. Degree completion

programs attract those students bringing credits to the degree and hoping to leverage previous education to a baccalaureate (Eduventures, 2007). Over three-quarters of those surveyed felt it was advantageous to use previously earned credits toward the baccalaureate degree.

Those seeking degree completion are busy people with jobs and often with families (Eduventures, 2007). They choose academic programs that offer transferability of credits, have classes with valuable content, and insist on their tuition being a worthwhile investment (Noel-Levitz, 2008). Their choice reflects an academic reputation that will enhance their future employment opportunities. Males are more likely than females to choose education with an aim to secure or advance their careers (Hoyt & Ellred, 2008). Spitzer (2001) wrote that adult students are more decided about their careers, and their educational decisions and careers are intertwined.

Thirty percent of the workforce in the United States are in jobs that require a degree (B. Brown, 1999). Hood (1990) presented steps to prepare for management which include “acquiring formal management education” (p. 27). Thamhain (1991) included steps for the individual to prepare for a management position which included taking courses and earning a degree. Speed of social change, knowledge explosion, and technological advances have increased the need for education for the manager (Cervero, 2000). Today the importance of a college degree is recognized by business. In 1973, only 16% of workers aged 30-59 had a college degree, while in 1998, 30% of these workers had college degrees. The educational level required by employers has increased in the past

quarter century. The educational level of managers and professionals grew from 38% with a college degree in 1973, to 52% in 1998 (Carnevale, 2000). Employers are recognizing the baccalaureate degree as necessary for entry-level managerial positions (Kozlowski, 2002). A technical college instructor bemoaned the devaluation of the technical college degree, "It's difficult to get in the door even with a degree. Every job I've seen, they're looking for (someone with a bachelors degree)" (Amour, 2003, p. B01).

In 2004, Wisconsin ranked below the national average of population holding at least a baccalaureate degree, 23.8% compared to the national average of 26.6% (Chronicle of Higher Education Almanac, 2005). A perceived consequence of the lower average is that per capita income in Wisconsin is \$32,157 as compared to the national average of \$32,937. Raising the percentage of the population with at least a baccalaureate degree is an attempt to raise the per capita income in the state. Raising the per capita income of the state to the national average would increase the income in the state by \$7.7 billion and increase the tax revenue by \$388 million (NorthStar, 2005).

Eduventures (2007) reported that one purpose in seeking the degree is to increase the household income. Another motivator was "to improve my . . . pay in my current job" (p. 3). Wisconsin ranks above the national average in the percentage of the population with associate degrees (Chronicle of Higher Education Almanac, 2005), making that segment of the workforce an obvious target to increase the educational standing to the baccalaureate level. Those seeking a degree completion bachelor's degree had lower household incomes than

those seeking masters' degrees or professional development credits (Eduventures, 2007).

Transition to Management

The workforce of the Western hemisphere has professionalized itself, improving the professions and the field of management (Cervero, 2000). Roberts and Biddle (1994) wrote about shifting from one track to another; the shift from the technical work force to the management role. Track switching may be seen as the opportunity to increase economic and professional standing. Seethamraju and Agrawai (1999) reported that gaining management qualifications increased the probability the technologist would receive a promotion to a management job. While they reported on post-graduate education, undergraduate degree completion may provide the same result.

Workers making the transition from technologist to manager often self-identify (Aucoin, 2002). They could contribute to the organization in either a technical or managerial role, but choose to make a move to management. The transition is not an event, but rather happens over time. Individuals prepare themselves either experientially or educationally to make the shift. The technical education they received did not prepare them for management positions and further education in management competencies increases the chance of successful transition (Aucoin, 2002; Howard, 2003; Seethamraju & Agrawai, 1999). The education needed for jobs varies, but high paying and continuing jobs requiring

less than a baccalaureate degree are fading from the economy (Hoachlander, 1999).

The move from technician to management is often seen as a promotion or career advancement (Osipow & Fitzgerald, 1996; Roberts & Biddle, 1994). It is generally accepted that managers are more highly paid than technologists (Roberts & Biddle, 1994). Additionally, the average annual income is 50% higher for college graduates than the average earnings of those with only a high school diploma, according to the U.S. Department of Education (Amour, 2003).

Promotion to a management position has become more competitive because of the flattening of organizational structure (Hall, 2004; Sullivan, 1999). Firms have down-sized, including the number of managers, in response to the changing economic environment. The way organizations function now, by their use of work-teams for instance, has lessened the role of the manager. A technician may be more capable of reaching technical goals than the broad organizational goals managers must reach (Aucoin, 2002; Roberts & Biddle, 1994). The shift is from the specialist to a generalist (Hood, 1990) and requires a different way to approach a subject. Scott, O'Shaughnessy and Cappelli (1996) found firms valued the generalist over the specialist because of the changed work environment, technologies, and team-based work applications. There is a need to develop the skills of a generalist in the specially trained technologist.

A shortage of technologists and managers with technical knowledge exists (Badawy, 1995; Hood, 1990). There is an advantage for a technically trained

person managing the work of technical employees (Biddle & Roberts 1994; Mintzberg, 2004). Competent technicians would be likely to see themselves as competent managers and may likely be identified by the organization as potential managers (Lewey & Davis, 1987; Roberts & Biddle, 1994; Seethamraju & Agrawal, 1999). Managers often are promoted from the ranks (Biddle & Roberts; 1994; Hood, 1990; Thamhain, 1991). When companies choose to promote a technician to a management role they often choose a good technician feeling they will get a good manager (Biddle & Roberts, 1994; Thamhain, 1991). Thamhain wrote that “managers can be developed” (p. 67), with the key success factor being the person’s decision to make the transition.

Inkson and Arthur (2001) predicted the workforce would become more educated, more professional, and more open to challenges. Education plays a role in career decisions allowing the technically trained individual to seek a professional and challenging career choice. Lewey and Davis (1987) suggest a contradiction may occur between the technical employee and the promotion to manager, but it is a transition that is sought.

The transition may present pitfalls or challenges (Aucoin, 2002; Badawy, 1995; Hood, 1990; Seethamraju & Agrawai, 1999). New managers are often surprised by the scope of the job change, as technical management is even more complex than other types of management (Sullivan 1999; Thamhain, 1991). The technician can perform the tasks of the technical job, but may not be able to perform the tasks required to be a good manager (Aucoin, 2002; Hood, 1990).

The skills required for each position are different and the transition calls for the development of management skills.

Formal education preparing technologists does not include preparation for management (Thamhain, 1991). Drucker (1977) wrote that management skills needed are “planning, organizing, integrating, measuring and developing people” (p. 4). Mintzberg (2004) lists three areas of skills needed as a manager; dealing with people, information gathering and sharing, and decision making. Aucoin (2002) lists the skills needed as including the technical, administrative and personnel functions of an organization. Communication skills, personnel management skills and understanding the organizational environment were skills listed as necessary for managers to obtain (Hood, 1990; Howard, 2005; Seethamraju and Agrawal, 1999). Aucoin (2002) wrote that the technically trained individual may find it difficult to deal with human behavior because human behavior does not have the rigidity with which the engineer is used to dealing. These are all skills that would enhance the successful transition from technologist to manager.

The transition from technologist to manager, in order to be considered successful, needs to be completed without major setbacks (Hood, 1990). A perceived higher status within an organization for the technical worker allows for an easier transition to management (Seethamraju and Agrawal, 1999). Zabusky and Barley (1996) wrote that technicians are more likely to value achievement more than advancement. They value themselves as experts in their field which

rewards them more than promotions. However, financial and professional rewards are perceived to come with advancement.

Previous Studies of Transition

Several previously completed research studies relate to this study. Seethamraju and Agrawal (1999) reported on a mixed methods study of engineers in Australia. The assumption held was that engineers make poor managers and the study attempted to identify the reasons, both individual and organizational, for this inadequacy. The survey instrument was developed after exploratory interviews with engineers and engineering managers. The survey was sent to members of the professional organization, Institution of Engineers Australia, and the final N equaled 756 civil, mechanical, and electrical engineers. The study focused on the change in the role and challenges faced during the transition. The findings attribute success in the transition from engineer to manager to individual personality, organizational structure, and educational factors. Obtaining management education allowed for a more successful transition and continued success.

Howard (2003) studied the transition of engineer to manager with an eye to the difficulties in the transition process and the conditions existing making that transition difficult. This phenomenological study explored the critical incidents, as defined by the subject, of the transition. Selection criteria included that the manager would have no business or management degree before the transition. Five engineering managers from an aerospace company in New York were

interviewed and nine themes were developed. The three major themes were the setting of priorities, relational changes, and leaving the technical work to others. The study's recommendations suggested that skills needed by engineers transitioning into management be included in formal or informal educational experiences.

Biddle and Roberts (1994) tested a model of self-selection and job matching in the transition, track switching, from technician to manager. Determining the productivity of the technician and manager empirically, the researchers hypothesized a positive correlation between the performance as a technician and the performance as a manager. They analyzed data from the National Science Foundation's longitudinal Survey of Natural Scientists and Engineers, with a final sample size of 4,179. They predicted managers would be drawn from the higher paid technicians and successful technicians would become successful managers. The data bore this out. A tournament model of career development and the human capital theory were offered as alternatives to track switching, although neither is supported in the findings at the same strength as the job matching model. In the technical fields studied, there was a positive correlation between success factors in the two tracks.

Younts (2006) studied the promotion of technical workers to management assignments within the Department of Defense of the United States government. Five Department of Defense managers who had successfully moved from a Technical Specialist rank were interviewed by phone or email to determine the skills or influences needed for a successful transition to a rank of Program

Manager. The focus of the study was management skills, acquiring them and applying them. The areas identified included job expectations, the number of issues facing the new manager, relationships, and assigning tasks instead of completing them. This study, along with Howard (2003), confirmed the transition as a process rather than an event.

These four studies reflect the breadth of the study of transition from technical worker to management, engineer to engineering manager. Seethamraju and Agrawal (1999) and Howard (2005) assumed the transition to be fraught with problems and offered education as one of the routes to a successful transition. Biddle and Roberts (1994) correlated the successful technician with the successful manager. Younts (2006) viewed the transition as a process and sought to determine the skills needed for success. The transition from technologist to manager presents many areas of further study.

A fifth study looked at the transition to management. Hill (2005) wrote of the experience of 19 sales and marketing managers during the first year of their transition into management. The shift of focus from their individual responsibilities to the broad organizational objectives happened not immediately, but over time. Resources Hill noted as available during the transition include the individual's previous work history. The new manager brings that experience to the new job, which gives the transitioned manager an advantage over the inexperienced manager. Current and past supervisors have lived the experience and can provide resources for the new manager (Hill, 2005). Peers, current and past, hold information the new manager can access. Training or education in the

management field also provides a route to the needed KSAs for the position. After the study was complete, Hill continued contact with several of the managers studied. From that continued contact she estimated the transition was complete after a period of two to three years.

Career changes are occurring more often and at faster rate (King, 2004). These studies explored some of the aspects of the transition, and other opportunities for research exist.

Career

Careers often define who we are, and how we view our worth (Inkson & Arthur, 2001). Some vagueness remains in the definition of career and affects how we think and act about careers (Patton & McMahon, 2006). The traditional definition of the term career, which has been used interchangeably with job and occupation, only reflected work for compensation. In 1957, Super defined career as a sequence of full-time jobs held over a worker's life. In 1976, he added other roles reflecting the whole person; vocational, family, and social roles. In 1989, the Department of Education and Science of The Netherlands added to their definition of career other roles beyond worker; student, volunteer and parent (Patton & McMahon, 2006). The definition of career has expanded beyond work for compensation.

The addition of factors outside the work for compensation definition included adding the element of time. Sarason, Sarason, and Cowden (1975) present that a person's viewpoint of time affects their relationship with work. The

stage of employment and length of time in the workforce added a dimension to their relationship. Careers are now seen as evolving, developmental, and changing (Patton & McMahon, 2006).

Career Development Theory and Vocational Adjustment

Frank Parsons established the field of vocational guidance and influenced the field of career theory (Patton & McMahon, 2006). Parsons (1909) held there were three basics in vocational choice: knowledge of self, knowledge of the vocational field and the relationship between the two areas of knowledge. Parsons wrote that vocational success would result from a career choice made by matching personal attributes with the job, the beginnings of the trait-factor career theory. Many career theories have evolved in the last half-century and several are reviewed below.

The trait-factor theory holds that an individual has certain interests and abilities and the career choice is matched with those interests and abilities (Osipow & Fitzgerald, 1996). This is considered the oldest of the career theories. Dawis and Lofquist (1984) described it as fitting the worker's characteristics with a job. Crites (1969) relates that this theory holds there is a right job for each person. He recognized, however, that vocational adjustment is developmental and careers may change. Additionally individuals may adjust to careers they are unsuited to. One person might be successful in a broad range of occupations (Super, 1957).

Super (1957) views vocational adjustment through the developmental theory lens. The developmental theory holds that a person's self-concept develops over the lifespan. A person also develops a concept of vocation. Success is viewed by the convergence of these two concepts (Osipow & Fitzgerald, 1996). Crites (1969) calls "work history" (p. 342) into the developmental discussion. Work history includes the type of job, length of employment, and any changes in employment. People do not start afresh at each job, but carry their history with them. Vocational adjustment through the developmental lens must take both personal development and career development into consideration.

The society/career choice theory holds that an individual doesn't choose the career, but society plays a role and the career may just happen (Osipow & Fitzgerald, 1996). The individual's concerns then are to deal with the circumstance. Bakke (1953) wrote about the vocational adjustment an individual makes, the adjustment an organization makes, and the way they come together. The individual adjusts to a vocation that is not chosen individually and the organization adjusts to the individual.

Vocational choice career theories are some of the most prominent (Osipow & Fitzgerald, 1996). Choice career theories proposed a match between abilities, interest and personality, and vocational choice with an eye to success and satisfaction. Any vocational adjustment would also reflect abilities, interests or personality type. Osipow & Fitzgerald wrote that workers in the West have a greater level of individual choice in career adjustment because of the nature of our

society and industry. In our culture we consider career to be an individual responsibility (King, 2004).

Career theories have evolved over time. Super, for example, changed his own definition and understanding of career theory (Savakis, 1997). In 1957 he presented the Career and Development theory which included matching skills and abilities to jobs. In 1981, at age 61, he added self-concept as a determining factor in the Developmental Self-concept Theory. The Life-Span, Life Space theory, 1990, evolved in his retirement from his earlier theories and added roles beyond worker; child, student, citizen, worker, homemaker.

Super (1990) revised his thinking by differentiating the commitment and participation individuals apply across life stages. The number of roles and the level of commitment by the individual differ from the stages presented in the 1950s. Instead of a single stage, the cycles may be shorter and more numerous over a lifetime (Sullivan, 1999). These cycles may be directed by education; formal or informal, on the job or in the classroom. This combination theory integrates the life stage model and the boundaryless career concept.

All of these career development theories include overlap and inter-connection (Osipow & Fitzgerald, 1996, Patton & McMahon, 2006). Career theory is evolutionary, as are careers. Attempting to use just one of the theories draws the researcher through the mud of the others.

The New Career Model

Career decisions are complex (Thamhain, 1991) and career choice can occur in many ways (Osipow & Fitzgerald, 1996). An individual can change employers, change jobs with the same employer, or change career fields. Components of change include skills, education and opportunity. The adult student returning to earn a baccalaureate degree has been described as ambitious and seeking to assure their employment during a downturn or recession (Meisler, 2004). Individuals are coping with change.

Organizations are coping with globalization, technology changes, and the changing work environment (Ito & Brotheridge, 2005; King, 2004; Sullivan, 1999). Organizational careers are no longer a standard and career self-management is becoming more necessary as a response to these changes (King, 2004). Sullivan (1999) wrote that all facets of the workforce are affected, including those that once felt secure in their jobs. It occurs not only at the beginning of a career but throughout, reflecting a career as continually developing. Career self-direction is made by all segments of the workforce, not confined to those with blue collars or white collars (Cappelli, 1999a). Blue collar workers, in fact, had more job security and less need for career change when protected by labor unions (Cappelli, 1999b). Today career self-management can serve every segment of the work force.

The career decision made by these incumbent workers leads them to a more boundaryless career. A boundaryless career is not tied to the organization,

but to the individual (Arthur & Rousseau, 1996). Two types of boundaryless careers are defined (Sullivan, 1999). The physical boundaryless career allows for the movement between organizations, while the psychological boundaryless allows for the ability to make career choices. This study examines both the physical and the underlying psychological conditions of boundaryless. The commitment to each portion of an individual's life is considered when making career choices (Sullivan & Arthur, 2006).

Sullivan and Arthur (2006) present a model of boundaryless careers to explain the influences of physical and psychological factors. Both factors influence career decisions on a continuum and each individual resides somewhere in the model depending on their individual physical and psychological factors. Besides these individual differences, culture, gender or competencies may play a role in the boundaryless decisions available to the individual. Sullivan (1999) wrote that the term boundaryless is not exactly correct because boundaries exist in all organizations and for all careers, but instead, the boundaries have become more permeable, allowing movement.

Related to the idea of a boundaryless career, the protean career recognizes those permeable boundaries, and gives the individual, rather than the organization, the ability to make the decision to breach the boundaries (Sullivan, 1999). A protean career is one developed by the individual, not the organization. Individuals make the choices that prepare them for careers they choose. Factors that might be included are education (formal or informal), job change, or other preparatory activities (Hall & Moss, 1998).

It is suggested that the protean career will necessitate more job transitions than the traditional career path. The average American worker can expect to have eight different employers during their work life (Inkson & Arthur, 2001). Most Americans change jobs every four years and the theory of adult development relies on a consistent employment record with one employer (Sullivan, 1999). Job duration has become shorter and the number of jobs held increased. Employment growth has been experienced in newer sectors of the economy and with smaller companies.

Because workers create the organizations it would be illogical to assume that organizations create careers, or own the careers, of their employees (Inkson & Arthur, 2001). The new career model includes companies supporting the careers, but employees owning them. Kossek, Fisher, and DeMarr (1998) wrote that employers encourage employees to take on career self-management for their own advantage. Most self managing career behavior can take place in an organization and needs to follow some of the rules of the organization (King, 2004). Some people are more likely to manage their own careers.

Highlighting the decreased role of the organization in career is the fact that a temporary employment agency, Manpower, is one of the largest non-government employers in the United States (Hall & Mirvis, 1995; Hall & Moss, 1998). This is not just happening in the United States, but globally. Hall & Moss (1998) argue that the old contract existed only with large organization, here or globally, and did not exist for most of the industrial workers in industrialized

countries. Companies are motivated by self-interest, not interest in the employee (Cappelli, 1999a).

The career contract is the understanding of the relationship of the employer and the employee held by both (Hall & Mirvis, 1995). Each of the parties serves a role in carrying out the contract in services, salary, and commitment (Hall & Mirvis, 1996). The old vocational contract does not exist (Arthur & Rousseau, 1992; Hall & Moss, 1998; Sullivan, 1999). Sarason, Sarason, and Cowden (1975) wrote that the old contract called for a career decision to be made, and once made, it was final. Sullivan (1999) wrote that the new vocational contract is based on “employability and employee responsibility” (p. 467) rather than the security provided by the old contract.

The new career contract puts the responsibility for career decisions and adjustments on the individual (Arthur & Rousseau, 1996; Hall & Mirvis, 1995). The protean, or self-directed career, is action based, directed by the individual and adjusted to deliver success and satisfaction as defined throughout the career (Hall & Mirvis, 1995). Hall & Mirvis (1996) relate there are two key components of the protean career, self-reflection and development, and adaptation. The protean career plan is both developmental and related to the boundaryless career. Ito & Brotheridge (2005) consider the adaptability of the employee as the most important facet of the protean career. Inkson (2006) contended that adaptability was secondary to self-direction.

Career self-direction is vocational adjustment by the individual. Crites' (1969) definition of vocational adjustment was written to describe the first career decision made with the prediction of success as defined by the job holder. The career decisions made later were not considered (Cytrynbaum & Crites, 1989). Today, we define vocational or career adjustment, as decisions made after the initial career choice that are made to increase success or satisfaction. Conflict or dissatisfaction with career may lead to an adjustment, or career change, in order to gain control (King, 2004). Career success and satisfaction, or conflict and dissatisfaction, might come from income, time commitment, social status, social contacts and purpose. Work life is only one segment of life and career self-development as a vocational adjustment may be undertaken with an eye to balancing the parts of the whole life.

Control of the career is an expected outcome of career self-management. Career self-adjustment is dealing with any roadblocks in the path to success and satisfaction (Crites, 1969). If career self-management does not create satisfaction then either another change happens or there is a frustration with the fact the job satisfaction did not occur. A change of employer might result. Kossek, Fisher and DeMarr (1998) wrote of the two behaviors that support self-management: seeking feedback, personal introspection or the feedback from others, and the preparation for mobility in the workforce. King (2004) wrote that the needed attributes for a person to self-manage their own career are that a person must be self-reflective and must be able to work within their social network to make the decision. Additionally, they must be smart enough to do it. Alterations of currently held

beliefs play a role in career self-management. The choices made with either of the behaviors may lead to alterations of currently held vocational beliefs. King (2004) suggested that there are those workers who should be guarded from making these decisions.

Three behaviors are associated with career self-management: positioning, influence, and boundary management (King, 2004). Positioning self-management includes the work history, jobs or assignments within a job. Education or training positions a person for career self-management. Influencing behavior includes influencing others, self-promotion for example. Letting those in decision making positions know the employee is interested in career change, promotion or advancement increases the possibility it will happen. Additionally, King wrote that it may help to be nice to those making the decisions. Boundary management maintains the barrier between the work and personal life of the worker. The barrier is not solid; information about each role must spill over. An example would be the coordination of scheduling work related trips with family vacation time.

Super (1994) wrote that success contributes to the feeling of control. Career anchors as defined by Schein (1996) recognized the shift from the purely stable career to the satisfying, and sometimes challenging career. The security/stability anchored person would find success in the lifelong employment within an organization. Without that anchor, and perhaps with the general managerial or lifestyle anchor, success could be achieved with a series of employers. King (2004) wrote the expected outcomes of self-managed careers are

an increased level of employability, personal satisfaction with impact on career choices, a balance of work and non-work life and general well-being. Boundaries between work and non-work life are more clearly defined, although in the era of the Blackberry® this boundary is disappearing.

The outcomes of career self-management are not guaranteed (King, 2004). There are positives and negatives with the new contract (Hall & Mirvis, 1995; Sullivan, 1999). Results of the contract might be individual: a balanced life, job and life satisfaction, success or stress. The organizational results include retention/turnover, productivity, and organizational climate.

Career Adjustment Related to the Organization

Sullivan (1999) explores how careers are viewed from two outlooks, the developmental theory of Super and the boundaryless model of Arthur and Rousseau. Because of the overlap of theory, the division between the two outlooks may not be as clear cut as Super presented. Careers developing within an organization measure success by organizational standards. The organization is the career framework and determines the measurements of success. Within a boundaryless or protean career, the individual becomes the framework. The contract is personal rather than with the organization (Arthur & Rousseau, 1992; Hall & Moss, 1998). Today, we find organizations supporting the new contract in order to create a satisfied workforce (Ito & Brotheridge, 2005). Benefits of the satisfied workforce include lower turnover, increased retention, and the retention

of organizational KSAs. The investment in the human capital of the organization is viewed as essential (Hood, 1990; Ito & Brotheridge, 2005; Sullivan, 1999).

Inkson and Arthur (2001) write that organizations invest in the careers of their employees with organizational health in mind. The KSAs of the current employees are important to the success of the organization. Employees also view the organization they choose to join as an investment they make. The return on their investment of time must be rewarded at a level viewed as sufficient in order to assure the satisfied employee. Individuals invest personal capital in order to become satisfied and successful (Inkson & Arthur, 2001; Pfeffer, 2005). The capital is knowledge. Knowledge is transferable and can be taken to a new organization or new job within an organization. A move to a more challenging job can be a reward for the investment of personal capital.

Cappelli (1999a) wrote that in the past 50 years new jobs appeared in old fields and new fields appeared. The labor market itself is playing a larger role in determining careers and careers changes (Arthur & Rosseau, 1996; Cappelli, 1999a). Where it was once thought a career was determined by the employer and included a series of roles within that organization, today the organization does not deliver job security. Change, and the speed of change in organizations create an unpredictable work environment. Job security, as it was once known, does not exist and there is a need to look outside of the organization or beyond the present job. Employability security is sought in its place.

An increased social value of our work life may explain the increased number of job changes by the workforce (Arthur & Rousseau, 1996; King, 2004). Employees expect that jobs should always be interesting and rewarding. Mastery of one job does not preclude leaving it for another. Employees expect challenges, increased rewards, and social status of a job (Inkson & Arthur, 2001; Sarason, Sarason, & Cowden, 1975).

Ito and Brotheridge (2005) presented the relationship between employer support for career development and the affect on commitment and turnover. Employees are supported in efforts to upgrade their KSAs, creating a more flexible, mobile workforce. Tuition reimbursement for education is one way the organization provides the opportunity for an employee to enhance his or her employability, within the present organization or outside of it. Companies in the United States pay \$10 billion in tuition reimbursement yearly to employees (Meisler, 2004). Fifty percent of the companies view tuition reimbursement as a strategic investment and a necessity. The organization takes the risk of preparing an employee for a different employer (Ito & Brotheridge, 2005).

The benefits of career development to the organization may include a more satisfied workforce, maintaining the organizational KSAs, and increased organizational commitment (Ito & Brotheridge, 2005). Some of the concerns raised with the boundaryless career are not present if the boundarylessness is psychological and not physical, those being the lack of commitment, productivity, and organizational KSAs (Sullivan, 1999).

Super (1957) supposed that maturity plays a role in our career decision. Savakis (1997) wrote about the need to adapt to changing career situations. Adaptability may play a bigger role than maturity, but one may question if they are not related. Information and experience may be required to make good career choices. Super (1969) used the word *planfulness*. A person must be aware of the need to plan for the future and be ready when the opportunity is presented. Choices made at each stage affect the next career.

Sullivan (1999) wrote that those displaying self-managing behaviors showed a greater career maturity. Crites (1969) wrote of the three meanings of choice: preference, aspiration, intention. Sullivan (1999) reviewed the applicability of Levinson's theory of self-development and its relationship with career theory, and integrates it with the boundaryless and protean career concepts. Career stages and life stages are inter-related and career adjustments made can differ according to either the career stage or the life stage.

The previously considered developmental career theories may not fit the mid-career worker in the new career model (Sullivan, 1999). Adults are making careers decisions continuously throughout their careers. A period of reflection and self-doubt may lead to a career adjustment. Bejian & Salomone (1995) suggested an additional career stage of career renewal, during which the employee is reflective and looks to make a renewing decision about a career. The old career model rewarded longevity and seniority while the new career places value on performance (Hall & Mirvis, 1995). Education, formal and informal, is a driver in the adaptability of a worker (Sullivan, 1999). Eduventures (2007) reported the

need for education to be available on a part-time basis to offer working adults the opportunity to invest in themselves. Economic rewards and personal satisfaction could be realized.

Mid-career

The mid-career worker has a larger investment in the organization than the younger worker (Sullivan, 1999). KSAs are already in place. The known pathway to success, however, may have disappeared (Hall & Mirvis, 1995). Flexibility and autonomy are benefits to the mid-career worker. Hall and Mirvis (1995) wrote that the protean career causes problems for the mid-career worker. They may not want the choices it provides, or be willing to take the risks that come with the choice. Their career identity is firmly entrenched. The new career contract may not be met for the mid-career worker. Mid-career employees bring their knowledge and experiences with them and are valuable assets to an organization (Hall & Mirvis, 1995).

Hall and Mirvis (1995) add learning stages to the developmental model. The essentials for midcareer success are reported as “identity and adaptability” (p.277). Being prepared when an opportunity arises requires an individual to understand who they are and what they want. It also requires the individual be able to change and to want the challenges of a new position.

Super (1957) viewed the mid career as a stable period; the KSAs had been mastered and the worker knew the job. Changes in organizational pressures changed this. The new model requires learning throughout the career. Continuous

improvement of the KSAs needed for the present job, and for the future job, are foundational for a self-directed career. Mid-career workers find themselves in the management stage of Super's (1957) career stages. Satisfaction levels follow a pattern during the career stages: establishment, management, and decline. Satisfaction is at first high, then dips and rises once again, in the establishment phase of a career. The management career stage then sees a slow decline of satisfaction (Cytrynbaum & Crites, 1989). Success begins low at the beginning of the career and builds over time. Correlation between success and satisfaction does not occur until the ages of 35-40 years old. Sullivan (1999) suggests more research is needed on the organizational entry or position change of mid-career adults.

Hall and Mirvis (1989) write that the emphasis on career self-management creates a "gender benefit." An earlier study of graduates of this degree completion baccalaureate degree showed female graduates were statistically significantly more likely to credit the degree with economic reward (Dittmann, 2007). Career theories will continue to develop and change for all sectors of employees as the employment conditions change.

Chapter Summary

In this chapter three areas of literature were reviewed. First reviewed was the literature related to degree completion programs. An overview of the degree completion program and its intent was offered. The second was that of the transition from technologist to manager; most often that of the engineer to the

engineering manager. This study investigates the transition of technical college degree holders who have earned a baccalaureate degree followed by a transition to a management position. In the five studies presented the experience of transition was reviewed, as well as the skills needed to make a successful transition.

This chapter also reviewed the literature of career self-management as it is considered a career adjustment. Career theories and their roles in career adjustment were presented. The mid-career vocational adjustment in relation to career theory was presented. This naturalistic study attempts to describe the experience of the transition of technicians to managers after they have earned a baccalaureate degree. Additionally it seeks to describe it as a function of career self-management.

Chapter 3

Methodology

This chapter describes the planning and the methods used to gather and analyze information. It restates the problem, the purpose of the study, and the research questions. It provides the setting of the study. The choice of research method is explained and research methods presented. The research design is outlined, including the methods of collecting information, the development of the interview guide, and the selection and recruitment of participants. Institutional Review Board approval and the role of the investigator are reviewed. Data collection, and the organization, reporting, and analyzing of the data are explained.

Introduction

The University of Wisconsin-Stout offers a baccalaureate degree completion program, building on a technical college degree, in an attempt to increase the number of baccalaureate degree holders in the state, with the goal of boosting the state economy. Working as the program director of the degree completion Bachelor of Science degree in Management at University of Wisconsin Stout I learned anecdotally that many of the students were preparing themselves for an uncertain job market, intending with their degree to become more employable. Many had aspirations to become managers, supervisors, or CEOs. By attaining a baccalaureate degree the technical college graduate may be, through career self-management and education, preparing him or herself for a

management role. Graduates may have positioned themselves for the transition from technical worker to manager, and may have made that transition, but the experiences of the graduates' transition were not known. The career self-management decisions and actions were also not known.

Purpose of the Study

The purpose of this study is to discover, from the manager's perspective, the transition from technician to manager. The study investigated the experience of transition and the manager's career self-management.

Research Questions:

1. What is the experience of a graduate from the B.S. in Management from UW-Stout who made the transition from technician to manager?
2. How did the graduate direct career self-management?

Additionally, during the research process additional areas of interest may have developed. The need to stay open during the investigative process may have informed changes in the research questions (Baszanger & Dodier, 2004). During the interviews these topics remained primary.

The setting

The degree completion program has been offered at UW-Stout since May 2000; first as a Bachelor of Science in Industrial Management, and then revised in 2006 to broaden its intent to a Bachelor of Science in Management. UW-Stout recognized a need for adult students with technical college degrees, to earn a

baccalaureate degree (Dittmann, 2007). According to the program authorization presented to the University of Wisconsin System in 1999, the purpose of the degree was to meet industry's need for skilled professionals with the ability to deal with both technical and managerial issues (Stewart, 1999). Graduates are expected to recognize and apply personnel and industrial management principles benefiting themselves, their employers, and the State of Wisconsin.

As part of the program development in 1999, a needs assessment was conducted (Dittmann, 2007). Manufacturing companies in Wisconsin were surveyed to assist in the determination of the curriculum of the proposed program. The degree was intended to meet a graduate's professional requirements and at the same time, the employers' requirements. Results from the needs analysis showed employers were satisfied with the technical skills their employees had received at a technical college, but in order to provide more advantage for their companies, the employees needed people skills and an understanding of business (Stewart, 1999). Five years later, in 2004, the Wisconsin Technical College System conducted focus groups with representatives of the manufacturing sector to determine programming needs (WTCS, 2004). The focus groups results echoed the earlier needs analysis reporting that workers needed more than technical ability to more fully contribute to the company. People skills such as teamwork, communication, and problem solving were ranked high.

The Bachelor of Science in Management (BSM) is atypical of the degree programs at UW-Stout in that it is designed as a baccalaureate degree completion program for the technical professional with a two year technical college degree

(Dittmann, 2007). Students are not admitted as freshmen, but transfer into the program after completing a program at a technical college, or after significant technical work experience. The average age of students in the program is in the mid-30s (UW-Stout, internal communication). The program is typical of UW-Stout programs in that it meets the definition of a baccalaureate degree of having a societal need, having a core of professional courses, and meeting the general education requirement of the University (UW-Stout, 2005).

The BSM consists of three areas: general education, professional studies and technical emphasis, each requiring 40 credits. An Associate of Applied Science (A.A.S.) degree from any Wisconsin technical college includes both transferable general education and technical credits. An articulation agreement between UW-Stout and the Wisconsin Technical Colleges System allows for the transfer into the BSM of up to 40 technical credits to complete the technical emphasis area plus appropriate general education credits from any technical college program offering an A.A.S or technical diploma: mechanical design, printing and publishing, electronics, hotel and restaurant or technical studies-journeyworker, to name several (Dittmann, 2007). The transfer of general education credits is determined by transfer guides and agreements between the UW System and the Wisconsin Technical Colleges System. The improved academic rigor in the general education component of a A.A.S. degree has increased the transferability in this area (Zinser & Hannsen, 2006). Students with an A.A.S. degree entering the degree completion program typically have 60 or more credits directly applied to the 120 credit program.

The BSM program meets the outreach mission of the UW System by being offered beyond the boundaries of the UW-Stout campus. It is delivered using distance education technologies including interactive television and online classes in order to reach the placebound adult learner. In 2009, interactive television courses were delivered at eight off campus sites in Wisconsin and one site in Minnesota. The degree is also available online and delivered on the UW-Stout campus.

The degree completion program addresses the mission of the University of Wisconsin-Stout by offering a degree completion opportunity to technical college graduates. The UW-Stout mission reads in part “The university offers undergraduate and graduate programs leading to professional careers in industry... [and] cooperates with the ... Wisconsin Technical College System” (UW-Stout, 2008). The program does both.

While the economy of the State of Wisconsin is shifting from a manufacturing base to a knowledge-based economy the future of industry is important to Wisconsin (COBE, 2005). The manufacturing sector employs 480,000 people in Wisconsin (Still, 2008). The initial program proposal for a degree in industrial management sought to provide knowledge to a changing workforce ensuring economic success in the state. The revised program extends the opportunity beyond industrial management to the areas of business and service management.

Research tradition holds that people agree on a common way to look at things, that there are reasonable questions to be asked and problems to be solved, and that there are processes in place that result in legitimate information (Gall, Gall, & Borg, 2003). Research design is determining the research process from beginning to end: formulating the problem, writing the research questions, reviewing the literature, choosing the method for the collection of information, organizing and analyzing the information, and reporting the results.

Moustakas (1994) explains the common characteristics of qualitative research methods include the study of experience in a way in which quantitative methods could not approach. It searches for the whole experience, rather than segments of the experience. The “meaning and essence” (p. 21) of the experience is the focus, rather than the attempt to measure the experience. Qualitative methods are post modern approaches to research. Creswell (1998) wrote that, within post modernism, knowledge assertions are inside the “conditions of the world” (p.79) and within the perspectives of gender, age or other group membership. Qualitative research understands knowledge in those terms.

In choosing the method of collecting information it is important that it serves the research questions (Ary, Jacobs, & Razavieh, 1996). A researcher must model the research to meet the information sought. Creswell (2003) wrote that the correct methodology is revealed during the research process, or that it should be apparent. A narrative case study (Connelly & Clandinin, 2006) examines in depth a particular person, subject, group, or incident bounded by time or activity by telling the story. The information sought in this study is the experience of the

transition between technician and manager and the determining career decisions, information which can be gained through a case study.

Case study seeks to understand the experience (Stake, 1995; Yin, 2006). A case study may be used if the research questions are descriptive; if the research questions seek an explanation and asks how or why (Yin, 2009). Case study helps understand why decisions are made, how they are implemented and the results of the decision made. The focus is on contemporary events, in this case, the transition and decisions made to reach this career stage. Cases must be bounded (Creswell, 1998). The case studied here is the graduates of the program, but in that study individual graduates' stories will be heard as well. The goal is a depth of understanding of the experience (Stake, 1995; Yin, 2006; Yin, 2009).

Narratives seek to make that experience "personally meaningful" (Connelly & Clandinin, 2006, p. 477). A narrative is the re-telling of life. While the participants first tell their stories, the researcher retells the story. In the narrative case study "no single story provides a full understanding of the journey" (Richmond, 2002. p.3). Data are gained through interview and the meaning presented by the researcher. The description must be viewed in context of the case. The temporal nature of the experience, the past, present and future, give form to the narrative (Connelly & Clandinin, 2006).

Yin (2009) suggests using multiple sources for information in a case study. In this case, 20 graduates of the program were interviewed, observed two graduates in the workplace, reviewed previous research on this degree program,

and used university data related to the program from the Placement Office and the University Office of Budget, Planning, and Analysis. Additionally, interviews with those involved in the implementation of the program helped direct the study. Multiple sources provide an opportunity for the triangulation of evidence, collaborating information from the sources.

A second suggestion is to maintain a case study database (Yin, 2009). The data collected in this study was color coded and sorted into a word document to create the database. Data reduction could occur from the database. Yin's third principle for data collection was to maintain a chain of evidence. The chain of evidence should allow an external observer to follow the process of moving raw data to the final report. The research method and the research questions should show clear alignment. In this case, marginal memos on transcripts led to theme, or story, development. Journaling by the researcher provided a train of evidence to the thinking behind decisions made during the process. Methodological memos were included. Data was presented with citations to participants giving the reader a clear chain of evidence.

Interviews

The method used to collect the majority of the data was first person interviews as an attempt to describe the experiences of the graduates. The interview was chosen as a research method because of its ability to provide descriptive information (McCracken, 1988; Seidman, 1998). It can assist the researcher in seeing how the research subject formulates the world. Holstein and

Gubrium (1995) relate that interviewing is a social event. The role of the interviewer is to straight-forwardly get to the knowledge held by the interviewee. Interviews are a way to “knowledge and understanding” (Seidman, 1998, p. xviii). Seidman wrote that each word the interviewee uses in relating the experience places that experience in a frame of reference.

Advantages to face-to-face interviews include the ability to ask probing questions to elicit a depth of information (Bernard, 2000; Yin, 2009). Interviews can be longer than time spent completing a questionnaire and each step of the interview process allows for a shift in direction or emphasis. Disadvantages to the interview as a tool are that they are labor-intensive and intrusive. Gall, Gall, and Borg (2003) recommend at least one long interview, free-flowing and comprehensive. Each participant in this study was interviewed at least one time for between forty-five minutes and two hours.

Interview Protocol

An interview protocol (Appendix A) was developed from the literature review. Rubin and Rubin (2005) write that an interview protocol, the outline and organization of the questions and procedure, does several things. It provides direction during an interview where topics sometimes stray and helps the interviewer organize the interview. It assures that there is an attempt to get all of the information sought and provides prompts to assist in assuring depth in the information. It assists the interviewer in staying focused on the intent of the research. While the word *emergent* has been used several times to describe this

process, I felt a need to ask for a minimum of the same information from each individual. But that said, each interview took on a life of its own and the same topics were not covered in each interview.

The participants were first asked about their current employment. This question verified they were indeed managers and qualified for the study. It also provided a non-threatening introduction to the interview. The managers in the study were asked about their transition and the decisions they made during their careers. Employment and educational choices and changes were targeted as topics to include. The topics to be included and the method of interviewing were chosen to complement each other. The interview was intended to be semi-structured and open-ended in order to gather information on the experience of the interviewees' lived experience. It was semi-structured in the fact that there was a guide; the interviewee's answers, however, may have led the questioning in an unplanned direction, and sometimes did. Structure existed in the guide to encourage that each intended topic was covered in each interview, but the emergent nature of the interview sometimes took the interviewer, and interviewee, off-topic.

Rubin and Rubin (2005) write that there might be a time the interview guide gets thrown away and while these interviews went far afield at times, the protocol still led the interview. The length of time spent on each topic differed, but as it turned out each topic was presented in each interview. The interviews were open-ended in design to allow the respondent to develop any detail presented. The last question of the interview probed for any detail the interviewee wished to include that had not been introduced.

Interview questions were written from the structure of the interview protocol and were viewed as emergent: the questions could be changed during the interview process as the direction of the information gathered varied from the outcome expected. Bernard (2000) explained rules for writing questions which included choosing language that is unambiguous and easily understood without seeming to be talking down to the interviewee. The interviewee must have the knowledge to answer the questions. Additionally, the questions must not be leading or attempt to ask two or more things at one time. The interviewer must recognize the purpose of the question and be able to provide alternative wording or entire question if the original is not understood. I found interviewing a sometimes challenging experience, but kept these constraints in mind when conducting the interviews.

Questions can be either open-ended, seeking any information the respondent has to offer, or closed-ended, seeking a single answer such as a yes or a no. Questions written for this interview were meant to be open-ended, seeking the story. The respondent could choose to answer in one of two ways as well (Holstein & Gubrium, 1995). The respondent could respond factually, or with the story of the experience: the questions were written with the hope to elicit the latter. Probes were used to coax a story from the interviewee. The same question presented to different interviewees might elicit a six-minute answer or an 11-word answer.

The opportunity for probes, or additional questioning, existed and was included in the protocol. Probes were developed beforehand, and on the spot, to

discover the details of the story. While the questions and procedures were in place, naturalistic studies must remain fluid to meet any unforeseen occurrences as they occur. The need to have a framework and order, and the need to be fluid during the process, can create conflict for the researcher (Baszanger & Dodier, 2004). I tried to address this by being prepared with alternative probes dependent on the direction of the interview in process. Generalized probes included asking the participant to explain a phrase, or describe an incident to support a statement they had made.

After the questions were developed, the interview protocol was reviewed by the researcher's advisor followed by the first interview. In qualitative research each interview may be viewed as a pilot study, as each interview is different from the one before it, and directs the following interview. Monsen and Cheney (2003) strongly recommend a pilot interview as an efficient use of the researcher's energy, and the first interview served that role. The up-front changes to an instrument or procedure can prevent a multitude of problems further in the research process. Bernard (2000) wrote that changes are inevitable. The researcher brings one frame of reference to the information, while the interviewee approaches the information from another direction, without the research background. The first interview was conducted under the same conditions as were planned for the subsequent interviews, to learn how the interviewees interpret the questions. It was conducted to determine the feasibility of proceeding with the research as written, and was intended to hone an interviewing technique to get the deep information sought. Changes to the interview protocol after the first

interview included adding the probe for detail: *give me an example*. After the second interview I began to ask the interviewee to give earlier details of their educational and vocational choices and heard decisions made in junior or senior high school as influencing their futures. The interview procedure continued to develop over the entire process of interviewing. Each interview offered the opportunity to reframe the questions and procedures, building on the experience during previous interviews.

Institutional Review Board Approval

Research must be reviewed by an institutional review board to assure the subjects give informed consent and are not exposed to undue risk. An application for an exempt review by the University of Minnesota Institutional Review Board (IRB) was made. Before the first interview took place the interview protocol was presented to the IRB for review along with the application, abstract, risks and benefits of the study, correspondence and plans for maintaining confidentiality. Approval from the University of Minnesota IRB was given. Additionally, IRB approval from the University of Wisconsin-Stout was sought and given, and the research went forward.

Selection of Participants

When the interview protocol was complete, and IRB approval given, the next step was to select the participants. It is necessary to pick the proper participants, ones who have the experience and are willing to talk (Gall, Gall, & Borg, 2003; Rubin & Rubin, 2005). This study required a purposeful sample.

Those selected must have the characteristics and the experience that is intended to be studied (Patton, 1987). In this study, they must be graduates of the UW-Stout program and have experienced the transition from technician to manager. The degree completion program has over 350 graduates from 2000 through 2008. Not all of the graduates made the transition being studied. A random sample of all graduates would not assure the individuals had experienced the phenomenon.

The randomness of a purposeful selection process is dependent on the number of those selected who choose to participate (Gall, Gall, & Borg, 2003). Patton (1990) wrote that “[t]here are no rules for sample size in qualitative inquiry” (p. 184). Miles and Huberman (1994) advise that qualitative research samples are usually small. If the interviews yield information in the depth needed there is not a magic number of interviews to be held. Seidman (1998) wrote that beyond redundancy a factor used to determine the number of participants is “sufficiency” (p. 48). The sample must include any and all of the populations being sampled. Gender, location, or vocational experience should be considered. These factors were considered when determining the number of interviewees.

The participants become co-investigators with the researcher because they lead the research through their lived experience (Gall, Gall, & Borg, 2003; Rubin & Rubin, 2005). A list of the graduates and their contact information was obtained from the Alumni Office of the university. From that list I identified those I believed had made the transition. Creswell (2003) suggests choosing participants with different perspectives. I chose students who had graduated from the entire time span the degree had been delivered. I chose people of different ages, and

chose both men and women. When determining possible participants, I chose several from the same geographic areas: the Fox Valley in Wisconsin, the Twin Cities and local to the university to minimize travel for interviews. A letter (Appendix B) was sent to those selected, introducing the study and telling the recipients they would be contacted by the researcher by phone. The phone number on record was included in the letter and the recipient was invited to contact the researcher if that number was not correct or non-existent. Five of the recipients contacted me before I had the chance to attempt to reach them: to volunteer, to correct the contact information, or to let me know they did not meet the research criteria.

Thirteen graduates in the Fox Valley were contacted by mail, 15 in the Twin Cities and 20 in the immediate area of the university. The letter was followed up with a phone call to assure the candidates met the qualifications. If they did, an attempt to schedule an interview was made. Initially six of the thirteen in the Fox Valley were contacted by phone and four of those agreed to be interviewed. The fifth had not transitioned into a managerial position, while the sixth had family commitments during the time the interviews were scheduled. The sixth was later interviewed by telephone. Six of the 15 from the Twin Cities were reached by phone and five interviews were set up. The sixth had not made the transition to management. After the first phone contact, three interviews in Appleton, six in the Twin Cities and three locally were scheduled. Of the 12 initially scheduled, two were cancelled by the participants. Both were rescheduled and took place.

Gall, Gall, and Borg (2003) suggest the rate of acceptance will be higher if the invitation is non-threatening, conveys a sense of importance, shows benefit to others and there is a payment or benefit provided. An attempt was made to meet these standards with the exception of payment to subjects. Additionally, if the invitation is extended by someone known to the possible participants the acceptance will be higher. In this case, I served as an academic adviser to these students and had a continuing relationship with some, but was known to all.

Of the initial twelve interviews all but two of the participants had changed employers after graduation; some of their own choice, others because of downturns in the economy. Secondary sampling provided additional respondents. Persons who had been initially contacted by letter were included in the secondary sampling, but graduates who had remained with their current employers were purposely sought as this group was underrepresented in the initial sample of twelve. Eight additional interviews took place. These eight interviews included three graduates that were still employed with the same employer they had while in school.

Patton (1990) recommends a minimum number of participants be determined and approved. The proposed and approved number of interviews was initially eight. The number was increased on the recommendation of my advisor; the final number of interviews being 20. Data collected from these 20 was rich, thick and sufficient.

The names of the final participants and the names of the companies they have worked for have been changed for this report. Their demographic

information has not. Table 1 lists the graduates, their current age, year of graduation, current job title, and whether or not they have changed employers since graduation.

Table 1

Participants

Name	Age	Year Graduated	Current job	Changed Employer
Ann	38	2002	Buyer	Yes
Ben	37	2004	Sales Engineer	Yes
Cal	37	2006	Director	Yes
Del	36	2007	Maintenance Planner	Yes
Eva	45	2006	Value Stream Manager	No
Fay	39	2004	Compliance	Yes
Guy	45	2008	Supervisor	Yes
Hal	35	2004	Working Manager	No
Ian	31	2001	District Service Manager	Yes
Jay	46	2004	Human Resource/Safety	Yes
Ken	45	2006	Maintenance Supervisor	No
Len	55	2003	Quality Systems Auditor	Yes
Max	35	2006	IT Director	Yes
Nan	51	2007	Supervisor/Sr. Designer	Yes
Ole	32	2007	Senior Sourcing Specialist	Yes
Pat	28	2007	Manufacturing Engineer	No
Quin	34	2005	Project Manager	No
Ray	52	2004	Account Manager	Yes
Sam	48	2002	Production Supervisor	Yes
Tom	49	2000	Project Engineer	Yes

m

Each interview brought data, often overlapping, often fresh, to the pool of data. The interviews continued beyond redundancy to provide replication (Gall, Gall, & Borg, 2003). In this case I interviewed until rich, thick data was available and a sense of sufficiency as apparent to me.

Role of the Investigator

In qualitative research the investigator is connected to the research, the opposite of a quantitative approach which distances the investigator from the research (Gall, Gall, & Borg, 2003). The investigator in qualitative research must set aside any preconceptions about the topic and be open to the information gathered from the participants. Moustakas (1994) wrote that the investigator must be “open, receptive and naïve” (p. 22). While at the same time Holstein and Gubrium (1995) write that the position of the interviewer is not neutral, but that the interviewer is a source of information. The researcher begins with a predisposition for the topic; and that often determines the selection of the topic.

Creswell (2003) wrote that the background of the researcher should be presented to expose any preconceived bias. As the investigator in this study, I have served as the program director of the studied degree program since its inception in 2000 and have served as the academic adviser to all of the graduates being studied. I have had a personal relationship, almost always at a distance and electronic, with the graduates. Earlier research I did attempted to show the graduates’ perceptions of the economic and professional impact of the degree. I

may be biased in thinking the degree completion program eased the transition between technician and manager roles.

Additionally, I have experience as a transfer and non-traditional student, both as an undergraduate and graduate student. After earning my bachelor's degree utilizing credits from five colleges, I worked in a variety of jobs while I raised my family. Most were part-time and flexible: waitress, Christian Education director, activities director for an English language program, and administrative assistant. I enjoyed taking classes and during this time took various classes at the university and local community colleges. Because I worked for a university, I decided a graduate degree would serve me professionally. I completed a master's program in Training and Development in my late 40's. I had a boundaryless career without knowing the definition. My career self-direction included the jobs I took along the way, instructional designer and webmaster, and my educational experiences. Offered the opportunity to provide leadership to the degree completion baccalaureate program in 2000, I became a program director.

Shortly after I earned my masters, I was introduced to the articulation between the Educational Specialist degree in Career and Technical Education at University of Wisconsin-Stout and the doctoral programs in Work, Community and Family Education, now Work and Human Resource Education, at the University of Minnesota. The doctoral degree from the University of Minnesota degree was a means to prepare me to take on new roles for the university. I chose the Doctor of Education because of its applied nature. I will continue my career as

a practitioner and applied researcher. On the way to this degree, I found I really enjoyed learning at the doctoral level.

Stake (1995) wrote of the different roles the researcher may take. In this case I intended to tell the story of the graduates. In order to objectively present the information gathered I must, as the investigator, set aside any biases and present my relationship to the research topic. Reflection during the interview process allowed me to maintain distance from my preconceptions and the research process. Notes about each interview required me to look at the data collected and how it matched my thinking and more importantly, how it differed from my own thinking.

Instrumentation

The data collected in this study was information about the transition between the role of technician and manager, and the career self-management of the graduates, answering the research questions of the study. The interview guide was developed to elicit information about that experience and interviewees were selected. While the interviews might have appropriately taken place in the interviewee's workplace, that was not always possible. In order to be consistent, the interviews were planned at local educational facilities, two-year University of Wisconsin or technical college campuses; viewed these as neutral sites. In fact, most of the interviews did occur at institution settings, while others occurred in coffee shops, places of employment, by telephone due to a snow storm, and in one case in the participant's home.

Interviews were scheduled when convenient to the interviewee. The interviewer planned to be present at the interview site when the interviewee arrived, but in several instances the interviewee arrived first. After the initial greeting and social moments the purpose of the study was presented to the interviewee and he/she was given the informed consent form to read. Because of the IRB exempt status the participant was not required to sign the consent form, but was given a copy of the form (Appendix C).

The interview protocol was used in order to attempt to cover all proposed topics with each interviewee. It did not guarantee that all details were covered, but the broad themes sought, education and employment choices, were addressed with each of the interviewees. Questions were asked according to the guide, but probes were individually crafted. By listening carefully to the responses I tried to fashion the questions and probes to clarify responses and draw out a depth of information (Seidman, 1998). I attempted to value silence while the interviewee composed the answer before speaking and was aware I needed to allow the interviewee time to answer the question. This is not normally my nature.

While it is important that the interviewer must be aware of the answers given, I also had to be aware of the process and be sensitive the interviewee's engagement. All of the participants were fully engaged by my measure. Thick, rich information was gathered on the first interview, with the next interviews offering additional data.

I took light notes during the interviews. The notes kept the interview on track, but did not detail the interview. I hoped that all interviews could be described as providing emergent material because the information did not always follow as I had planned which was, in most part, the case. Analysis began during the interview as I made decisions as to the next question or probe as led by the information presented (Seidman, 1998; Yin, 2009). The interviews were planned to last between 60 and 120 minutes, and, with one exception, they did. After each interview the notes were reviewed and details fleshed out for later evaluation.

Each interview was digitally tape recorded on a small recorder and additionally recorded using Audacity[®], free-ware software which records to a file directly on the computer. The data of the interview are all-important and a back-up recording gave me a sense of security of information. In every case but one a good transcript was available from the digital recorder. The computer file of this interview served as back-up and allowed this data to be reviewed. The digital recordings were transferred to a memory stick and are kept in a locked drawer and could be referred to if needed (Seidman, 1998).

A complete transcription of each interview is essential (Patton, 1990; Seidman, 1998). Accuracy is increased if the entire interview is available in text. If a partial transcription is made to save time or money, the interviewer's bias enters the evaluative process earlier than if the researcher can review the entire transcription. A verbatim transcription of each interview was made as the interviews were completed. I attempted to transcribe the first interviews using the voice recognition software, Dragon NaturallySpeaking[®]. It was beyond my talents

and time constraints, and I determined a transcriptionist was needed. The transcriptionist was given written instructions and asked to sign a confidentiality statement (Appendix D) to communicate the importance of privacy to the research. I reviewed the transcriptions for accuracy by listening to the recording and reviewing the transcript. In an attempt to utilize member checking, confirmation by the participants, three transcripts were sent to participants for their comments. Only perfunctory responses such as “looks good” were received back. Reading the transcripts the interviewees words came alive again. While every nuance was not recorded, the eye rolls or shrugs, the words came to life on paper.

Analyzing the Data

Qualitative data analysis involves taking the raw data apart and then reconstructing it with meaning (Stake, 1995). It is up to the researcher to make sense from the information gathered (Patton, 1990; Moustakas, 1994), but it is often the case that the researcher must winnow the data to a manageable amount in order for it to make sense (Wolcott, 2001). The core of the research must be presented and it must be presented with adequate detail providing examples and experiences. The research method is not criteria enough to permit the researcher to make any claims, or expect the information gathered to be acceptable. The data presented must be clear to the reader. The rich data in this study are the words of the participants. Rubin and Rubin (2005) describe the quotations from the interviewees as the “core evidence” (p. 261).

Stake (1995) wrote that a choice needs to be made on how to handle the data. Data can be coded or the interpretation can rely more heavily on observation. Observation was clearly used in the interpretation of the data, the narrative descriptions of the data. With the goal of understanding the case the narratives tell the story. The data was also coded using color coding to stand out. Several attempts to organize the material took the data in different directions.

Patton (1990) recommends the continual analysis of the information. Yin (2009) wrote the analysis really begins during the process of interviewing, but with the transcripts the analysis takes on a new level. After the first interview took place, and with the transcript available, the process of bringing order to the information began. The first three interviews were transcribed and read and reread. Memos were added in the margins of the transcripts. Another read through highlighted different themes. Analysis continued incrementally as the other interviews are completed. Notes taken during the interviews were reviewed in concert with the transcripts. The verbatim transcription of the interview was one tool used. A second, edited version, of the transcripts was developed. It included highlights and quotes from each interviewee. This document grew quite large and was intended to bring more order to the information.

The information gathered was organized according to the interview protocol (Stake, 1995). Information pertaining to questions may appear out of sequence, or within the answer to a different question in the interview. By grouping the information according to the interview themes for individuals, and for the group, the essence may be better identified. The interview protocol asked

questions about the transition experience and the career self-management of the participants and the data was grouped by those areas. Tables within Microsoft Word were used to sort data into categories.

Gall, Gall, and Borg (2003) write that in analyzing data a researcher may use both textural and structural description to explain the phenomenon. Structural description explains the phenomenon by providing the underlying “thought, judgment, imagination, and recollection” (p. 482). Textural description provides the “intuitive, prereflective perceptions” (p. 482) of the experience. The study attempted to uncover both in the data. Participants answered structurally and textually and the data was interpreted in both realms.

Wolcott (2001) suggests starting with the broadest themes or categories when beginning the process of bringing order to the data. When the data are reviewed each piece should fall into one of the broad categories. Creating themes helps to “pull together many different pieces of data” (Miles & Huberman, 1994, p. 246). The first interview transcript was read and categories developed. Data reduction moved raw data, the interviews, to categories that can be better understood. As the process continued, the interview transcripts were read and the information organized with the new information from each interview added. New subcategories developed from each of the experiences.

The broadest themes were developed into more detailed themes, but it was still important that most of the data fit into a category (Patton, 1990). If material did not fit into a category a new category had to be developed. The last

theme developed occurred during the final stages of editing the results portion of this study. While I had been confident all the big areas were covered there was a nagging presence waiting to be presented. The data was reviewed and the last theme confirmed and added.

There are several software applications available to manipulate qualitative data. The choice was made to not use a computer application. I attended an NVIVO workshop and decided the hands-on approach to the data would work best for me. The development of categories was done using printed pages and colored paper, ink, and markers. Several different documents with different foci were developed. Different configurations of categories were developed and tested until a configuration is determined. After creating the themes, the transcripts were reviewed to assure all of the categories were appropriate and complete.

Patterns across the individual interviews emerged in a temporal manner. The story of technical education, both secondary and post-secondary was revealed. The technical work history before earning a baccalaureate degree was presented. Interviewees expressed the idea that they were different from their coworkers, because of their decisions to further their education. The thinking behind the decision to earn a baccalaureate degree, and specifically this degree, emerged. The experience of earning the degree emerged as a theme, as did employment history after the degree. The differences and similarities between the technician's job and the management role were offered. The management role assumed was presented. These patterns began to tell the story of the graduates.

Once it was felt that the information was appropriately classified into categories it had to be validated. There are several methods to validate the presentation of the categories. The categories should be reasonable and believable both to the reader and to the participants. The information may reviewed by the participants to assure it describes the experience. In a second attempt at member checking three of the participants were asked to review the information and asked if the categories represented the experience. Each of the themes may not have represented their personal experience, but they must see each as plausible for another to have experienced. If they did not validate the interpretation the researcher would have needed to make revisions and present them a second time. No changes were made to the data interpretation.

Patton (1990) suggests the development of an alternative set of classifications in order to confirm the correctness of the original. It had been planned to classify the data according to the management skills presented earlier by Mintzberg (2004) of dealing with people, information gathering and sharing, and decision making. The data gathered was not rich enough in each of these areas to fully develop these themes, but the data was reviewed with these themes in mind to give a new focus.

Stake (2005) wrote that while the categories determined may not be “perfectly repeatable” (p. 454), these methods of triangulation provide different lenses through which to view the data. Resulting categories may be compared to those presented in earlier research. Chapter Five will present the results in relationship to the literature.

Gall, Gall, and Borg (2003) write that the standards of reliability and validity are less stringent for the interview than for tests or surveys. It is the responsibility of the researcher to provide the reader enough information to determine the reliability and validity of the information presented. The triangulation techniques described earlier were an attempt to do so. Miles and Huberman (1994) wrote of the need for external reliability, or confirmability, which they relate to the research method and procedures, the data collection methods and transformation, and the researcher's openness about personal biases and assumptions. The research methods were presented to be reviewed and the researcher's biases presented as completely as possible.

The "reliability/ dependability/auditability" (Miles & Huberman, 1994, p. 278) is related to the research question, the researcher role, breadth of data collected, and data evaluation techniques. The research questions were presented and used to classify the data. The role of the researcher and the breadth and process for evaluation of the data were offered. Internal validity, "credibility/authenticity," (p. 278) is dependent on the believability of thick data. The data must be examined with more than one focus. Quotations from the interviewees were presented in support of the classifications claimed. An alternative approach to the data was undertaken. External validity, "transferability/fittingness," (p. 279) looks at the boundaries of the study, sample selection, data to allow the reader to come to their own conclusions. The boundaries and sample were delineated for the reader.

The interpretation of the data must not only be accurate, but logically presented (Stake, 1995). Each researcher may interpret raw data differently than another, but the interpretations must be reasonable to the reader. By using the participants' own words, the study attempted to elevate the acceptance of the material presented. The stories of the graduates are presented to illustrate the case (Stake, 1995).

Assumptions and Limitations of Study

A narrative case study was completed. The boundaries of this case are the graduates of a degree completion program designed for technical college graduates and delivered by the University of Wisconsin-Stout. Each participant has transitioned from technician to manager. The conceptual framework of the study introduces limitations. The selection of those to be interviewed was carefully done to assure that all of the participants meet the criteria of the group to be studied (Creswell, 1998). Only graduates of one academic program at a single university were interviewed.

Much of the research presented is on the transition between engineer and manager while those studied here are technologists, not engineers. A few have the title of engineer, but none has an engineering degree. They have technical college degrees followed with a degree completion model baccalaureate. They represent the graduates of one program at one university.

McCracken (1988) wrote that qualitative research develops the areas of study during the process, rather than being set before the research begins. It is

designed to receive a depth of information rather than a set of data. Some of the decisions about process or direction are made during the research process and not planned beforehand (Creswell, 1998; Denzin & Lincoln, 2005). The study remained true to the research questions, but the experience of transition took a secondary role to the career self-management of the graduates.

Conducting qualitative research requires the researcher to examine an experience after setting aside personal background and while interpreting the experience (Creswell, 1998). With a constructionist perspective, a common information collection method is the interview. If constructed and conducted with care, the interview provides the richest source of information (McCracken, 1988). This was the method used in this study and it presents several limitations.

The researcher must construct the questions to elicit the meaning of the experience (Gall, Gall, & Borg, 2003). The interview process is hard to standardize. While an interview guide existed, the standardization of these interviews included proscribed topics with only the opening question remaining the same across interviews. The danger of interviewer/interviewee bias is constant (Best & Kahn, 2003). By explaining the purpose of the study and my role in the research I attempted to negate any bias apparent. The experience of the interviewer is crucial (Best & Kahn, 2003; Gall, Gall, & Borg, 2003). This interviewer had minimal formal interviewing experience, but had considerable experience at the end of this study. Each interview was a learning experience.

The interviewee presents several limitations. The researcher has a relationship with the interviewees and may bias the responses (Gall, Gall, & Borg, 2003). They may alter answers in order to be perceived in a certain way by the researcher. The interviewee might not care to express negative experiences. Interviewees' memories may be less than perfect. Information limited by interviewees' knowledge, memory, ability to convey information clearly and accurately. Interviewees may have differing qualities of articulation and communication skills.

Finally, it is up to the researcher to present the information so others will be able to understand and use it (Gall, Gall, & Borg, 2003). The information gathered in an interview does not present itself as data that fits in a neat table, but rather, may seem to be unconnected details (McCracken, 1988; Wolcott, 2001). To bring order to the information gathered it is often grouped into themes or categories developed by the interviewer. Developing these themes and telling the story must be done carefully and completely.

With the constructionist belief that each person constructs his/her own reality, the establishment of reliability and validity must rely on plausibility, authenticity, credibility and relevance (Denzin & Lincoln, 2005). The researcher must establish those through research methods and writing of the results.

Summary

This chapter reintroduced the problem and purpose of the study and the research questions. The choice of case study research was explained in order to

explain the experience of the transition from technician to manager. The interview development and procedures were explained. IRB approval and the development of the interview methods were outlined. The purposeful sample of those who had experienced the phenomenon was defined. The role of the investigator in qualitative research and in this study was presented. Gathering, organizing and analyzing the data was described. The next chapter presents the results from gathering and analyzing the data.

Chapter 4

Results

This chapter presents the findings from the case study conducted to determine the experience of graduates of a degree completion program offered at the University of Wisconsin-Stout who transitioned from technician to manager. It also presents findings on the career self development practiced by these managers. The data came from a series of semi-structured interviews with graduates of the program who had made the transition. Observations at the worksites of two managers enhanced the interviews. The chapter uses the participants' words to tell their story. Additional data was gathered from university reports and surveys and reported here. A retelling of their story concludes the chapter.

Background

The degree program intended to provide the opportunity for technical college graduates to complete a Bachelors of Science degree and place themselves in a position to advance within their present employment, change jobs with intent to "move up," or remain employable. Approximately 350 people have graduated from the B.S. in Management (previously Industrial Management) since its inception in 2000. The program was developed by the university in order to meet industry's need for technically trained managers and to meet the state's goal of increasing the number of baccalaureate degree holders in the state.

Table 2

Enrollments/Graduates of the BS in Management

Year	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-9
Enrolled	52	104	168	169	177	217	247	298	342
Graduate	6	10	8	42	26	51	59	63	37(Dec)

From Table 1 one may surmise several things. The first being, the adult student takes a long time to complete the degree. While that is true, graduation occurring on average four years after beginning the program, the results may also suggest that there are a large number of people entering the program and not completing. I would concur with the second assumption. Anecdotally, the graduation rate from this program is lower than a traditional four-year degree seeking student. Retention statistics are unavailable as they are not gathered by the university for transfer students.

The employment data gathered at graduation shows 98% of the graduates from 2000-2007 are employed upon graduation (UW-Stout, 2008a). This is not surprising as most are employed full-time during their studies. They were employed and earned salaries that averaged in the high \$40,000s.

An earlier study (Dittmann, 2007) of these graduates reported that before starting the program they were: professionally motivated, 95%; economically motivated, 95%; and personally motivated, 100%, to earn a baccalaureate degree.

Graduates reported they were positively impacted both professionally, 90%, and economically, 74%, by earning the degree. I had been concerned that the economic motivation was not matched with economic reward, but perhaps the graduates had higher expectations and were in fact rewarded. Of those changing positions, 67% reported moving up, 20% made a parallel move, and 13% moved downward in position after graduation. Forty percent reported they had been promoted and, of those, only 7% did not attribute the promotion to their degree, while 16% were neutral. When surveyed in 2006, 45% of the respondents reported changing employers after earning their degrees. Slightly over three-quarters attributed their job change, position or employer change, to their degree attainment.

Additionally the university does one and five-year follow up studies with graduates and employers (UW-Stout, 2006). Graduates of 2000, 2002, 2004, and 2006 were surveyed one year after graduation. Over 70% of those surveyed reported their classes prepared them well, or very well, for employment. Eighty-two percent were employed one year after graduation with an average salary of \$51,600. The employers surveyed, N=3, ranked the graduates' overall preparation for professional employment when compared to other employees at 4.5 on a scale of 1-5, 5 being high. One hundred percent of the graduates responding five years after graduation (graduates of 2000 and 2002) reported being employed, with an average salary of \$78,400. Their employers, N=2, reported their preparation for professional employment when compared to other employees at 5 on a scale of 1-5, 5 being high. Salaries grew significantly in the four years between surveys and

employers, although a small sample, seemed pleased with the preparedness of these graduates.

Introducing the themes

The career decisions made along the way by these graduates are many and varied. Ann put it as:

So it took spinning around and trying different things, and applying different skills, to get me to that next step. I wish there would have been a more direct route, but I don't know that I would have got there. I needed those other experiences to prepare me for the next role. (Ann)

The early years: Finding an identity – a passion for the technical

The graduates had, for the most part, begun their education in the technical college system. Some went straight from high school to a technical college, some had worked before entering the technical college, and others had served in the military first. A few started at a four-year college, but their experience there was short-lived. Overall, their education was technical and their work experiences technical. This study sought to determine the decisions made throughout their careers that determined their current positions. One of the decisions they all made was to return to the university and earn a baccalaureate degree.

When asked about the career journey taken, graduates began their stories at different points. Several talked about decisions they made in high school or earlier. Max was the youngest of five children and attended a Catholic grade

school. His family decided he was not going to the Catholic high school and his local public high school did not provide anything beyond a normal curriculum.

And there was no way on earth I wanted to go to [the local high school]. So, I really wanted to look for something that was mine. But at the same time, I knew early on, by then and I knew, I wasn't going to be involved in a program that would help me meet people and something that could help me form an identity. I knew I wasn't much of a football player or basketball player. So I looked for something, that one technology thing.

I was involved with technology, early on, even in the high school I went to. I'm a product of the Minneapolis schools I attended Minneapolis North. When I was a student I worked at KBEM. 88.5. I was a student in that program from eighth grade until my senior year. The radio station, that was, related more to the big building blocks that started my whole career. Always interested me. At 12, 13 years old, who doesn't want to work on a radio station? (Max)

Max later was invited to attend a summer youth awareness program for minority high school students. While it was organized in a camp-like way, it included industry visits and had technology at its heart. He credited this experience with his decision to further his education by earning two associate degrees, electronics and networking and digital systems, from a local private technical college.

Others did not make the decision to begin technical education as seriously.

Hal related:

In my senior year in high school I took a half semester of, or one semester of graphic arts, just 'cause I had nothing else to do. I just was waiting for the end, waiting to graduate kind of thing. Wanted to do something that was, I thought, brain dead, you know, one of those kind of shop class kind of things. So I took a graphic arts class and had a lot of fun with it. (Hal)

Hal went to the university directly out of high school and completed three years of a four year college program and later he completed all but one credit of an A.A.S. in printing and publishing. He has worked in the printing industry since leaving college.

Ian's high school career was not as positive, yet his experience in technical education was:

In high school I was introduced to a program called the Youth Apprenticeship Program. The Youth Apprenticeship Program (YAP) excited me greatly because I would get out of the high school environment. High school was not a good situation for me. I was just not there and didn't really care about high school very much. . . . Again, academically, I had not a clue; long hair, half way down my back, all that kind of stuff. So, when I heard about the Youth Apprenticeship Program it interested me a lot because it wasn't in high school, plus it was more of

real world experiences. So I was accepted into the first year of the automotive program, for the Youth Apprenticeship Program.

So, I got into the Youth Apprenticeship Program and absolutely loved it. I went to the job site three days a week. (Ian)

Part of the YAP included classes offered at the local technical college. The experience of attending classes somewhere other than high school motivated Ian to continue his education by seeking an A.A.S. While working in the YAP Ian found a mentor who:

Really taught me a lot about the automotive dealership. It was a big enough dealership that they had their separate little tunnels of, “Okay, you are the technician, you are only supposed to do this.” But Sal was good to make sure I understood the other people’s viewpoints. So that was a good experience. (Ian)

Over ten years later, this mentor is still a part of Ian’s life. Mentors played a role in the career development of several of those interviewed. Nan’s mentor taught her lighting design, a skill that “opened a lot of doors” and became a career focus for her.

In the early 1970’s Nan was the first female in her high school to take shop classes. “My mother had to go to the school board to allow that to happen.” She was influenced by two uncles who were engineers and describes herself as “not a girly girl, and I liked rebuilding engines and things like that.” However, when she entered the university she declared English Literature as her major.

After one semester she transferred to another school into an industrial supervision program and left that to get married. She worked as a drafter/designer for the next twenty-plus years.

Tom saw that he could go in two different directions after high school and made a decision:

Actually, when I was in high school, I took a lot of what they called back then, industrial arts programs. Woodworking, metal craft, drafting, and of course this is all pre-computer age. Everything was done by hand. From that standpoint, I had two directions I could have gone, either architectural design, or into the metals field. And I actually chose the metals field and went to NTC over in Wausau, the machine tool program over there. It was a two-year program. I graduated with a diploma. (Tom)

Tom worked as a machinist and later returned to the technical college for an employer-sponsored apprenticeship in tool and die.

Ben started in a business program at the university. He dropped out of school after one year and worked for a year.

As I was struggling, trying to find out what I wanted to do. How am I going to separate myself? Cause everyone goes to college for business.

And I didn't have a career path in mind. But I figured I could always use a trade. I remembered I like to draft, draw. I was good with numbers. I started at Dunwoody. I was in the HVAC. Once I got to Dunwoody and

gained trade experience, then kinda I knew where I wanted to go from there. The decisions for me were done. (Ben)

Ole had no technical education classes in his high school, but made the decision to attend a local private technical college and study architecture. “I wanted to live in a big white house with pillars and columns out front and a big yard, and just thought I would like to draw that.” He was clear he did not want to spend four years in school and chose a two year program. “I would be in and out.”

Others did not make decisions, but went with the flow of life. Del started out in college:

I got married young, right out of high school. I was 19. I wanted to be a doctor/physical therapist. Started going to school for pre-med, and it just wasn't for me. I've always been a carpenter. My dad has a construction company, so I started working in trades. (Del)

He was not satisfied with where that led him, “I was in a dead-end, useless, don't-want-to-be-there job, and said to one of the guys from the union, ‘What do I do?’” And he was advised to take the test to become an apprentice millwright.

And the test was all math. They can't do anything mechanical because, back then, the way it was explained is: women have the right to do it, men have the right to do it, and they don't have to know anything about mechanics or what a crescent wrench is, because the apprenticeship will teach you that. If you know everything, there is no sense going through the apprenticeship.(Del)

He was satisfied with the outcome of becoming an apprentice.

When you are 20 years old, and it wasn't that much, at the time I started out, I think I was making \$12 or \$13, but it was still pretty good. That was 20 years ago. Every six months, as long as you get your schooling in, you went to school, depending on where it was, and Wisconsin uses the tech schools, so I went to Nicolet Technical College for a while, in Rhinelander. You went Tuesdays, for eight hours. Took math classes, blueprint reading classes, college courses. (Del)

Several worked before they began their technical education. Eva worked for a few years at McDonalds and then factory jobs before she decided to earn a technical degree. "I was about 26. And Fox Valley had a lot of paper mills at that time and that is why I went for the program I did (pulp and paper), plus I thought it was interesting." Len also worked in a factory, although not for long.

Right out of high school, I basically went to work in a plastics factory, injection mold operator. I was making as much, when I started, as much as some guys that had been there ten years. About four months into that job, I said that I would never want that to be what I want to do the rest of my life. Usually everybody has the job that turns them, right?

I didn't really care for it, I just knew I didn't want to end up like that. Most people have that dirty job that, I've talked to a lot of people about that, everyone has the farm, working here, doing that, something told them they didn't like it. (Len)

It was the job that convinced him he needed more education so he completed an A.A.S. electronics program at the local technical college.

Ann changed careers early on. She had attended the technical college for a medical lab technician degree. However, she found:

It was very interesting, but you got no respect. You worked all these hours, and every shift, and you didn't get paid that well. So my brother and I, my brother the machinist, are sitting down and comparing job woes. He is getting paid twice as much, has job security, and doesn't work a weekend. Are you kidding me? (Ann)

She returned to technical college for a vocational diploma as a machinist. "That was the hardest thing I have ever done, because I wasn't mechanical before I got there. I had an interest for it, how things worked, but I didn't know what a lathe was."

Ian described his career as being influenced by something even more fundamental than education, his upbringing:

Some of it being just smart decisions at the time, not realizing how important of a decision it was. I did, about 90% of my success in life, I believe, you know I consider it a successful life, is 90% of it has been because I was born and raised on a dairy farm, and the ambition, and the "get up off your butt and get things done." (Ian)

First work experience

Their job career paths vary, most however, have had a series of assignments, jobs, and employers. So much so that Guy reported:

My mother-in-law is scared because she thinks I can't hold a job. Because she thinks, "Oh, you know, gee, he had a job at Company F, left there, went to Company A, a great job, left there, and now he is at Company E, and he interviewed for a different company." She thinks I can't hold a job. But, I had to explain that to her. I said, "You know, Joyce, hey, hold on here, you know, I am not quitting jobs, I am leaving one job to go to another job. One was closing, and one didn't work out. Okay, that is just the way it works." (Guy)

As a machinist, Ann worked at a series of small shops. She explained her employment history and job changes as a result of her professional development:

I did schooling for one machine. From there, another company really wanted that because they had this one machine and nobody knew how to run it. Okay, so I moved up to that next position. And then, from there, that experience helped me get to the next one. (Ann)

Fay was working as a waitress in 1991 and as she remembers "tips weren't too good." One of her customers told her about an opportunity to be trained as a truck driver. The Commercial Drivers License was being introduced and the trucking industry "feared about 50% of the truck driving force would lose their

licenses because of illiteracy.” She entered a supported training program and started driving truck. A few years later Fay was teaching truck driving at a local technical college, but:

That went away and I went back to driving truck full-time, driving truck, seven on, seven off. I'd call my husband and would say 'meet you wherever.' I was seven on seven off. I'd go seven days without seeing my daughter. (Fay)

Her next job was in local manufacturing facility and she took it “to be home to with my kid.”

Del's job included safety concerns. He worried that he might be “going to go home, for sure, because of someone else's mistakes, or yours. And you have that every day, but it was just more intensified when you are” the technician.

Factors other than the work actually performed influenced many of the decisions to change jobs or employers. Del worked as a journeyman with the union and employment was boom or bust.

Millwrighting, you would work like crazy. I'd put 24, 25, 26 hour days in, and I know there's only 24 in a day, but I'd go in at 7 in the morning, and go home at 9 the next day. I worked like mad for two weeks on a shutdown, and had off for three. So you go from making great money, with overtime, to, at the time, it was like \$260 a week unemployment. It was hard to budget, hard to build a family with that. So, what Company K

offered was stability. Company K offered a paycheck every week, and benefits that were spectacular. What it was, it was steady work. (Del)

Jay worked at Company C for 17 years and he intended to retire from there, but the company wasn't there for him to continue.

Originally I was working at Company C. Company C, of course, merged with Company S. Company S sold off the integrated circuit division to a Taiwanese bank, to a guy from Taiwan, who had big dreams. He did not know how to do it, but he had big dreams, and in a two year course managed to run the company in the ground. And we were all out of work, and it was right after 9/11. (Jay)

The company experienced a layoff and 107 people were laid off. Jay was number 104 and he related "you always remember your number." He had a nine month job search with only 2 interviews, but resulting in a job.

These graduates seemed to be looking for more in their employment. Wages, responsibility, respect, and challenge were mentioned as some of the things they were looking for. Tom kept moving in his career.

I always seemed to be looking for, especially in the late 70's or early 80's, companies were growing, but once you got in it and you started working, you always kind of hit a roadblock as far as pay increases. I mean you could get to a certain standpoint, where you worked there two or three years, and all of the sudden, well, that was it, you couldn't really go any higher, and the job that you had was the job that you had. I always seemed

to be constantly striving to get, to be able to use my mind more. And, of course, more pay incentive was always in the background. (Tom)

Eva was on her own at 18 and “just went out and worked.” She worked at McDonalds and local manufacturing facilities. “But I always wanted to better myself, and I just never quit a job without bettering myself. I think I just wanted to have a good life for my children and for myself and my husband.”

Ray made career decisions because of his feeling that his experience was not being respected.

The turning point in my life was at HC. I was an assistant chief engineer there. And I was told I was taking over the chief engineer’s position because of my vast knowledge in foundry. One day the general manager walked in, with a young guy, shook hands, and said, “Ray, I want you to meet our new chief engineer.” They had not talked to me or anything.

But that was it. I walked into the general manager’s office and I said, “I quit.” (Ray)

Another time Ray left a job because of inadequate reward for his effort.

What happened there is I had done that job for about one to two years, and I was expecting this huge raise, because when they hired me I only knew how to do AutoCad. And I get in there and there are boxes, and I said “What’s this?” And they said, “We hired you as the system administrator design engineer. Install the networks.”

Well, when raise time came, (the manager) at the time, sat down in the office, he said, “Ray, you’ve done pretty good. We’ve looked at the market. We are adjusting our bubble, and we are going to offer you an extra \$1,000 a year.” “This isn’t right.” I said, “Well I was really hoping a \$8,000 dollars a year raise.” And he laughed at me. I said, “I can’t continue to work for this company if that is what you are going to do.” And he said, “There’s the door.” The next day I came in with my formal letter of resignation. (Ray)

Hal realized the world was changing around him. He works in the print industry which has experienced huge technological changes in the last 20 years. “Change is something that’s always there. Things are always changing. I think you can sit in your cubicle for 40 years and not expect you know something different to come along. You are fooling yourself. It will happen.” He needed to change to keep up with his industry.

Ken was the only person who was with their first employer. He began working for Company A as summer help during college, and it turned into a full-time job loading boxcars when he left college. Because he had some engineering classes at college he felt he asked the right questions on the job. “I got noticed because I saw things in the system.” He moved steadily up within the company. Ken thinks he was one of the last engineers his company brought up through the ranks. Today they hire engineering graduates for the job. Ken had reached as high a level as he could without a college degree.

Building their skills

Most of those interviewed enjoyed being a technician. In fact, Jay went so far to say, “If that job came back and was guaranteed until I could retire, I would go back to it. I still have notes on all the equipment I used. But if I could, I would go back in a heartbeat.” But he was realistic enough to admit:

The one thing about not being in the technology community right now is that I'm not riding that roller coaster ride of boom to bust, boom to bust right now. It's good when it is good, and it's really bad when it is bad.

(Jay)

Del didn't argue that his technician's job was mentally challenging, but felt he proved himself in a very physical sense:

I guess the part I liked about it was that I'm an ox. When nobody else could get the tensions or torques they needed, I could pull it. Big, dumb animal I call myself. Because it was, one of the jobs we did up in Peshtigo, up at the paper mill before it shut down, a lot of years ago, was torquing the heads on the Yankee dryer. Love that aspect of it. (Del)

Cal also spoke of the physicality of his role as a technician, but in a less positive sense.

Well, one of the most difficult parts is the physical part of it. You can see that, yeah, I can still do it, but at 45, would I still be able to do the same job I was doing? And staying a technician, and moving up the ranks, my next job is sitting at the control panel, like a Homer Simpson type deal,

running the boilers, but it is very stressful. And I think 12 hours of very stressful stuff; you might as well put a gun to my head, because I'll have a heart attack or something. I could see that. (Cal)

There were good parts of being a technician. Cal did say he thought the best part of being a technician was:

Going into new areas, is the problem solving, trying to make things either work better or more efficient. Just looking from outside the box, saying, "Okay, this is what we are doing. Let's step back and say, 'Does this make sense? Could we do this better?' (Cal)

Ben liked being a technician, "Very much. I likened it to in the building trade, it was very much like playing chess because you have to think one step ahead. Ahead of the plumbing designer, the electrician, the electrical designer."

Several of the interviewees mentioned the straightforwardness of the technician's job; the fact that the job was over when you left at the end of the day. Eva spoke about the simplicity of the technician's role:

I like to keep busy, so as just a technician, you keep busy, you go home and you are done with your job. So it is pretty simple that way. Once you are done after your eight hours, you are done. (Eva)

Tom said he "I really enjoyed doing the programming, getting the first couple pieces off the machine, making adjustments and making sure that they were in the tolerance." But he added:

If you had a very long production run, and you had one spindle on a CNC lathe for example, that you are putting one piece of solid steel in and it was doing all the machining. That run for 5000 parts could take two to three weeks. That's basically all you do is take and load that piece of steel into the automated production, close up on it, close the door, and press the start button, making sure it was straight. That, I did not care for. (Tom)

Several of the graduates mentioned the intensity of being a technician. Ken's role in the engineering side of the company brought him challenges, and rewards.

Good things in engineering, you are very focused on one project. You might have multiple projects, but with multiple projects you get one big one and a couple of side bar things. You are very focused. I put blinders on and do what I need to do. And this is kind of fun because you are always trudging forward and you know what is going on, and you are the expert. (Ken)

Pat found he was very focused as well and related how it was different in his management role.

I think being a technician you are more involved in the micro-aspects of your job. You are there and you are real hands on. You don't have as much of the responsibility, so you are more in tune with the day-to-day, down to the nitty gritty stuff. You know, where once I have worked my way now up into more of a management role, you are concerned about

that, but you also have to be concerned about the larger scale too, so things, just being able to focus on one little aspect, you know, that probably made the technician part of it a little bit more enjoyable, because you had one thing that you could put all of your effort to and be able to perfect that. (Pat)

The technical work experiences of these graduates presented many pluses for these graduates. Ian spoke of doing what “came naturally.” Each found his/her experiences to be positive, but they wanted more.

Different from their fellow workers

Graduates mentioned that while coworkers were satisfied with their working conditions, they themselves were not. Hal describes how he is different from some of the people he worked with.

Where, when I first started in the industry, I was working with guys who, yeah, they were in the union for 20, 30 years. And they thought, “This is the only job I’m ever going to have.”

Guys I had been working with had been doing the same job for 20, 30 years, and didn’t think Mac would ever catch on. Didn’t think anything would happen. Well, you know, within a couple years their jobs were gone. And a couple years later, after that, the people who took their jobs, their jobs were gone. And it’s just, nowadays, in that industry, it is constantly changing. There is always something different going, always

something new. The stuff, the way you used to do things, is not the way it's done anymore.

Say, if people do the same things for years and years and years, and they don't wanna, or don't make no attempt to learn the new way, then when the old stuff does go away. Because it will, you know, everything will go away in favor of something new, forever, that's how it works. People who cling on to those old methods or equipment, they go with it when it leaves. That's how I have survived. (Hal)

Tom worked with many people fully satisfied with their chosen careers. People intending to work 35 to 40 years at the same job, but that was not his choice.

They would come in and they would do what they needed to do during the day, and then they went home. But, they were that much closer to retirement, and when you take someone that is in their early twenties, and they have another 35 to 40 years, you want to be able to utilize more of your talents than what were being utilized there. (Tom)

Nan credits her early mentors for broadening her outlook and expressed how she differed from others she had worked with:

Because of the people that I worked for when I was younger and the opportunities that some of these people gave me I was able to think a little more broadly than I think a lot of drafters do. Because I know an awful lot of people that are perfectly content to be drafters and they don't care if the

company grows as long as they have a job. They don't care if products get improved. They don't care if they can make someone's job easier or make someone else's job more difficult by what they do. So I don't know if I was different in terms of most technicians, or the more typical technician. I really don't know. Because I know there are people at places I have worked before who are still there 20 years later and they are still drafting. They have had absolutely no interest in doing anything but draft. So I guess maybe it is just an internal thing. I don't know.

Eva thought her love for learning made her different than others with whom she had worked.

I love to learn, too. I wish I could just do a job and say, "Okay, this will be a good job for me to do the rest of my life." But I am always trying to better myself. But I think it would be simple sometimes if I would just say, "This is good enough, now." But it is all a part of learning. Some people like it and some don't. (Eva)

They viewed themselves as different from their fellow workers. Their decisions were different from those their fellow workers made. Each of those interviewed found a reason to return to school for a baccalaureate degree, each with the goal of being more employable, at new levels.

The need for more

While they were generally successful technicians, they each decided to return to college to earn a baccalaureate degree. Their motivation might have been

financial, but often it was personal. The sense that they could do more, and wanted to do more, was evident. Ray made it clear that he expected this decision to be life changing:

I think the bottom line is I want to be in control of my destiny and be empowered. And the glass ceiling, because I didn't have a degree, was just one more thing, to add gasoline to the fire. And when I came to the realization that I needed to get that, my life changed. It changed. I'm transformed. (Ray)

Pat wanted more than he was currently qualified for.

And that was actually one of the primary drivers for me getting or finishing my college education was just to open up more doors for me long term, knowing that I didn't know if I wanted to be an estimator forever. And I am glad that I made that decision. It worked out pretty well. (Pat)

Eva had a good job, but changed employers and her life to earn a degree. Her decision to change jobs was predicated by her desire to return to school for her baccalaureate:

My initial reason for even coming to Company A, because I do live 45 miles away, is because they do offer tuition reimbursement. That was a big thing for me. And I did know that I wanted to go back for my bachelor's degree. So, I was a supervisor at a prior job. They didn't have tuition reimbursement, and I felt I could make improvements in myself by being

with Company A instead of staying with the company I was with. So, I quit and took a pay cut, but I figured it would be worth it. I think within nine months of the start of my working with Company A, I started my degree here at Stout. (Eva)

Eva said she looks back and realizes when she made the decision:

“This is where I want to go,” I think the key of what people need to do is make a goal. Find out where you want to go to and then go for it, and it will be much quicker. Because once I made that decision and I knew what I wanted to do, and I look back, it only took three or four years from the time I started at Company A (to finish her degree). (Eva)

But she also felt she was at the right place at the right time. She appreciated the tuition reimbursement her employer provided:

I think a lot of people are afraid of the debt for four years of college. That was my fear. That is why it took me so long, because I didn't want that debt. But it is well worth it. I am fortunate enough where I had tuition reimbursement so I didn't have to, but if I would have taken on the debt, I probably would have been promoted much earlier and years ago. But I am okay with the route I took. (Eva)

The motivation was not always monetary, but personally and professionally motivated. Tom wanted to do more.

I worked at a few different, not job shops, but full production shops, learning NTC equipment, lathes, grinders, and other machines, and, you

know, high volume jobs, . . . I didn't have any problem with the pay or the benefits at that time. But, again, you are not utilizing your full talents, what you feel that you would be able to do.

So I wasn't utilizing my talents as much as I wanted to at that point. And my next thought was, "Well, it would really be nice to be able to go to college to get my engineering degree." So then I started with a major employer in the Eau Claire area and six months later I was at Stout.
(Tom)

The graduates wanted to be the one making their career decision, looking to open doors in the future. Pat wanted to make sure he had a voice in his future:

The bachelor's was going to be even better for long-term career goals. I was satisfied where I was moving and wanted to make sure I kept moving forward instead of reaching a point where I couldn't go any higher up.
(Pat)

The fragility of employment became clearer during these interviews. Ann was looking for some job security, looking to the future:

Well, before I came to Stout, I was a machinist. So I was working in a trade, working with metals, and I was seeing the manufacturing side of things starting to . . . , um, the job outlook wasn't real good. I was stuck at a position and really wanted more. Wasn't really sure what more, but I needed something that could give me other opportunities. The bachelor's degree was what did it. (Ann)

Del was confident of his employability, but it was the next job he was concerned with:

I was getting bored, getting sick of standing here all day long doing nothing, and I need to do something else with my life. What is going to get me to the next level? What's going to take me from being the dumb worker? You know, I always had work. You know they treated me well, I worked enough, but I still had the problem with the benefits, you know, if you don't work. I was working enough that it was still pretty good, but I wanted to get to that next level. I wanted something where I knew I was being paid every week, and wasn't killing myself to do it. The older you get, you know, I'd walk around and see the guys that are missing fingers, guys that are missing eyeballs, and I've seen everything with those guys. I don't eat the best and I'm not the healthiest person in the world, but I'd like to be able to do what I want with my kids, too. That was a big choice, and then I decided to go back to school. (Del)

Employers encouraged employees to get an education and supported their efforts. Tuition reimbursement was available and as Jay related, education itself was rewarded:

At Company C, they base their salaries on degrees, or at least in our division they did. If you had had a two-year degree, you were in this pay grade. If you had a four-year degree, you were paid more. You could be the best employee in the world and come up with great innovations, and

everything, but if you had two-year degree you were slotted in this category and you were not going to move out of it. You could have a master's degree or Ph.D. and be dumb as a box of rocks, but because you had a Ph.D. you make six figures. That was kind of a flaw in the system as far as I was concerned. (Jay)

Del saw the degree as solving his problem:

Well, you always have to have the end goal in mind. You know, I guess, if somebody comes and says, "Well you can't do this, because you don't have this. Or you can't do that, because you don't have this. Or you can't be a toolmaker, because you don't have a journeyman's card." Well, then I'll go get it. You know, and, "You can't be an engineer, because you don't have a degree." Well, that's not a problem either. I'll do that. You have to be able to have that drive in order to succeed. You have to have the personal drive in order to continue on and make these decisions that, you know, if somebody says that you can't do something. Well, why not? They'll give you an excuse. Well, then go out and fix it, you know. (Del)

Tom also wanted more, financially and professionally:

Once I achieved my journeyman status, I knew what engineers were doing, and I said, "Well, I can do that too. I can do this, you know." And it was always, "You don't have the education. You need the education." "Not a problem. I'll find somewhere I can get the education." And I did.

I've worked with people in the industry, also, that did not have a bachelor's degree. And I didn't hold anything against them, but you know, that was fine for them. They found an alternative route. Anytime that I wanted to go into the engineering field, I got, "Well you have your technical knowledge, and that is fine, but you don't have a degree. You don't have an engineering degree. You don't have a management degree." "Well, let's solve that issue, I'll go back and get my degree." Basically, well, there's no more excuses. You know what I mean. (Tom)

Many of the graduates mentioned the roadblocks they faced because they did not have a degree. They brought, in some cases, decades of experience and were limited in their employment choices. Ray said:

I was climbing the ladder for a while, and then all of the sudden I hit the glass ceiling because I didn't have a degree. I had an accumulated total of three years of traditional education, sitting behind desk, listening to the teacher, professor, whatever, you know, impart their knowledge. And I just never had a piece of paper to show for any of that. It was crazy because they would be firing registered professional engineers and putting me in their position. I'd be doing the same work. They would go get somebody else to put a stamp on it. I had done that for almost 20 years. So I got a lot of knowledge. I walked in those trenches, but never was able to progress because I didn't have a piece of paper. And I was resentful of those that did at first, thinking, "You know, that's baloney. I know more than them. (Ray)

Tom comments added to the theme:

But it's kind of like, well, you tell somebody you want to do this, and it's, "Well, why do you want to do this?" "Because that's what I want to do." The thing is, I'm good at it, you know, at least I'd like to try it. Well, you can't try it because, you don't have this. I'll go out and get it then. You know, that's not a problem. Once you do that, there's no more excuses left. At least, you know, it's your decision. It's not somebody else's. You have to plan for that. That's exactly right, you have to plan for that. (Tom)

There were those that admitted to being financially motivated, either primarily or secondarily. Max's motivation was clearly monetary:

Now back in my early 20s, how do I say this without sounding cold and crass? I decided I wanted a six-figure salary by the time was 30. That was my goal. I needed to know how to get there. You need to make strategic steps and decisions to both better yourself and your career to sell and market yourself to get to where you want to be.

You know, absolutely no surprise, I get that before I was 30 and then my next question is, what's my next goal? I want to be retired by the time in 45. Is it going to happen? Probably not. But what would I have to do to get there, or get wherever when I get out of the game. (Max)

Ray also admitted to being financially motivated:

Well, I would say continually hitting that glass ceiling. Being so well liked, so multifunctional, working at a high capacity with minimal pay, got

me thinking, because I worked harder for half the pay a lot of people were getting, and had more responsibilities. And I just kept thinking I've got to be able to leverage some more money for me. Let's face it, not only is there all that other stuff, but you still have to have money at the end of the month to pay all of the bills. For me that was a major motivator. (Ray)

The decision to choose this specific degree was motivated in several ways. Ray found this degree and thought, "This is perfect, because I really don't want to be a draftsman or engineer the rest of my life. I want to take that role of management. I want to work more independently and not be micromanaged." Tom said, "I was looking more for the management end of it; how to manage multiple-skill projects, and how to be more of a management type level. I had all this other background that I brought with me."

While the rest of the world thinks of this degree as degree completion, Tom saw it as a backward approach to education.

I had the experience, but I did not have the degree. And a lot of people, what happens is, they go to college right out of high school. They will find out that after four years of college they really can't find employment, so they go back and get a technical diploma or associate degree. I did it a little bit backward. I had all my technical stuff first, and then finished up with my degree. (Tom)

Ole felt "I had enough ambition in me to finish out my college education." After his technical college degree, he transferred to one of the Minnesota State

Colleges and Universities and found his credits from a private technical college did not apply to a degree. Discouraged, he went forward anyway and earned an Associate of Arts degree before finding the degree completion program at UW-Stout.

So I thought, instead of transferring from MCTC over to U of M Carlson School like I had been planning on doing, I met with UW-Stout and I found it to be an amenable decision. The classes being offered at Dunwoody were convenient. The cost of tuition was less than what I would pay at Carlson. I had fewer issues with all of my credits transferring from both Dunwoody and MCTC into UW-Stout than I would have had going to Carlson, so it just seemed like it was a good fit. (Ole)

Hal had a varied educational background. Three years at the University of Minnesota studying mathematics, all but one class of an A.A.S. degree, and then UW-Stout, the first degree he completed.

Company K, that is when they put me into, back to school and finish up and paid for Stout. Because my boss at the time knew what we were working with, looked at the curriculum and said, “Yeah this is all very applicable, pertinent stuff.” (Hal)

This degree seemed like a good fit for these students. Sam appreciated the transferability of his credits and once enrolled, felt a level of comfort.

The schools: the tech and Stout both. The partnership between them is beyond fantastic. I never would have thought I could take one level of

education and start as a senior at the next because of the transfer of credits. That really opened my mind up to possibilities. From a person who was a high school dropout in 79, 78 to achieve 167 credits at the level I have. Like what I have would have could only come from years of experience working in the trenches and understanding there's something better in your life.

And when you get a partnership of schools that are going to work with you and the average age of the students is no longer 18 or 19 but 30. Umm. And you go into a classroom and you're not the only one of your age, and half the room is filled with people your age, you come with a greater comfort level. (Sam)

Hal agreed that the content of the degree served him well:

So I am seeing these things as I am working, and then I turn around and go to school, and it is like, you know, second nature just to know, to understand what is going on in class. You get more of the theory on the class side, but I am getting the experience on the work side, which is really helpful. I thought, you know, the degree works.

Um, I don't even know if my boss knows I have a management degree, when they put me, you know, in that position. So, I find it very, I found it very helpful, all of the schooling on all of the different stuff. (Hal)

The decision was no small matter to the interviewees. Del went to the local community college for academic counseling to find out what he could do next. “What are my options? Where can I go?” His education had been years earlier and he needed to know his options and how they would affect his life.

It was huge. It was scary. Like I said, I’ve got four kids. My wife, knowing that I was going to lose all that time with my kids for school work, and studying, and knowing what it was like 20 years ago, and it’s a lot worse now. (Del)

Balancing college and life

While they were in the baccalaureate program, they made changes to their lifestyles in order to complete the degree. Quin described his life while in school as:

Just crazy. It was work, come home, do homework until midnight or one in the morning. Get up at 5 to go to work, again. If I was traveling, it was that I was up until midnight in the motel room. Or, you know, if I got home at midnight, it was working until the next day, and then going back to work without sleep. What drove me was my kids. To make life better for them, what they need and what they want, lessons that to get what you want takes hard work. And if it’s worth doing, it’s worth doing right. What I want, and what they want, and the niceties of life, instead of just, “here’s taco meat again.” You have to work for it. You have to go after what you want. (Quin)

Ray reported his experience as:

Where other people might spend an hour per credit, I spent five or six. I would work every night. I would get up at 4 o'clock. I would work as much as I could before I went to work. I can survive on three hours of sleep for three years in that program. It was just the head against the wall. And that was for two or three classes, Saturdays and Sundays, wake up and I worked solid. I got through it. (Ray)

The odd hours were a theme many of the graduates explained. Guy said "A lot of my homework was done after midnight or during the day if I was working afternoons, or after 11 o'clock at home. I did some at work on midnight; I did some at home on midnight." Tom also mentioned the lack of sleep:

Eight years at Stout, going on a part-time basis, I was working full time, third shift, 11-7, and I went to school during the day at Stout. And I started at the IT program at Stout. About seven years later, I decided to switch to industrial management, and finished my degree in eight years, being a project engineer at that standpoint. Well, there were a few roadblocks in there. But you if you keep that goal in sight, I mean when I was working fulltime, especially at night, working from 11 to 7 and then going to school during the day, it's hard on a person to do that, especially a returning adult student with a young family and all, and a fulltime job at night, and going to school during the day.

There was one semester where I don't think I got more than three hours of sleep a day. It was very rough, because, you know, in the beginning it wasn't quite so bad because you all these classes to take, so you could kind of pick and choose to fit your time schedule. But once you had those completed, in your sixth and seventh year, that one fall semester, I had a class right away in the morning. So I'd leave work at 7 a.m. and get to Stout at 8. Had class from 8-10. My next class wasn't until 2 in the afternoon. So I'd go home, get some sleep, get back up to go school. Had class from 2-3:30, or whenever it was, and then go back home again after that. Of course, well, my time clock was totally messed up at that time. You can't just go back to sleep, so I'd stay up until my wife would come home from work, and we would have dinner together. Then I would do my homework. Then it would be about 9:30, and I would be getting pretty tired, so I could get a little bit of sleep before getting back up at 10:30 to be back at work at 11. It was pretty rough. (Tom)

Tom would agree that the journey was rough. He admitted to wondering if it were all worth it and needed the end goal in sight to motivate him. The "light at the end of the tunnel" was completing his degree, but along the way he had some dark days.

Low points would be that it places a burden on family life, because of other things that you do. I had homework for school, and lack of sleep was a big deterrent. You do kind of catch up on the weekends, of course, and come back around, but by mid-semester you are constantly lacking that

amount of rest that is needed for the body. You turn out to be a bear. And I had my wife tell me that many times. You know, by the middle of October, sometimes she didn't want to be in the same room with me, especially if I was doing homework, working on the computer, because it's hard. So she would take my little one and they would go to the park or they would go shopping or something, and leave me be and do my work.

Well, I wondered if it was all worth it, but again, you always have to keep that end goal in mind. And I actually had planned to be completed in seven years, not a full eight. But by the time that seventh year started rolling around, I knew it was going past seven, I knew it was going to take another year in order to finish that out. And that was part of the time I compromised here. I didn't quite get it done in the timeframe that I wanted to. (Tom)

While they were students they took time from their families and from their jobs. Del took vacation time to attend classes and to study.

It took about three and one-half years. I used a lot of my vacation to stay home and make certain classes when I had classes here. Every Wednesday night I took, I ended up taking two weeks of vacation to be sure I was home on Wednesdays, trying to just catch up. I couldn't have done it without vacation if I had to, and make my classes. (Del)

Jay has three technical college degrees so he was not adverse to education, yet it was a long haul of eight or nine years to graduate with his baccalaureate

degree. “But that was with a little bit of burnout setting in, stopping and taking a breather for one or two semesters.” What motivated him to finish was the precarious position of his employer, “And then when things started going downhill at Company C, that is when I thought I had to go back to school and get moving with this again.”

Ken spent 11-12 years in school after returning as an adult. He attended part-time and took two years off for health reasons. He describes his experience as:

A lot of damn hard work and persistence. For me it was. People have no idea the effort it was for me, because working here, with a wife and two kids. And I actually live in Balsam Lake, so I'd leave here and it's an hour to Stout and then an hour fifteen to get home. There was a lot of 9 and 10 o'clock nights... Get up at 4 to get here to work by 6 am. (Ken)

Ray's advice to a working adult getting a college degree was clear, although he admits he probably wouldn't follow it today:

Don't make the mistake I did. Accept B's or C's. You don't have to get A's on everything.” I didn't learn from my mistakes. I cheated time from my children, from my wife. I'm still a person who probably would try real hard though. And I wish I had those years back. (Ray)

Sam's employment while he was a student took a different track. He worked for a temporary employment agency.

When I set up my school schedule, well, these companies were, because these jobs were flexible. I could work 3 hours in the morning and then 5 hours later in the day. Most of the positions were through agencies, 6-9 month contracts.

The different industries were a good prequel to what I wanted to move into. It gave me a lot of exposure to the plastics, to computer components, to different food products. And again, it gave more exposure to different types of broad systems I would be working with. And at the same time it fulfilled my financial needs. As well as my scheduling needs: around my school schedule, and my son who was younger at the time. That's primarily why I worked that type of industry at the time.

Reflecting on their degrees, there seemed to be a feeling of satisfaction. The sleepless nights, or forgone vacations with families, paid off. Del said about the degree:

You know I really enjoyed it. I waited to go to school because I wasn't ready when I was younger, and it just wasn't for me. But I really enjoyed it. I enjoyed the challenge, and I enjoyed the learning, in general. (Del)

Quin said about finally earning the degree.

I have the tools to be a success at what I do. And I did not have the depth of knowledge of applying those tools before my degree. So that gave me a whole new approach. And I lived to regret saying, "Well they've got a

piece of paper, how come they got the job?” to a point. Now I’ve the experience and a piece of paper. Thank you. (Quin)

Putting the degree to work

Many of those interviewed indicated the role they expected, or saw, their degree playing in their employment. Some set out to find new employment once they had completed the degree. Pat said,

I figured I was a pretty hot commodity. I had nine years of experience in the machine tool area up to that point, and then I had a bachelor’s degree now to go with it, and started to look around for different employment.

I think that, you know the bachelor’s degree, I think in the career path I want to go toward, upper management and whatnot, I think that the bachelor’s degree that I got showed a little bit more commitment than an associate’s degree showed on the resume, especially being that I had decided to pursue that kind of stuff above and beyond when most people stop going to school. To do that, and take the initiative to do that nights and weekends and go about it that way, I think, helped me quite a bit. (Pat)

There was a shift in the kind of job they sought, and gained. Ben stayed with his employer long enough to earn his baccalaureate degree with his tuition reimbursement benefit. Then he made the decision to look elsewhere, “I had just completed my 4 yr degree. I knew I could take on a new career path. That was a decision.” Del took his degree and after failing to leverage it into higher salary, leveraged it to a new job with a significant increase in salary.

I graduated in 2007 with my degree, in the spring. And I told them the first year I hired in, my salary was low. I started in there at \$41,000 a year. The first year I was there, I didn't get a raise. They said I needed to have more experience. Well, I was going to be graduating, so I said, "You've got a year, cause if you don't give me a raise, I'm gone, I'll walk out of your door." And I walked out of his office. A year later, two and one-half years into the program, they gave me a few dollars, so put me up to 40 some, so wasn't really happy with that. I said, "Look, I went to school. I got my degree. I want more out of life than traveling the country for what you are paying me." "Next year." I went back to my desk and started applying for jobs at work. I had several interviews. Interviewed at Company T? They offered me a job. I told them that I wanted \$75,000.

I was smiling from ear to ear, and I walked into boss' office and said, "I quit." He said, "What do you mean?" I said, "You've got two weeks. I'm done." "Why?" I said, "Because you haven't paid me jack squat for the three years that I have been here, and I've given you everything that I've got. And I'll damn near double my income."

He didn't even have a chance to come back, because he couldn't have offered me that. And I believe strongly that, most of that, I would have probably gotten the job with my degree or without my degree. They've hired two other guys with trades' background experience, like I have, millwrights. And I honestly believe my degree got me the offer. They knew that I cared that much more about it, to see that in my thirties I

went back to school to get a bachelor's in management, because I wanted to go places. And they wanted leaders, and wanted people who were going to go after what they wanted. I know I am making a lot more, a whole lot more dollars a year. (Del)

Guy saw managers in his company without degrees, but felt they were vulnerable. He wasn't ready to attempt a move into management until he had his degree:

I never stepped into management, because without a degree, you are kind of leaving yourself hanging. I had a lot of guys that were in their fifties that had gotten kicked back from management positions. Some of them were, one was a plant manager for Company NHG, a pretty good sized plant, and look, they said, "Duane, you are making too much money, you have a high school education, yeah, technically you are good, but we can go and get somebody else to do it, with a degree, for less money, and he could move up in the company. So between him and a few other people, I just kind of shied away until I got this degree. (Guy)

He was looking for a job and some job security:

I just look at it and think I want to be able to work, just in case I have to work. I want to make sure that I have a career that I can do in my sixties and seventies if I have to. And, something I don't mind getting up in the morning to do.

Yeah, you have got to be able to go to sleep at night, and say, “Yeah, I have got to get up and do this and that.” And not lay there at night with your eyes open staring at the ceiling, saying, “God.” I don’t want that. I know people that have jobs like that. (Guy)

Ann changed employers three times since graduating with her bachelor’s degree before she landed with her current employer. She worked for large well-respected companies and each job change was her choice. “Every change that I made was for either more pay, benefits; it’s always been more pay. There has never been a lateral move.” She wasn’t always sure of her moves though:

Oh, yeah; learning curve, learning curve. “Did I make the right decision?” Always that, “Is this going to set me back, or did I just commit career suicide?” I like to be safe in some of the judgments that I make, even though you can’t. If you never take risks, you will never have rewards. (Ann)

She’s planning on staying at her current job for the near future.

Ken was the only person in the study to be with their employer for 20 plus years. He felt the degree allowed him movement within his organization.

It’s pretty much guaranteed I wouldn’t be sitting at in that position today if I wouldn’t have finished my degree, any degree. But getting my Industrial Management degree. I wouldn’t have made that leap from engineer to first line manager without a degree. It was kinda what got it – I had been inquiring about that job for quite a while. They finally had to say “You

finally got your degree and you earned the right to be in this position.”

(Ken)

Several of those interviewed said the degree played a role in gaining their current employment Ray said it made a difference.

That’s when it started. And doors opened up. When I had the degree all of the sudden, I started to hear from contacts, and people would say, “Ray, you know, we know your work ethic. You’ve got a degree. Why don’t you come in and let’s talk.” (Ray)

But he sometimes felt like an imposter. “Everybody saw this guy’s got almost 30 years of intense engineering experience in manufacturing and a degree. You know, they didn’t realize that degree came later.” And he wasn’t telling them either. He was recommended or recruited for other jobs.

A guy I worked with, Alan M, said, “Ray, have you ever considered coming to work for Company U?” And I said, “Yeah, okay, where is their office?” He said, “Well, it’s in Chicago.” And I said, “Well I don’t want to move to Chicago.” And he said, “No, you work out of your house.”

And then that even scared me more, because it was so untraditional. But then again I jumped. (Ray)

Ray used his confidence to seek new employment, “My income nearly tripled as a result of being able to show I had my degree and the experience, which I could.”

Having the degree made a difference. Ole said the bachelor’s degree was the “minimum requirement” to be considered for the job he sought after

graduation. Guy felt the degree was “the only thing that got me the interview was this degree. That got me in there.” Eva made sure her employer knew she was seeking a degree and knew she had completed the degree:

So I had a lot of people around me and above me, where I let them know where I wanted to go and asked them what they were asking from me to get there. I’ll achieve it, but I want to know. And nothing is guaranteed, and they made that very clear, and I totally understand that. But it was still good to talk to them and I knew what they wanted from me, and they knew what I wanted from them. I think keeping those communications open is very important. (Eva)

Building on experiences

Pat describes his first day on his new management job, the job he got because he had a bachelors degree.

I remember that first day at Company L, you know, I was nervous driving to work because you know I knew that there was going to be a whole new set of responsibilities and, you know, a new position, new demands on me, and there is a lot of unknowns. I mean being, you know, working at Z’s for eight, nine years, you know, I was settled in, you know as a technician type person. You know I could have done my job with my eyes closed, and, you know, knowing that I was going to be going into the “big time” now, you don’t, you never knew how I was going to handle it. You know, would I be able to take it on? Would I be able to, you know, jump right in

or was it going to take me some adjustment? You know, would I even be able to be a good manager? You know, how am I going to work with the people, the new people, and, you know, try to build relationships, you know, with them guys, and making sure that, you know, it was going to be a successful move for me? (Pat)

Each of the participants transitioned from technician to manager. They brought their technical background to the management position and saw that experiences as essential to what they are doing today. Ann said “I am tapping into my old background, which is so comfortable.” Ann goes on to say, “the machining part is one thing, but then understanding purchase orders and legal things, and making sure your invoices match, and so all those things that I have done throughout my career, it all makes sense.”

Tom said of the two roles:

Actually complement each other quite well. I can take a look at the geometry of the part, have conference calls with the customer, and I can envision how that mold is going to be built because I have built them myself in the past. They very much complement each other from the standpoint that a tool maker isn't going to have as much customer contact, not directly. They are going to contact me if they have any issues, and then I contact the customer. I am managing the project on both sides, from the customer's standpoint, and from the tool maker's standpoint. Where in the

tool-making standpoint you don't have that direct conversation with the end customer, that's where I come in.

I know areas that are going to be an issue from the beginning to the end of fill. What shut-offs are going to be an issue, where certain geometry features can be fit and where they can't, where a lifter is going to work, you have to have a funny geometry feature, or where a slide is needed. Because I have gone through and actually have built the stuff myself, and know what kind of issues they are going to have at the tool shops. I try to minimize that as much as possible so we can have this nice flow going all the way through. If I didn't have that, there would have been a much larger learning curve, if I didn't have the machining aspect in my background. (Tom)

His technical background makes Del's life easier:

I get to do all the thinking. I don't have to do any of the work. I'm working my mind every day. It's great. I get to look at the machinery and think of how I would do it, having the background of how to do it. And then being able to apply it and write so anybody could understand, with a basic amount of competence. That's what is fun; bridging that gap between doing and thinking, writing instructions. (Del)

Several respondents mentioned the elevated stature they held with their subordinates because they had a technical background. Eva thought:

It helps because you do know the background. You do know the job from the ground. And it does help when people are talking about certain processes, if they can't explain themselves very well, by already knowing it and being there does help me to understand them better, I think, as a manager or as a supervisor. It really helps. Also, they have a lot of respect for me, I think. I have heard that from certain ones, because you started with them on the floor, and even though I have become a supervisor, I don't forget my roots. I am okay with that and I will jump in and help just as well whether I am the COO, and I think people respect that.

I didn't have that education, and I think you need both now days, definitely, you need both. If they can get someone with the education and experience, companies are all the better. It is tough, you know, but...

The technicians or the workers on the floor right now, they have told me straight out that they think it is really great, what I did, but yet I don't consider myself above them. So, I guess from their point of view, they think it is great that they have a supervisor that knows where they are at and doesn't think she is any better just because she did move up. But I think you become a better leader if you do that. (Eva)

Others felt that way as well. Max thought his team respected his experience.

That's the big thing. That being that building the technical background makes you more well-rounded as manager, because you've been there.

You've been in the trenches and if you need to, you know it. I think you get more respect from people, specifically like my staff. Like now, we're doing penetration testing. Now, that I really enjoy. I won't say I'm a reformed hacker, but I've always had an interest in that in identifying vulnerabilities.

So we didn't outsource any of that. We did it all internal and whatnot. I did it all. It really says something to my staff, and I did this. So, they know I did this, that I didn't dump 10 grand into consulting company. I can walk the walk and speak the speak in this and at the same time they feel I represent them well to others announcing what the department can do, and I don't make commitments that our department can't handle.

(Max)

Sam brought over 20 years experience to his job, and he thought his reports were surprised with his knowledge.

I really like the knowledge I had from then and continued to gain, when I would meet with some of my employees just a month ago and we would run into something, something that was not out of tolerance, but just on the high or low side of the customer specs.

They didn't realize what my background really was, and I started talking to them about a couple things and they looked at me and WOW "You really do know this stuff." And they were quite surprised. They had pictured the supervisor as someone who would just tell them what to do

and not know what has to be done themselves. So taking stuff I knew from the 80's and 90's and transpose that into my education, and maintenance and being able to troubleshoot and resolve issues. It's all just built up on top of each other. I can sit back and remember things I did 21 years ago and use that knowledge.

I can use all that different knowledge. And gain respect from them because all of a sudden they realize I am not just an idiot with a clipboard, that I actually had the ability to work at their level and work with and at the same time bring their level up. (Sam)

Several expressed the differences in the two roles of technician and manager. While their technical backgrounds made the transition easier in part, they were quick to explain the differences. Max related how he felt:

The big thing, the big thing I can tell you from being like a technician worker bee versus being in management is at the end of the day. Being a technician you felt you got something done. Because you either fix something and get it done, or you didn't and you knew what you had to do the next day. With management, you never feel like you're done, you can see a light at the end of the tunnel. That is your vision. And you follow the light of the light. Sometimes it gets brighter, sometimes it gets dim. Depending on how much momentum you have. That's the big thing I can say from being there in the trenches, versus the management. (Max)

Ann explained the difference between the technical and the professional roles as:

Yeah, because in the technician role, your job is to make this part. It is a black-and-white thing. You have either made it to print, or you haven't. In a professional role, when you are trying to manage people and trying to lead people; it's never ending. There is no, "Yes, it was done and done right and everyone is happy." It's, "Oh, well, this one is complaining because you did this. And this one is complaining because you didn't do this." The job got done, but, "Oh, forget it!" (Ann)

Several mentioned they thought they had the advantage over a new college graduate without experience, or over those who did not have their varied background. Ray expressed the thought that "some people that they hire fresh out of college really don't have the background experiences. An understanding." Fay claims to be:

Much more well-rounded. I'm so over rounded with a lot more information; you know, where some people have never been out of the area, doing that the same job for 40 years. Bravo for them. But I'm a lot more different experiences. (Fay)

Being a manager

Several of the respondents mentioned they liked the autonomy and the authority that comes with being a manager. Hal liked being the responsible person:

Um, I am kind of a, it's just my nature, but I'm kind of a detail-oriented kind of um, um, what's the word, perfectionist, when it comes to a lot of stuff, and when our work gets done, I like to make sure it is 100% right before we send it to Vancouver for inclusion in the product, or for anyone out in the field to use, because if it's not right, that really bugs me. Um, being in the management side or the lead side, I have some control over that. And if it's not getting done right, I can say, "Hey, this is how we need to do it, you know, that way, because I say so." Um, so being, there might be... It feeds my perfectionism; that kind of thing.

And if it's not, I'm the one who hears about it, anyway, and so I need to make sure it is. And like I said, being kind of a perfectionist, that really helps me to know that if there is something that is not happening right, I can say, "Hey, this is how it's going to happen." Whereas, if you are not in that management role, but you might be the go-to person in the lab, you may tell someone, "Hey this is how it needs to be done," but if they don't do it your way, you know, you can throw up your hands, but what are you supposed to do? You can't tell the person their job, because you are not their boss. So, I guess, on that side of it, it helps me with that kind of a perfectionist kind of making sure it's right, that all the t's are crossed, i's dotted. (Hal)

Ann also appreciated her role in the process, "But, yeah, it's really a lot of autonomous stuff, where it's, 'This is mine, and I determine who can do it best'."

Ben learned he didn't know everything. Something he learned when he became a manager.

Probably for me it was knowing when, the learning curve for me was, to figure out when I couldn't solve the problem and I needed additional resources. Up 'til that time in my career I had always pretty much done everything either on my own or gathered the information that I needed to make the decision. What I needed to know here was when to get the factory involved or other salesmen with previous experience involved in solving problems that come up on a job site.

Facing the challenges

Several of the participants revealed feeling overwhelmed with their new responsibilities. Len described his transition into management as “ a very interesting job, because it is like drinking water out of a fire hose, is a classic example. There was so much information coming at me I couldn't swallow it all. I couldn't maintain.”

Not only was there a lot of information coming at the new managers, but the demands on their time proved challenging. Ole thought his biggest challenge to a manager was:

Balancing your time and who you are going to give your attention to. A lot of people want my attention, both internal stakeholders, and vendors. And I see value in a sympathetic way from each of those two areas that are demanding resource. So, probably the most difficult thing is deciding who

I am going to give my time to today, and ultimately what is going to be the payoff for doing that. Not monetarily so, but long term who is going to benefit the most in that. So in making that decision it brings into mind what resources I have to work with in order to respond to this demand.

I am sure I can sit down on my computer for another three hours and hammer away at another project that is coming up, or something that is due. But I have to get away from it and just pick it up the next day. That is probably the most difficult thing, just balancing out where I am going to give my attention to, because everything needs to be done. (Ole)

The additional information, responsibility and priority setting brought additional stress. Len describes it.

I think the biggest part about being in the management role is, you know, there is the added responsibility, and there is the added stress, you know. You know you are now the one who kind of controls all the cards and if you don't get it done, that you know there is failure there. Where as a technician, you know, you had the person above you that you go to and are able to get help with, well you know now there is really nobody much higher than you, it is up to you now to get the job done. And, you know, there is times where, you know, there is days that you want to pull your hair out because you are trying to satisfy the end goal of making the customer happy, and you know if things go wrong and you are the one who has got to figure out the problem, you have got to be the creative

person. You have got to be able to work with the people to get it done. And if it takes you 60 hours a week, it takes you 60 hours a week to do that. And, you know, that is what that entails being a manager, is that you know you have got to be able to accept the responsibility, the stress, the accountability that goes with that. (Len)

Eva concurs with both the added stress and the added responsibility, but manages to see it as a positive.

Now it is nine or ten hours and you don't ever leave what is going on. You need to manage the stress so it doesn't overtake your life, but I personally prefer the supervision, versus the technician. I like to be involved. I like to try and make improvements. And you are still busy, and you do need to manage your stress level, and your priorities with family and work. (Eva)

Each of these graduates brought experience and education to the job, but not all felt fully prepared. Ann felt she was unprepared for some of the required skills in management, specifically computer skills. She explained:

My first week, we were sitting down and they were kind of, I was in different meetings, and one of the computer people kept talking about a tool set. "Did you get that tool set yet?" A tool set to a machinist is not an Excel file. So I said, "I'm not sure what you are talking about. Was I supposed to get a gift or something?" And he kind of laughs, and, "No, did you get, you know, all of these programs, the Demand Planner, the Supply Chain Planner..." I said, "Tool sets, huh?" Some of the lingo,

that was tough. Everybody has acronyms and, gosh, I was lost. I was so lost. (Ann)

The social/personal management side of management affected most of those interviewed. When probed about challenges of management Jay said “I really think that in the human resource role. I see it more than ever.” Max referred to it as the ‘social aspect’ of being a manager, “how to exert and implement my past experience and my vision without socially disturbing the organization and our department.”

There were major people skills to learn. Ken found something as simple as delegating a skill he needed to develop.

That is a lot different than my engineering side –and I wasn’t very people oriented – I was project orientated. Now I have to manage the people side of it. So it was a big thing.

Learning to delegate was one, for the first six months was challenging. For me to call on the radio and have Jack go find these glasses. Six months ago, I probably wouldn’t have done that. (Ken)

The personnel functions of management are not often looked at in a positive light. Hal stated:

You look at it a little bit and you think, “Well, yeah, it’s going to stink to have to do personnel reports, and do end of the year kind of evaluations, and, yeah, it’s going to stink to tell someone, ‘Well, you’re already

making more than some of the management around here, so you don't get a raise this year." Some of that's going to stink. (Hal)

But he admits it is more than he counted on.

You know, before becoming manager, just being kind of a lead or a go-to person, but not necessarily the boss, quote, unquote, if there were any kind of disputes between employees, or, "Oh, this person is really annoying me because they do this," or any of the, you know, "I am getting a divorce, I need some time off," or, "My kid is sick, I won't be in today," all that kind of stuff, the HR stuff, I might have heard about it before being manager, but now I am the one that has to deal with it.

And it's a pain in the butt. I would think people are more conscientious about managing their own lives, but a lot of times you have to step in as the manager and give them some guidance. And you think they should have, you know, they should be able to figure it out themselves. The kid is sick, stay home, I don't care, that's fine, thanks for calling. But, you know, they get all bent out of shape, and they are worried about their jobs, and I don't know. (Hal)

Eva agreed and felt personnel management provided her the greatest challenge.

The discipline part, I guess, even though it is not a fun part to do, but it needs to be done or, if you don't deal with the people that need to be disciplined, you do not get respect as a leader. Nobody wants to be mean

to anybody, or have to reprimand people, but you need to. It is just part of the job. But that is probably not the fun part of the job. (Eva)

Quin echoed the challenge of the personnel component of management and said:

I mean they, you know what, my kids come up with more complex problems than my team members do. And, managing my team members sometimes feels, and I've even said this, I'll get, you know, Barb and Christina come up and say, "Don's driving us crazy. He keeps playing this," we have a radio in the lab, "he keeps turning on this weird radio station, and we don't like the music, and he won't change it." It's like, "I'm not your dad, people, go figure it out." So sometimes, just maybe, being a parent has helped train me a little bit on how to be a manager. Managing people is a lot like managing your own kids. I don't know. So sometimes, some of it is, so, you know.

Um, well, I'm told by my co-workers, as well as my boss, that I do a good job. They like having me as a manager. (Quin)

Job Fragility Redux

The interviews in this study took place from December 2008 through March 2009. Non-farm employment fell by 651,000 in February 2009. In the previous four months employment had declined by 2.6 million jobs (US Department of Labor, 2009). It is not surprising that the interviews reflected a certain fragility about employment in general. Leaving the technician role behind

and shifting into management did not, in most cases, reduce the feeling of job fragility. Jay admits to being pleased just because he is “employed in this day and age.” Hal is “just praying to stay employed past each of the reorganizations and all that kind of stuff that kind of happens.” Hal has lived through a number of reorganizations within his company. He describes the experience as:

Every year Company K reorganizes, because there is so much change. I tend to think it's more just to, you know, to hide certain employees, or to avoid having to lay somebody off, or to avoid severance, or who knows, somebody has pictures of somebody, and that's how they keep their job. But there's always something. There's always some change happening. And, you can say the people who survive are the ones who understand that, I think. And it is the people who don't change are the people who are let go. They are left by the wayside as the company changes. (Hal)

Len's cynicism shows with his statement:

There is a theme to this. “U.S. Corporations, people are just capital equipment.” They are making that very clear. They say the words, but they don't walk the walk. Company U just got done telling everybody that the last thing they want to do is lay people off. And times are getting tough. And they don't expect them to get any better, and it looks like they are going to get worse. But the last thing they are going to do is lay you off. Sure. I just don't believe it. You'll feel really bad, but you will do it

anyway. While you are doing it you will apologize to us, and then you will lay us off. (Len)

So it is no surprise that Len is always looking for work. “One of the things that I do, my resume is always on Monster and it is always on Career Builder. I never take it off. I am always looking for a job. I tell people that.” Len has had several jobs in the last four years and he explains it this way:

People always ask why I have had a lot of jobs in the last four years. I’m never looking to leave, and they say that I am a job hopper, and I say I look at it as being proactive. If I think that the company is financially in trouble and there isn’t a real good future there, I’ll start to look. So in my mind I am being proactive and getting the ball rolling. And I think that is a good thing, not a bad thing. (Len)

Within months of Nan beginning with her current employer, they received an influx of dollars from an IPO, the initial public offering of their stock to the public.

All of the sudden we had all of this cash, and they were spending it like crazy. But they were spending it faster than they were bringing money in, and with the business slowdowns and the slowdowns in capital equipment, especially for healthcare facilities, they let, unofficially off the record, the numbers that were reported to the newspaper were much lower than the actual number of people that were let go. We ended up letting go about one quarter of our workforce. (Nan)

She brought a different background to the experience than other employees and had “been through recessions or had a job when you go in every day and know there is going to be a layoff this weekend, and hoping they are going by seniority and you have been there the longest.” She worked hard at changing her job to increase its value to the company.

Ole spent some time last year looking for a new job, His position was the same, but his immediate supervisor position was vacant and he felt there was no one in the organization to “block and tackle” for him. He continues to think about a move in the future.

I think that if the economy was different, I would certainly be interested in finding a different job that offered me more of what I am looking for for a career path, more responsibility, and more of the opportunities to be more involved with the operations side of the business and introducing some ideas and plans for improving efficiency using technology. But, as it is, I spent four months last year on the career web sites. I used UW-Stout, Monster, JobsinMinneapolis.com, Yahoo Jobs. (Ole)

He felt like he was sending his resumes into a “black hole.”

Hal gives this example of the employment picture as he sees it and considers his friend a lucky person to be employed:

And, so, I work with a guy whose, what is it, his 25th anniversary was with Company M, 30th was Company I, 35th was with Company KP, and 40th was just with Company K. He has gone through so many mergers, and

sell-offs, and spin-offs, and downsizes, but he has managed to make it through, and he, say he's got four different certificates on his desk, for how many years of service, and they all say different companies. But he has been sitting in the same cubicle for the whole time, and literally the same cubicle for that long. But, yeah, the company and name... (Hal)

So Hal's philosophy of employment is:

I've always been told, and always found this to be true, that you never turn down an opportunity. No matter what that is. If someone told me, you know, I need you to move to Kuala Lumpur, to run an operation over there, I'd say, "Sure, no problem." Because the minute you turn down an opportunity, you'll be passed over the next time there is an opportunity.

You can't wait for the *prime* opportunities. You take every one that comes along. And, especially, in a company that is changing, and wanting to cut people. If you say, "No," to an opportunity, you put yourself into that maybe-we-should-cut this-person category. And, so, maybe it's just a survival tactic to always say, "Yes," and take the opportunity, regardless of what it is, or who you are working with, or what you're working with, or what the product is, or location. So when they offered me the opportunity and said, "Here's what it is," the first thing I thought was, "Okay, yeah, I'm gonna do it." (Hal)

Because of saying yes to the opportunity Hal is experiencing a little more job security with his move into management.

I wanna say there is a little feeling of job security, being a lead rather than just one of the peons, um, as some people in the lab like to call themselves. Ah, partly because I am more of a working manager, I don't just sit in a room and manage the people; I actually do the work that they are doing, while also managing the projects. So that, I think, kind of makes me feel like maybe I have more chance of keeping my job if there is a cut, just because I am more experienced and have skill, than some of the people on the team. (Hal)

While many had unplanned job changes through plant closures, reorganizations, or downturns others saw something on the horizon and made deliberate job changes. Ann said:

Because last year Company A was cutting back on their hours and things were looking very grim. And I said, "Alright, if you see something, let me know" (to her husband who worked for her current employer). So he looked and said, "Um, check the website." So, I did, and the rest is history. (Ann)

Max is the IT director of a Minnesota non-profit. His wife wasn't sure about his recent job change, but he told me:

Had I not made the switch in July, I would have lost my job in November. Then where would we be today... Ya, they laid off 40 people in the in November. I would have been laid off. My boss was laid off. It would have been . . . One thing I've always been really, really, good at reading people and situations and from day one in with that group I never had

warm fuzzies. And I'm pretty good at reading people and reading situations from that change. I knew I've always had that attitude to read and make a decision that worked for me so. It worked for me. And you know, I don't have any regrets about it. (Max)

Many mentioned planning for their futures. A third of the graduates interviewed were looking for, or are enrolled in, a graduate program, or had continued with professional certifications. Pat said, "You know, because I graduated from Stout back into 2007 doesn't, by any chance, mean that I am not going to step that foot back in some kind of class or training in the next couple of years either." Ole plans on earning a master's degree, when he has an employer that will support his effort with tuition reimbursement.

Well, I would like to get my master's in business administration. That fact that Company M offers zero dollars today for reimbursement, I just don't feel good about paying for it on my own when I know there are companies out there that today, still, offer either paying for it in full or a large portion is reimbursed or paid for, or they are billed instead of you. (Ole)

When asked if his next employer would have tuition reimbursement Ole answered, "Yes, if I have anything to say about it, given the economy, if it becomes an employee's market again."

Nan made it clear she thought her masters would make a difference. She intended to leverage her degree to a new position.

Now I have spoken to my manager, not my immediate supervisor, but our

manager, that I would, when opportunities open up in the company, I would prefer to be moved into either the quality department, as a member of the quality department, or into operations management. That I was not working on my master's degree to supervise CAD people the rest of my career at Company T. (Nan)

Two of the interviewees are being more entrepreneurial and taking more personal ownership in their careers. Ian is preparing for the next step in his career, self-sufficiency. He has owned rental properties since he was in college. He and his wife recently purchased a retail operation in a mall.

And now we are getting ready in case Company H decides, for one reason or another, to say, "Okay, Ian, you wanna go over here, or you've got to go over here," or those kind of things, if I decide, "No thanks, it's not for me," I have enough volume built up networking, enough of an established business flow of money and investments and those kind of things, that we can say, "See you later." (Ian)

Len's employment status is precarious, and he is preparing to launch a consultancy business. He had several pieces of the arrangement falling into place the week we spoke.

I am thinking about leaving this job, and I have got to make a decision in like a week. So either I tell them I am leaving, so I have got this contract place where on an hourly wage I am making about the same, but because I am only part-time with this guy, I am not making what I make, what I do

now. But I talked him into doing this. I actually told him he needs someone experienced, like a quality manager, but “you don’t need one full time. You need a part-time guy with experience. You need a salary range to fill here, I can fill that part-time, but then you have got to realize I need the rest of the time to go find other jobs.” And I sold it.

So I have got that going and he wants me to get started. And he wants me to sign the contract. But today, that was all I had going. And I had some other things out there. So I am thinking I am sort of sticking my neck out. And all of the sudden today, three things came up, things I had started at work became more positive. So one difference, I was thinking I was doomed, the next day I am fine, the next day I am doomed. It is just like, all of the sudden now these things opened up. You know I was looking at part-time auditing with an agency, another sent me the contract today. I’ll do that, and another set up with another company, this is the one that does the sales. You never know what is going to happen one day to the next. (Len)

The story retold

The graduates of the degree completion program who transitioned from a technician to a manager told their story. They shared the ups and downs of their careers in a technical role and the adventure of becoming a manager. They talked about their past and their futures. They included stories about their families and their personal lives.

Each of those interviewed had a technical background. Most often they had technical college experience, most often an A.A.S. degree. Chapter 38 of the Wisconsin State Statutes (2009) states that person completing a technical college education will “acquire the occupational skills training necessary for full participation in the work force; which stresses job training and retraining; which recognizes the rapidly changing educational needs of residents to keep current with the demands of the work place.” These graduates acquired those skills and put them to work in industry.

The graduates were employed initially in a technical occupation and considered themselves successful in that area. They considered their employability foremost, above job security. They viewed themselves different from those they worked with because they wanted more, occupationally, professionally and often financially. Many had made job changes along the way to meet financial, occupational or personal objectives. They made decisions that affected their current and future employment.

One of those decisions was to continue their education in a baccalaureate degree completion program at UW-Stout and each graduated. They exhibited motivation and persistence. Each transitioned into a management position. They drew on their technical background to enhance the education they had received at the university and applied the education and experience to their new employment situation. They felt more fully prepared for their current position because of both their technical background and the education they received.

Each of the graduates felt they were successful in their new role in management. Human resource management issues were raised as the most taxing challenge in their new positions. The new challenge of managing time and priorities was stressful, but not in an overly negative way. Each faced challenges in the transition, but each felt they were successful in their new role. Chapter Five reviews the transition and career choices made in relation to the literature.

Chapter 5

Discussion, Implications and Reflections

This narrative case study sought to describe the experience of transition from technician to manager of graduates of a degree completion program at the University of Wisconsin Stout. It also sought to describe the career self-management practiced by these graduates that determined their current employment status. The research questions for this study asked, *What is the experience of a graduate from the B.S. in Management from UW-Stout who made the transition from technician to manager? And How did the graduate direct career self-management?* In seeking the answer to those questions 20 graduates of the degree completion program that had experienced the transition from technician to manager were interviewed. Site visits were made to the workplaces of two managers. University documents relating to the degree and its graduates were reviewed.

The chapter discusses the findings of the study as related to the literature of transition and career-self management. The boundaryless and protean career models are discussed in relation to the findings. It explores implications for practice and provides recommendations for future research. It concludes with my reflections about the study.

Discussion of the findings

Drucker (1999) wrote that to be successful in a career a person must plan for that success. People need to “be prepared for opportunities’ (p. 6). The managers in this study prepared themselves for opportunities by earning a baccalaureate degree. Crites’ (1969) theory of vocational adjustment, a change in the “state or condition of the individual in relation to the world of work at any given moment after he has entered an occupation” (p. 325), is the theoretical underpinning of this study. The adjustment made by the managers in this study was the degree attainment. The degree attainment led to personal, professional and financial rewards for these managers.

King (2004) wrote that Crites’ theory holds today in the study of career self-management and that self-directed career development is a vocational adjustment as defined by Crites. A feature of vocational adjustment is the motivation to attain vocational satisfaction and success, the two components of career adjustment (Arthur, Hall & Lawrence, 1989; Crites, 1969). The success and satisfaction of the participants in this study was not detailed, but neither were failure or dissatisfaction. Success and satisfaction was assumed by inference.

Careers

Super (1980) defined career as a “sequence of roles played by a person during the course of a lifetime” (p. 282). Hall and Mirvis (1996) describe the protean career as a series of learning cycles. This study looks at some of the roles chosen by graduates of a degree completion program leading to a position in

management. More people are making the choice to change jobs when they find their current jobs no longer challenging (Hall & Mirvis, 1996; Sarason, Sarason and Cowden, 1975). These managers studied changed jobs, for a variety of reasons; including the fact they could “do more.”

Super (1980) defined his career theory as fragmented, influenced by developmental, social, and phenomenological psychology as well as learning theory and self-concept. Different stages of life, and the different spectrums of our lives, influence decisions an individual makes about career choice and career adjustment. A decision made to return to college in order to attain a degree may be influenced by the stage in life and spectrum of life: family, talents, or ambition. People face different challenges depending on the career and life status (Briscoe, Hall, & DeMuth, 2006). The decision to return to college made by the managers in this study is a vocational adjustment as defined by Crites (1969) fitting the Super model of career theory (King, 2004).

Inkson (2006) wrote that protean and boundaryless careers are not career theories, but different types of careers. These types of careers are increasing and growing in acceptance because of organizational changes and employee attitudes. Protean and boundaryless careers allow the individual to manage his or her own career. Boundaryless careers cross both the physical, organizational, and psychological, career, boundaries. The individual must have the “will and personal resources” (p. 55) to cross the boundaries. The managers studied here had both.

Hall and Moss (1998) define the protean career as the series of experiences by the employee and the management of those experiences leading to the resulting career. The managers studied here most often had a series of employers and job assignments. Even those staying with one employer had changed assignments more than once. Hall and Moss defined the protean career as being based on four factors; driven by the individual, based on personal goals, encompassing whole life, and driven by psychological success. A person has to define their career and take action to achieve their goal. Briscoe, Hall, and DeMuth (2006) wrote that the individual must “identify their own career identities, opportunities, and structures” (p. 7). The managers studied here defined their careers, articulated their goals, and took actions to reach their goals.

Job security was not an issue for those interviewed, but their employability was an issue. Hall and Moss (1998) consider employability, and the perception of employability, to be a factor in the protean career. A person with a protean degree adjusts to changing circumstances (Inkson, 2006). Adaptability is one component to a protean career, but secondary to self-direction. Briscoe, Hall and DeMuth (2006) wrote that the challenge for a person with a protean career is where to apply the experience they have. These managers found a variety of places to which they could apply their experiences. Hill (2005) reported how the transition to manager relied on the previous experiences of the person making the transition. Howard (2003) wrote that the technical experience of the manager contributed to the transition while Biddle & Roberts (1994) wrote that a successful technician transitioned into a successful manager.

Inkson and Arthur (2001) wrote of the need to accumulate career capital, which these managers did and then reinvested it with their careers. Several moved into compliance positions, applying their former technical background. Others took leadership positions within their organizations. Others were reaching out to become entrepreneurial.

The person with a protean career is values driven and self directed. Several of those interviewed related how their values determined employment decisions. Job decisions were made because of the attitude of the company towards the worker, or the job. People with protean careers are “more able to lead themselves and others” (Briscoe, Hall, & DeMuth, 2006 p. 8). The managers studied had careers with protean characteristics, which may be why they found themselves in leadership positions.

The early years: Finding an identity – a passion for the technical

Super (1980) wrote that decisions made before the adult career influence later career positions and expectations. This study showed the decisions made both in the K-12 education system and the technical colleges system influenced employment in adulthood. Additionally, the first job choice determined later choices, as shown as well in this study. Sarason, Sarason, and Cowden (1975) wrote that the first career choice determines how the rest of a person’s life develops. There is a need to live with the choice made, however we see the managers within this study as making career adjustments that led them outside a narrow choice, to their positions in management.

There are different ways to gain access within an organization (Pair, 1994). The managers in this study most often entered the organization as a technician. Once hired, they demonstrated their talents and moved to a new position, up or parallel. Each of those studied carried their first jobs forward in the development of their careers. Those with long careers had moved beyond that entry level position, but were road blocked in some cases from moving any further without a baccalaureate degree.

The managers studies here spring boarded their technical education to a baccalaureate degree. As Grubb (1999) insisted, the technical college degree does not preclude the opportunity for continued education. These graduates did not, at the time of high school graduation, plan on attaining a four year college degree, but the fact that they earned a technical college degree did not prevent them from doing so later. The degree completion degree recognizes and supports the A.A.S. degree.

Building Their Skills

Huang and Van de Vliert (2004) examined the relationship between job level, national culture, and job satisfaction. Assuming the United States fits the category of an individualistic country, they determined there was a positive relationship between job level and job satisfaction. Production or maintenance workers were described as blue collar while professionals, engineers, clerical and administrative workers were described as white-collar workers. Workers are more motivated if their jobs include “skill variety, task identity, task significance,

autonomy and feedback” (p. 331). Blue collar work was less likely to meet the individual’s higher order needs. The recollection of the technical work experience of the managers studied here would confirm they were looking for the attributes listed above. Without them they chose to change employers, jobs and careers.

Different from fellow workers

The managers studied here described themselves as being different than the people they worked with during their technical careers. They described others as being satisfied and willing to do the same thing for 20-30 years. Herzberg, Mausner, & Snyderman (2005) described the characteristics leading to job satisfaction and dissatisfaction. Of their characteristics causing dissatisfaction those most often mentioned in this study are supervision, work conditions, and salary. More often mentioned were characteristics these managers had been looking for; achievement, work, responsibility, advancement, and growth. The managers studied here were seeking job satisfaction and were motivated to achieve it by changing jobs.

The need for more

Several reports (Stewart, 1999; Ward & Urness, 2000; WTCS, 2004) indicated that the technically prepared graduate was an asset to Wisconsin industry, but there needed to be further educational opportunities to prepare that graduate to take on more responsibility and leadership. Wisconsin, and UW-Stout, intended to build on the two education systems within the state to provide an

educational ladder to allow graduates to meet their career goals (Ward & Urness, 2000). The Bachelor of Science in Management (BSM) degree was specifically referred to by the Ward and Urness report as a model offering the “opportunity to earn a baccalaureate degree building on their technical degree” (p. 10). Workers looking for promotion are expected to have baccalaureate degrees. It follows that the BSM would aim to prepare the technical worker for that promotion. Since 2000 over 350 people have graduated from the program. Each of those people interviewed for this study is one of those graduates. Seethamraju and Agrawal’s 1999 study of Australian engineers and Howard’s 2005 study in the aerospace industry both reported education in the management field as one of the routes to a successful transition.

The graduates studied here demonstrate both outcome expectations and self-efficacy expectations (Hackett & Betts, 1981). They believed that through education, the outcome would be they would be more employable and have the opportunity for advancement. Their self-efficacy expectations led them to believe they could complete the degree and make the transition to management. They believed in their probability of success. The protean career model requires the individual to have both the outcome expectations and more importantly, the self-efficacy expectations.

Balancing college and life

Eduventures (2008b) reported the number of adult students is growing with an estimate that it will reach 7.2 million in 2010. Just one of participants of

this study did not meet the age definition of an adult learner of 25 years or older, but he did qualify under at least two other categories, being employed full-time and being financially independent. Two-thirds of returning adult students are employed full-time (Eduventures, 2008c). The managers studied in this case were all employed full-time while students, or between jobs not of their own decision.

B. Brown (1999) wrote that the choice to continue education must “have personal value” (p. 2). There is a significant investment, not only financially but of time and energy. The returning adult student is a busy adult looking to increase their salary or change their career (Eduventures, 2007). These managers’ stories express value in their baccalaureate education.

Eduventures (2008c) reported returning adult students were “looking to improve my performance or pay on my current job” (p. 3). Motivation for returning to college included: preparing for a new job in my current field, 15.4%; changing careers, 13%; and utilizing tuition reimbursement, 10%. The motivating factors expressed by those interviewed for this study mirror these. A motivating factor for the University to provide this degree is to increase the earning power of the state (COBE, 2005). The new economy calls for increased education and with it increased reward. Higher education has become the “threshold” to career success (Carnevale, 2001).

Putting the degree to work

Sarason, Sarason, and Cowden (1975) wrote the difference between the person who labored in the factory and one who worked professionally as “one

was branded by his work; the other put his stamp or brand on his work” (p.584). These managers were clear that they wanted the responsibility and autonomy not present in the technician’s role.

Each of these individuals transitioned into a managerial role. Inkson & Arthur (2001) wrote that a new manager brings their experience to the new job. These graduates brought a wealth of technical experience and experience generally in the workforce. They agreed that as a transitioned manager they had an advantage over the inexperienced manager. The baccalaureate degree was not enough in itself, but augmented by their experience.

Earlier studies of the transition include themes common to those presented here. Howard (2003) considered the transition from engineer to manager as a difficult experience and researched from that point of view. Seethamraju and Agrawai (1999) also approached the transition as “difficult and ineffective” (p. 2). The participants in this study would not have agreed that the transition to management was difficult, though some might have used the word *challenging* to describe the experience. Howard highlighted three themes in the transition of engineers to managers: more responsibilities, tasks and priorities, relationship challenges, and delegation: Each of those themes was reinforced in this study, although they were present in different order of emphasis; relationships, more responsibility and then delegation.

Seethamraju and Agrawai (1999) reported the transition as a process rather than a single step. Hill (2005) also wrote of the process of transition. The

managers in this study described their experience of transition as a process, not happening in one fell swoop. Seethamraju and Agrawai wrote that a higher status at the technician, or engineer, position led to an easier transition to management. Biddle & Roberts (1994) discovered a positive correlation between the performance as a technician and the performance as a manager. Their model of self-selection from technician to manager was reinforced with those managers studied. Each of those interviewed self selected for the transition and described themselves as successful technicians. They also reported being successful in their management role.

Hill (2005) wrote about establishing credibility with subordinates. The managers studied here related that their technical background and experience in the field created credibility for them beyond that provided by their degree. Hill wrote that managers often first committed to demonstrating technical expertise and neglected relationship building losing the opportunity to strengthen the unit. These managers did not express that concern, but may not have been aware of it if it had occurred.

The most challenging area for the managers studied here was personnel management with which Hill (2005) would concur. The day-to-day problems of interpersonal relationships, commitment to the job, and performance all concerned these managers. Hill wrote that managers resented the need to be involved in subordinates' personal problems. The managers studied here related they did not enjoy being involved in subordinates' personal lives or petty squabbles in workforce. Hill agreed that managers were more at ease with the

technical part of managing people, the training, supervision and direction of the workforce, than with the personal aspects of management. This area continues to be a concern for those managers with direct reports.

Job Fragility

The job and career changes made by these managers were influenced by the changing corporate environment filled with reorganizations, restructuring, and downsizing. The fragility of employment as expressed by the graduates was reflected in Hall and Mirvis (1995) and Hall and Moss (1998). Hall (2004) wrote about the need for people to be more protean in the current employment environment. The insecurity of jobs and organizational flattening led these graduates to attempt to determine their own futures.

DeVos and Soens (2008) wrote of the importance of being employable as it relates to career satisfaction. People who practice career self-management behavior have increased job satisfaction. Having a protean attitude is important in the current employment climate and important in determining career success. The managers in this study had this protean attitude and acted to manage their careers. Kossek et al. (1998) wrote that employees alter how they consider their careers, become self-aware, and assume new responsibilities in order to be career self-managers. These managers took those steps.

The protean career correlates job and organizational mobility (Hall, 2004). People must be motivated and capable of making changes. The degree attainment was one way to demonstrate the capability of making a job change. A person with

a protean career must be personally driven and feel in charge of their own career. Even in the employment situation we see today, the managers studied here continue to feel some control of their own careers.

Implications of the finding

This case study supported earlier research in the transition of technologist to manager. Similar areas of interest and concern were presented. While much has been written on the theories of boundaryless or protean careers, there has been little research done on those demonstrating those career models. This study outlines some of the choices made by individuals developing protean, or boundaryless, careers and may add to the body of knowledge on the subject. It may provide increased knowledge on motivation behind the decisions, or examples of self-management actions taken by individuals.

The study has implications for individuals, the university, and perhaps to industry. Individuals looking to become more protean in their careers may look at the examples presented here. The university may look at the choices made by returning adult students and address them through program choice, delivery, or model. Industry may look at the choices being made by these individuals and address current policy and practice to encourage valuable technical workers to remain with their current employer in a technical or managerial position. Hall and Moss (1995) write the effective organizations provide opportunities to their employees so the person can self-manage their career. The relationship between

the organization and employee is encouraged and supported in order to build strong organizations.

The data gathered was the words of the participants. They told their stories seemingly without hesitation. The findings reflect only their stories.

Recommendations for further study

This study provides a distinctive perspective on both the transition from technician to manager and the career self-management decisions made by the graduates of this degree completion program. It adds to the current body of knowledge in career self-management. It did not attempt to go beyond the bounds of the case and looked at one program from one university. The number of graduates studied was small, but the data was both thick and rich.

Further study could be done with graduates from other universities offering degree completion programs. Technical college graduates who had completed a baccalaureate degree, but had not made the transition to manager could be interviewed to determine if the stories diverged from those heard here. All of the graduates surveyed were Caucasian. Graduates of color could be included in the participant pool. Briscoe, Hall and DeMuth (2006) offer an empirical tool to measure the strength of protean or boundaryless attitude. That tool could be applied to graduates with this set of experiences. The transition to manager was not the major focus of the study as it turned out. Additional research could focus on the transition experience.

Motivation, both in the career and the educational settings of these graduates, could be studied. The drivers behind job changes and job advances could be determined. The characteristics that led these managers to graduate with the degree while many others who started it did not could be studied.

Reflections

The qualitative nature of this study created a sense of apprehension for me as the researcher. I did not know where the research would lead and questioned what I would do with the results. As the project went on, I discovered where the study was leading and additional topics that could be researched in the future. Without experience in interviewing, I was a novice with the data collection method. The results provided data less concrete and comfortable than clear-cut statistics, but deeper and more personal than I expected.

The experience gave me a greater appreciation for the qualitative methods of research. The methods elevated themselves to the standards I am familiar with in research, and became more than just a pleasant experience. The relationship with the participants appealed to me. Being acquainted with the participants the experience intensified the relationship. They allowed me to enter their personal lives and learn more about their career decisions and experiences. The transcriptionist went so far as to say she would miss hearing their stories, and she heard them just once.

I learned from my role as a researcher. I began with a predilection for the topic; and used that interest to lead the study. Understanding the graduates

decisions, lives and future ambitions was my goal. I wondered what motivated these people to graduate when three students enter the program for every one that graduates. I gained knowledge from their voices. Their stories led the research and I followed.

References

- Amour, S. (2003, June 13). Classrooms filled with returning adults, *USA Today*, B01. Retrieved June 12, 2008 from EBSCOhost Academic Search Elite.
- Arthur, M., Hall, D., & Lawrence, B. (1989). *Handbook of career theory*. New York: Cambridge University Press.
- Arthur, M., & Rousseau, D. (1996). *The boundaryless career*. New York: Oxford University Press.
- Ary, D., Jacobs, L., & Razavieh, A. (1996). *Introduction to research in education*. Orlando: Harcourt Brace College Publishers.
- Aucoin, B. (2002). *From engineer to manager: Mastering the transition*. Boston: Artech House.
- Badawy, M. (1995). *Developing managerial skills in engineers and scientists: Succeeding as a technical manager*. New York: John Wiley & Sons.
- Bakke, E., (1953). *The fusion process, a map for the exploration of the relationship of people and organizations*. New Haven: Labor and Management Center, Yale University.
- Baszanger, I., & Dodier, N. (2004). Ethnography: relating the part to the whole. In D. Silverman (ed.). *Qualitative research: Theory, method, and practice*. (2nd ed., pages 9-34).

- Becker, G. (1975). *Human capital*. New York: National Bureau of Economic Research.
- Bejian, D., & Salomone, P. (1995). Understanding midlife career renewal: Implications for counseling. *Career Development Quarterly*, 44(1), 52-63.
- Bernard, H. (2000). *Social research methods: Qualitative and quantitative approach methods*. Thousand Oaks, CA: Sage Publications, Inc.
- Best, J., & Kahn, J. (2003). *Research in education*, 9th ed., Boston: Allyn and Bacon.
- Biddle, J., & Roberts, K. (1994). *Private sector scientists and engineers and the transition to management*. *The Journal of Human Resources*, 29 (1), 82-107.
- Blau, P., & Duncan, O. (1967). *The American occupational structure*. New York: John Wiley & Sons.
- Board of Directors. (1998, August). *AACC position statement on the associate degree*. Retrieved February, 9, 2009, from <http://www.aacc.nche.edu/About/Positions/Pages/ps08011998.aspx>.
- Briscoe, J., Hall, D., & DeMuth, R. (2006). Protean and boundaryless careers: An empirical exploration. *Journal of Vocational Behavior*, 69, 30-47.
- Brown, A. (1999). *Career pathways for industrial supervisors in the United Kingdom*. SKOPE Research Paper No. 3. Warwick: Centre on Skills, Knowledge and Organisational Performance.

- Brown, B. (1999). Vocational certificates and college degrees, *Eric Digest 212*, EDO CE 99 212. Retrieved June 8, 2008, from EBSCOhost, Academic Search Elite.
- Cappelli, P. (1999a). Career jobs are dead. *California Management Review*, 42 (1), 146-167. Retrieved May 30, 2008 from EBSCOhost, Business Source Elite.
- Cappelli, P. (1999b). *The new deal at work: Managing the market-driven workforce*. Boston: Harvard Business Press
- Carnevale, D. (2000). *Help wanted . . . College required*. Princeton NJ: Educational Testing Service. Retrieved January 30, 2009, from EBSCOhost, Academic Search Elite.
- Carnevale, D. (2002, October 18). Missed connections, *Chronicle of Higher Education*, 49(8), A35. Retrieved January 30, 2009, from EBSCOhost, MasterFILE Premier.
- Cervero, R. (2000). Trends and issues in continuing professional education. In V. W. Mott and B.J. Daley (Eds.). *Charting a course for continuing professional education: Reframing professional practice. New Directions for Adult and Continuing Education*, 86, 3-12. San Francisco: Jossey-Bass. Retrieved June 2, 2008, from EBSCOhost, Academic Search Elite.
- Chakravarthy, B., McEvily, S., Doz, Y., & Rau, D. (2003). Knowledge management and competitive advantage. In M. Easterby-Smith & M. A.

Lyles (Eds.), *The Blackwell Handbook of Organizational Learning and Knowledge Management*. Malden, MA: Blackwell Publishing.

Chronicle of higher education almanac. (2005). Retrieved June 3, 2008, from <http://chronicle.com/free/almanac/2003/index.htm>.

COBE (Committee on Baccalaureate Expansion). (2005). *Expanding access to baccalaureate education in Wisconsin*. Madison WI: Committee on Baccalaureate Expansion. Retrieved January 20, 2009 from http://www.uwsa.edu/opar/reports/cobe/final_report.pdf.

Connelly, F., & Clandinin, D. (2006). Narrative Inquiry. In J.L. Green, G.E. Camilli & P.B. Elmore (Eds.), *Handbook of complementary methods in education research*. (pp. 477-487). Mahwah, NJ: Lawrence Erlbaum Associates.

Creswell, J. (1998). *Qualitative inquiry and research design: Choosing among the five traditions*. Thousand Oaks, CA: SAGE Publications.

Creswell, J. (2003). *Qualitative, quantitative approaches & mixed method approaches*, 2nd ed., Thousand Oaks, CA: Sage Publications, Inc

Crites, J. (1969). *Vocational psychology*. New York: McGraw-Hill Book Company.

Cytrynbaum, S., & Crites, J. (1989). In Arthur, M., Hall, D., & Lawrence, B. (Eds.). *Handbook of career theory*. New York: Cambridge University Press.

- Dawis, R., & Lofquist, L. (1984). *A psychological theory of work adjustment*. Minneapolis, MN: University of Minnesota Press. Retrieved June 18, 2008 from http://www.psych.umn.edu/psylabs/vpr/pdf_files/Psychological%20Theory%20of%20Work%20Adjustment.pdf.
- Denzin, N., & Lincoln, Y. (2005). *The Sage handbook of qualitative research*, 3rd ed. Thousand Oaks, CA: Sage.
- DeVos, A., & Soens, N. (2008). Protean attitude and career success: The mediating role of self-management. *Journal of Vocational Behavior*, 73(3). 449-456
- Dittmann, W. (2007). An analysis of Bachelor of Science in Industrial Management graduates' perceptions of the economic and professional impacts of the degree. (EdS Thesis, University of Wisconsin-Stout, 2007). Retrieved June 18, 2008 from <http://www.uwstout.edu/lib/>.
- Drucker, P. (1977). *An introductory view of management*. New York: Harper's College Press.
- Drucker, P. (1993). *Post-capitalist society*. New York: HarperBusiness.
- Eduventures. (2008a, September). *Assessing consumer demand and market opportunities in the bachelor's degree completion market in nine states and Manitoba, Canada*. Online Higher Education Learning Collaborative, Custom Research Report. Boston.

- Eduventures. (2007, December). *Changing environments of bachelor's degree completion programs*. Continuing and Professional Education Learning Collaborative, Member Round Table. Boston.
- Eduventures. (2008b, June). *Targeting the undergraduates adult learner; A comparison of national trends against one member's student population*. Online Higher Education Learning Collaborative, Custom Research Report. Boston.
- Eduventures. (2008c, January). *What motivates adults to return to school to complete their bachelor's degree?* Online Higher Education Learning Collaborative, Custom Research Report. Boston.
- Eisner, H. (2000). *Reengineering yourself and your company: From Engineer to manager to leader*. Boston: Artech House.
- Federal Reserve. (1999). *Remarks by Chairman Alan Greenspan, 81st annual meeting of the American Council on Education*. Washington D.C.
Retrieved May 30, 2008, from <http://www.federalreserve.gov/boardDocs/speeches/1999/19990216.htm>.
- Gall, M., Gall J., & Borg W. (2003). *Educational research: An introduction*, 7th ed., Boston: Allyn and Bacon.
- Grubb, W. (1996). *Working in the middle*. San Francisco: Jossey Bass.
- Hackett, G. & Betts, N. (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior*, 18

- Hall, D. (2004). The protean career: A quarter-century journey. *Journal of Vocational Behavior*, 65(1), 269-289.
- Hall, D., & Mirvis, P. (1995). The new career contract: Developing the whole person at midlife and beyond. *Journal of Vocational Behavior*, 47, 269-289.
- Hall, D., & Mirvis, P. (1996). *The new protean career*. In Hall, D. *The career is dead; Long live the career*. San Francisco, Jossey-Bass.
- Hall, D., & Moss J. (1998). The new protean career contract: Helping organizations and employees adapt. *Organizational Dynamics*, 26 (3), 22-37.
- Herzberg, F., Mausner, B., & Snyderman, B. (2005). *The motivation to work*. Edison, NJ: Transaction Publishers
- Hill, L. (2005). *Becoming a manager*. Boston: Harvard Business School Press.
- Hoachlander, G. (1999, Fall-Winter). More than a name change? Transitioning from vocational to career and technical education. *NCVRE Centerwork*, 10(3-4), 2-4.
- Holstein, J., & Gubrium, J. (1995). *The active interview*. Thousand Oaks, CA: Sage Publications, Inc.

- Hood, D. (1990). *Transition: Engineer to manager: Specialist to generalist*.
Presented at 1990 IEEE International Engineering Conference,
Management through the year 2000: Gaining the competitive advantage.
- Howard, C. (2003). From engineer to engineering manager: A qualitative study of the experiences, challenges, and individual transitions for engineering managers in aerospace industries. (Doctoral dissertation, The Pennsylvania State University, 2003). Retrieved June 12, 2008, from University of Minnesota, *Digital Dissertation*,
<http://www.lib.umn.edu/site/proquest.phtml>.
- Hoyt, J., & Ellred, E. (2008) Educational and employment outcomes of a degree completion program. *The Journal of Continuing Higher Education*. 56(2), 26-33.
- Huang, X., & Van de Vliert, E. (2004). Job level and national culture as joint roots of job satisfaction. *Applied Psychology: An international review*, 53(3) 329-348
- Hull, D. (2005). *Career pathways, education with a purpose*. Waco, Texas: CORD.
- Inkson, K. (2006). Protean and boundaryless careers as metaphors. *Journal of Vocational Behavior*. 69, 48-63.
- Inkson K., & Arthur, M. (2001). How to be a successful career capitalist, *Organizational Dynamics*, 30(1), 48-61. Retrieved May 30, 2008, from EBSCOhost, Academic Search Elite.

- Ito, J., & Brotheridge, C. (2005). Does supporting employees' career adaptability lead to commitment, turnover, or both. *Human Resource Management*, 44(1), 5-19. Retrieved June 8, 2008, from EBSCOhost, Academic Search Elite.
- Judy, R., & D'Amico, C. (1997). *Workforce 2020: Work and workers in the 21st century*. Indianapolis: Hudson Institute. Retrieved June 4, 2008, from EBSCOhost, Academic Search Elite.
- King, Z. (2004). Career self-management: Its nature, causes, and consequences. *Journal of Vocational Behavior*, 65, 112-133.
- Kossek, E., Fisher, S., & DeMarr, B. (1998). Career self-management: A quasi-experimental assessment of the effects of a training intervention. *Personnel Psychology*, 51, 935-959. Retrieved May 30, 2008, from EBSCO Business Source Elite.
- Kozlowski, D. (2002). Returning to school: an alternative to 'traditional' education, *Orthopaedic Nursing*, 21(4), 41. Retrieved May 30, 2008, from EBSCO Health Source Nursing Academic Edition.
- Laird, J., Chen, X., & Levesque, K. (2000). The postsecondary educational experiences of high school career and technical education concentrators: Selected results from the NELS:88/2000 postsecondary education transcript study. (PETS) 2000. U.S. Department of Education.

- Lewey, L., & Davis, B. (1987). When techies manage. *Training and Development*, 41(10), 66- 89. Retrieved June 2, 2008 from EBSCOhost Business Source Elite.
- McCracken, G. (1988). *The long interview*. Newbury Park, CA: Sage.
- Meisler, A. (2004). A matter of degrees, *Workforce Management*, 83(5), 32-37.
- Miles, M., & Huberman, M. (1994). *Qualitative data analysis*. Thousand Oaks, CA:Sage.
- Mintzberg, H. (2004). *Managers not MBAs*. San Francisco: Berrett-Koehler Publishers, Inc.
- Monsen, E., & Cheney, C. (2003). Descriptive research designs. In E. Monsen. (ed.). *Research: Successful approaches*. (2nd ed., pages 3-14). Chicago, IL: American Dietetic Association
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage Publications, Inc.
- Murdock, A. (1999, January). Achieving a seamless curriculum in Georgia: The BAS degree program. *Tech Directions*, 58(6), 27. Retrieved November 18, 2008 from EBSCOhost Academic Search Elite.
- National Center for Education Statistics (2002). U.S. Department of Education. *The condition of education 2002: nontraditional undergraduates*. Washington, D.C.: U.S. Government Printing Office. Retrieved March 12,

2009 from

<http://nces.ed.gov/programs/coe/2002/analyses/nontraditional/sa01.asp>.

Noel-Levitz & Council on Adult and Experiential Learning. (2008). *National adult students priorities report*. Retrieved January 31, 2009 from <https://www.noellevitz.com/NR/rdonlyres/64680486-40A7-4C10-966A-C1F3E6893E05/0/ASPSReport08.pdf>.

NorthStar, (2005). *Human Capital and Brain Power in the Wisconsin Economy: Shaping the New Wisconsin Economy*. Retrieved June 10, 2008 from <http://www.northstareconomics.com/HumanCapitalReport-final.pdf>

OED online, (2008). Oxford English Dictionary Online, 2nd Edition, 1998.

Oxford University Press, New York. Retrieved from <http://dictionary.oed.com/entrance.dtl> June 10, 2008.

Osipow, S., & Fitzgerald, L. (1996). *Theories of Career Development* 4th ed., Needham Heights, MA: Allyn & Bacon.

Pair, C. (1994, November). The changing role of vocational and technical education and training. Pathways and participation in vocational and technical education and training, Synthesis Report. Issues and Questions for Working Group I. Meeting of the Organisation for Economic Cooperation and Development. Paris. Retrieved June 12, 2008 from EbscoHost ERIC.

Parsons, F. (1909). *Choosing a Vocation*. Boston: Houghton Mifflin Company.

Patton, M. (1987). *How to use qualitative methods in evaluation*. Thousand Oaks, CA: Sage Publications, Inc.

Patton, M. (1990). *Qualitative Evaluation and Research Methods*, 2nd ed., Newbury Park, CA: Sage Publications, Inc.

Patton, W., & McMahon, M. (2006). *Career development and systems theory: connecting theory and practice*. Rotterdam, The Netherlands: Sense Publishers

Pfeffer, J. (2005). Producing sustainable competitive advantage through effective management of people. *Academy of Management Executive*, 19(4), 95-106. Retrieved February 22, 2009 from EBSCOhost Business Source Elite.

Richmond, H. (2002). Learners' lives: A narrative analysis. *The Qualitative Report*. 7(3). Retrieved March 8, 2009 from <http://www.nova.edu/ssss/QR/index.html>

Roberts, K., & Biddle, J. (1994). The transition into management by scientists and engineers: a misallocation or efficient use of human resources? *Human Resource Management*, 33(4), 561-579. Retrieved June 2, 2008 from Proquest ABI/INFORM Global.

Roehling, M., Cavanaugh, M., Moynihan L., & Boswell, W. (2000). The nature of the new employment relationship: A content analysis of the practitioner and academic literatures. *Human Resource Management*. 39(4), 305-320. Retrieved June 15, 2008 from Proquest ABI/INFORM Global.

- Ruben, B. (2003). *Pursuing excellence in higher education: eight fundamental challenges*. San Francisco: Jossey-Bass.
- Rubin, H., & Rubin, I. (2005). *Qualitative interviewing: The Art of hearing data*. Thousand Oaks, CA: Sage Publications, Inc.
- Sarason, S., Sarason, E., & Cowden, P. (1975). Aging and the nature of work, *American Psychologist*, 30(5), 584-592. Retrieved January 30, 2009 from WilsonWeb.
- Savakis, M. (1997). Career adaptability: An integrative construct for life-span, life-space theory. *The Career Development Quarterly*, 45, 247-259. Retrieved June 15, 2008 from EBSCOhost Master FILE Premier.
- Schein, E. (1996). Career anchors revisited: Implications for career development in the 21st century, *Academy of Management Executive*, 10(4), 80-88.
- Scott, E., O'Shaughnessy, K., & Cappelli, P. (1996) *Management Jobs in the Insurance Industry: Organizational Deskillling and Rising Pay Inequality*. Retrieved June 15, 2008 from <http://knowledge.wharton.upenn.edu/papers/473.pdf>.
- Seethamraju, R., & Agrawal, R. (1999). Engineers as managers: a conceptual model of transition. Presented at the Management of Engineering and Technology, 1999. Technology and Innovation Management. PICMET '99. Portland International Conference. Portland, Oregon. Retrieved June 4, 2008 from <http://ieeexplore.ieee.org/servlet/opac?punumber=6378> .

- Seidman, I. (1998). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*, 2nd edition. New York: Teachers College Press.
- Silverberg, M., Warner, E., Goodwin, D., & Fong, M. (2002). *National assessment of vocational education*, Interim report to Congress, US Department of Education, Washington, D.C.
- Spitzer, T. (2001). Predictors of College Success: A Comparison of Traditional and Nontraditional Age Students. *NASPA Journal*, 38(1), 82-98. Retrieved January 26, 2009, from <http://publications.naspa.org/naspajournal/vol38/iss1/art11>
- Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: Sage
- Stake, R. (2005). Qualitative case studies. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (3rd ed, pages 443-466). Thousand Oaks, CA: Sage Publications, Inc.
- Stewart, D. (1999). Proposal to plan: Bachelor of Science in industrial management. Menomonie, WI: UW-Stout.
- Still, T. (2008, December). As the recession grips Wisconsin, business groups search for common ground. *Wisconsin Technology Network*. Retrieved February 27, 2009 from <http://wistechnology.com/articles/5285/>.
- Sullivan, S. (1999). The changing nature of careers: A review and research agenda. *Journal of Management*, 25(3), 457-484.

- Sullivan, S., & Arthur, M. (2006). The evolution of the boundaryless career concept: Examining physical and psychological mobility. *Journal of Vocational Behavior, 69*, 19-29.
- Super, D. (1957). *The psychology of careers*. New York: Harper and Row.
- Super, D. (1980). A life-span, life-space approach to career development. *Journal of Vocational Behavior, 16*, 282-298.
- Super, D. (1994). A life-span, life space perspective on convergence. In Savikas, M & Lent, R. (eds). *Convergence in career development theories* (63-76). Palo Alto, CA: CPP Books.
- Taylor, J. (2000). *Adult degree completion programs: A report to the trustees from the task force on adult degree completion programs and the award of credit for prior learning at the baccalaureate level*, Commission on Higher Education, Chicago: North Central Association of Colleges and Schools. Retrieved June 17, 2008 from <http://www.ncahigherlearningcommission.org/download/ADCPRept.pdf>
- Thamhain, H. (1991). From engineer to manager. *Training & Development, 45*(9), 66- 70.
- Townsend, B. (2002, spring). Transfer rates: A problematic criterion for measuring the community college. *New Directions for Community Colleges, 117*, 13-23.

- United States Department of Labor. (2009). Employment situation summary. Retrieved March 15, 2009 from <http://www.bls.gov/news.release/empsit.nr0.htm>.
- University of Wisconsin-Stout. (2006). *Alumni follow-up data*. Budget, Planning and Analysis. Retrieved October 23, 2008 from <http://www.uwstout.edu/bpa/ir/gfu/2006index.htm>
- University of Wisconsin-Stout. (2008). *Annual undergraduate employment report*. Career Services. Retrieved January 23, 2009 from <http://www.uwstout.edu/careers/documents/anrpt.pdf>
- University of Wisconsin-Stout, (2008). *Fact Books*. Office of Budget, Planning and Analysis. Retrieved from <http://www.uwstout.edu/bpa/ir/factbooks/index.html>
- University of Wisconsin-Stout. (2005). *Meaning of the baccalaureate degree*. Retrieved July 8, 2008 from <http://www.uwstout.edu/provost/currhb/MeanBac.htm>.
- University of Wisconsin-Stout. (2008) Select mission of UW-Stout. Retrieved July 8, 2008 from <http://www3.uwstout.edu/geninfo/mission.cfm>.
- Ward, D. & Urness, J. (2000). *Improving opportunities for transfer from the Wisconsin Technical College System to the University of Wisconsin System*. Report of the UW/WTCS transfer study committee to the president of the University of Wisconsin System and the state director of the Wisconsin Technical College System.

- Wisconsin State Statutes. (2007-2008). Retrieved April 13, 2009 from
<http://www.legis.state.wi.us/rsb/stats.html>
- Wolcott, H. (2001). *Writing up qualitative research*. Thousand Oaks, CA: Sage Publications, Inc.
- WTCS. (2008). *Factbook*. Wisconsin Technical College System. Retrieved June 25, 2008 from <http://www.wtcsystem.edu/reports/data/factbook/pdf/graduates.pdf>.
- WTCS. (2007). *Progress report on UWS/WTCS credit transfer*. Wisconsin Technical College System. Retrieved January 31, 2009 from
http://www.wtcsystem.edu/initiatives/credit_transfer/pdf/progress_report_07may.pdf
- WTCS. (2004). Wisconsin manufacturers speak out; focus group findings. Wisconsin Technical College System. Retrieved January 30, 2009, from
<http://www.wtcsystem.edu/initiatives/advmfg/pdf/focusgroup.pdf>
- Yin, R. (2006). Case study methods. In J.L. Green, G.E. Camilli & P.B. Elmore (Eds.), *Handbook of complementary methods in education research*. (pp. 111-122). Mahwah, NJ, US: Lawrence Erlbaum Associates.
- Yin, R. (2009). *Case study research: Design and methods*. Thousand Oaks, CA: Sage.
- Younts, M. (2006). *Stepping Out from a Technical Job and Leaping Into Management: A Dissertation*. Bloomington, IN: iUniverse.

Zabusky, S., & Barley, S. (1996). Redefining success: Ethnographic observations on the careers of technicians. In P. Osterman (Ed.), *Broken ladders: Managerial careers in the new economy* (pp. 185-214). New York: Oxford University Press.

Zinser, R. & Hannsen, C. (2006). Improving access to the baccalaureate articulation agreements and the National Science Foundation's advanced technological education program. *Community College Review*, 34 (1). 27-43.

Appendix A

Interview Guide adapted from Howard (2003) and Korte (2007)

The purpose of this study is to discover, from the manager's perspective, the transition from technician to manager. The study investigates the experience of transition and the manager's perception of their career self-management.

Research Questions:

1. What is the experience of a person making the transition from technician to manager?
2. How did the person direct career self-management?

Selection of site

Closest UW College or Technical College (WI or MN) campus to participant's home or workplace.

Conference room

Preparing site for interview:

Investigator to be present at interview site

Tape recorder with microphone and computer with Audacity[®] software

Beverages and snacks available

Consent form to be read by participant

Note taking guide/pen

Introduction

1. Purpose of the study
2. Definition of group interviewed, confirm interviewee meets parameters (graduate of the program and has transitioned between technician and manager).
3. Presentation of consent form.

Interview	
Current job responsibilities	What are your current job responsibilities? What do you do and what are you responsible for?
Career development Incidents	Let's talk about how your career development. Begin with your first experience as a technician and progress up to today.
Follow-up examples	
Career development	What were your principal responsibilities at each job? <i>Looking for a development.</i> What do you consider to be the transition experience from technician to manager? How do you define your transition?
Career development the experience, thoughts, emotions.	What were you thinking, feeling and doing during the transition? Was the transition different than you expected?
Career self-development incidents	How did the changes take place? What did you do to facilitate each change?
	What did you like about the transition between technician and manager? What did you dislike about the transition?
Incidents	What did you like and dislike about being a technician? What do you like and dislike about being a manager?
Emotions	What is the most difficult thing about being a manager?
Career self-development incidents	What steps did you take to assure you would make the transition?
Different perspective	If I asked your closest friend/spouse to tell me the most difficult thing about your transition what would s/he tell me? If I asked that same person what you did to make this change happen, what would s/he tell me?
Follow-up	Did anything else come to mind when we talked about your decisions leading to this change?

Appendix B



Date

First Name Last Name

Address

City, State ZIP

Dear First Name,

Here I am again, asking for your help.

I completed my Education Specialist degree and have one more step for a doctorate. I need to do research. For my dissertation I plan to interview graduates of the program who have transitioned from a technician's role to a management role and write about their experiences.

Do you meet that criterion? Would you be willing to talk to me for an hour or two sometime before mid-January?

I hope to begin interviewing in Appleton on January 5th and 6th. I will be calling you (at (920) 788-5997?) to see if you're willing and have time on one of those days.

Thanks for considering,
(personalized signature)
Wendy Dittmann

dittmannw@uwstout.edu

800 991 5291



Appendix C

A study of degree-completion graduates' transition

You are invited to be in a research study of the transition from technician. You were selected as a possible participant because you are a graduate of the BS in Industrial Management or BS in Management program at UW-Stout who has worked as a technician and made the transition. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: Wendy Dittmann, University of Minnesota

Background Information

The purpose of this study is: learn from your experience the transition from technician to manager and determine if you managed your career development.

Procedures

If you agree to be in this study, we would ask you to do the following things:

Commit to an interview which might last up to two hours.

Share your experience of transition.

Risks and Benefits of being in the Study

Your participation in the interview will ask for your experience. You may recall and share information that causes you psychological concern.

The benefits to participation are: to the researcher; information about the transition graduates of the baccalaureate program experience, to the participant: small: personal satisfaction.

Confidentiality

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject.

Research records will be stored securely and only researchers will have access to the records.

Voluntary Nature of the Study

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota or UW-Stout. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions

The researcher conducting this study is Wendy Dittmann. You may ask any questions you have now. If you have questions later, you are encouraged to contact her at UW-Stout, Menomonie, Wisconsin, 715 232 1372, dittmannw@uwstout.edu. The faculty supervising this research is Dr. Theodore Lewis, University of Minnesota, Department of Work and Human Resource Education, 612-624-4707, lewis007@umn.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis,

Minnesota 55455; (612) 625-1650 and/or Susan Foxwell, Director, Research Services,
152 Vocational Rehabilitation Building, UW-Stout, Menomonie, WI, 54751, 715 232
2477, foxwells@uwstout.edu.

Appendix D

Transcription confidentiality Agreement

Below is the statement presented to the subjects in the study in reference to confidentiality.

Confidentiality

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records.

I recognize the personal and confidential nature of the interviews I will be transcribing. I agree to maintain the confidentiality of the participants.

It is the responsibility of the researcher, Wendy Dittmann, to remove any identifying material from the transcripts.

During the time I have the audio files in my possession I will maintain their security.

In the event I know one of the interviewees I will not transcribe the interview and inform Wendy Dittmann.

I agree to keep a copy of the audio and transcription only until the researcher has verified that she has the record. After that time I will destroy all of my copies.

I have read and agreed to the information contained above.

Name _____ Date _____

I have discussed the transcription confidentiality requirements with the transcriber.

Name _____ Date _____