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A Study of the Effectiveness of a Pilot Training Program in an Organizational Setting: An Intervention for Work Engagement

John Joseph Kmiec Jr.

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A STUDY OF THE EFFECTIVENESS OF A PILOT TRAINING PROGRAM IN AN ORGANIZATIONAL SETTING: AN INTERVENTION FOR WORK ENGAGEMENT

by

John Joseph Kmiec, Jr.

Abstract of a Dissertation
Submitted to the Graduate School of The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

May 2010
ABSTRACT

A STUDY OF THE EFFECTIVENESS OF A PILOT TRAINING PROGRAM IN AN ORGANIZATIONAL SETTING: AN INTERVENTION FOR WORK ENGAGEMENT

by John Joseph Kmiec, Jr.

May 2010

This study measured the effects of a learning intervention designed to enhance the capabilities of immediate managers to increase the level of work engagement in line employees at a small manufacturing firm in south Mississippi. The study answered the call of researchers to investigate the impact of innovative management practices on work engagement (Bakker, Schaufeli, Leiter, & Taris, 2008). The firm’s Production business unit managers participated in a 90-day learning program based on five skills outlined by Flagello and Dugas (2009); the Maintenance business unit managers did not participate in the learning. At three intervals during the intervention, the researcher collected Utrecht Work Engagement Scale ("UWES", 2003; Schaufeli et al., 2006) data pertaining to (1) the instrument’s dedication subscale, as a measure of perceived work environment, and (2) overall work engagement. Mixed Design ANOVA between-group effects for the Production and Maintenance line employees, using both the UWES dedication subscale (F(1, 36) = 17.258; p < .001; η² = .324; observed power = .981) and the entire work engagement construct (F(1, 36) = 12.739; p = .001; η² = .261; observed power = .935), were statistically and practically significant and powerful. Future research should consider (1) conducting longitudinal research into interventions for work engagement; (2) exploring UWES research applications that measurably link the psychological work engagement construct to meaningful business outcomes; and (3) using intervention
research to move towards a more universal, practical engagement construct; one that links together the preconditions, psychological factors, behavioral outcomes, and business results of engagement into a unified, actionable whole.
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DEDICATION

First and foremost, I want to dedicate this project to my wife, Dawn Lynne, whose innumerable personal sacrifices, incredible patience and unyielding support and encouragement made it all possible. I would also like to dedicate this to our three children; Gabriel, Melissa and Heather, who I encourage to live their wildest dreams and always remember that:

“We live in deeds, not years: In thoughts not breaths;
In feelings, not in figures on a dial. We should count time by heartthrobs.
He most lives who thinks most, feels the noblest, acts the best.”

- David Bailey
ACKNOWLEDGMENTS

Thanks so very much to my incredible dissertation committee who taught me more that they will ever know. To my chair, Dr. Cyndi Gaudet, who taught me the best writing really is rewriting; thanks for allowing me the freedom to struggle my way through the undiscovered country, to be true to myself in all things, and to pay it all forward. To Dr. Heather Annulis, who taught me how to navigate the inside of the funnel, to move from the confusion of infinite possibilities to a single, focused topic; thanks for always being there to listen, and for sharing a kindred appreciation for the classics of organizational behavior. To Dr. Brian Richard, who taught me that brevity can also be a virtue; thanks for reminding me there are other points of view to consider as we try to understand our own, and for being understanding and so very helpful. To Dr. Mary Nell McNeese, who taught me to love the once foreign language of statistical analysis; thanks for helping me see the numbers, to better understand their meanings and possibilities, and for helping me keep my sense of perspective. To Dr. Sandra Dugas, who helped me find my savvy; thanks for your hands and your heart, and for all your help in making the Savvy Manager learning intervention a reality.

Although not on my committee, I would like to thank Dr. Wilmer Schaufeli from the Department of Social and Organizational Psychology, Utrecht University, Netherlands, for allowing me the privilege of using the Utrecht Work Engagement Scale. And, thanks to all the work engagement researchers around the globe for continuing to explore this very important topic. I also offer my thanks to Drs. Jack and Patti Phillips from the ROI Institute for their tireless work in evaluation; you inspire me. Finally, thanks to Suzy Knight and Robin Johnson for all the amazing things you do every day.
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CHAPTER I

INTRODUCTION

In an era of intense global competition and rapid change, organizations of all shapes and sizes are more compelled than ever to make the best use of human capital, propelling the topic of engagement to the front position in a long line of priorities for human resource development researchers and practitioners (Baumruk, Gorman, & Gorman, 2006; Beehr, Glazer, Fischer, Linton, & Hansen, 2009; Buckingham & Coffman, 1999; Fitz-enz, 2009; Harter, Schmidt, & Hayes, 2002; Oakley, 2004; Phillips & Phillips, 2007b; Schaufeli & Salanova, 2008; Xanthopoulou, Baker, Demerouti, & Schaufeli, 2009). From among the various definitions and constructs of engagement developed over the past 20-years (Harter, Schmidt, & Hayes, 2002; Kahn, 1990; Schaufeli & Salanova, 2008), work engagement has emerged as perhaps the most studied and highly validated concept, by means of the Utrecht Work Engagement Scale, or UWES (Bakker, Schaufeli, Leiter, & Taris, 2008; "UWES", 2003). Work engagement is defined as a “positive, fulfilling, work-related state of mind that is characterized by vigor, dedication and absorption” (González-Romá, Schaufeli, Bakker, & Lloret, 2006, p. 166). When fully engaged at work, employees generate potentially limitless talent and ingenuity, making human capital perhaps the last true source of competitive advantage in an age of rapidly expanding knowledge; inextricably interconnected, yet fiercely competitive global markets; instantaneous world-wide communications; and the exponential evolution of even the most highly advanced technologies (BlessingWhite, 2008; Endres & Mancheno-Smoak, 2008; Florida, 2002; Harter, Schmidt, & Keyes, 2002; Porter, 1990; Schaufeli & Salanova, 2008; Senge, 1990; Stewart, 2008; Varghese,
Having a fully engaged workforce is the ideal. According to a 2004 Gallup Organization “survey of employees worldwide, organizations with higher than average levels of engagement… enjoyed 27 percent higher profits, 50 percent higher sales and 50 percent higher customer loyalty levels” (Irvine, 2008, p. 38). Today, however, large numbers of employees are either under-engaged or disengaged at work.

The High Cost of an Under- or Disengaged Workforce

“Lack of engagement is endemic, and is causing large and small organizations all over the world to incur excessive costs, underperform on critical tasks, and create widespread customer dissatisfaction” (Rampersad, 2008, p. 11). A 2007 Gallup Management Journal “survey found that, of all U.S. workers 18 or older, about 24.7 million... are actively disengaged. Gallup estimates that the lower productivity of actively disengaged workers costs the U.S. economy about $382 billion” per year (Many employees would fire their boss, 2007, n.p.). Excessive costs, lost business opportunities and dissatisfied customers are commonplace, showing the need to increase work engagement as a vital business concern (BlessingWhite, 2008; Many employees would fire their boss, 2007; Rampersad, 2008; Varghese, 2006).

The Business Case for Increasing the Level of Work Engagement

Organizations today are more compelled than ever to make the best use of available talent to help offset critical skills shortages and spur on human creativity and innovation; key ingredients of competitive advantage in a globalized, knowledge economy (Amabile, Barsade, Mueller, & Staw, 2005; Amabile, Conti, Coon, Lazenby, & Herron, 1996; Florida, 2002; Forum for People Performance Management and Measurement, n.d.; Gordon, 2000; Porter, 1990; Senge, 1990; Tellis, Prabhu, & Chandy,
Recent evidence also suggests that for a growing number of organizations, increasing the level of work engagement to advance business performance and competitiveness is heavily contingent upon continuously measuring, valuing and improving the learning and performance of human capital (BlessingWhite, 2008; Fitz-enz, 2009; Phillips & Phillips, 2007). Consequently, finding ways of effectively increasing the level of engagement at work has gained increased significance for practitioners and scholars alike (Baumruk et al., 2006; Piersol, 2007; “Using Appreciative Inquiry”, 2007). This is because, as a growing body of research suggests, organizations with highly engaged employees enjoy higher levels of productivity, improved business results, increased customer satisfaction and profitability (Baumruk et al., 2006; Beehr, Glazer et al., 2009; Buckingham & Coffman, 1999; Fitz-enz, 2009; Harter, Schmidt, & Hayes, 2002; Many employees would fire their boss, 2007; Oakley, 2004; Phillips & Phillips, 2007a; Xanthopoulou et al., 2009). Some researchers have further implied that by increasing the level of work engagement across many organizations and regions, the national economy could potentially benefit in terms of increased demands for goods and services, more jobs and a better quality of life for the citizenry (Blakely & Bradshaw, 2002; BlessingWhite, 2008; Buhler, 2008; Davidson, 2006; Florida, 2002; Gordon, 2000). Pragmatically speaking, however, increasing work engagement to advance business performance and competitiveness is primarily an organizational responsibility.

**Why Organizations Must Lead the Fight to Increase Work Engagement**

Intense global competition, a severe economic recession, critical skills shortages, job burnout, and unemployment are all related issues adversely impacting productivity, economic growth and prosperity on a national level (Buhler, 2008; Davidson, 2006;
Leiter & Maslach, 2001; U.S. Department of Labor, 2009; U.S. Department of the Treasury, 2009). Contemporary strategies to address these issues include large-scale federal economic interventions (The White House, 2009); fixing the skills pipeline through national workforce development initiatives (DOLETA, 2007) and educational reform (U.S. Department of Education, 2007); and by maximizing the capabilities and contributions of human capital at the organizational level (Fitz-enz, 2009; Garavan, 2007; Phillips & Phillips, 2007; Vance, 2008). Of these approaches, the only one within the grasp of most organizations is the management of human capital. This is because other approaches fall almost exclusively into the hands of federal and state governments. Further, government economic interventions, workforce development and educational reform are most often very long-term, broad-based initiatives that are heavily influenced by politics, funding problems and bureaucratic red tape, over which organizations have very little, if any control (Blakely & Bradshaw, 2002; Nilsen, 2007; Porter, 1990, 2008; Sack-Min, 2009; The White House, 2009; Dervarics, 2009). In the meantime, individual organizations must continuously act to increase engagement, maximize productivity and ensure survival in a highly competitive, rapidly changing global economy (BlessingWhite, 2008; Catteeuw, Flynn, & Vonderhorst, 2007; Harter, Schmidt, & Hayes, 2002; Krug, 2008; Many employees would fire their boss, 2007; The White House, 2009; U.S. Department of Labor, 2009; U.S. Department of the Treasury, 2009; Varghese, 2006 ). Fortunately, for most organizations, a key resource in the fight to increase the level of engagement at work may lie in the talents of frontline, immediate managers.
The Promise of Frontline, Immediate Managers

Research indicates that the supervisory practices of frontline, immediate managers are measurably linked to employee satisfaction, engagement, and retention (Beehr et al., 2009; Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Oakley, 2004; Many employees would fire their boss, 2007; Xanthopoulou et al., 2009). Further, immediate managers play a significant role in shaping workplace environments that not only increase employee motivation and work engagement, but positively influence business outcomes, and advance the attainment of organizational goals and objectives (Baker & Newport, 2003; Baumruk et al., 2006; Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Hersey, Blanchard, & Johnson, 1996; Many employees would fire their boss, 2007; May, Gilson, & Harter, 2004; Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2008; Crossley, 2009; Tekleab & Taylor, 2003; Vroom & Jago, 2007).

Consequently, developing immediate managers to maximize the latent capabilities of employees has long been a prime focus of human resource development, particularly in the management of organizational behavior (Hersey et al., 1996; Swanson & Holton, 2009). A contemporary example of this focus can be found in The Savvy Manager: 5 Skills That Drive Optimal Performance by Flagello & Dugas (2009).

The Savvy Manager: 5 Skills That Drive Optimal Performance

Frontline, immediate managers, according to Flagello and Dugas (2009), can be developed into highly effective leaders and supervisors who get things done through and with people. These savvy managers inspire trust, are highly effective communicators, and are excellent teachers and role models (Flagello & Dugas, 2009). Moreover, the
savvy manager delivers solid performance, consistently hits his or her targets, surpasses colleagues on key measures and results, and attracts top talent. Savvy managers know how to integrate and balance the two competing dimensions of the workplace: the numbers and the people who do the work. (Flagello & Dugas, 2009, pp. 1-2)

The learning objectives for developing savvy managers are based on five skills outlined by Flagello and Dugas (2009) aimed at helping managers enhance their personal effectiveness through continuous practice and self-coaching. The skills, which are heavily grounded in organizational behavior research, are posited to collectively distinguish themselves as those practiced by savvy managers; self-managing, reflecting, acting consciously, collaborating and evolving (Flagello & Dugas, 2009). The focus on self-coaching (Tews & Bruce, 2008) during the application of these competencies is further believed to create continuous learning and development within the manager (Flagello & Dugas, 2009) that is conducive to the manager providing a more motivational work environment that engages employees to higher levels of performance (Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Oakley, 2004; Schaufeli & Salanova, 2008). While the underlying theories supporting this and numerous other interventions aimed at enhancing the skills of frontline, immediate managers are well researched, there are virtually no academic studies of the impact of such interventions on work engagement.

Statement of the Problem

While performance improvement interventions intended to increase work engagement are not unheard of among field practitioners, academic research is almost
nonexistent in the study of such interventions (Bakker et al., 2008). As previously discussed, initiating learning and development programs aimed at improving the supervisory practices of frontline, immediate managers is commonly held as a practicable approach to increasing employee satisfaction and work engagement; with the ultimate goal of making gains in productivity, business results, customer satisfaction and profitability (Buckingham & Coffman, 1999; Garavan, 2007; Harter, Schmidt, & Hayes, 2002; Many employees would fire their boss, 2007; Oakley, 2004; Xanthopoulou et al., 2009). While this belief is compelling for human resource development practitioners around the globe, there is little empirical evidence showing the effectiveness of such interventions to increase the level of work engagement (Bakker et al., 2008; Harter, Schmidt, & Hayes, 2002; Oakley, 2004). Consequently, researchers have called for additional study of the antecedents of engagement; suggested further investigation into the reliability of engagement measures on business results; and recommended the development of models, performance improvement interventions and instruments that help practitioners increase the level of engagement in the workplace (Bakker, et al., 2008; Harter, Schmidt, & Hayes, 2002; Oakley, 2004). According to Bakker et al. (2008), the greatest contribution of any future research will emerge from the focused, systematic investigation of performance improvement interventions that evaluate the impact of innovative management practices on work engagement. Accordingly, the scientific research of specific interventions designed to increase work engagement is needed to advance the body of knowledge.
Purpose of the Study

The purpose of this study was to advance the body of knowledge by measuring the effects of a specific learning intervention on work engagement. Based on the five skills posited by Flagello and Dugas (2009), the intervention was a distinctive learning program specifically designed to enhance the capabilities of front line, immediate managers to increase the level of work engagement at the business unit level.

Hypotheses

The following hypotheses were examined using a nonequivalent control group, quasi-experimental research design (Cook & Campbell, 1979; Crano & Brewer, 2002; Creswell, 2003), involving the frontline, immediate managers and direct reports from one test and one control group business unit at a small manufacturing firm in south Mississippi:

Ha₁: Test Group Dedication > Control Group Dedication
Ho₁: Test Group Dedication ≤ Control Group Dedication
Ha₂: Day-0 Dedication < Day-45 Dedication < Day-90 Dedication
Ho₂: Day-0 Dedication ≥ Day-45 Dedication ≥ Day-90 Dedication
Ha₃: Group Dedication * Day Dedication Interaction ≠ 0
Ho₃: Group Dedication * Day Dedication Interaction = 0
Ha₄: Test Group Work Engagement > Control Group Work Engagement
Ho₄: Test Group Work Engagement ≤ Control Group Work Engagement
Ha₅: Day-0 Work Engagement < Day-45 Work Engagement < Day-90 Work Engagement
Ho₅: Day-0 Work Engagement ≥ Day-45 Work Engagement ≥ Day-90 Work Engagement
Ha₆: Group Work Engagement * Day Work Engagement Interaction ≠ 0
**H₀₆**: Group *Work Engagement* * Day *Work Engagement* Interaction = 0

The dependent variables for these hypotheses included the line employees’ perceptions of work environment (H₀₁-H₀₃), as measured by the dedication subscale of the Utrecht Work Engagement Scale, or UWES (Bakker et al., 2008; “UWES”, 2003); and the line employees’ perceptions of work engagement (H₀₄-H₀₆), as measured by the UWES in its entirety. The independent variables included (1) group (test and control group business unit line employees taking the UWES, as shown in H₀₁ and H₀₄); and (2) day (day 0, day 45, day 90; representing three administrations of the UWES, as shown in H₀₂ and H₀₅). Analyses of these hypotheses included a Mixed Design Analysis of Variance, or Mixed Design ANOVA (Agresti & Finlay, 1997; Green & Salkind, 2004; Lomax, 2001; Shavelson, 1988) for the between-subjects factor tests of H₀₁ and H₀₄; the within-subjects factor tests for H₀₂ and H₀₅; and an analysis of the interaction between factors, as shown in H₀₃ and H₀₆.

**Theoretical Base**

More than 50 years of organizational behavior research has shown that the emotions, needs and motivations of employees profoundly impact performance (Avey, Wernsing, & Luthans, 2008; Hellriegel & Slocum, 2004; Hersey et al., 1996; Miner, 2005). These needs and motivations are shaped by environmental factors and manifest themselves as employee behaviors; employee behaviors effect business outcomes; and business outcomes can either enhance or hinder the attainment of organizational goals and objectives (Azevedo & Akdere, 2008; Chen, Eisenberger, Johnson, Sucharski, & Aselage, 2009; Doest, Maes, Gebhardt, & Koelewijn, 2006; Gagnon, Jansen, & Michael, 2008; Hellriegel & Slocum, 2004; Hersey et al., 1996; Kaplan, Bradley, Luchman, &
Haynes, 2009; May et al., 2004; Miner, 2005; Podsakoff, Whiting, Podsakoff, & Blume, 2009; “Using Appreciative Inquiry”, 2007). Moreover, immediate managers play a significant role in shaping workplace environments that can improve or obstruct employee satisfaction and work engagement, influence business outcomes, and impact organizational goals and objectives (Baker & Newport, 2003; Baumruk et al., 2006; Beehr et al., 2009; Buckingham & Coffman, 1999; Crossley, 2009; Harter, Schmidt, & Hayes, 2002; Hersey et al., 1996; May et al., 2004; Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2008; Tekleab & Taylor, 2003; Vroom & Jago, 2007; Xanthopoulou et al., 2009). Research further suggests that competencies can be learned, developed and supported in immediate managers to create motivational environments that result in increased work engagement; believed to be a prime catalyst for greater productivity, creativity and innovation, business results, customer satisfaction and profitability (Aggarwal, Datta, & Bhargava, 2007; Amabile et al., 1996; Amabile et al., 2005; Baumruk et al., 2006; Beehr et al., 2009; Buckingham & Coffman, 1999; Catteeuw et al., 2007; Chen et al., 2009; Fitz-enz, 2009; Flagello & Dugas, 2009; Gagnon et al., 2008; Harter, Schmidt, & Hayes, 2002; Oakley, 2004; Kaplan et al., 2009; Phillips & Phillips, 2007b; Sanghi, 2007; Sekiguchi, Burton, & Sablynski, 2008; Swanson & Holton, 2009; Xanthopoulou et al., 2009).

Delimitations

Due to time and resource constraints, this study did not include an investigation into changes in productivity, creativity and innovation, business results, customer satisfaction, profitability or any other outcome resulting from the intervention. However, an evaluation plan was developed using the Phillips Return-On-Investment (ROI)
Methodology (Phillips & Phillips, 2007b) and provided to the participating organization as part of the learning intervention suite.

Limitations

The uniqueness of this study, coupled with the practical necessity to employ a nonequivalent control group, quasi-experimental research design, meant that any results or inferences drawn would be confined to the participating organization. Further, the interpretation of results was limited to the definitions and parameters of the UWES (Bakker et al., 2008; “UWES”, 2003). The future replication of this study in other organizations will be required, therefore, to further advance any inferences and lessons learned to other populations.

Definition of Terms

Key phrases and terms pertinent to this study included the following:

1. Absorption is an aspect of work engagement that “is characterized by fully concentrating on and being deeply engrossed in one's work, where time passes quickly and one has difficulty detaching oneself from work” (González-Romá et al., 2006, p. 166).

2. Acting consciously is the practice of deliberately and intentionally selecting from feasible options decisions that are better aligned with desired outcomes. It is one of the five skills of savvy managers. (Flagello & Dugas, 2009)

3. Business unit is defined as a logical “element or segment of a firm (such as accounting, production, marketing) representing a specific business function, and a definite place on the organizational chart, under the domain of a
manager. Also called department, division, or a functional area” (“Business Unit”, 2009).

4. **Collaborating** is working with the full involvement of people in order to better align efforts, add value and generate results. It is one of the five skills of savvy managers. (Flagello & Dugas, 2009)

5. **Competencies** are observable workplace behaviors that reflect the knowledge, skills, traits, and motives needed for effective or superior performance at work (Sanghi, 2007). Also see differentiating competencies and threshold competencies.

6. **Competency model.** “A competency model describes the combination of knowledge, skills and characteristics needed to effectively perform a role in an organization and is used as a human resource tool for selection, training and development, appraisal and succession planning” (Sanghi, 2007, p. 20).

7. **Dedication** is an aspect of work engagement that “is characterized by a sense of significance, enthusiasm, inspiration, pride and challenge” (González-Romá et al., 2006, p. 166).

8. **Differentiating competencies** “distinguish superior performers from average performers” (Sanghi, 2007, p. 12).

9. **Engagement**, for the purposes of this study, is “defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication and absorption” (González-Romá et al., 2006, p. 166). Throughout the literature, engagement is most commonly referred to as employee engagement (Harter,
10. *Evolving* is a personal, life-long commitment to the deliberate and continuous pursuit of learning, development and professional growth. It is one of the five skills of savvy managers (Flagello & Dugas, 2009).

11. *Human capital* refers to the employees, or human assets, of an organization; including the value generating capabilities, personal knowledge and experiences each person trades to an organization as a condition of employment (Mayo, 2001). “It is the sum total of individual intelligence built upon the acquisition of skills, training and educational experience over a lifetime. The application of human knowledge to the workplace creates real value” (Gordon, 2000, p. 54).

12. *Human performance improvement*, or *performance improvement* is a “results-based, systematic process used to identify performance problems, analyze root causes, select and design actions, manage interventions in the workplace, measure results, and continually improve performance within an organization” (American Society for Training & Development [ASTD], 2006, p. 128).

13. *Human resource development (HRD)* “is a process of developing and unleashing expertise for the purpose of improving individual, team, work process, and organizational system performance” (Swanson & Holton, 2009, p. 4). “HRD efforts in organizations often take place under the additional banners of training and development, organization development, performance
improvement, organizational learning, career management, leadership development, etc” (Swanson & Holton, 2009, Figure 1.2).

14. **Immediate managers** in this study will refer to individuals at the business-unit level (Harter, Schmidt, & Hayes, 2002) of an organization who are responsible for ensuring the employees under their direct supervision deliver “a sufficient return on investment, consistently high productivity, and efficiencies throughout the workplace” (Flagello & Dugas, 2009, pp. 126-127). The term *immediate manager* will be used interchangeably with the terms *immediate supervisor* and *frontline manager*.

15. **Interventions** “are deliberate, conscious acts that facilitate change in [human] performance… Interventions are targeted to organizations, departments, work groups and individuals” (Van Tiem, Moseley, & Dessinger, 2004, pp. 62-63). In the field of human performance technology, or performance improvement, interventions are systematically selected, designed and developed to permanently address the root causes of poor performance as efficiently and effectively as possible (Van Tiem et al., 2004). Also see *human resource development* and *human performance improvement*.

16. **Learning and development** refers to a category of *human resource development* that is also referred to as *training and development* (Swanson & Holton, 2009). It represents just one of several kinds of *interventions* aimed at improving organizational, workplace, team and individual performance (Van Tiem et al., 2004).
17. Motivational work environments are those where employee satisfaction and engagement are high (Buckingham & Coffman, 1999; Chen et al., 2009; Harter, Schmidt, & Hayes, 2002; Oakley, 2004; Piersol, 2007).


19. Organizational behavior “is the study of human behavior, attitudes, and performance in organizations. It is interdisciplinary—drawing on concepts from social and clinical psychology, sociology, cultural anthropology, industrial engineering, and organizational psychology” (Hellriegel & Slocum, 2004, p. 5).

20. Organizational Citizenship Behavior (OCB): “Individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization” (Organ, Podsakoff, & MacKenzie, 2006, p. 3).

21. Reflecting “is the simple practice of quietly contemplating, thinking, and/or observing…without judgment” (Flagello & Dugas, 2009, p. 6). It is one of the five skills of savvy managers (Flagello & Dugas, 2009).

22. ROI Methodology refers to the comprehensive, disciplined approach to program measurement and evaluation developed by Jack. J. Phillips, PhD (Phillips & Phillips, 2007b). The ROI Methodology forecasts and measures six types of value found in all types of learning and development and performance improvement programs, including a return-on-investment calculation for such programs (Phillips & Phillips, 2007b).
23. *Savvy Managers* are those managers who practice the five skills posited by Flagello and Dugas (2009). These skills include self-managing, reflecting, acting consciously, collaborating and evolving (Flagello & Dugas, 2009).

24. *Self-coaching* is the practice of monitoring and assessing one’s personal on-the-job performance compared to predetermined learning objectives. It includes the self-development and implementation of personal performance improvement goals (Tews & Bruce, 2008).

25. *Self-management* refers to the practice of continuous self-improvement through purposeful self-observation and -monitoring, self-assessment, goal-setting, and conscious action (Flagello & Dugas, 2009; Pattni, Soutar, & Klobas, 2007). At the heart of self-management are self-awareness and self-discipline (Flagello & Dugas, 2009; Pattni et al., 2007). It is one of the five skills of savvy managers (Flagello & Dugas, 2009).

26. *Threshold competencies* “are the essential characteristics that everyone in the job needs to be minimally effective” (Sanghi, 2007, p. 12).


28. *Work Engagement* is defined as a “positive, fulfilling, work-related state of mind that is characterized by vigor, dedication and absorption” (González-Romá et al., 2006, p. 166). Also see the terms engagement, absorption, dedication and vigor.

29. *Vigor* is an aspect of work engagement that “is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in
one's work, and persistence even in the face of difficulties” (González-Romá et al., 2006, p. 166).

Summary

In an era of intense global competition, organizations of all shapes and sizes are, more than ever, striving to make the best use of human capital. Accordingly, the topic of engagement has moved to the forefront in a long line of priorities for human resource development researchers and practitioners alike. The psychological state of work engagement, with its three factor construct of absorption, dedication and vigor, is the most studied engagement concept internationally, as measured with the highly validated Utrecht Work Engagement Scale, or UWES. When fully engaged at work, employees generate potentially limitless talent and ingenuity. According to a 2007 Gallup survey, however, the cost of disengaged employees in the United States averages $382 billion per year. Given the current economic recession and critical skills shortages, organizations can ill afford to ignore an under- or disengaged workforce. Research further indicates that the supervisory practices of frontline, immediate managers are measurably linked to employee satisfaction and engagement. Moreover, learning and development programs, or performance improvement interventions, aimed at improving the supervisory practices of immediate, frontline managers is generally believed to be a practicable approach to increasing work engagement. One contemporary example of this is The Savvy Manager: 5 Skills That Drive Optimal Performance by Flagello and Dugas (2009), who posit that managers can be developed into highly effective leaders and supervisors who get things done through and with people. While the underlying theories supporting The Savvy Manager and numerous other approaches aimed at enhancing the skills of frontline,
immediate managers are well researched, there are virtually no academic studies of the impact of these interventions on work engagement. The purpose of this study, therefore, was to advance the existing body of knowledge by measuring the effects of a specific learning intervention designed to enhance the capabilities of front line, immediate managers to increase the level of work engagement at the business unit level. Based on the five skills posited by Flagello and Dugas (2009), the intervention was a distinctive learning program designed to enhance the capabilities of front line managers to increase the level of work engagement at the business unit level, as measured by the highly validated Utrecht Work Engagement Scale. The remaining chapters of this study include a review of the literature, a detailed explanation of the research methods employed, the data and results, and a discussion of the findings with recommendations for future study.
CHAPTER II
LITERATURE REVIEW

Introduction

The purpose of this study was to expand the current body of knowledge by measuring the effects of a specific learning intervention intended to enhance the capabilities of front line, immediate managers to increase the level of work engagement at the business unit level. Pursuant of this purpose, Chapter II offers a review of the literature that takes into account the contextual framework introduced in Chapter I; namely, the current state of engagement (BlessingWhite, 2008; Many employees would fire their boss, 2007; Rampersad, 2008; Varghese, 2006), the work engagement construct (Bakker et al., 2008; González-Romá et al., 2006; Schaufeli & Salanova, 2008; “UWES”, 2003), the role of immediate, frontline managers (Beehr et al., 2009; Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Hersey et al., 1996; Many employees would fire their boss, 2007; Oakley, 2004; Swanson & Holton, 2009; Xanthopoulou et al., 2009), and the need to research interventions specifically designed to increase work engagement (Bakker et al., 2008; Harter, Schmidt, & Hayes, 2002; Oakley, 2004).

Accordingly, this review explores a number of theories underling the field of human resource development (HRD), particularly those found in the study of organizational behavior. Organizational behavior research, specifically motivational theory, provides the foundation for the design of interventions to improve work engagement, including the skills posited by Flagello and Dugas (2009) as those practiced by savvy managers; the basis for the intervention in this study.
A Brief Overview of the Theoretical Relationships Supporting This Study

The underlying theories of HRD, found in psychology, systems theory, economics, and performance improvement (Swanson & Holton, 2009), combine to form the basis for this study in the following ways. First, more than 50 years of organizational behavior research, specifically in the area of motivational theory, has shown that the needs and motivations of employees impact job performance (Avey et al., 2008; Hellriegel & Slocum, 2004; Hersey et al., 1996; Miner, 2005). Second, employee needs and motivations are shaped by environmental factors that influence individual and group behavior; individual and group behavior determines business outcomes; and the resulting business outcomes can range from extremely positive to extremely negative (Azevedo & Akdere, 2008; Chen et al., 2009; Doest et al., 2006; Gagnon et al., 2008; Hellriegel & Slocum, 2004; Hersey et al., 1996; Kaplan et al., 2009; May et al., 2004; Miner, 2005; Podsakoff et al., 2009; “Using Appreciative Inquiry”, 2007). Third, immediate managers play a pivotal role in shaping workplace environments that regulate employee satisfaction and work engagement, influence business outcomes, and determine organizational effectiveness (Baker & Newport, 2003; Baumruk et al., 2006; Beehr et al., 2009; Buckingham & Coffman, 1999; Crossley, 2009; Harter, Schmidt, & Hayes, 2002; Hersey et al., 1996; May et al., 2004; Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2008; Tekleab & Taylor, 2003; Vroom & Jago, 2007; Xanthopoulou et al., 2009). Fourth, research suggests that competencies can be developed in frontline managers for the creation of motivational environments that result in increased work engagement; believed to be a prime catalyst for greater productivity, creativity and innovation, business results, customer satisfaction and profitability (Aggarwal et al., 2007; Amabile et al., 1996;
Amabile et al., 2005; Baumruk et al., 2006; Beehr et al., 2009; Buckingham & Coffman, 1999; Catteeuw et al., 2007; Chen et al., 2009; Fitz-enz, 2009; Flagello & Dugas, 2009; Gagnon et al., 2008; Harter, Schmidt, & Hayes, 2002; Kaplan et al., 2009; Oakley, 2004; Phillips & Phillips, 2007; Sanghi, 2007; Sekiguchi et al., 2008; Swanson & Holton, 2009; Xanthopoulou et al., 2009).

How This Chapter is Arranged

The literature review presented here is arranged to explicate the research and theoretical underpinnings of this study by examining (1) the three principal models of engagement, particularly work engagement; (2) the foundations of human behavior and performance, especially the relationship between organizational behavior research and engagement; (3) the impact of workplace environments on employee satisfaction and work engagement; (4) the influence of frontline, immediate managers in shaping workplace environments that either promote or stifle engagement; (5) the basis for the development of immediate managers to increase work engagement; and, finally, (6) the Savvy Manager framework that was used in this study of a specific learning intervention designed to expand the capabilities of immediate managers to increase the level of work engagement at the business unit level. An examination of engagement is presented next.

Engagement

Numerous Definitions of Engagement

Research provides numerous definitions of engagement. For example, engagement has been defined as an “energetic state in which the employee is dedicated to excellent performance at work and is confident of his or her effectiveness” (Schutte, Toppinen, Kalimo, & Schaufeli, 2000, p. 54). Another definition proclaims that
“engagement is characterized by energy, involvement and efficacy” (Rothmann, 2003, p. 18). Another suggests that “Engaged employees have a sense of energetic and effective connection with their work activities and they see themselves as able to deal well with the demands of their job” (Schaufeli, Taris, & Rhenen, 2008, p. 176). One more declares that “employee engagement refers to the individual’s involvement and satisfaction with as well as enthusiasm for work” (Harter, Schmidt, & Hayes, 2002, p. 269). While there are many more examples of definitions of engagement, three dominate the literary landscape.

**Three Most Prevalent Models of Engagement Found in the Literature**

In a seemingly endless sea of definitions and constructs of engagement, ultimately, the three most prevalent examples include personal engagement (Kahn, 1990), employee engagement (Harter, Schmidt, & Hayes, 2002) and work engagement (Xanthopoulou et al., 2009). Personal engagement is defined as the “harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances” (Kahn, 1990, p. 694). Personal engagement is measured by three psychological pre-conditions discussed later in this chapter; meaningfulness, safety and availability (Kahn, 1990). In contrast to personal engagement, the term employee engagement is defined as “involvement and satisfaction with as well as enthusiasm for work” (Harter, Schmidt, & Hayes, 2002, p. 269). The Gallup Organization, in describing the construct of employee engagement, identifies three types of employees as: (1) engaged employees who work passionately, are highly connected to the organization and drive innovation; (2) not-engaged employees who lack energy and drive for work; and (3) the actively disengaged or discontented employees who actively undermine the organization (Many employees
would fire their boss, 2007). Various commercial instruments are used to measure employee engagement, including the predominant Gallup Q12 (Harter, Schmidt, & Hayes, 2002). The Gallup Q12 gauges overall worker satisfaction, as well as employee perceptions of how well immediate supervisors demonstrate the best practices Gallup researchers have identified as antecedents of employee engagement (Harter, Schmidt, & Hayes, 2002). Finally, work engagement is a theoretical construct that is defined as a “persistent and pervasive affective-cognitive state” (Schaufeli & Salanova, 2008, p. 381) characterized by absorption, dedication and vigor (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Work engagement and the Utrecht Work Engagement Scale used to measure the three component model of absorption, dedication and vigor are discussed next in greater detail.

**Work Engagement and the Utrecht Work Engagement Scale (UWES)**

As previously stated, work engagement is defined as a “persistent and pervasive affective-cognitive state” (Schaufeli & Salanova, 2008, p. 381) characterized by absorption, dedication and vigor (Schaufeli, Salanova, González-Romá, & Bakker, 2002). The three components of the work engagement are described as follows:

Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties. Dedication is characterized by a sense of significance, enthusiasm, inspiration, pride and challenge. Absorption is characterized by fully concentrating on and being deeply engrossed in one's work, where time passes quickly and one has difficulty detaching oneself from work. (González-Romá et al., 2006, p. 166)
The Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006; “UWES”, 2003) is used to measure the three factor work engagement construct. Internationally, the UWES is the most widely used and thoroughly validated instrument for measuring work engagement (Bakker et al., 2008). More specifically,

Since its introduction in 1999, a number of validity studies have been carried out with the UWES that uncover its relationship with burnout and workaholism, identify possible causes and consequences of engagement and elucidate the role that engagement plays in more complex processes that are related to worker's health and wellbeing. (“UWES”, 2003, p. 8)

From among the three most studied definitions and constructs of engagement developed over the past 20-years (Harter, Schmidt, & Hayes, 2002; Kahn, 1990; Schaufeli & Salanova, 2008), work engagement has emerged as perhaps the most studied and validated concept, internationally, by means of the Utrecht Work Engagement Scale, or UWES (Bakker et al., 2008; “UWES”, 2003). It is for this reason that work engagement and the UWES were the construct and instrumentation used throughout this study.

The Importance of Engagement

When fully engaged at work, employees provide potentially limitless talent and ingenuity, making human capital perhaps the last true source of competitive advantage in an age of rapidly expanding knowledge; inextricably interconnected, yet fiercely competitive global markets; instantaneous world-wide communications; and the exponential evolution of the most highly advanced technologies in human history (BlessingWhite, 2008; Endres & Manchano-Smoak, 2008; Florida, 2002; Harter,
Schmidt, & Keyes, 2002; Porter, 1990; Schaufeli & Salanova, 2008; Senge, 1990; Stewart, 2008; Varghese, 2006). Unfortunately, large numbers of employees are either under-engaged or disengaged at work, resulting in excess costs, lost opportunities and dissatisfied customers for countless organizations (BlessingWhite, 2008; Many employees would fire their boss, 2007; Rampersad, 2008; Varghese, 2006).

A 2007 Gallup Management Journal survey found that “of all U.S. workers 18 or older, about 24.7 million... are actively disengaged. Gallup further estimates that the lower productivity of actively disengaged workers costs the U.S. economy about $382 billion” (Many employees would fire their boss, 2007, n.p.) per year. “Lack of engagement is endemic, and is causing large and small organizations all over the world to incur excessive costs, underperform on critical tasks, and create widespread customer dissatisfaction” (Rampersad, 2008, p. 11). “Although North American employees are among the most engaged worldwide, fewer than 1 in 3 employees (29%) are fully engaged. 19% are actually disengaged” (BlessingWhite, 2008, p. 1). Conversely, according to a 2004 Gallup Organization survey of employees worldwide, “organizations with higher than average levels of engagement also enjoyed 27 percent higher profits, 50 percent higher sales and 50 percent higher customer loyalty levels” (Irvine, 2008, p. 38).

Interestingly, the Gallup figure of $382 billion (Many employees would fire their boss, 2007, n.p.) per year in losses for under- and disengaged employees may be considered quite conservative compared to other estimates. For example, in a recent examination of presenteeism, a single manifestation of disengagement at work, researchers found that “employees spend approximately one hour and twenty minutes in a typical workday engaged in personal activities, costing their employers an average
$8,875 each year in lost productivity per employee” (D’Abate & Eddy, 2007, p. 361). While the D’Abate and Eddy presenteeism study (2007) is not statistically generalizable to the entire workforce, it provides some context regarding the potential scope of the problem. Considering the United States workforce is projected to reach 164.2 million by 2016 (Figueroa & Woods, 2007), the potential losses from all of these employees conducting just one hour and twenty minutes of personal business during a typical workday (D’Abate & Eddy, 2007) could cost as much as $1.5 trillion dollars per year. Even at the lower Gallup figure of $382 billion (Many employees would fire their boss, 2007) per year in losses, increasing the level of employee engagement at work, or work engagement, is an enormous financial imperative. That is, the business case for increasing work engagement is quite significant.

The Business Case for Increasing the Level of Work Engagement

Organizations today are more compelled than ever to make the best use of available talent to help offset critical skills shortages and spur on human creativity and innovation; key contributors to maintaining a competitive edge in today’s economy (Amabile et al., 1996; Amabile et al., 2005; Florida, 2002; Forum for People Performance Management and Measurement, n.d.; Gordon, 2000; Porter, 1990; Senge, 1990; Tellis et al., 2009). Recent evidence also suggests that for a growing number of organizations, increasing work engagement to advance business performance and competitiveness is heavily contingent upon continuously measuring, valuing and improving the learning and performance of human capital (BlessingWhite, 2008; Fitz-enz, 2009; Phillips & Phillips, 2007). Consequently, finding ways of effectively improving the level of engagement at work is gaining increased significance for practitioners and scholars alike (Baumruk et
al., 2006; Piersol, 2007; “Using Appreciative Inquiry”, 2007). This is because, as a
growing body of research suggests, organizations with highly engaged employees enjoy
higher levels of productivity, improved business results, increased customer satisfaction
and profitability (Baumruk et al., 2006; Beehr et al., 2009; Buckingham & Coffman,
1999; Fitz-enz, 2009; Harter, Schmidt, & Hayes, 2002; Many employees would fire their
boss, 2007; Oakley, 2004; Phillips & Phillips, 2007a; Xanthopoulou et al., 2009). Some
researchers have further implied that by increasing the level of work engagement across
many organizations and regions, the national economy could potentially benefit in terms
of increased demands for goods and services, more jobs and a better quality of life for the
citizenry (Blakely & Bradshaw, 2002; BlessingWhite, 2008; Buhler, 2008; Davidson,
2006; Florida, 2002; Gordon, 2000). Pragmatically speaking, however, increasing work
engagement to advance business performance and competitiveness is an organizational
responsibility.

Why Organizations Must Lead the Fight to Increase Work Engagement

Intense global competition, a severe economic recession, critical skills shortages,
job burnout, and unemployment are all related issues adversely impacting productivity,
economic growth and prosperity on a national level (Buhler, 2008; Davidson, 2006;
Leiter & Maslach, 2001; U.S. Department of Labor, 2009 U.S. Department of the
Treasury, 2009). Recent strategies to address these issues have included large-scale
federal economic interventions (The White House, 2009); fixing the skills pipeline
through national workforce development initiatives (DOLETA, 2007) and educational
reform (U.S. Department of Education, 2007); and by maximizing the capabilities and
contributions of human capital at the organizational level (Fitz-enz, 2009; Garavan, 2007;
Phillips & Phillips, 2007; Vance, 2008). Of these approaches, the only one within the grasp of most organizations is the management of human capital. This is because the other approaches fall almost exclusively into the hands of federal and state governments. Further, government economic interventions, workforce development and educational reform are most often very long-term, broad-based initiatives that are heavily influenced by politics, funding problems and bureaucratic red tape, over which organizations have very little, if any control (Blakely & Bradshaw, 2002; Dervarics, 2009; Nilsen, 2007; Porter, 1990, 2008; Sack-Min, 2009; The White House, 2009). For example, federal and state governments may wait years before legislative programs begin to fill critical skill shortages in the medical and manufacturing sectors (Dervarics, 2009; DOLETA, 2007; Nilsen 2007). In the meantime, individual organizations in these and other industries must continuously act to increase engagement, maximize productivity and ensure survival in a highly competitive, rapidly changing global economy (BlessingWhite, 2008; Catteeuw et al., 2007; Harter, Schmidt, & Hayes, 2002; Krug, 2008; Many employees would fire their boss, 2007; The White House, 2009; U.S. Department of Labor; 2009; U.S. Department of the Treasury, 2009; Varghese, 2006). A vital precursor for organizations wanting to increase the level of work engagement is simply having the ability to recognize and evaluate the existence of engagement in employees. As the definitions presented earlier suggest, there are at least two dimensions that can be used to recognize and evaluate engagement; a behavioral dimension and an affective-cognitive dimension.
Recognizing Engagement – A Behavioral Dimension

Recognizing engagement is accomplished by means of a behavioral dimension, which is displayed in the observable actions or behaviors of employees. These actions or observable behaviors include organizational citizenship, creativity and innovativeness, voluntary role-expansion, retention, and demonstrated competence or expertise. All of these are evident to some degree in the observable behaviors of employees. Further, the frequency and intensity of such observable behaviors suggests the presence or absence of employee commitment and involvement at work. For example, those highly engaged employees who consistently demonstrate competencies that “distinguish superior performers from average performers” (Sanghi, 2007, p. 12), become the basis for competency-based Human Resource Development (Dubois & Rothwell, 2004; Sanghi, 2007). Further, employees who exhibit high levels of organizational citizenship behavior are likewise thought to be engaged, because they voluntarily go above and beyond the requirements of their jobs to help others at work, including customers (Organ et al., 2006; Podsakoff et al., 2009; Varghese, 2006). Voluntary role-expansion, or taking personal responsibility for doing more than what is required in the employee’s job description, is yet another behavioral sign of engagement (Macey & Schneider, 2008; Varghese, 2006).

Evaluating Engagement – An Affective-Cognitive Dimension

The second dimension of engagement is not as outwardly visible as the behavioral dimension. It is an affective-cognitive dimension that can be expressed by the feelings and attitudes of each employee towards his or her organization, managers, co-workers and self (Amabile et al., 2005; Avey et al., 2008; Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Kaplan et al., 2009; Macey & Schneider, 2008; Schaufeli et al.,
2008; “Using Appreciative Inquiry”, 2007; Varghese, 2006). The affective-cognitive aspects of engagement are most frequently the focus of employee satisfaction surveys, questionnaires, interviews and focus groups used to evaluate engagement from the perspective of employees (Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Macey & Schneider, 2008; May et al., 2004; Schaufeli et al., 2006; Varghese, 2006; Wefald & Downey, 2009). For instance, in numerous studies in The Netherlands, Germany, Greece, Spain, Finland, Great Britain, South Africa, Japan, Canada and others, Schaufeli and his colleagues have come to define and evaluate work engagement as a “persistent and pervasive affective-cognitive state” (Schaufeli & Salanova, 2008, p. 381) of mind characterized by absorption, dedication and vigor (Schaufeli, Salanova, González-Romá, & Bakker, 2002). In each of these studies, work engagement was evaluated with the Utrecht Work Engagement Scale; the 17 item questionnaire that measures work engagement based on individual employee perceptions of personal absorption, dedication and vigor (Bakker et al., 2008; “UWES”, 2003). Discussed in greater detail in Chapter III, it should be noted here that even though it has been translated into 17 different languages and applied in work engagement studies in as many countries, the UWES performs very consistently and with a high degree of validity (Bakker et al., 2008; “UWES”, 2003). For this reason, the UWES has become, internationally, the most widely used tool (Bakker et al., 2008) for measuring the affective-cognitive dimension of engagement.

Relating the Behavioral and Affective-Cognitive Dimensions

A review of the literature shows that both the behavioral and affective-cognitive dimensions discussed here are fundamental to recognizing and evaluating engagement
The relationship between these dimensions and engagement are depicted in Figure 2.1.

Figure 2.1. As the behavioral signs (horizontal axis) and affective-cognitive feelings and attitudes (vertical axis) of employees move in a positive (+) direction, the level or intensity of personal engagement also increases. As the behavioral signs and affective-cognitive feelings and attitudes of employees move in a negative direction (-), the level of engagement also decreases. The positive behaviors of the highly engaged are listed just right of the graph.

It is noteworthy that practitioners and researchers commonly apply these affective-cognitive and behavioral dimensions to the design, development, implementation and evaluation of performance improvement interventions and organizational development strategies targeting engagement (Catteeuw et al., 2007; Krug, 2008; Fitz-enz, 2009; Phillips & Phillips, 2007b; Van Tiem et al., 2004; Varghese, 2006).
This is because, as research suggests, engagement leads to improved business results and profitability (Avey et al., 2008; Blessing-White, 2008; Buckingham & Coffman, 1999; Catteeuw et al., 2007; Fitz-enz, 2009; Gagnon et al., 2008; Harter, Schmidt, & Hayes, 2002; Krug, 2008; Macey & Schneider, 2008; Oakley, 2004; May et al., 2004; Phillips & Phillips, 2007a; Varghese, 2006).

While performance improvement interventions to increase engagement are not uncommon among field practitioners, academic research is lagging in the study of such interventions (Bakker et al., 2008). Nevertheless, the rational for increasing work engagement remains very strong in both camps. For example, a recent diary study of daily fluctuations in job autonomy, coaching, and team climate among forty-two employees from three branches of a Greek fast-food company found that

When employees are immersed in their work and focused on their customers (i.e. engagement), they have a higher probability to bring in profit, than when they just believe that they are capable to serve their customers adequately (i.e. self-efficacy). (Xanthopoulou et al., 2009, p. 197)

In a work engagement study of 1177 educators in North-west Province, South Africa, Jackson, Rothmann, and Van de Vijver (2006) concluded that

burnout (exhaustion and mental distance) mediated the relationship between job demands and ill-health, while work engagement (vigor and dedication) mediated the relationship between job resources and organizational commitment. Job resources [growth opportunities, organizational support, and advancement] contributed strongly to low burnout and high work engagement. (p. 263)
The Gallup Organization, in a meta-analysis of qualitative and quantitative data collected from 7,939 business units in 36 widely diverse companies over the course of thirty years, examined

the relationship at the business-unit level between employee satisfaction–engagement and the business-unit outcomes of customer satisfaction, productivity, profit, employee turnover, and accidents. Generalizable relationships large enough to have substantial practical value were found between unit-level employee satisfaction–engagement and these business-unit outcomes. One implication is that changes in management practices that increase employee satisfaction may increase business-unit outcomes, including profit. (Harter, Schmidt, & Hayes, 2002, p. 268)

Clearly, the promise of engagement, as these and numerous other studies conducted around the globe suggest, is increased performance, retention, innovation, customer satisfaction, business results and profitability (Bakker et al., 2008; Catteeuw et al., 2007; Harter, Schmidt, & Hayes, 2002; Krug, 2008; Oakley, 2004; Piersol, 2007; Varghese, 2006; Xanthopoulou et al., 2009). With so much at stake, academics and practitioners continue research into the antecedents of engagement, so that performance improvement interventions can be developed for the betterment of the enterprise. Accordingly, researchers have called for additional study of the antecedents of engagement; suggested further investigation into the reliability of engagement measures on business results; and recommended the development of models, performance improvement interventions and instruments that help practitioners increase the level of
engagement in the workplace (Bakker, et al., 2008; Harter, Schmidt, & Hayes, 2002; Oakley, 2004). According to work engagement researchers,

Future research on work engagement would benefit from a resolute focus on interventions. This research would make the most valuable contribution by not only focusing on something positive, but also working directly on increasing the [relevance] of positive relationships with work... We urge researchers to go beyond investigating work engagement’s causes and consequences. The greatest contribution will come from systematic studies that evaluate the impact of new management procedures or personal routines on work engagement. Interesting questions are whether engagement can be trained, and whether the engagement frame facilitates interventions. (Bakker et al., 2008, p. 195)

Foundational to developing performance improvement interventions that increase the level of work engagement is an exploration of human behavior and performance. The organizational behavior literature, in particular, elucidates the conditions that lead to motivated, engaged employees; the basis for the design of interventions intended to effectively increase the level of work engagement.

Human Behavior and Performance

More than 50 years of organizational behavior research, specifically in the area of motivational theory, has shown that the emotions, needs and motivations of employees profoundly impact performance (Avey et al., 2008; Hellriegel & Slocum, 2004; Hersey et al., 1996; Miner, 2005). It is in the study of organizational psychology and behavior where the motives and actions of individuals are perhaps best understood. Theories on motivation range in complexity and scope in an attempt to explain why people,
particularly employees, behave the way they do. This section will discuss some of the underlying theories central to understanding the antecedents of engagement.

At its most fundamental level, the human motivational process can be understood as a relationship between a person’s ability and motivation that results in performance, which has been expressed as a formulary where (Hellriegel & Slocum, 2004):

$$\text{Performance} = f(\text{ability} \times \text{motivation})$$

In this context, *performance* describes the results of the employee’s work, or how well the task is performed compared to predetermined standards; *ability* is a person’s talent or competence to perform a particular task or behavior; and *motivation* is a person’s confidence and commitment to perform, as expressed in the needs (psychological, social or physical deficiencies) and goals each person directs towards satisfying those needs (Adair, 2007; Hellriegel & Slocum, 2004; Hersey et al., 1996; Miner, 2005). Research supports that when individual needs and goals are in alignment with organizational needs, goals and standards of performance, the outcomes are more favorable for both the individual and for the organization (Beehr et al., 2009; Fitz-enz, 2009; Phillips & Phillips, 2007b). Where there is misalignment between the standards, values, goals and objectives of the organization and those of the individual, both individual and organizational performance suffers (Fitz-enz, 2009; Phillips & Phillips, 2007b). As a result, motivational research attempts to understand and align the needs, goals and values of individuals with those of the organization (Hellriegel & Slocum, 2004; Beehr et al., 2009).

The formula, $\text{Performance} = f(\text{ability} \times \text{motivation})$, is an adaptation of the Lewin Equation, $\text{Behavior} = f(\text{person, environment})$ or $B = f(p, e)$, which states that
behavior is a function of the interaction between the person and his or her environment or situation (Hersey et al., 1996; Miner, 2005). In the adapted formula, person is replaced with ability and motivation and Behavior is represented as Performance.

In a more contemporary adaptation of the Performance = f (ability X motivation) heuristic, Lewin’s environment (e), characterized in the B = f (p, e) formulary, was reintroduced as the opportunity to perform. In this context, opportunity is controlled by the organization, which supports or inhibits the performance of the individual with its resources, management practices, policies and procedures, equipment, facilities, supplies, training, development, relationships, culture, reactions to forces outside the organization, or any other element that combines with the afore mentioned to shape the work environment (Hersey et al., 1996; Kelloway & Barling, 2000; Siemsen, Roth, & Balasubramanian, 2008; Vroom & Jago, 2007; Wilson, 2003). The resulting formula is commonly expressed as follows (Kelloway & Barling, 2000; Siemsen et al., 2008; Wilson, 2003):

\[ Performance = f (ability \times motivation \times opportunity) \]

In this modern-day version of the Lewin Equation, individual performance is expressed as a function of each employee’s ability, motivation and opportunity to perform. The factors of ability, motivation and opportunity that influence individual performance at work are summarized in Table 2.1.
Table 2.1

Factors Influencing Individual Performance at Work

<table>
<thead>
<tr>
<th>Ability</th>
<th>Motivation</th>
<th>Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence to perform at or above minimally acceptable standards</td>
<td>Confidence and commitment to perform at or above minimally acceptable standards</td>
<td>Organizationally controlled factors that shape the work environment in ways that support or inhibit each person’s prospects of successful performance</td>
</tr>
<tr>
<td>Determined by each person’s education, training and experience</td>
<td>Expressed by each person’s needs and the goals directed at satisfying those needs</td>
<td>Organizational resources, management practices, policies and procedures, equipment, facilities, supplies, training, development, relationships, culture, reactions to external forces</td>
</tr>
<tr>
<td>Demonstrated in the observable actions or behaviors of employees</td>
<td>Articulated in employee attitudes and feelings towards the organization, managers, co-workers, customers, themselves and the work they do</td>
<td></td>
</tr>
</tbody>
</table>

Note: Individual performance at work is a function of the interaction between each person’s ability, motivation and opportunity.

From the HRD perspective of “developing and unleashing expertise for the purpose of improving individual, team, work process, and organizational system performance” (Swanson & Holton, 2009, p. 4), ability, motivation and opportunity are prime targets for training, learning and development, performance improvement, and organizational development (Swanson & Holton, 2009). Undergirding the study of human behavior, including engagement and the performance triad of ability, motivation and opportunity, are Maslow’s hierarchy of needs; McClelland's achievement, power, and affiliation model; Herzberg’s 2-factor theory (motivator and hygiene factors); Adams’ equity theory; Vroom’s process theory of work and motivation; and Csikszentmihalyi’s flow theory (Hersey et al., 1996; Hellriegel & Slocum, 2004; Miner, 2005; Adair, 2007; Steele & Fullagar, 2009).
**Maslow’s Hierarchy of Needs**

Maslow’s hierarchy of needs model (Figure 2.2) is based on the assumption that, in general, the lower level (physiological, safety and social) needs of employees must be satisfied before the higher level (esteem and self-actualization) needs take precedence and induce higher levels of performance (Adair, 2007; Hellriegel & Slocum, 2004; Hersey et al., 1996; Maslow, 1943). It is important to note that in Maslow’s view, “Not all behavior is determined by the basic needs… There are many determinants of behavior other than motives… one other important class of determinants [are] the so-called “field” [environmental, situational] determinants” (Maslow, 1943, p. 74). In other words, the hierarchy of needs theory only partly explains why people behave the way they do, as does the environment, how close the person’s motives are to the five basic needs, and how intensely unmet needs are experienced by the individual (Maslow, 1943). These limitations notwithstanding, the theory offers a useful construct for organizations. Key points of Maslow’s hierarchy of needs include the following (Adair, 2007, p. 57):

- Maslow’s classification of needs into five categories – Physiological, Safety, Social, Esteem and Self-actualization – is a useful sketch map for a practical leader. It is an aid to understanding human nature.

- The more basic needs are stronger, so that when they are threatened we jump back down the ladder and defend.

- The higher needs are weaker, but they are what make us distinctively human. The ‘higher needs’, according to Maslow, included not only the need to fulfill ourselves but also cognitive and aesthetic needs – the need to know and to understand. We need truth as well as beauty in our lives.
Maslow’s distinction between coping and expressive behaviour reflects a seminal insight. An artist is often highly motivated, but as his or her work is a form of self-expression it doesn’t feel like work. A picture of motivation that sees humans as merely moved to achieve goals in response to external rewards or punishments, like mice in a cage, is a defective one.

![Maslow's Hierarchy of Needs](image)

*Figure 2.2.* Typically, the physiological, safety and social needs of employees must be satisfied before their higher level esteem and self-actualization needs drive performance.

In the context of individual performance at work being a function of the interaction between ability, motivation and opportunity, unsatisfied lower-level needs are generally believed to divert an employee’s attention from fully and enthusiastically applying his or her abilities on the job (Adair, 2007; Hellriegel & Slocum, 2004; Hersey et al., 1996; Maslow, 1943). In other words, unsatisfied lower-level needs can reduce employee satisfaction and inhibit work engagement. Research conducted by the Gallup Organization, Northwestern University, Accenture, Blessing White, George Mason University, California State University, and many others strongly suggests that employee satisfaction is an important antecedent of engagement (Beehr et al., 2009; BlessingWhite,
2008; Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; “How to integrate”, 2005; Kaplan et al., 2009; May et al., 2004; Oakley, 2004; “Using Appreciative Inquiry”, 2007; Xanthopoulou et al., 2009). The implication is that the organization may foster a work environment that leads to missed performance opportunities, unsatisfied needs and lower levels of engagement (Aggarwal et al., 2007; Avey et al., 2008; Catteeuw et al., 2007; Doest et al., 2006; Harter, Schmidt, & Hayes, 2002; Kahn, 1990; Krug, 2008). Conversely, because the organization shapes the work environment, it can also provide those performance opportunities that ensure the lower-level needs of employees are met; preventing unsatisfied needs from becoming distractions to engagement (Bakker et al., 2008; Kelloway & Barling, 2000; Siemsen et al., 2008; Vroom & Jago, 2007; Wilson, 2003).

McClelland’s Achievement Motivation Theory

Like Maslow, McClelland’s research focused on human motivation. “The domain of achievement motivation theory... focuses on three motives (often broadly stated) and relates them to organizational behavior, or to behavior that appears to have relevance for organizations” (Miner, 2005, p. 47). McClelland’s motives include achievement, power and affiliation. The earliest and most studied of the three, by McClelland, is achievement, which he saw as “a distinct human motive, distinguishable from others. It can be found, in fact tested for, in any group” (McClelland, 1966, p. 96). Using the achievement motive to understand McClelland’s theory, Miner (2005)

In McClelland’s view, all motives are learned, becoming arranged in a hierarchy of potential for influencing behavior that varies from individual to individual. As people develop, they learn to associate positive and negative feelings with certain
things that happen to and around them. Thus, achievement situations such as a challenging task may elicit feelings of pleasure, and ultimately a person may be characterized by strong achievement motivation. For such a person, achievement is directed toward the top of the motive hierarchy; it takes only minimal achievement cues to activate the expectation of pleasure and thus increase the likelihood of achievement striving. Under such circumstances, weaker motives are likely to give way to the achievement motive and assume a distinct secondary role in influencing behavior. (p. 48)

When taken in the context of individual performance being a function of ability, motivation and opportunity, McClelland’s achievement, power, and affiliation motives have implications similar to Maslow’s hierarchy model. For example, a person with strong achievement motives and minimal or no opportunities for accomplishment at work may not fully engage his or her talents towards meeting organizational objectives. Instead, this employee may redirect his or her abilities to where these achievement needs can be satisfied; perhaps in another firm (Hersey et al., 1996; McClelland, 1966; Miner, 2005). When the achievement-motivated, although frustrated, employee channels his or her energies, talents and abilities away from the job, work engagement is diminished (Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Oakley, 2004). As with Maslow’s hierarchy, the implication is that the organization may be the cause of this employee’s missed opportunity to perform at a higher level (Aggarwal et al., 2007; Avey et al., 2008; Catteeuw et al., 2007; Doest et al., 2006; Kahn, 1990; Harter, Schmidt, & Hayes, 2002; Krug, 2008). This is because the organization shapes the work environment that provides the performance opportunities for achievement and engagement (Bakker et
al., 2008; Kelloway & Barling, 2000; Vroom & Jago, 2007; Wilson, 2003; Siemsen et al., 2008). This same concept also applies to employees with strong power or strong affiliation motives, depending on which of these motives has the strongest hold on the individual’s behavior (Miner, 2005). That the organization shapes the work environment in ways that will enhance or diminish opportunities for performance is further supported by Herzberg’s 2-factor theory.

**Herzberg’s 2-Factor Theory**

Herzberg’s 2-factor theory is based on the premise that the factors that “satisfy or motivate us at work are not the opposite of the ones that dissatisfy us” (Adair, 2007, p. 85). That is to say, “the factors involved in producing job satisfaction (and motivation) are separate and distinct from the factors that lead to job dissatisfaction” (Herzberg, 1968, p. 107). Hygiene factors are those that dissatisfy employees when they are not present; motivators, on the other hand, improve satisfaction and motivation on the job (Adair, 2007; Hersey et al., 1996; Herzberg, 1968; Miner, 2005). Hygiene factors include company policy and administrative practices, supervision (technical quality), interpersonal relations (especially with supervision), physical working conditions, job security, benefits, and salary. These dissatisfiers, or hygiene factors, when appropriately provided, can serve to remove dissatisfaction and improve performance up to a point, but they cannot be relied upon to generate really positive job feelings or the high levels of performance that are potentially possible. (Miner, 2005, p. 63)

In essence, hygiene factors represent what employees expect to be provided to them by the organization as a condition of employment. Similar to Maslow’s lower level
(physiological, safety and social) needs, the absence of hygiene factors causes dissatisfied employees and inhibits engaged work performance (Adair, 2007; Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Hellriegel & Slocum, 2004; Hersey et al., 1996; Herzberg, 1968; Kahn, 1990; Miner, 2005).

In contrast, motivators can be influenced by the organizational environment in ways that lead to job satisfaction, where

Job satisfaction is viewed as an outgrowth of achievement, recognition (verbal), the work itself (challenging), responsibility, and advancement (promotion). These five factors are considered to be closely related both conceptually and empirically. When they are present in a job, the individual’s basic needs will be satisfied and positive feelings as well as improved performance will result. The basic needs specified are those related to personal growth and self-actualization, and these are said to be satisfied by the five intrinsic aspects of the work itself. (Miner, 2005, p. 63)

The implications of preventing employee dissatisfaction while enhancing the level of employee satisfaction are this: When an organization shapes a work environment that provides performance opportunities that ensure an abundance of hygiene factors and motivators, the level of engagement should increase (Adair, 2007; Bakker et al., 2008; Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Hellriegel & Slocum, 2004; Hersey et al., 1996; Herzberg, 1968; Kahn, 1990; Kelloway & Barling, 2000; Miner, 2005; Oakley, 2004; Siemsen et al., 2008; Vroom & Jago, 2007; Wilson, 2003). While Herzberg’s 2-factory theory explores the broader categories of motivators and
hygiene factors, Adams equity theory focuses sharply on the perception of fairness among employees.

*Adam’s Equity Theory*

Adams equity theory is based on the premise that employees compare the organizational payoffs they receive with the rewards given to other employees performing similar work at relatively the same level (Adams, 1963; Hellriegel & Slocum, 2004; Miner, 2005). The theory assumes that people evaluate their interpersonal relationships to determine the fairness or equity of outcomes they receive, compared to what others receive for similar inputs (Adams, 1963; Hellriegel & Slocum, 2004; Miner, 2005). “Whenever two individuals exchange anything, there is the possibility that one or both of them will feel that the exchange was inequitable” (Adams, 1963, p. 79). When an employee perceives unfairness in their situation compared to relative others, there is inequity that causes tension, which the employee tries to resolve (Adams, 1963; Hellriegel & Slocum, 2004; Miner, 2005). This theory is similar to the other theories already discussed in that it is impacted by the organization, whose work environment enhances or restrains performance opportunities for equity and engagement (Adams, 1963; Bakker et al., 2008; Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Hellriegel & Slocum, 2004; Kahn, 1990; Kelloway & Barling, 2000; Miner, 2005; Oakley, 2004; Siemsen et al., 2008; Vroom & Jago, 2007; Wilson, 2003). Just as inequities are believed to stifle performance, an expectation of positive outcomes is posited to raise performance, according to Vroom’s process theory.
**Vroom’s Process Theory of Work and Motivation**

Vroom’s process theory of work and motivation builds on the work of Atkinson, Edwards, Peak and Rotter, and is considered highly significant in the advancement of expectancy theory started by Lewin and Tolman (Campbell, Dunnette, Lawler, & Weick, 1970; Hersey et al., 1996; Hellriegel & Slocum, 2004; Miner, 2005). An iteration of expectancy theory, the fundamental variables in Vroom’s model (Figure 2.3), include “expectancies, valences, choices, outcomes and instrumentalities” (Campbell et al., 1970, p. 116). Expectancies are what each employee perceives to be the probability of their successfully performing a specific task or effort; valences represent the value each employee places on specific outcomes; and instrumentalities represent each employee’s perception of their chances of achieving valued outcomes based on a successful performance (Campbell et al., 1970; Hellriegel & Slocum, 2004; Hersey et al. 1996; Miner, 2005).

![Figure 2.3](image.png)

*Figure 2.3.* Personal effort is expended when an employee feels there is a good chance of having a successful performance and there is a good chance that the successful performance will lead to a desired, valued outcome(s).

For example, refer to Figure 2.4. After losing a disappointing bid for promotion to a colleague with an advanced degree, an employee considers attending graduate school (effort) to increase the chances (instrumentality) of securing the next available promotion...
as a department manager in one of the company’s affiliates (outcome). The position will open when the incumbent, a professional acquaintance, retires in two years. After doing some research, the employee decides to apply for admittance to a program that best meets the employee’s personal selection criteria. These criteria include a program that (1) can be completed by students who work full time, and (2) can be completed in less than 2-years. The program format accommodates the needs of busy, working professionals by offering a blended learning format, consisting of on-line instruction combined with traditional classroom delivery methods. The program averages two years for most students to complete, and it can be finished in 18-months if the employee attends the summer semester. The employee is estimating a high probability of success (expectancy) for this effort, because this program can be completed by working professionals within 18-months (performance). Finally, the employee feels that by earning the graduate degree (performance), there is a very good chance (instrumentality) of receiving the promotion (outcome) to department manager when the incumbent retires in two years.

Figure 2.4. An employee decides to attend graduate school based on the probability of the effort leading to the successful completion of the program within 18-months, and the likelihood that the degree will lead to promotion to department manager.
Because the organization shapes the work environment that provides performance opportunities (Bakker et al., 2008; Kelloway & Barling, 2000; Siemsen et al., 2008; Vroom & Jago, 2007; Wilson, 2003), it has influence over the expectancies and instrumentalities of its employees. For instance, if the employee in the graduate school example believes the organization is unsupportive of its personnel pursuing an advanced degree (expectancy), or if the organization has a reputation for not promoting from within (instrumentality), a decision not to apply may result. Like the theories previously discussed, Vroom’s iteration of expectancy theory supports the performance equation (Kelloway & Barling, 2000): \[ \text{Performance} = f(\text{ability} \times \text{motivation} \times \text{opportunity}) \]

Csikszentmihalyi’s Flow Theory

Csikszentmihalyi’s Flow Theory (Steele & Fullagar, 2009) is another construct important to the exploration of ability, motivation, opportunity and performance. Psychological flow occurs when an employee becomes fully absorbed by what he or she is doing. The flow state is characterized by feelings of focused energy, total involvement, and success in the process of doing the task (Steele & Fullagar, 2009). “Characteristics of being in a state of flow include high concentration on the activity, low self-consciousness, a strong sense of agency and control, high self-esteem, and losing track of time” (Luthans, Youssef, & Avolio, 2007, p. 161). Research participants “have reported that flow experiences are so enjoyable and optimal that they are intrinsically motivated by the task itself” (Steele & Fullagar, 2009, p. 6).

Flow has been used in the study of engagement and positive psychology, and it has been linked to psychological well being and physical health (Steele & Fullagar, 2009). The literature, however, differentiates flow from engagement by defining flow as
a short-term, task-specific state of total absorption, compared to engagement, which encompasses a much broader range of activities over extended periods (Steele & Fullagar, 2009). Flow is highly focused, intense and short-lived. Engagement describes a positive psychological tendency towards making enthusiastic contributions at work that involve many tasks and activities. Within work engagement, flow closely resembles the absorption component that is “characterized by fully concentrating on and being deeply engrossed in one's work, where time passes quickly and one has difficulty detaching oneself from work” (González-Romá et al., 2006, p. 166). Perhaps the implication is that frequent episodes of flow can be thought of as leading to a state of absorption, a key component of work engagement (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Accordingly, understanding the antecedents of flow may be helpful in the design of interventions for increasing the level of work engagement.

The theoretical antecedents of flow are characterized by high levels of challenge and ability in balance (Luthans et al., 2007). That is, flow occurs when the level of opportunity or challenge in a specific situation is entirely balanced with one’s perceived abilities and skills to meet the demands of that situation. When challenges exceed perceived skills, anxiety and diminished self-efficacy preclude engagement, enjoyment, motivation, and thus flow. By the same token, when challenges are clearly below one’s skill level, boredom and apathy distract attention away from the activity.... (Luthans et al., 2007, p. 160)

Since the organization shapes workplace environments and provides performance opportunities, including training and development, job design, safety, coaching and countless other factors that balance challenge and ability (Kelloway & Barling, 2000;
advancing the conditions for psychological flow, absorption and engagement may also be influenced (Bakker et al., 2008; Schaufeli & Salanova, 2008). A discussion of positive workplace environments is next.

Workplace Environments

Employee needs and motivations are shaped by environmental factors and manifest themselves as employee behaviors; employee behaviors effect business outcomes; and business outcomes can either enhance or hinder the attainment of organizational goals and objectives (Azevedo & Akdere, 2008; Chen et al., 2009; Doest et al., 2006; Gagnon et al., 2008; Kaplan et al., 2009; May et al., 2004; Miner, 2005; Podsakoff et al., 2009; “Using Appreciative Inquiry”, 2007). This section will explore some of the environmental factors that the literature suggests should be in place for engagement to occur. The topics covered here will include affectivity and engagement, the employment value proposition, alignment, and Kahn’s three conditions of engagement.

Affectivity and Engagement

Affectivity is generally understood as an important antecedent of engagement (Amabile et al., 2005; Avey et al., 2008; Buckingham & Coffman, 1999; Fitz-enz, 2009; Harter, Schmidt, & Hayes, 2002; Kaplan et al., 2009; Macey & Schneider, 2008; “Using Appreciative Inquiry”, 2007; Varghese, 2006). In a recent series of meta-analyses of 57 primary studies concerning affectivity at work, the positive feelings and emotions employees expressed in relation to their jobs were found to be positively related to task performance and organizational citizenship behaviors (Kaplan et al., 2009). Based on
these findings, Kaplan and his colleagues from George Mason University and California State University at Fresno recommended that “organizational attempts to enhance worker well-being and performance should entail both minimizing negative emotions (e.g., stress and anxiety) and promoting positive ones (e.g., excitement and enthusiasm)” (2009, p. 172). This recommendation for achieving higher levels of engagement is consistent with Lewin’s equation; Maslow’s hierarchy of needs; McClelland's achievement, power, and affiliation model; Herzberg’s 2-factor theory (motivators and hygiene factors); Adams’ equity theory; Vroom’s process theory of work and motivation; and Csikszentmihalyi’s flow theory (Adair, 2007; Hellriegel & Slocum, 2004; Miner, 2005; Steele & Fullagar, 2009). Regarding positive affectivity at work, research suggests that employee satisfaction, organizational commitment, feelings toward the work itself, and each employee’s attitudes towards their managers and other employees, are important antecedents of engagement (Bakker et al., 2008; Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Macey & Schneider, 2008; Schaufeli & Salanova, 2008; Varghese, 2006; Wefald & Downey, 2009).

For instance, the literature repeatedly points towards employee satisfaction as a “key antecedent to employee engagement” (Oakley, 2004, p. 2). However, it should be noted that there is growing concern among some researchers that the lines between employee satisfaction and engagement need to be more clearly drawn in order to better distinguish one from the other (Fitz-enz, 2009; Heger, 2007; Macey & Schneider, 2008; Varghese, 2006; Wefald & Downey, 2009). Moreover, researchers suggest that evaluating employees for high levels of employee satisfaction, not just satiation, is an important condition for considering satisfaction as an antecedent of engagement (Fitz-
“Satisfaction when assessed as satiation is not in the same conceptual space as engagement. Satisfaction when assessed as feelings of energy, enthusiasm, and similarly positive affective states becomes a facet of engagement” (Macey & Schneider, 2008, p. 8).

Research further suggests that engagement also requires a degree of personal commitment, which includes positive feelings and attitudes towards the organization (Fitz-enz, 2009; González-Romá et al., 2006; Macey & Schneider, 2008; Varghese, 2006). “Organizational commitment is an important facet of the state of engagement when it is conceptualized as positive attachment to the larger organizational entity and measured as a willingness to exert energy in support of the organization, to feel pride as an organizational member, and to have personal identification with the organization” (Macey & Schneider, 2008, pp. 8-9). Commitment appears to be closely related to Schaufeli’s concept of the dedication component of work engagement, which is “characterized by a sense of significance, enthusiasm, inspiration, pride and challenge” (González-Romá et al., 2006, p. 166).

Other facets of positive affectivity related to engagement include the employees’ positive feelings towards the work itself, their managers and other employees; feelings of empowerment and equity; and the optimism that good performance will lead to desirable outcomes (Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Macey & Schneider, 2008; Varghese, 2006). Accordingly, each organization, in an effort to create a workplace environment more conducive to engagement, has some areas of focus it can target for needs analysis, and for possible performance improvement or organizational development interventions (Fitz-enz, 2009; Phillips & Phillips, 2007b; Schaufeli &
Salanova, 2008; Swanson & Holton, 2009; Van Tiem et al., 2004). Some of these are summarized in Table 2.2.

Table 2.2

Organizational Focus Areas for Engagement

<table>
<thead>
<tr>
<th>Focus Areas</th>
<th>Supporting Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are jobs meaningful, challenging, and do they demand the full use of employee skills and abilities?</td>
<td>Buckingham &amp; Coffman, 1999; Fitz-enz, 2009; Flagello &amp; Dugas, 2009; Harter, Schmidt, &amp; Hayes, 2002; Schaufeli &amp; Salanova, 2008; Varghese, 2006</td>
</tr>
<tr>
<td>Are career paths clearly mapped and are mechanisms in place to assist employees with achieving their career goals?</td>
<td>BlessingWhite, 2008; Buckingham &amp; Coffman, 1999; Fitz-enz, 2009; Flagello &amp; Dugas, 2009</td>
</tr>
<tr>
<td>Are people treated fairly in all matters, including compensation, interpersonal relationships, work schedules, rewards, promotions and decision-making?</td>
<td>Adair, 2007; Buckingham &amp; Coffman, 1999; Fitz-enz, 2009; Flagello &amp; Dugas, 2009</td>
</tr>
<tr>
<td>Are the managers of the organization perceived as effective, trusted leaders, communicators and catalysts for higher levels of performance?</td>
<td>Adair, 2007; Baumruk et al., 2006; Beehr et al., 2009; BlessingWhite, 2008; Buckingham &amp; Coffman, 1999; Crossley, 2009; Fitz-enz, 2009; Flagello &amp; Dugas, 2009</td>
</tr>
<tr>
<td>Are the personal growth and development needs of employees actively pursued by the organization?</td>
<td>Beehr et al., 2009; Buckingham &amp; Coffman, 1999; Fitz-enz, 2009; Flagello &amp; Dugas, 2009; Harter, Schmidt, &amp; Hayes, 2002; Schaufeli &amp; Salanova, 2008; Varghese, 2006</td>
</tr>
<tr>
<td>Do employees have the training, technology and support needed to do their jobs effectively?</td>
<td>Adair, 2007; Buckingham &amp; Coffman, 1999; Flagello &amp; Dugas, 2009; Harter, Schmidt, &amp; Hayes, 2002; Schaufeli &amp; Salanova, 2008; Varghese, 2006</td>
</tr>
<tr>
<td>Do employees receive specific feedback related to performance improvement and growth?</td>
<td>Adair, 2007; Beehr et al., 2009; BlessingWhite, 2008; Buckingham &amp; Coffman, 1999; Fitz-enz, 2009; Flagello &amp; Dugas, 2009; Harter, Schmidt, &amp; Hayes, 2002; Schaufeli &amp; Salanova, 2008; Varghese, 2006</td>
</tr>
</tbody>
</table>
An important implication derived from the statements in Table 2.2 is the existence of an unwritten psychological contract between employers and their employees. When certain obligations of this unwritten contract are not met by the organization, employee motivation and engagement can be predicted to decline (Heger, 2007). Conversely, research suggests that perceived organizational support in a positive direction leads to extra-role performance (Chen et al., 2009). The psychological contract in question is known as the employment value proposition (Heger, 2007).

Employment Value Proposition (EVP)

The employment value proposition (EVP) “describes the value or benefit an employee derives from his or her membership in an organization… Employees who perceive their own organizations’ EVP to be less competitive than the EVP of other organizations are likely to disengage… by reducing their contributions or by leaving” (Heger, 2007, p. 121). EVP is consistent with Vroom’s process theory of work and
motivation (otherwise known as expectancy theory) and Adam’s equity theory discussed earlier in this chapter. Further, EVP is related to the concept of perceived organizational support (POS), a component of organizational support theory that posits that “POS meets socioemotional needs and is used by employees to infer their organization’s readiness to reward increased efforts made on its behalf. The theory holds that workers act in accord with the norm of reciprocity, trading their effort and dedication to their organization for POS and its promise of future benefits” (Chen et al., 2009, p. 120).

EVP has a strong footing in human capital theory, which views employees as human assets of an organization; including the value generating capabilities, personal knowledge and experiences each person trades to an organization as a condition of employment (Mayo, 2001). More specifically, “The critical contribution of people---especially high-value, talented people---to organizational success has probably never had a higher profile. It is essential for organizations to have sound measures for managing people as assets, rather than merely as costs” (Mayo, 2001, p. 3). EVP has powerful implications for organizations subscribing to human capital theory because the degree to which individuals value and seek to maintain membership in organizations and involvement in organizational activities varies as a direct function of the degree to which they find that such membership and involvement serve to satisfy their own personal needs or facilitate the achievement of their goals. (Porter, Lawler, & Hackman, 1975, p. 109)

Because EVP is based on employee perceptions of whether or not the organization is meeting its obligations, organizations should be concerned with breaches of psychological contract related to employee expectations and feelings of equity,
because of the negative impact these breeches can have on engagement (Johnson & O’Leary-Kelly, 2003, Heger, 2007). “Perhaps the worst outcome of low engagement is the hidden specter of workers who ‘quit on the job.’ According to various studies, it is not unusual for 15 percent to 20 percent of a work force to drop out without leaving” (Fitz-enz, 2009, p. 226). Consequently, the areas of focus in Table 2.2 also apply to organizations desiring to increase the EVP by promoting environments capable of increasing engagement (Hellriegel & Slocum, 2004; Van Tiem et al., 2004; Heger, 2007; Swanson & Holton, 2009).

Alignment

Research supports that when individual needs and goals are in alignment with organizational needs, goals and standards of performance, the outcomes are more favorable for both the individual and for the organization (Beehr et al., 2009; Fitz-enz, 2009; Gagnon et al., 2008; Phillips & Phillips, 2007b). Where there is misalignment between the standards, values, goals and objectives of the organization and those of the individual, both individual and organizational performance suffers (Fitz-enz, 2009; Gagnon et al., 2008; Phillips & Phillips, 2007b).

While it is commonly held that “in an ideal organization, different subunits focus their efforts towards achieving the organization’s overall goals…some units of the organizational structure are more aligned with the rest of the organization than in other units” (Beehr et al., 2009, pp. 1-2). Research also suggests that organizational efficiency and effectiveness are not easily achieved where the alignment of individual efforts with business needs, goals and strategies is lacking (Beehr et al., 2009; Swanson & Holton, 2009). For example, in a review of over 800 impact studies of learning and development
programs, the *ROI Institute* found that the number one reason that these programs failed to meet their full potential was a lack of alignment with business needs (Elkeles & Phillips, 2007). Alignment is essential at all levels of an organization, from the highest echelons of leadership down to the divisions, departments, individual subunits, all the way down the line to the individual employee (Beehr et al., 2009; Elkeles & Phillips, 2007; Fitz-enz, 2009; Phillips & Phillips, 2007b; Swanson & Holton, 2009).

Regarding alignment, there is commonality among researchers and practitioners that the central question any organization can ask itself in the pursuit of engagement is whether or not the organization clearly communicates its goals and objectives so that each employee fully understands his or her contributions and importance to organizational success (Adair, 2007; Beehr et al., 2009; BlessingWhite, 2008; Fitz-enz, 2009; Hellriegel & Slocum, 2004; Oakley, 2004; Phillips & Phillips, 2007b; Schaufeli & Salanova, 2008). A second condition for aligning the individual with the organization is employee enhancement, which “refers to assisting employees in achieving the organization’s objectives by providing them with opportunities to improve necessary skills, and improving or clarifying knowledge about their roles and goals, and allowing autonomy and involvement in decision-making processes, either in groups or as individuals” (Beehr et al., 2009, p. 4). A third condition of alignment is managerial effectiveness, which has been defined as “the degree to which organizational leaders support the goals of the organization and manage their subordinates accordingly” (Beehr et al., 2009, p. 3). The relationship between goal communication, managerial effectiveness and employee enhancement to alignment were recently studied by Beehr and his colleagues (2009), who
investigated potential antecedents of the alignment of organizational subunits’ processes and goals with the organization’s primary goals and therefore with each other. Alignment data of 329 aggregated subunits (7,359 employees), organization wide, of a large US manufacturing company were examined. Managerial effectiveness, communication about goals and objectives, and employee enhancement positively related with alignment at a group or subunit level. Alignment, in-turn, positively related with company satisfaction at an individual level. Moreover, 95% of the variation in satisfaction across subunits could be explained by alignment and its antecedents. (p. 1)

Furthering the ideals of managerial effectiveness, effective goal communication and employee enhancement are all consistent with the aims of learning and development, performance improvement, competency management, organization development, program evaluation and a host of other human resource development strategies that can be applied towards improving alignment and increasing work engagement (Beehr et al., 2009; Dubois & Rothwell, 2004; Endres & Mancheno-Smoak, 2008; Fitz-enz, 2009; Phillips & Phillips, 2007b; Sanghi, 2007; Schaufeli & Salanova, 2008; Swanson & Holton, 2009). Accordingly, creating an environment that fosters alignment and engagement is within the reach of organizations committed to improving goal communication, employee enhancement and managerial effectiveness (Beehr et al., 2009; Endres & Mancheno-Smoak, 2008; Fitz-enz, 2009; Phillips & Phillips, 2007b; Schaufeli & Salanova, 2008; Swanson & Holton, 2009). Like affectivity, EVP and alignment, Kahn’s (1990) psychological pre-conditions of personal engagement may also be considered influential to improving the environmental landscape.
**Kahn’s Three Conditions of Engagement**

Kahn (1990) developed a theoretical framework consisting of three psychological conditions of personal engagement or disengagement in his research; meaningfulness, safety and availability. He explains that

These circumstances are like conditions in fleeting contracts; if certain conditions are met to some acceptable degree, people can personally engage in moments of task behaviors... Organization members seemed to unconsciously ask themselves three questions in each situation and to personally engage or disengage depending on the answers. The questions were: (1) How meaningful is it for me to bring myself into this performance? (2) How safe is it to do so? and (3) How available am I to do so? (p. 703)

Continued research in this area has shown the usefulness of this construct, in that “all three psychological conditions exhibited significant positive relations with engagement” (May et al., 2004, p. 11). May, Gilson, and Harter (2004) performed an exploration of the determinants and mediating effects of meaningfulness, safety and availability on engagement to find that

Meaningfulness displayed the strongest relation [to personal engagement at work]. Job enrichment and work role fit were positively linked to psychological meaningfulness. Rewarding co-worker and supportive supervisor relations were positively associated with psychological safety… Psychological availability was positively related to resources available...

The findings of this study have important implications for managers in terms of the design of jobs, employee selection and relations with employees...
managers should attempt to foster meaningfulness through the effective design of jobs... selecting the proper employees for particular work roles will enhance meaningfulness. Care must be taken to learn more about the personal aspirations and desires of employees in order to fit them to roles that will allow them to better express themselves.

Managers should also work to establish employee perceptions of safety by developing supportive, trustworthy relations with their employees. Specifically, it is important for managers to encourage employees to solve work-related problems, develop new skills, participate in decisions, treat employees fairly, be consistent in their actions, demonstrate integrity between their words and actions, use open communication.... (p. 11, 33)

Krug’s (2008) tactical engagement model uses Kahn’s (1990) three pre-conditions of engagement as the foundation of a conceptual framework for organizational development interventions aimed at increasing work engagement. The model consists of the (1) Kahn’s (1990) pre-conditions of engagement; (2) ongoing tactical resources the organization leverages at satisfying the availability condition; and (3) the desired outcomes of engagement (Krug, 2008). While Krug’s model puts the emphasis of organizational development interventions squarely on satisfying the condition of availability, it leaves the conditions safety and meaningfulness to the employees themselves (2008). May and his colleagues (2004) suggest that the organization, its managers in particular, can positively impact all three pre-conditions: meaningfulness, safety and availability. An adaptation of Krug’s (2008) model, integrating the ideas of May and his colleagues (2004), is depicted in Figure 2.5. In this way, the model may be
used as an organizational development tool to provide workplace environments more conducive to increasing the level of engagement by addressing all three pre-conditions of meaningfulness, safety and availability (Kahn, 1990; Krug, 2008; May et al., 2004).

**Figure 2.5.** In this adaptation of the tactical engagement model, the desired outcomes represent the anticipated results of engagement; the pre-conditions of engagement represent the requirements for engagement; and the ongoing tactical elements represent what the organization leverages to support the pre-conditions and increase the potential for engagement.


Illustrative and not all inclusive

While affectivity, EVP, alignment and the pre-conditions of engagement all converge to create a more motivational environment for engagement, it is the immediate, frontline manager who is ported to have the greatest impact in bringing all these elements together.
The Impact of Immediate Managers

Frontline, immediate managers, otherwise known as immediate supervisors, play a significant role in shaping workplace environments that sway employee motivation and work engagement, influence business outcomes, and impact organizational goals and objectives (Baker & Newport, 2003; Bakker et al., 2008; Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Baumruk et al., 2006; Buckingham & Coffman, 1999; Crossley, 2009; Harter, Schmidt, & Hayes, 2002; Hersey et al., 1996; May et al., 2004; Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2008; Tekleab & Taylor, 2003; Vroom & Jago, 2007). More specifically, according to research, frontline, immediate managers have the greatest impact on employee satisfaction; employee satisfaction is an antecedent to engagement; and engagement promotes increased productivity, business results, customer satisfaction and profitability (Beehr et al., 2009; Buckingham & Coffman, 1999; Fitz-enz, 2009; Harter, Schmidt, & Hayes, 2002; Oakley, 2004; Phillips & Phillips, 2007a; Wefald & Downey, 2009; Xanthopoulou et al., 2009). Because of their unique position in the organization, closest to the individual employee, each immediate manager has the opportunity, and the responsibility, to lead, develop, coach, equip, support and otherwise shape the conditions and relationships that advance engagement and business results in the business unit (Bakker, Demerouti, & Schaufeli, 2003; Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002; Hersey et al., 1996; Schaufeli & Salanova, 2008).

For decades, the primacy of the immediate manager, or frontline supervisor, has held up in numerous studies, suggesting the immediate manager plays a key role in the level of employee engagement and productivity at work. For example, in a longitudinal study of 238 Dutch employees, researchers provided evidence that “the supervisor's
influence is stronger in the area of such favorable job conditions as providing opportunities for challenge and personal development than in the array of extrinsic rewards” (Stinglhamber & Vandenberghe, 2003, p. 265). In a study comparing formal executive-to-line-employee mentoring relationships with immediate supervisor-employee relationships, the evidence suggested that “the mentoring relationship was not related to mentee outcomes, while supervisory… relationships were... [Further, the study recommended that] if one desires to affect job satisfaction, turnover intentions, and organizational commitment, mentoring functions may be best performed by supervisors” (Raabe & Beehr, 2003, p. 271). In another study, “Specific supervisor interactions with tellers in 50 branches of a commercial bank were examined for their contribution to turnover rates. For those branches that instigated such actions, turnover was significantly lower than in the matched control groups” (Krackhardt, McKenna, Porter, & Steers, 1981, p. 249). These findings are typical throughout the research. That is, most research findings support the proposition that immediate managers are in the best possible position to positively influence productivity, quality, business results, customer satisfaction, job satisfaction and engagement (Bakker et al., 2007; Baumruk et al., 2006; Beehr et al., 2009; BlessingWhite, 2008; Buckingham & Coffman, 1999; Corace, 2007; Durgin, 2006; Griffin, Patterson, & West, 2001; Harter, Schmidt, & Hayes, 2002; Kerr, Hill, & Broedling, 1986; Krackhardt et al., 1981; Lowin, Hrapchak, & Kavanagh, 1969; O’Driscoll & Beehr, 1994; Raabe & Beehr, 2003; Reynolds, 2002; Stinglhamber & Vandenberghe, 2003; Witt, Kacmar, & Andrews, 2001; Xanthopoulou et al., 2009). The research is also consistent in its appraisal of the competencies of effective immediate managers.
The traits and practices of frontline, immediate managers have been studied for decades to determine how the role impacts employee motivation, organizational behavior and performance (Adair, 2007; Buckingham & Coffman, 1999; Hellriegel & Slocum, 2004; Hersey et al., 1996; Miner, 2005; Natemeyer & Gilberg, 1989). Consequently, it is now generally accepted that effective immediate managers (1) build workplace environments founded on mutual trust and respect; (2) align the personal aspirations and work efforts of employees with organizational missions, goals and objectives; (3) make a priority of knowing and facilitating the personal growth and professional development needs of their people; (4) provide employees with information, support and other critical resources needed to maximize performance and business results; (5) hold employees accountable for their performance; and (6) provide employees with opportunities to participate in decision-making, as well as independent, empowered action (Argyris, 1957; Bakker et al., 2007; Baumruk et al., 2006; Beehr et al., 2009; BlessingWhite, 2008; Buckingham & Coffman, 1999; Catteeuw et al., 2007; Fiedler, 1969; Harter, Schmidt, & Hayes, 2002; Hersey et al., 1996; May et al., 2004; Oakley, 2004; Piersol, 2007; “Using Appreciative Inquiry”, 2007). In keeping with workplace learning and performance practice and research, a rich tradition of organizational, leadership and supervisor development has evolved in an effort to advance the competencies of immediate managers and improve their overall effectiveness.

The Development of Immediate Managers

Today, it is commonly held that competencies can be learned, developed and supported in immediate managers to create motivational environments that result in higher levels of engagement; believed to be a prime catalyst for greater productivity,
creativity and innovation, business results, customer satisfaction and profitability (Aggarwal et al., 2007; Amabile et al., 2005; Amabile, Conti, Coon, Lazenby, & Herron, 1996; Baumruk et al., 2006; Buckingham & Coffman, 1999; Catteeuw et al., 2007; Chen et al., 2009; Fitz-enz, 2009; Flagello & Dugas, 2009; Gagnon et al., 2008; Harter, Schmidt, & Hayes, 2002; Hersey et al., 1996; Kaplan et al., 2009; Oakley, 2004; Phillips & Phillips, 2007b; Sanghi, 2007; Sekiguchi et al., 2008; Swanson & Holton, 2009). For this reason, thousands of books have been authored and thousands of courses and seminars developed with the aim of improving the effectiveness of immediate supervisors. For instance, on the topic of organizational behavior alone, the Library of Congress maintains a catalog of 2098 books published since 1957 (The Library of Congress, n.d.). Reportedly valued at nearly $24-billion dollars, with net sales of more than $19-billion in 2008 (Amazon, 2009a), the Internet bookseller giant, Amazon.com, lists over 24,000 organizational behavior and related titles in its inventory (Amazon, 2009b). In just one example of the thousands of leadership and supervisory development courses available today (Google, n.d.), the United States Air Force mandates attendance at its Airman Leadership School for all its prospective first-line enlisted supervisors (Air Force Times, 2009b).

The Airman Leadership School’s (ALS) regimen of 192 curriculum hours in the areas of leadership, communications skills and professional military studies is conducted at 72 locations worldwide; successful completion of all course requirements is a promotion prerequisite for advancing to the next level of responsibility (Air Force Times, 2009b). The 24-academic day course is only the first phase of Air Force Enlisted Professional Military Education (PME) that occurs throughout each enlisted person’s
career (Air Force Times, 2009b). The emphasis and commitment to the development of immediate managers is significant, especially considering there are approximately 500,000 enlisted personnel in the United States Air Force:

Concepts of leadership and responsibility dominate today’s curriculum. In addition to undergoing meticulous technical training, our enlisted Airman begin formal PME after three years’ service. Each unique level varies in intensity, length, subjects offered, and learning objectives. Currently our program seeks to develop leadership abilities and supervisory skills as well as increase the understanding and appreciation of the profession of arms. After completing Airman Leadership School—the first level of PME—Airman can expect to return to the classroom with almost every promotion. (Murray, 2005, p. 8)

As a matter of perspective, it is notable that the Army, Coast Guard, Navy and Marines all have intensive educational programs aimed at the professional development of thousands of enlisted personnel serving as immediate managers in the United States military services (Air Force Times, 2009a). Further, when one considers the vast universe of available leadership development courses, workshops and seminars (Google, n.d.) and the plethora of books on the topic of organizational behavior (Amazon, 2009b; The Library of Congress, n.d.), it is clear that immediate, front-line managers are prime targets for performance enhancing learning and development programs (Swanson & Holton, 2009). Today, developing and supporting immediate managers is generally accepted as part of the overall human resource development process of “developing and unleashing expertise for the purpose of improving individual, team, work process, and organizational system performance” (Swanson & Holton, 2009, p. 4). To underscore this,
it should be noted that an estimated $134.39 billion was spent on workplace learning in the United States in 2007, of which 11.7% was spent on managerial and supervisory development programs (ASTD, 2008). And, with increasing advances in learning technologies, it appears the demand and the market will continue to expand for developing immediate managers to increase the level of work engagement in employees (Human Capital Institute, 2008).

*Developing Immediate Managers to Increase Work Engagement*

Learning and development programs aimed at improving the supervisory practices of frontline, immediate managers is generally believed to be a practicable approach to increasing employee satisfaction and work engagement, with the accompanying gains in productivity, business results, customer satisfaction and profitability (Buckingham & Coffman, 1999; Garavan, 2007; Harter, Schmidt, & Hayes, 2002; Many employees would fire their boss, 2007; Oakley, 2004; Xanthopoulou et al., 2009). While this belief is compelling for practitioners around the globe, there is, however, little empirical evidence showing the effectiveness of specific learning and development programs, or performance improvement interventions, undertaken by employers to improve the capabilities of frontline managers to increase work engagement (Bakker et al., 2008; Harter, Schmidt, & Hayes, 2002; Oakley, 2004). Consequently, researchers have called for additional study of the antecedents of engagement; suggested further investigation into the reliability of engagement measures on business results; and recommended the development of models, interventions and instruments that help practitioners increase the level of engagement in the workplace (Bakker et al., 2008; Harter, Schmidt, & Hayes, 2002; Oakley, 2004). “Future research on work engagement
would benefit from a resolute focus on interventions… systematic studies that evaluate the impact of new management procedures or personal routines on work engagement” (Bakker et al., 2008, p. 195).

Savvy Manager Framework

A central component of this study was the framework that formed the basis for the specific learning intervention used to prepare immediate managers to more effectively create and sustain motivational work environments that positively impact work engagement. The learning intervention used in this study was based on the book, *The Savvy Manager: 5 Skills That Drive Optimal Performance*, by Flagello and Dugas (2009). In the context of immediate, front-line managers catalyzing work environments of sustainable high levels of engagement, Flagello and Dugas contend that “achieving consistent high performance is all about the relationship between people and work. Sustainable change comes from an integrated perspective of employees as people and work as an expression of service” (2009, p. v). The “savvy manager delivers solid performance, consistently hits his or her targets, surpasses colleagues on key measures and results, and attracts top talent. Savvy managers know how to integrate and balance the two competing dimensions of the workplace: the numbers and the people who do the work” (Flagello & Dugas, 2009, pp. 1-2). The skills themselves are conceived to develop these capabilities in managers who learn and practice all five competencies on a continuous basis (Flagello & Dugas, 2009).

The five skills, which are heavily grounded in the organizational behavior research points already discussed in this chapter, are posited to collectively distinguish themselves as those practiced by savvy managers (Flagello & Dugas, 2009). The focus on
self-coaching (Tews & Bruce, 2008) during the application of these competencies was intended to create continuous learning and development within the immediate manager (Flagello & Dugas, 2009) to provide a more motivational and engaging work environment (Buckingham & Coffman, 1999; Flagello & Dugas, 2009; Harter, Schmidt, & Hayes, 2002; Oakley, 2004; Schaufeli & Salanova, 2008). The skills taught during the intervention included self-managing, reflecting, acting consciously, collaborating and evolving (Flagello & Dugas, 2009). All of these combined, when practiced by the immediate manager, are ported to lead to greater supervisory and leadership effectiveness, continuous learning and professional growth (Flagello & Dugas, 2009). Self-managing refers to continuous self-improvement through purposeful self-observation and -monitoring, self-assessment, goal setting, and conscious action (Flagello & Dugas, 2009; Pattni, Soutar, & Klobas, 2007). At the heart of self-management are self-awareness and self-discipline (Flagello & Dugas, 2009; Pattni et al., 2007). Reflecting is the “simple practice of quietly contemplating, thinking, and/or observing…without judgment” (Flagello & Dugas, 2009, p. 6). Acting consciously is the practice of deliberately and intentionally making decisions that are better aligned with desired outcomes (Flagello & Dugas, 2009). Collaborating is working with the full involvement of people in order to better align efforts, add value and generate results (Flagello & Dugas, 2009). Evolving is a personal, life-long commitment to the deliberate and continuous pursuit of learning, development and professional growth (Flagello & Dugas, 2009).

The purpose of the intervention was to prepare immediate managers to more effectively create and sustain motivational work environments that positively impact
work engagement and organizational performance. The learning objectives for the intervention were aimed at helping managers improve their personal effectiveness through the practice of continuous learning and self-coaching (Flagello & Dugas, 2009). By the conclusion of the learning intervention, each participating frontline, immediate manager was able to:

1. Describe, relate and apply the concepts of motivational work environments, work engagement and organizational performance;
2. Effectively employ The 5 Skills of Savvy Managers to create and sustain motivational work environments in ways that positively impact work engagement and organizational performance;

While the aforementioned skills were individually learned in a building block process of goal-setting, coaching, individual practice, sharing, reflection and self-assessment (Flagello & Dugas, 2009), the effectiveness of the intervention itself was evaluated holistically, as a complete whole. That is, the effectiveness of the intervention was gauged by changes in work engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli et al., 2006; “UWES”, 2003). Chapter III describes the methodology used to measure the effects of this learning.

Summary

The purpose of this study was to measure the effects of a specific learning intervention on work engagement. According to research, when fully engaged at work, employees leverage potentially limitless talent and ingenuity, resulting in higher
organizational performance, customer satisfaction and profitability. Unfortunately, according to the Gallup Organization, large numbers of employees are either under-engaged or disengaged at work, resulting in $382 billion per year in excess costs, lost opportunities and dissatisfied customers in the United States alone.

The theories supporting this research, and presented in this chapter, underlie the field of human resource development. More than 50 years of organizational behavior research, specifically in the area of motivational theory, has shown that the emotions, needs and motivations of employees profoundly impact job performance. Employee needs and motivations are shaped by environmental factors and manifest themselves as employee behaviors; employee behaviors effect business outcomes; and business outcomes can either enhance or hinder the attainment of organizational goals and objectives. Immediate managers play a significant role in shaping workplace environments that can improve or obstruct employee satisfaction and work engagement, influence business outcomes, and impact organizational goals and objectives. Competencies can be developed in immediate managers to create motivational environments that result in increased work engagement; believed to be a prime catalyst for greater productivity, creativity and innovation, business results, customer satisfaction and profitability.

The psychological state of work engagement, with its three factor construct of absorption, dedication and vigor, is the most studied engagement concept internationally, as measured with the highly validated Utrecht Work Engagement Scale (UWES). The work engagement construct and UWES were used in this study to examine a specific learning intervention intended to enhance the capabilities of frontline, immediate
managers to increase the level of work engagement at the business unit level. The intervention was based on the competencies of savvy managers posited by Flagello and Dugas; self-managing, reflecting, acting consciously, collaborating and evolving. The overall effectiveness of the learning intervention was gauged by changes in work engagement in the direct reports of the frontline managers participating in the study. The remaining chapters include a detailed explanation of the research methods employed, the data and results, and a discussion of the findings with recommendations for future study.
CHAPTER III
RESEARCH DESIGN AND METHODOLOGY

Introduction

*Examining a Learning Intervention to Increase Work Engagement*

The purpose of this study was to expand the current body of knowledge by measuring the effects of a specific learning intervention intended to enhance the capabilities of front line, immediate managers to increase the level of work engagement at the business unit level.

*About the Learning Intervention*

The learning intervention was based on the book, *The Savvy Manager: 5 Skills That Drive Optimal Performance*, by Flagello and Dugas (2009). The skills, which are heavily grounded in the organizational behavior research discussed in Chapter II, were posited to collectively distinguish themselves as those practiced by savvy managers; self-managing, reflecting, acting consciously, collaborating and evolving (Flagello & Dugas, 2009). The intervention was a distinctive learning program specifically designed to enhance the capabilities of frontline managers to increase the level of work engagement at the business unit level. There were three learning objectives for the intervention, which were intended to prepare each participating manager to:

1. Describe, relate and apply the concepts of motivational work environments, work engagement and organizational performance;

2. Effectively employ *The 5 Skills of Savvy Managers* (Flagello & Dugas, 2009) to create and sustain motivational work environments in ways that positively impact work engagement and organizational performance, and;

These objectives were aimed at helping each participant improve his or her personal effectiveness through an intensive, 90-day program of instruction, skills-practice and self-coaching. Self-coaching (Tews & Bruce, 2008) during the application of these competencies was planned for the purpose of developing a habit of continuous learning and development within each participant (Flagello & Dugas, 2009). Accordingly, a repeating cycle of facilitated instruction was immediately followed by each participant applying the most recently learned skill on the job. Each of these skill practices included an element of personal reflection and journaling, group discussion and self-assessment. The cycle was repeated over the course of seven instructional sessions, evenly distributed during the 90-day intervention. The entire program was delivered using a blended format that combined traditional classroom instruction with collaborative online learning methodologies. This learning strategy was believed to be conducive to each manager developing competence at providing a more motivational work environment that engages employees to higher levels of performance (Buckingham & Coffman, 1999; Harter et al., 2002; Oakley, 2004; Schaufeli & Salanova, 2008). While the five skills were individually learned in a building block process of goal-setting, self-coaching, individual practice, reflection, sharing and self-assessment (Flagello & Dugas, 2009), the overall effectiveness of the intervention was evaluated through changes in the level of work engagement of frontline employees.
Research Design Summary

*Determining Overall Effectiveness through Changes in Work Engagement*

To determine the overall effectiveness of the learning program, changes in the level of work engagement in the direct reports of the immediate managers participating in the study were examined using a nonequivalent control group, quasi-experimental research design (Cook & Campbell, 1979; Crano & Brewer, 2002; Creswell, 2003). In this scenario, the study included one test and one control group business unit at a small manufacturing firm in south Mississippi. The learning intervention was applied to the test group immediate managers assigned to a production business unit at the firm. The control group immediate managers assigned to a maintenance business unit in the same firm did not receive the intervention. In both the test and control group business units, work engagement measurements of frontline employees were taken before (by day-0), during (day-45) and at the end (day-90) of the intervention using the Utrecht Work Engagement Scale, or UWES (Schaufeli et al., 2006; “UWES”, 2003). An analysis of changes in work engagement between (and within) the test and control group business unit line employees was conducted using the Mixed Design Analysis of Variance, or Mixed Design ANOVA, (Agresti & Finlay, 1997; Green & Salkind, 2004; Lomax, 2001; Shavelson, 1988). The Mixed Design ANOVA was used to determine whether a statistically significant increase in work engagement occurred in the test group line employees compared to the control group line employees. A comprehensive explanation of the research design and methods used in this study are discussed throughout the remainder of this chapter, beginning with the research hypotheses.
Research Hypotheses

The following hypotheses were examined using a nonequivalent control group, quasi-experimental research design, including one test and one control group business unit at a small manufacturing firm in south Mississippi:

**Hypothesis I**: As measured by the dedication component of the Utrecht Work Engagement Scale (UWES items 2, 5, 7, 10 and 13), the direct reports of the immediate managers who receive the learning intervention will perceive a more positive work environment than the direct reports of the immediate managers who do not receive the intervention. This alternative hypothesis (Ha₁) and its corresponding test, or null, hypothesis (Ho₁) are expressed as:

$$\text{Ha}_1: \text{Test Group} \text{Dedication} > \text{Control Group} \text{Dedication}$$

$$\text{Ho}_1: \text{Test Group} \text{Dedication} \leq \text{Control Group} \text{Dedication}$$

**Hypothesis II**: The within-subjects changes for the dedication component of the Utrecht Work Engagement Scale will increase across all participants during the 90 day test period. This alternative hypothesis (Ha₂) and its corresponding null hypothesis (Ho₂) follow:

$$\text{Ha}_2: \text{Day-0 Dedication} < \text{Day-45 Dedication} < \text{Day-90 Dedication}$$

$$\text{Ho}_2: \text{Day-0 Dedication} \geq \text{Day-45 Dedication} \geq \text{Day-90 Dedication}$$

**Hypothesis III**: There will be an interaction of the between- and within-subjects tests of dedication. Alternative hypothesis (Ha₃) and null hypothesis (Ho₃) are expressed, as follows:

$$\text{Ha}_3: \text{Group Dedication} \times \text{Day Dedication Interaction} \neq 0$$

$$\text{Ho}_3: \text{Group Dedication} \times \text{Day Dedication Interaction} = 0$$
**Hypothesis IV:** As measured by the entire Utrecht Work Engagement Scale (UWES items 1-17), the direct reports of the immediate managers who receive the learning intervention will experience significantly higher levels of work engagement than the direct reports of the immediate managers who do not receive the intervention. Alternative hypothesis (Ha₄) and its corresponding null hypothesis (Ho₄) follow:

\[
\text{Ha}_4: \text{Test Group Work Engagement} > \text{Control Group Work Engagement}
\]
\[
\text{Ho}_4: \text{Test Group Work Engagement} \leq \text{Control Group Work Engagement}
\]

**Hypothesis V:** The within-subjects changes for work engagement will increase across all participants during the 90 day test period. Alternative hypothesis (Ha₅) and its null hypothesis (Ho₅) are shown as:

\[
\text{Ha}_5: \text{Day-0 Work Engagement} < \text{Day-45 Work Engagement} < \text{Day-90 Work Engagement}
\]
\[
\text{Ho}_5: \text{Day-0 Work Engagement} \geq \text{Day-45 Work Engagement} \geq \text{Day-90 Work Engagement}
\]

**Hypothesis VI:** There will be an interaction of the between- and within-subjects tests for work engagement. Alternative hypothesis (Ha₆) and null hypothesis (Ho₆) follow:

\[
\text{Ha}_6: \text{Group Work Engagement} \times \text{Day Work Engagement Interaction} \neq 0
\]
\[
\text{Ho}_6: \text{Group Work Engagement} \times \text{Day Work Engagement Interaction} = 0
\]

*Population and Sample*

This study was conducted at a small manufacturing firm in south Mississippi. The population consisted of all the frontline employees (N=149) at the firm.
Method of Selection and Unit of Sampling

Two of fourteen business units at the firm were selected by convenience. From these, one test group (Production) and one control group (Maintenance) business unit were studied for changes in work engagement, as part of a nonequivalent control group, quasi-experimental research design (Cook & Campbell, 1979; Crano & Brewer, 2002; Creswell, 2003). Convenience sampling was necessary due to operational and logistical constraints at the firm. Accordingly, the senior human resource manager at the firm assisted the researcher in the identification and selection of the business unit control and test groups. Due consideration was given to selecting business units that were as similar as possible in aspects relevant to this research. The Production business unit had four immediate managers and 32 line employees. Maintenance had two immediate managers and 31 line employees. Production and Maintenance were nearly equivalent in size, and were the two largest of all the business units. Both business units were subject to the same shift work cycles, and both shared similar standards for production, quality and safety.

The unit of sampling included all line employees assigned to the two selected business units at the firm; representing 63 of the 149 line employees, or 42% of the entire population. Work engagement was measured in the 32 direct reports of the four test group immediate managers assigned to the Production business unit; and work engagement was measured in the 31 direct reports of the two control group immediate managers assigned to the Maintenance business unit.
**Survey Method:**

Repeated measurements of work engagement were taken with the Utrecht Work Engagement Scale (Schaufeli et al., 2006; “UWES”, 2003) from all of the test and control group line employees. At three predetermined time intervals during the course of the study, all 32 test and 31 control group business unit line employees were sampled using the UWES to capture work engagement data from each employee, as follows:

1. Pre-Intervention: One week before the intervention begins, or is first applied to the test group immediate managers
2. Mid-Intervention: 45-days into the intervention, at the half way mark
3. Post-Intervention: 90-days after the intervention begins, at the end

A minimum completed survey sample size was calculated for each test and control group (business unit) in order to ensure a 95% confidence level, with a +/- 5% margin of error, using the following formula (Dillman, Smyth, & Christian, 2009, p. 56):

\[
N_s = \frac{(N_p)(p)(1-p)}{(N_p-1)(B/C)^2 + (p)(1-p)}
\]

Where:
- \(N_s\) = the completed sample size needed for the desired level of precision.
- \(N_p\) = the size of the population.
- \(p\) = the proportion of the population expected to choose one of the two response categories.
- \(B\) = margin of error (i.e., half of the desired confidence interval width): [ .05 = +/- 5% ].
- \(C\) = Z score associated with the confidence level (1.96 corresponds to the 95% level).

All line employees assigned to the test and control group business units were sampled to reduce the likelihood of coverage-, sampling- and non-response errors (Dillman et al., 2009). The test and control group business unit sampling information is presented in Table 3.1.
Nonequivalent Control Group Threats to Validity

In this nonequivalent control group, quasi-experimental design, test and control group business units were selected without random assignment (Cook & Campbell, 1979; Crano & Brewer, 2002; Creswell, 2003). The nonequivalent control group design “is perhaps the most frequently used design in social science research and is fortunately often interpretable. It can, therefore, be recommended in situations where nothing better is available” (Cook & Campbell, 1979, p. 103). The decision to use convenience sampling in a nonequivalent control group design was deemed necessary due to operational and logistical constraints at the firm. As a result, the researcher was obligated to identify and, to the maximum extent possible, mitigate the principal threats to validity associated with the nonequivalent control group, pretest-posttest design used in this particular study; internal, external and construct validity.

Internal Validity

“Internal validity refers to the approximate validity with which we infer that a relationship between two variables is causal or that the absence of a relationship implies the absence of a cause” (Cook & Campbell, 1979, p. 37). The nonequivalent control

Table 3.1

Test and Control Group Business Unit Sampling Information

<table>
<thead>
<tr>
<th>Sampling Information</th>
<th>Test Group&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Control Group&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>$n_{t,1} = 32$</td>
<td>$n_{t,2} = 31$</td>
</tr>
<tr>
<td>Minimum completed survey sample size&lt;sup&gt;c&lt;/sup&gt;</td>
<td>$n_{t,1n} = 28$</td>
<td>$n_{t,2n} = 28$</td>
</tr>
</tbody>
</table>

<sup>a</sup>Production business unit line employees.
<sup>b</sup>Maintenance business unit line employees.
<sup>c</sup>Minimum number completed surveys needed for 95% confidence and ±5% margin of error.

Note: The test and control group sample and minimum survey sample sizes are shown.
group, pretest-posttest design “usually controls for all but four threats to internal validity” (Cook & Campbell, 1979, p. 104). The four threats to internal validity not usually controlled for by the nonequivalent control group design are (1) selection-maturation, (2) selection-instrumentation, (3) differential statistical regression and (4) the interaction between participant selection and local history. (1) Selection-maturation occurs when “the respondents in one group are growing more experienced, more tired, or more bored than the respondents in another group” (Cook & Campbell, 1979, p. 104). That is, both groups are not at the same level of performance, or capability, at the pretest phase of the study. Selection-maturation has the potential of obscuring the true impact of the intervention on pretest-posttest growth, or on the actual improvement between the test and control groups (Cook & Campbell, 1979). (2) Selection-instrumentation problems refer to scaling issues that make it hard to determine if the intervals between points on the scale are equal. Scaling problems are amplified by the nonequivalence of test and control groups. Selection-instrumentation problems make it difficult to detect the true impact of the intervention on the growth, or actual improvement, occurring between test and control groups. (3) Differential statistical regression refers to a form of matching, or deliberately manipulating control group membership to more closely match the test group. Differential statistical regression also results in the true impact of the intervention on pretest-posttest growth becoming obscured. This is because the act of deliberately selecting control group participants based on key test characteristics of the treatment group amplifies dissimilarities between the control group and the target population. (4) The interaction between participant selection and local history problems occur when events other than the intervention impact one group, but not the other. Simply known as
local history, this threat also results in the impact of the intervention becoming obscured. (Cook & Campbell, 1979)

Besides (1) selection-maturation, (2) selection-instrumentation, (3) differential statistical regression and (4) local history, the remaining threats to internal validity are, according to Cook and Campbell (1979), usually controlled by the nonequivalent control group, pretest-posttest design. These remaining threats include (5) test familiarity, (6) mortality of participants resulting from different kinds of persons dropping out of the test group, (7) ambiguity about the direction of causal influence, (8) diffusion or imitation of treatments, (9) compensatory equalization of treatments, (10) compensatory rivalry by respondents receiving less than desirable treatments, and (11) resentful demoralization of respondents receiving less desirable treatments (Cook & Campbell, 1979). Every effort was made during this study to “systematically think through how each of the internal validity threats may have influenced the data. Then, the investigator... [examined] the data to test which relevant threats [could] be ruled out” (Cook & Campbell, 1979, p. 55). That is, the researcher made every effort to “make all the threats explicit and then rule them out one by one” (Cook & Campbell, 1979, p. 56).

*External Validity*

In contrast to internal validity, external validity “refers to the approximate validity with which we can infer that the presumed causal relationship can be generalized to and across alternate measures of the cause and effect and across different types of persons, settings, and times” (Cook & Campbell, 1979, p. 37). The result of the degree to which samples are representative of the populations from which they are drawn, external validity is concerned with the soundness of inferences made when “(1) generalizing to
particular target persons, settings, and times, and (2) generalizing across types of persons, settings, and times” (Cook & Campbell, 1979, p. 71). Threats to external validity include (1) the interaction of selection and treatment, (2) the interaction of setting and treatment, and (3) the interaction of history and treatment (Cook & Campbell, 1979). It should be noted that these threats are mainly applicable to generalizations made across populations and sub-populations, as opposed to generalizations made to those specific populations under study (Cook & Campbell, 1979). Accordingly, any generalizations were strictly limited to the target organization.

_construct validity_

Often associated with the Hawthorne effect in industrial relations research, construct validity is primarily concerned with confounding constructs or intervening variables that may obscure the true impact of the intervention on changes in behavior (Cook & Campbell, 1979). Cook and Campbell (1979) suggest that the constructs used in the intervention be well defined and tested, differentiated from other constructs, and that multiple measures be taken whenever possible. In this regard, the researcher utilized an extensively researched, highly validated instrument, the Utrecht Work Engagement Scale (Schaufeli et al., 2006; “UWES”, 2003), which will be discussed in greater detail later in this chapter. Further, the use of repeated measures was planned to help ensure as high a level of construct validity as possible.

Besides threats to internal, external and construct validity, threats to reliability will be addressed throughout the remainder of this chapter, including the internal and external consistency of the instrument used in this study. Before discussing these issues, however, the following sub-section will address the protection of human subjects.
Protection of Human Subjects:

Approval of this study was obtained from the researcher’s dissertation committee. Approval was also obtained from The University of Southern Mississippi Institutional Review Board (IRB), as seen in Appendix A. Participation in this study posed no known risks or hazards. An Authorization to Participate in Research Project form and oral presentation (Appendix B) was provided to all participants. The information indicated to all participants the voluntary, participatory nature of the study and that by signing the authorization, informed consent was achieved. Participants remained permanently anonymous and could withdraw at any time, for any reason, without personal risk. All work engagement data collection procedures were conducted on-site, within the participating organization. In each administration of the UWES, the participants had five work days to complete and return the instrument to one of two locked drop boxes at the organizational site. The researcher kept the only key and maintained strict control of the contents of each drop box. All completed forms were secured at the researcher’s home and shredded upon completion of the study. Finally, results were shared only as a group, not by individual.

Data Collection and Instrumentation

To test the hypotheses, work engagement data were collected from the test and control group business unit line employees using the Utrecht Work Engagement Scale (Schaufeli et al., 2006; “UWES”, 2003). UWES data were collected at three intervals during the study and analyzed in SPSS 16.0 using a Mixed Design Analysis of Variance (Agresti & Finlay, 1997; Green & Salkind, 2004; Lomax, 2001; Shavelson, 1988). In this scenario, the 90-day learning intervention was applied to the four Production (test group)
immediate managers at the firm. Repeated measurements were taken via the Utrecht
Work Engagement Scale (Schaufeli et al., 2006; “UWES”, 2003) from all of the 32 test
(Production business unit) and 31 control group (Maintenance business unit) line
employees.

About the Utrecht Work Engagement Scale (UWES) Instrument

Shown in Table 3.2 and Appendix C, the Utrecht Work Engagement Scale
(Schaufeli et al., 2006; “UWES”, 2003) was the instrument used to measure work
engagement throughout this study. Internationally, the UWES has been reported to be the
most widely used instrument for measuring work engagement (Bakker et al., 2008).
Available in 17 languages, the UWES has been used to collect work engagement data
from approximately 30,000 employees (Schaufeli & Salanova, 2008). “Since its
introduction in 1999, a number of validity studies have been carried out with the UWES
that uncover its relationship with burnout and workaholism, identify possible causes and
consequences of engagement and elucidate the role that engagement plays in more
complex processes that are related to worker's health and wellbeing” (“UWES”, 2003, p. 8). These investigations have been conducted in several countries, including Australia,
Canada, China, Finland, Germany, Great Britain, Greece, Japan, Norway, South Africa,
Spain and The Netherlands (Bakker et al., 2008; Schaufeli & Salanova, 2008).
Table 3.2
Items Comprising The Utrecht Work Engagement Scale (UWES)

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At my work, I feel bursting with energy</td>
<td>Vigor&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>2. I find the work that I do full of meaning and purpose</td>
<td>Dedication&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>3. Time flies when I am working</td>
<td>Absorption&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>4. At my job, I feel strong and vigorous</td>
<td>Vigor&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>5. I am enthusiastic about my job</td>
<td>Dedication&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>6. When I am working, I forget everything else around me</td>
<td>Absorption&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>7. My job inspires me</td>
<td>Dedication&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>8. When I get up in the morning, I feel like going to work</td>
<td>Vigor&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>9. I feel happy when I am working intensely</td>
<td>Absorption&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>10. I am proud of the work that I do</td>
<td>Dedication&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>11. I am immersed in my work</td>
<td>Absorption&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>12. I can continue working for very long periods at a time</td>
<td>Vigor&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>13. To me, my job is challenging</td>
<td>Dedication&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>14. I get carried away when I am working</td>
<td>Absorption&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>15. At my job, I am very resilient, mentally</td>
<td>Vigor&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>16. It is difficult to detach myself from my job</td>
<td>Absorption&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>17. At my work, I always persevere, even when things do not go well</td>
<td>Vigor&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Note: Each of the items included in the UWES measure one of three factors of work engagement: Absorption<sup>a</sup>, Dedication<sup>b</sup>, Vigor<sup>c</sup>. As shown in Appendix C, each UWES item is measured on a scale ranging from “0” (zero) to “6” (six). Each choice is used to describe how frequently participants experience each of the 17 items at work. In this scale, a rating of “0” (zero) means never and a rating of “6” (six) means always, every day. Adapted from “Utrecht Work Engagement Scale: Preliminary Manual,” by W. Schaufeli and A. Bakker, p. 48. Copyright 2003 by Schaufeli & Bakker.

<sup>a</sup>Absorption: Being fully concentrated and happily engrossed in one’s work, whereby time passes quickly and one has difficulties with detaching oneself from work.

<sup>b</sup>Dedication: Being strongly involved in one’s work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge.

<sup>c</sup>Vigor: Characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence even in the face of difficulties.

In each study, confirmatory factor analyses of the instrument’s three subscales of absorption, dedication, and vigor “showed that the fit of the hypothesized three-factor
structure to the data was superior to that of alternative factor models. In addition, the internal consistencies of the three subscales proved to be sufficient in each study” (Bakker et al., 2008, p. 190). That is, Cronbach’s $\alpha$ usually ranged between 0.80 and 0.90, with all investigations exceeding the critical value of 0.70 for the three subscales (“UWES”, 2003). Further, correlations between the three subscales of absorption, dedication and vigor typically surpassed 0.65 (“UWES”, 2003). In sum, psychometric analyses across several countries indicated that the UWES subscales were highly correlated, internally consistent, and cross-nationally valid (Bakker et al. 2008; Schaufeli & Salanova, 2008; “UWES”, 2003). A small, not-all-inclusive sampling of international research applications using the UWES is shown in Table 3.3.

Table 3.3

Sampling of International Research Applications of the UWES

<table>
<thead>
<tr>
<th>Country</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>Identify the association between perfectionism, academic burnout and engagement in college students (Zhang, Gan, &amp; Cham, 2007).</td>
</tr>
<tr>
<td>Cross-National Study: Spain and The Netherlands</td>
<td>Study burnout and engagement as they relate to feelings of efficacy and inefficacy in college students and employees (Schaufeli &amp; Salanova, 2007).</td>
</tr>
<tr>
<td>Cross-National Study: Spain, Portugal and The Netherlands</td>
<td>Examine burnout and engagement in university students related to academic performance (Schaufeli, Martinez, Pinto, Salanova, &amp; Bakker, 2002).</td>
</tr>
<tr>
<td>Finland</td>
<td>Study burnout and engagement among teachers relative to job resources, organizational commitment and health (Hakanen, Bakker, &amp; Schaufeli, 2006).</td>
</tr>
<tr>
<td>Greece</td>
<td>Examine “how daily fluctuations in job resources (autonomy, coaching, and team climate) are related to employees’ levels of personal resources (self-efficacy, self-esteem, and optimism), work engagement, and financial returns” (Xanthopoulou et al., 2009, p. 183).</td>
</tr>
</tbody>
</table>
Table 3.3 (continued).

<table>
<thead>
<tr>
<th>Country</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>“develop and validate the Japanese version of Utrecht Work Engagement Scale” (Shimazu et al., 2008, p. 510).</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Study the validity of the job demands-resources model relative to self-reported absenteeism and turnover intentions in telecom call center employees (Bakker et al., 2003).</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Develop and test a research model, predicting the impact of job and personal resources on work engagement in front-line employees in four-star and five-star hotels in Abuja (Karatepe &amp; Olugbade, in press).</td>
</tr>
<tr>
<td>Norway</td>
<td>Determine the relationship between strong work motivation, workaholism and subjective health related outcomes, including work engagement, job stress and burnout (Andreassen, Ursin, &amp; Eriksen, 2007).</td>
</tr>
<tr>
<td>South Africa</td>
<td>“investigate the effects of job demands, job resources and sense of coherence on the burnout and work engagement of non-professional counselors in South African banks” (Fourie, Rothmann, &amp; van de Vijver, 2008, p. 35).</td>
</tr>
<tr>
<td>Spain</td>
<td>Investigate causal relationships between information and computer technology, feelings of efficacy and engagement in university students (Llorens, Schaufeli, Bakker, &amp; Salanova, 2007).</td>
</tr>
<tr>
<td>Sweden</td>
<td>Investigate whether work engagement can be separated from job involvement and organizational commitment in Information Communication Technology consultants (Hallberg &amp; Schaufeli, 2006).</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Determine “the levels of burnout and work engagement among dentists in the United Kingdom” (Denton, Newton, &amp; Bower, 2008, p. 382).</td>
</tr>
<tr>
<td>United States</td>
<td>“This study focuses on job burnout, job engagement, and their relationships with the Big Five personality dimensions: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience” (Kim, Shin, &amp; Swanger, 2009, p. 96).</td>
</tr>
</tbody>
</table>

Note: Not-all-inclusive listing of international Utrecht Work Engagement Scale research applications.

In the present study, prior to deployment of the Utrecht Work Engagement Scale (Schaufeli et al., 2006; “UWES”, 2003), a copy of the UWES was given to both the senior human resource manager and the senior training manager at the firm for review and feedback. A face-to-face meeting with the senior human resource manager, the senior
training manager and the researcher was used to discuss the feedback and how to mitigate any potential problems regarding UWES administration at the firm. The UWES was also provided to the members of the dissertation committee for review and feedback. These reviews helped ensure the clarity of instructions, identified potential problems with individual survey items, and determined the length of time needed to complete the UWES. It should be noted that no changes were made to the UWES, so as to maintain the integrity of the instrument. In other words, feedback obtained from the human resource and training managers, and from the dissertation committee members, were used to guide how the instrument was administered only, not to make changes to the instrument itself.

Also, while “The Utrecht Work Engagement Scale is free for use for non-commercial scientific research” (“UWES”, 2003, p. 48); permission to use the UWES during this project was obtained from the author (W. Schaufeli, personal communication, April 9, 2009), as shown in Appendix D.

The initial survey packet included administrative instructions, along with sufficient quantities of the UWES and The Authorization to Participate in Research Project and oral presentation forms (Appendix B) to cover both the test and control group line employees. The remaining two administrations of the UWES included instructions and sufficient quantities of the UWES to cover the test and control group line employees. The UWES was administered on-site, by the senior training manager at the firm. The Authorization to Participate in Research Project and oral presentation forms were also administered on site by the senior training manager, who distributed the forms and surveys to each participant. Each survey participant had five work days to complete and place the authorization forms and completed UWES surveys into a locked drop box.
located in each business unit (one test and one control group business unit drop box was provided by the researcher). The researcher retrieved the locked drop boxes with the signed authorization forms and completed UWES surveys at the end of the five-days. The researcher maintained the only key and controlled the contents of the drop boxes, so as to protect each participant’s anonymity and their right to participate voluntarily without undue pressure. The researcher coded and stored all data in SPSS 16.0 for analysis. Data processing and analysis was conducted off-site, at the researcher’s home office. All forms were secured at the researcher’s home office for the duration of the project. The researcher shredded all forms at the completion of the project.

Data Analysis

Analyses were generated in SPSS 16.0 for the data collected from all the Production (test group) and Maintenance (control group) business unit frontline employees. As stated, any inferences drawn from the analysis of the data applied only to the organization from which the data was obtained. As depicted in Table 3.4, the dependent variables (Fink, 2003, vol. 9) included the line employees’ perceptions of work environment (Hypotheses Ho1-Ho3), as measured by the dedication subscale of the UWES (items 2, 5, 7, 10 and 13); and the line employees’ perceptions of work engagement (Hypothesis Ho4-Ho6), as measured by the UWES in its entirety. The independent variables (Fink, 2003, vol. 9), also shown in Table 3.4, included (1) group (test and control group business unit line employees taking the UWES); and (2) day (day 0, day 45, day 90; representing the three administrations of the UWES). The analysis itself consisted of two Mixed Design ANOVAs (Agresti & Finlay, 1997; Green & Salkind, 2004; Lomax, 2001; Shavelson, 1988); to include one between-subjects factor
(Hypotheses Ho₁, Ho₄) and one within-subjects factor (Hypotheses Ho₂, Ho₃), as well as an analysis of the interaction between factors (Hypotheses Ho₅, Ho₆). The null hypotheses (Ho₁-Ho₆) were tested using Mixed Design ANOVAs; the decision to reject or fail to reject each null hypothesis was made based on the results of the statistical analyses generated in SPSS 16.0. While the UWES shown in Appendix C uses an ordinal scale, the data was treated as numerical. Assigning a numerical scale to ordinal data and processing that data as quantitative, instead of qualitative, is a commonly accepted practice for survey research in the social sciences, because it allows for a higher level of statistical analysis (Agresti & Finlay, 1997; Fink, 2003, vol. 9). As shown in Appendix C, the responses on the UWES are measured on a numerical seven-point scale ranging from zero (0 = never) to six (6 = always, every day) (Schaufeli et al., 2006; “UWES”, 2003).

Table 3.4

**Dependent and Independent Variables with Relevant Hypotheses**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group (test and control group business units)</td>
<td>Dedication (UWES items 2, 5, 7, 10, 13):</td>
</tr>
<tr>
<td>Day (day 0, day 45, day 90)</td>
<td>2. I find the work that I do full of meaning and Purpose</td>
</tr>
<tr>
<td></td>
<td>5. I am enthusiastic about my job</td>
</tr>
<tr>
<td></td>
<td>7. My job inspires me</td>
</tr>
<tr>
<td></td>
<td>10. I am proud of the work that I do</td>
</tr>
<tr>
<td></td>
<td>13. To me, my job is challenging</td>
</tr>
</tbody>
</table>

**Relevant Hypotheses**

Relevant Hypotheses for Group, Day and the Dedication subscale (UWES items 2, 5, 7, 10, 13):

H₀₃: Group Dedication * Day Dedication Interaction ≠ 0
H₁₃: Group Dedication * Day Dedication Interaction = 0 (interaction between factors)
Table 3.4 (continued).

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group (test and control group business units)</td>
<td>Absorption (UWES items 3, 6, 9, 11, 14, 16):</td>
</tr>
<tr>
<td>Day (day 0, day 45, day 90)</td>
<td>3. Time flies when I am working</td>
</tr>
<tr>
<td></td>
<td>6. When I am working, I forget everything else around me</td>
</tr>
<tr>
<td></td>
<td>9. I feel happy when I am working intensely</td>
</tr>
<tr>
<td></td>
<td>11. I am immersed in my work</td>
</tr>
<tr>
<td></td>
<td>14. I get carried away when I am working</td>
</tr>
<tr>
<td></td>
<td>16. It is difficult to detach myself from my job</td>
</tr>
<tr>
<td></td>
<td>Dedication (UWES items 2, 5, 7, 10, 13)</td>
</tr>
<tr>
<td></td>
<td>2. I find the work that I do full of meaning and purpose</td>
</tr>
<tr>
<td></td>
<td>5. I am enthusiastic about my job</td>
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<td></td>
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<td></td>
<td>10. I am proud of the work that I do</td>
</tr>
<tr>
<td></td>
<td>13. To me, my job is challenging</td>
</tr>
<tr>
<td></td>
<td>Vigor (UWES items 1, 4, 8, 12, 15, 17):</td>
</tr>
<tr>
<td></td>
<td>1. At my work, I feel bursting with energy</td>
</tr>
<tr>
<td></td>
<td>4. At my job, I feel strong and vigorous</td>
</tr>
<tr>
<td></td>
<td>8. When I get up in the morning, I feel like going to work</td>
</tr>
<tr>
<td></td>
<td>12. I can continue working for very long periods at a time</td>
</tr>
<tr>
<td></td>
<td>15. At my job, I am very resilient, mentally</td>
</tr>
<tr>
<td></td>
<td>17. At my work, I always persevere, even when things do not go well</td>
</tr>
</tbody>
</table>

Relevant Hypotheses

Relevant Hypotheses for Group, Day and Work Engagement (UWES items 1-17):

- **Ha3:** Test Group Work Engagement > Control Group Work Engagement
- **Ho3:** Test Group Work Engagement ≤ Control Group Work Engagement

(between-subjects)

- **Ha4:** Day-0 Work Engagement < Day-45 Work Engagement < Day-90 Work Engagement
- **Ho4:** Day-0 Work Engagement ≥ Day-45 Work Engagement ≥ Day-90 Work Engagement

(within-subjects)

- **Ha5:** Group Work Engagement * Day Work Engagement Interaction ≠ 0
- **Ho5:** Group Work Engagement * Day Work Engagement Interaction = 0

(interaction between factors)

*Note:* The null hypotheses were tested using Mixed Design ANOVAs; the decision to reject or fail to reject each null hypothesis was made based on the results of the statistical analyses.
Composite Variables Used in These Analyses

To facilitate the analyses of Mixed Design ANOVAs (Agresti & Finlay, 1997; “ANOVA”, 2004; Green & Salkind, 2004; Lomax, 2001; Shavelson, 1988), UWES raw data collected at day-0, -45, and -90 were transformed into averages, or mean values, in SPSS 16.0 (Green & Salkind, 2004; “UWES”, 2003). These composite variables were used to generate the descriptive statistics and Mixed Design ANOVAs in SPSS 16.0 for both dedication (UWES items 2, 5, 7, 10, 13) and work engagement (UWES items 1-17).

To test the first three hypotheses (H01-H03), the composite variables generated from the dedication raw data (UWES items 2, 5, 7, 10, 13) collected at day-0, -45, and -90, included the following:

\[
\text{Dedication\_Day\_0\_MEAN} = \frac{\sum_{\text{Case}_n} \text{(UWES Items 2, 5, 7, 10 and 13)}}{n} \quad \text{Case}_1
\]

\[
\text{Dedication\_Day\_45\_MEAN} = \frac{\sum_{\text{Case}_n} \text{(UWES Items 2, 5, 7, 10 and 13)}}{n} \quad \text{Case}_1
\]

\[
\text{Dedication\_Day\_90\_MEAN} = \frac{\sum_{\text{Case}_n} \text{(UWES Items 2, 5, 7, 10 and 13)}}{n} \quad \text{Case}_1
\]

To test the remaining three hypotheses (H04-H06), the composite variables generated from the work engagement raw data (UWES 1-17) collected at day-0, -45, and -90, included:

\[
\text{WE\_Day\_0\_MEAN} = \frac{\sum_{\text{Case}_n} \text{(UWES Items 1-17)}}{n} \quad \text{Case}_1
\]
Case 1
\[
\text{WE}_{\text{Day} \_45\text{\_MEAN}} = \frac{\text{Day-45 } \sum (\text{UWES Items 1-17})}{\text{Case}_n}
\]

Case 1
\[
\text{WE}_{\text{Day} \_90\text{\_MEAN}} = \frac{\text{Day-90 } \sum (\text{UWES Items 1-17})}{\text{Case}_n}
\]

Descriptive Statistics

The descriptive statistics were based on the data collected with the Utrecht Work Engagement Scale (Schaufeli et al., 2006; “UWES”, 2003) from the test and control group business unit frontline employees at day-0, -45 and -90. To facilitate analyses, UWES raw data were transformed into means, as composite variables, in SPSS 16.0 (Green & Salkind, 2004; “UWES”, 2003). Descriptive statistics were run from the composite variables for dedication and work engagement. These descriptive statistics included samples (n), means and standard deviations (SD) for the composite variables, because these were the variables used to run the remaining analyses.

Mixed Design Analysis of Variance (Mixed Design ANOVA)

Mixed Design ANOVAs were run in SPSS 16.0 (Agresti & Finlay, 1997; Green & Salkind, 2004; Lomax, 2001; Shavelson, 1988). “Analysis of variance (ANOVA) is one of the most commonly used statistical techniques in psychological research. The basic approach… is to use estimates of variability to test hypotheses about group means” (“ANOVA”, 2004). That is, the ANOVA is “the statistical analysis of mean differences that are traced back to the effects of one or more factors” (“Appendix 4”, 2005).

According to Lomax (2001)
The characteristics of the… mixed ANOVA design are a combination of the characteristics of the one-factor repeated measures and the two-factor fixed effects models… one of the factors is a between-subjects factor, the other factor is a within-subjects factor, and the result is known as a split-plot design… Each subject then responds to each level of the repeated factor, but to only one level of the nonrepeated factor. Subjects then serve as their own controls for the repeated factor, but not for the nonrepeated factor. (pp. 425-426)

In this study, the analysis of variance consisted of “measures that [were] repeatedly observed on the same respondents” (“Appendix 4”, 2005). That is, repeated measures were taken with the Utrecht Work Engagement Scale (Schaufeli et al., 2006; “UWES”, 2003) during the three predetermined data collection points described earlier; at day-0, -45 and -90 of the intervention. Each administration of the UWES represented three levels of analysis (day-0, -45 and -90) for the within-subjects tests of dedication and work engagement (Agresti & Finlay, 1997; Green & Salkind, 2004; “UWES”, 2003). The respondents included all the line employees assigned to the test and control group business units. Collectively, all these line employees were tested for within-subjects effects, irrespective of which group they were assigned. Additionally, the test and control group business units each served as between-subjects factors (Agresti & Finlay, 1997; Green & Salkind, 2004).

In the ANOVA, the “total variation in observations is… partitioned into the between-groups sum of squares… and the within-groups… sum of squares” (“Appendix 4”, 2005). This partitioning allows for a variety of tests for (1) testing within- and between-subject changes in variation; (2) testing and adjusting for sphericity, or the
symmetry of within-subject response correlations (Agresti & Finlay, 1997); and (3) testing for residual variation not attributable to within- and between-subject factors (Agresti & Finlay, 1997). “The desired outcome in most cases,” including this study, is that “the between-groups sum of squares is greater than that for the within-groups” (“Appendix 4”, 2005). In this study, the desired outcome was for the test group business unit line employees to outperform the control group business unit line employees in terms of increased, positive perceptions of work environment and work engagement (Table 3.4).

\textit{Cronbach’s }\alpha

Internal consistency of the three UWES subscales of absorption, dedication and vigor was verified at day-0 using Cronbach’s \(\alpha\) (Gliem & Gliem, 2003; Schaufeli et al., 2006; “UWES”, 2003). “Cronbach’s alpha is the average value of the reliability coefficients one would obtain for all possible combinations of items when split into two half-tests” (Gliem & Gliem, 2003, p. 84). “Cronbach’s alpha reliability coefficient normally ranges between 0 and 1… The closer Cronbach’s alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale” (Gliem & Gliem, 2003, p. 87). A critical value of 0.70 for each of the three subscales is generally considered the acceptable minimum for achieving internal consistency (“UWES”, 2003).

\textbf{Summary}

The purpose of this study was to measure the effects of a specific learning intervention on work engagement at the business unit level. This chapter described the data collection and research methods employed in this study. To determine the overall effectiveness of the learning program, changes in the level of work engagement in the
direct reports of the immediate managers participating in the study were examined in a nonequivalent control group, quasi-experimental research design. At three predetermined intervals during the learning intervention, the Utrecht Work Engagement Scale (UWES) was used to collect data pertaining to the absorption, dedication and vigor of the test and control group line employees. Mixed Design ANOVA was used to determine (1) whether a statistically significant increase in work engagement (the absorption, dedication and vigor subscales of the UWES combined) occurred in the test group compared to the control group line employees; (2) the within subjects changes for all participants; and (3) if there was an interaction of the between and within subjects tests. Further, the same tests were independently applied to the dedication subscale to examine changes in perceived work environment. Finally, Cronbach’s $\alpha$ was run during the first administration of the UWES to verify the internal consistency of the instrument. The remaining chapters of this study include the data and results of the study, and a discussion of the findings with recommendations for future research.
CHAPTER IV

RESULTS

Introduction

The purpose of this study was to expand the current body of knowledge by measuring the effects of a specific learning intervention intended to enhance the capabilities of frontline, immediate managers to increase the level of work engagement at the business unit level in a small manufacturing firm in south Mississippi. The study used a quasi-experimental research design to analyze changes in line employee work engagement in one test and one control group business unit at the firm. The desired outcome was for the test group business unit line employees to outperform the control group business unit line employees in terms of increased, positive perceptions of work environment and work engagement. This chapter details the results of this research in three sections. First, a descriptive studies section will provide information about the population, sampling, reliability and descriptive statistics. Second, the tests of hypotheses section will describe the results of the Mixed Design ANOVA used to test the between-subjects effects, the within-subjects effects, and the interaction of the between- and within-subjects tests for the dedication component work engagement. Mixed Design ANOVA test results are also presented for the work engagement construct, as a whole. This section is subdivided by each of the six null hypotheses detailed in Chapter III, and it includes the researcher’s basis for rejecting (or failing to reject) the null hypotheses. Third, a threats to validity section will discuss those issues of greatest potential concern to the researcher. Fourth, the final section provides a brief summary of Chapter IV.
Descriptive Studies

This study was conducted at a small manufacturing plant in south Mississippi, where the population consisted of all frontline employees (N=149), who were distributed across the fourteen business units at the firm. Two of the fourteen business units at the firm were selected by convenience to participate in the study. From these two business units, one test group (Production) and one control group (Maintenance) were studied for changes in work engagement. The Production business unit had four immediate managers and 32 line employees. Maintenance had two immediate managers and 31 line employees. Production and Maintenance were nearly equivalent in size, and the two largest business units at the firm. Both business units were subject to the same shift work cycles, and both shared similar standards for production, quality and safety.

The unit of sampling included all line employees assigned to the two participating business units at the firm; representing 63 of the 149 line employees, or 42% of the population. Accordingly, work engagement was measured in the 32 direct reports of the four test group immediate managers assigned to the Production business unit; and in the 31 direct reports of the two control group immediate managers assigned to the Maintenance business unit. Repeated measurements of the 32 line employees in Production (test group) and the 31 line employees in Maintenance (control group) were taken at day-0, -45 and -90, using the Utrecht Work Engagement Scale (“UWES”, 2003; Schaufeli & Salanova, 2008) shown in Appendix C. Table 4.1 shows the number of completed Utrecht Work Engagement Scale (UWES) instruments needed to ensure a 95% confidence level, using the formula described by Dillman, Smyth and Christian (2009). In this case, both the test and control group needed to return 28 completed
instruments during each of the three UWES administrations. It should be noted that while Production (test group) returned the minimum number of completed UWES instruments (32 at day-0; 32 at day-45; and 30 at day-90), the Maintenance (control group) did not (22 at day-0; 16 at day-45; and 21 at day-90). Consequently, a non-response bias and less than 95% confidence are possible for the Maintenance (control group) business unit.

Table 4.1

**UWES Test and Control Group Sampling Information**

<table>
<thead>
<tr>
<th>Business Unit</th>
<th>Line Employees Assigned</th>
<th>Minimum UWES Returns&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Actual UWES Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Day-0</td>
<td>Day-45</td>
</tr>
<tr>
<td>Production (test group)</td>
<td>32</td>
<td>28</td>
<td>32</td>
</tr>
<tr>
<td>Maintenance (control group)</td>
<td>31</td>
<td>28</td>
<td>22</td>
</tr>
</tbody>
</table>

<sup>a</sup>Minimum number of completed surveys needed for 95% confidence and a +/- 5% margin of error.

*Cronbach’s α Reliability Statistics for the Utrecht Work Engagement Scale*

As shown in Table 4.2, Cronbach’s α reliability statistics for the first (day-0) administration of the Utrecht Work Engagement Scale (UWES) revealed a high degree of consistency for all three subscales (absorption = .865; dedication = .864; and vigor = .892). Moreover, work engagement, all three UWES subscales combined, generated an exceptionally high degree of reliability, with a Cronbach’s α of .949 (Table 4.2).
Table 4.2

*Cronbach’s α Reliability at Day-0 Administration of the UWES*

<table>
<thead>
<tr>
<th>Utrecht Work Engagement Scale (items numbers)</th>
<th>Cronbach’s α</th>
<th>N of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absorption subscale (items 3, 6, 9, 11, 14, 16)</td>
<td>.865</td>
<td>6</td>
</tr>
<tr>
<td>Dedication subscale (items 2, 5, 7, 10, 13)</td>
<td>.864</td>
<td>5</td>
</tr>
<tr>
<td>Vigor subscale (items 1, 4, 8, 12, 15, 17)</td>
<td>.892</td>
<td>6</td>
</tr>
<tr>
<td>Work Engagement (items 1-17)</td>
<td>.949</td>
<td>17</td>
</tr>
</tbody>
</table>

*Note:* Cronbach’s α at day-0 for each UWES subscale and the entire work engagement construct.

Composite Variables Used in These Analyses

To facilitate the analyses of Mixed Design ANOVAs (Agresti & Finlay, 1997; “ANOVA”, 2004; Green & Salkind, 2004; Lomax, 2001; Shavelson, 1988), UWES raw data collected at day-0, -45, and -90 were transformed into averages, or mean values, in SPSS 16.0 (Green & Salkind, 2004; “UWES”, 2003). As described in Chapter III, these composite variables were used to generate the descriptive statistics in SPSS 16.0 for both dedication (Table 4.3) and work engagement (Table 4.4).

Dedication Descriptive Statistics

Table 4.3 shows the descriptive statistics for the dedication subscale (UWES items 2, 5, 7, 10, 13) of the work engagement construct. The Production (test group) means for dedication (day-0 mean = 4.48; day-45 mean = 4.66; and day-90 mean = 4.42) were notably higher than the Maintenance (control group) means (day-0 mean = 3.67; day-45 mean = 3.81; and day-90 mean = 3.10) during all three administrations of the UWES. Moreover, the standard deviations (SDs) for Production (test group) dedication (day-0 SD = .961; day-45 SD = .912; and day-90 SD = .903) were tighter than those of Maintenance (control group) (day-0 SD = 1.46; day-45 SD = .911; and day-90 SD =
1.98) at day-0 and day-90. The Production (test group) and Maintenance (control group) standard deviations at day-45 were nearly equal at .912 and .911, respectively.

Table 4.3

Dedication Composite Variables (Means) Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Business Unit (test or control group)</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedication_Day_0_MEAN</td>
<td>Production (test group)</td>
<td>4.4818</td>
<td>.96147</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Maintenance (control group)</td>
<td>3.6719</td>
<td>1.46196</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.1408</td>
<td>1.24715</td>
<td>38</td>
</tr>
<tr>
<td>Dedication_Day_45_MEAN</td>
<td>Production (test group)</td>
<td>4.6636</td>
<td>.91211</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Maintenance (control group)</td>
<td>3.8125</td>
<td>.91059</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.3053</td>
<td>.99484</td>
<td>38</td>
</tr>
<tr>
<td>Dedication_Day_90_MEAN</td>
<td>Production (test group)</td>
<td>4.4182</td>
<td>.90271</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Maintenance (control group)</td>
<td>3.1000</td>
<td>1.98125</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.8632</td>
<td>1.57762</td>
<td>38</td>
</tr>
</tbody>
</table>

Note: Descriptive statistics for dedication subscale composite variables shown for both groups.

Work Engagement Descriptive Statistics

Table 4.4 shows the descriptive statistics for these variables, as calculated in SPSS 16.0, used to test work engagement (UWES items 1-17). The Production (test group) means for work engagement (day-0 mean = 4.04; day-45 mean = 4.07; and day-90 mean = 3.91) were higher than the Maintenance (control group) means (day-0 mean = 3.28; day-45 mean = 3.41; and day-90 mean = 2.90) during all three administrations of the UWES. Moreover, the standard deviations (SDs) of Production (test group) work engagement (day-0 SD = .862; day-45 SD = .829; and day-90 SD = .790) were decidedly smaller than those of the Maintenance (control group) (day-0 SD = 1.540; day-45 SD = .737; and day-90 SD = 1.870) at day-0 and day-90. The test and control group standard
deviations at day-45 were .829 and .737, respectively; showing the control group standard deviation to be somewhat smaller.

Table 4.4

**WE Composite Variables (Means) Descriptive Statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Business Unit</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE_Day_0_MEAN</td>
<td>Production (test group)</td>
<td>4.0423</td>
<td>.86161</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Maintenance (control group)</td>
<td>3.2796</td>
<td>1.53972</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.7212</td>
<td>1.23615</td>
<td>38</td>
</tr>
<tr>
<td>WE_Day_45_MEAN</td>
<td>Production (test group)</td>
<td>4.0739</td>
<td>.82943</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Maintenance (control group)</td>
<td>3.4081</td>
<td>.73705</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.7935</td>
<td>.84951</td>
<td>38</td>
</tr>
<tr>
<td>WE_Day_90_MEAN</td>
<td>Production (test group)</td>
<td>3.9064</td>
<td>.78976</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Maintenance (control group)</td>
<td>2.9003</td>
<td>1.87043</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.4828</td>
<td>1.42329</td>
<td>38</td>
</tr>
</tbody>
</table>

*Note: Descriptive statistics for work engagement composite variables shown for both groups.*

Tests of Hypotheses

**Ho1: Test Group Dedication < Control Group Dedication (Rejected)**

As shown in Table 4.5, the analysis of between-subjects effects for the test and control group, using the dedication subscale of the UWES, was statistically significant: F(1, 36) = 17.258; p < .001; η² = .324; observed power = .981. Regarding effect size, 32.4% of the variance in the dependent variable could be explained by the independent variable. Further, as shown in Table 4.6, the Production (test group) dedication mean of 4.5 (standard error = .16) was noticeably higher than the Maintenance (control group) mean of 3.5 (standard error = .18). These differences are graphically illustrated in the plot showing the estimated marginal means of the dedication subscale measurements taken from both groups at day-0, -45 and -90 (Figure 4.1). Also shown in Figure 4.1, the gap
between the test and control group had widened considerably by the end of the 90-day intervention. The researcher rejected the first null hypothesis (Ho₁) based on these results; alternative hypothesis (Ha₁) was, therefore, determined to be plausible.

Table 4.5

Between-Subjects Effects for Test and Control Group Dedication

<table>
<thead>
<tr>
<th>Type III Sum of Squares</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
<th>Partial Eta Squared</th>
<th>Noncent. Parameter</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.407</td>
<td>1</td>
<td>36</td>
<td>27.407</td>
<td>17.258</td>
<td>.000</td>
<td>.324</td>
<td>17.258</td>
<td>.981</td>
</tr>
</tbody>
</table>

Note: aSource: Group
bComputed using alpha = .05

dTable 4.6

Test and Control Group Dedication

<table>
<thead>
<tr>
<th>Business Unit (test or control group)</th>
<th>Mean</th>
<th>Std Error</th>
<th>95% Confidence Interval</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (test group)</td>
<td>4.521</td>
<td>.155</td>
<td>4.207</td>
<td>4.836</td>
<td></td>
</tr>
<tr>
<td>Maintenance (control group)</td>
<td>3.528</td>
<td>.182</td>
<td>3.159</td>
<td>3.897</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.1. Estimated Marginal Means of Dedication at Day-0, -45 and -90.
\( Ho_2: Day-0_{Dedication} \geq Day-45_{Dedication} \geq Day-90_{Dedication} \) (Failed to Reject)

Wilks’ Lambda Multivariate Test (\( F = 1.362; \) Hypothesis df = 2.0; Error df = 35.0) generated a significance of .269 with an observed power of .274 (Table 4.7).

Specifically, the within-subjects effects of the dedication subscale were not statistically significant. Moreover, in light of Box’s M Test of Equality of Covariance (also shown in Table 4.7), it should be noted that the within-subjects test of dedication may be less reliable in terms of its p-value: Box’s M = 16.58; \( F(6, 7156.75) = 2.50; \) \( p = .02 \). That is to say, a violation of the multivariate assumption depicted by the Box’s M test p-value of .02, coupled with the low observed power of .274 in Wilks’ Lambda test make a Type II error possible (Huck, 2004). The researcher failed to reject the within-subjects null hypothesis \( (Ho_2) \) for the dedication subscale, because the tests for gradual increases in personal dedication across all line employees in Production and Maintenance indicated no statistical improvement; alternative hypothesis \( (Ha_2) \) was determined implausible.

Table 4.7

Within Subjects Factors Tests for Dedication

<table>
<thead>
<tr>
<th>Value</th>
<th>F</th>
<th>Hypothesis Df</th>
<th>Error Df</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Noncent. Parameter</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>.928</td>
<td>1.362(^a)</td>
<td>2.0</td>
<td>35</td>
<td>.269</td>
<td>.072</td>
<td>2.723</td>
<td>.274</td>
</tr>
</tbody>
</table>

Note: \(^a\)Exact statistic
\(^b\)Computed using alpha = .05
\(^c\)Design: Intercept + group. Within Subjects Design: Dedication Means
Table 4.7 (continued).

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box’s M</td>
<td>16.575</td>
</tr>
<tr>
<td>F</td>
<td>2.501</td>
</tr>
<tr>
<td>df₁</td>
<td>6.0</td>
</tr>
<tr>
<td>df₂</td>
<td>7156.752</td>
</tr>
<tr>
<td>Sig. c</td>
<td>.020</td>
</tr>
</tbody>
</table>

Note: *Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups
  bDesign: Intercept + group. Within Subjects Design: Dedication Means
  cEquity of covariance assumption is met when Sig. (p) > .05

**H₀₃: Group Dedication * Day Dedication Interaction = 0 (Failed to Reject)**

As shown in Table 4.8, Wilks’ Lambda Multivariate Test of Dedication*Group (F = .398; Hypothesis df = 2.0; Error df = 35.0) had a significance of .675 with an observed power of .109, indicating little or no interaction between factors. This lack of interaction is graphically illustrated in the plot of the Production (test group) and Maintenance (control group) for the dedication subscale (Figure 4.2). The plots of Production and Maintenance dedication failed to intersect at any point during the 90-day test period, indicating little or no interaction between the group and day test factors. The researcher failed to reject the null hypothesis for interaction (H₀₃), making its alternative hypothesis (Hₐ₃) implausible.
Table 4.8

*Wilks’ Lambda Multivariate Test of Dedication*Group

<table>
<thead>
<tr>
<th>Value</th>
<th>F</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Noncent. Parameter</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>.978</td>
<td>.398a</td>
<td>2.0</td>
<td>35</td>
<td>.675</td>
<td>.022</td>
<td>.795</td>
<td>.109</td>
</tr>
</tbody>
</table>

*Note:* aExact statistic
bComputed using alpha = .05
cDesign: Intercept + group. Within Subjects Design: Dedication Means

*Figure 4.2.* Estimated Marginal Means of Dedication at Day-0, -45 and -90.

*H₀₄: Test Group WE ≤ Control Group WE (Rejected)*

As shown in Table 4.9, the analysis of between-subjects effects for the Production (test group) and Maintenance (control group), using the combined absorption, dedication and vigor subscales of the UWES, was statistically significant: F(1, 36) = 12.739; p = .001; η² = .261; observed power = .935. Concerning effect size, 26.1% of the variance in the dependent variable could be explained by the independent variable. Further, as shown in Table 4.10, the Production (test group) work engagement (WE) mean of 4.0 (standard error = .15) was noticeably higher than the Maintenance (control group) mean of 3.2 (standard error = .17).
Table 4.9

*Between-Subjects Effects for Test and Control Group Work Engagement* \(^a\)

<table>
<thead>
<tr>
<th>Type III Sum of Squares</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Noncent. Parameter</th>
<th>Observed Power (^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.301</td>
<td>1</td>
<td>36</td>
<td>18.301</td>
<td>12.739</td>
<td>.001</td>
<td>.261</td>
<td>12.739</td>
<td>.935</td>
</tr>
</tbody>
</table>

*Note:* \(^a\)Source: Group  
\(^b\)Computed using alpha = .05

Table 4.10

*Test and Control Group Work Engagement*

<table>
<thead>
<tr>
<th>Business Unit (test or control group)</th>
<th>Mean</th>
<th>Std Error</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (test group)</td>
<td>4.008</td>
<td>.148</td>
<td>3.708 to 4.307</td>
</tr>
<tr>
<td>Maintenance (control group)</td>
<td>3.196</td>
<td>.173</td>
<td>2.845 to 3.547</td>
</tr>
</tbody>
</table>

These differences are graphically illustrated in the plot in Figure 4.3 showing the estimated marginal means of the WE measurements taken from both groups at day-0, -45 and -90. As shown in the plot (Figure 4.3), the gap between the Production (test group) and Maintenance (control group) had widened considerably by the end of the 90-day intervention. Based on the evidence provided, the researcher selected to reject the null hypothesis (Ho\(_4\)); alternative hypothesis (Ha\(_4\)) was, for that reason, considered plausible.
Figure 4.3. Estimated Marginal Means of Work Engagement at Day-0, -45 and -90.

$H_{05}: \text{Day-0 } WE \geq \text{Day-45 } WE \geq \text{Day-90 } WE \ (Failed \ to \ Reject)$

As shown in Table 4.11, Wilks’ Lambda Multivariate Test ($F = .799; \text{Hypothesis df} = 2.0; \text{Error df} = 35.0$) generated a significance of .458 with an observed power of .175. Specifically, the within-subjects effects of work engagement (WE) were not statistically significant. Moreover, in light of Box’s M Test of Equality of Covariance (Table 4.11), it should be noted that the within-subjects test of WE may be less reliable in terms of its p-value: Box’s M = 21.36; $F(6, 7156.75) = 3.22; p = .004$. That is to say, a violation of the multivariate assumption depicted by the Box’s M test p-value of .004, coupled with the low observed power of .175 in Wilks’ Lambda test make a Type II error possible (Huck, 2004). The researcher failed to reject the within-subjects null hypothesis ($H_{05}$) for work engagement, because the tests for gradual increases in personal work engagement across all line employees in Production and Maintenance indicated no statistical improvement; corresponding alternative hypothesis ($H_{a5}$) was deemed implausible.
Table 4.11

Within Subjects Factors Tests for Work Engagement (WE)

<table>
<thead>
<tr>
<th>Wilks’ Lambda Multivariate Test&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Value</th>
<th>F</th>
<th>Hypothesis Df</th>
<th>Error df</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Noncent. Parameter</th>
<th>Observed Power&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>.956</td>
<td>.799&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.0</td>
<td>35.0</td>
<td>.458</td>
<td>.044</td>
<td>1.598</td>
<td>.175</td>
<td></td>
</tr>
</tbody>
</table>

Note: <sup>a</sup>Exact statistic
<sup>b</sup>Computed using alpha = .05
<sup>c</sup>Design: Intercept + group. Within Subjects Design: WE Means

Box’s Test of Equity of Covariance Matrices<sup>a,b</sup>

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box’s M</td>
<td>21.364</td>
</tr>
<tr>
<td>F</td>
<td>3.224</td>
</tr>
<tr>
<td>df&lt;sub&gt;1&lt;/sub&gt;</td>
<td>6.0</td>
</tr>
<tr>
<td>df&lt;sub&gt;2&lt;/sub&gt;</td>
<td>7156.752</td>
</tr>
</tbody>
</table>

Note: <sup>a</sup>Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups
<sup>b</sup>Design: Intercept + group. Within Subjects Design: WE Means
<sup>c</sup>Equity of covariance assumption is met when Sig. (p) > .05

$H_{06}$: Group<sub>WE</sub> * Day<sub>WE</sub> Interaction = 0 (Failed to Reject)

Shown in Table 4.12, Wilks’ Lambda Multivariate Test of Work Engagement (WE)*Group (F = .20; Hypothesis df = 2.0; Error df = 35.0) had a significance of .82 with an observed power of .079. The absence of interaction between factors is graphically illustrated in the plot of the Production (test group) and Maintenance (control group) for WE (Figure 4.4). The plots of Production and Maintenance work engagement failed to intersect at any point during the 90-day test period, further indicating little or no interaction between group and day test factors. The researcher failed to reject the null hypothesis ($H_{06}$); alternative hypothesis ($H_{a6}$) was implausible.
Table 4.12

*Wilks’ Lambda Multivariate Test* of WE*Group*

<table>
<thead>
<tr>
<th>Value</th>
<th>F</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Noncent. Parameter</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>.989</td>
<td>.20&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.0</td>
<td>35</td>
<td>.820</td>
<td>.011</td>
<td>.40</td>
<td>.079</td>
</tr>
</tbody>
</table>

*Note:*<sup>a</sup>Exact statistic
<sup>b</sup>Computed using alpha = .05
<sup>c</sup>Design: Intercept + group. Within Subjects Design: WE Means

*Figure 4.4.* Estimated Marginal Means of Work Engagement at Day-0, -45 and -90.

**Threats to Validity**

*Selection-Maturation: The Potential Differences between Groups at Start-Up*

Of those threats detailed in Chapter III, the nonequivalent control group, quasi-experimental research design (Cook & Campbell, 1979; Crano & Brewer, 2002; Creswell, 2003) threat to validity of greatest potential concern to the researcher was selection-maturation. Selection-maturation occurs when both groups are not at the same level of performance, or capability, at the pretest phase of the study; in this case, day-0 of the learning intervention. Selection-maturation has the potential of obscuring the true impact of the intervention on pretest-posttest growth, or on the actual improvement
between the test and control groups (Cook & Campbell, 1979). To determine the extent of this particular internal threat to validity, the researcher ran Independent Sample t-Tests (Green & Salkind, 2004) for both groups using the composite variables from day-0 for both the dedication subscale and the entire work engagement construct. The results of these tests showed that the differences between group means were not statistically significant at day-0 for either dedication (Table 4.13) or work engagement (Table 4.14).

More specifically, the difference between the Dedication_Day_0_MEANs for the test and control groups were not statistically significant; \( t(33.04) = 1.39, p = 0.173 \). Equality of variance was not assumed, in this case, because Levene's Test for Equality of Variance had a significance of .008. Further, the difference between the WE_Day_0_MEANs for the test and control groups were also not statistically significant; \( t(30.56) = 1.12, p = 0.273 \). Again, equality of variance was not assumed, because Levene's Test for Equality of Variance had a significance of .002. Briefly stated, both Production and Maintenance line employees were statistically at the same level of performance, or capability, at the start of the intervention.

Table 4.13

**Independent Samples Test of Dedication at Day-0**

<table>
<thead>
<tr>
<th>Dedication_Day_0_MEAN</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (test group)</td>
<td>32</td>
<td>4.5125</td>
<td>.92553</td>
<td>.16361</td>
</tr>
<tr>
<td>Maintenance (control group)</td>
<td>22</td>
<td>4.0318</td>
<td>1.42633</td>
<td>.30409</td>
</tr>
</tbody>
</table>
Table 4.13 (continued).

<table>
<thead>
<tr>
<th>Dedication_Day_0_MEAN</th>
<th>Levene’s Test for Equality of Variances</th>
<th>t-Test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Equal Variances Assumed</td>
<td>7.51</td>
<td>.008</td>
</tr>
<tr>
<td>Equal Variances Not Assumed</td>
<td>1.39</td>
<td>33.042</td>
</tr>
</tbody>
</table>

Table 4.14

*Independent Samples Test of Work Engagement (WE) at Day-0*

<table>
<thead>
<tr>
<th>WE_Day_0_MEAN</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (test group)</td>
<td>32</td>
<td>4.0511</td>
<td>.86237</td>
<td>.15245</td>
</tr>
<tr>
<td>Maintenance (control group)</td>
<td>22</td>
<td>3.6556</td>
<td>1.50015</td>
<td>.31983</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WE_Day_0_MEAN</th>
<th>Levene’s Test for Equality of Variances</th>
<th>t-Test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Equal Variances Assumed</td>
<td>11.089</td>
<td>.002</td>
</tr>
<tr>
<td>Equal Variances Not Assumed</td>
<td>1.116</td>
<td>30.557</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WE_Day_0_MEAN</th>
<th>t-Test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. Error Difference</td>
</tr>
<tr>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Equal Variances Assumed</td>
<td>.32205</td>
</tr>
<tr>
<td>Equal Variances Not Assumed</td>
<td>.35431</td>
</tr>
</tbody>
</table>
Local History: The Plant Fire and a Pay and Technical Certification Restructuring

Two more potential threats to validity that occurred during the study included a plant fire and a pay and technical certification restructuring. The plant fire occurred in the final 30 days of the intervention and posed a potential local history threat to validity. This type of threat occurs when events other than the intervention impact one group, but not the other. Simply known as local history, this type of threat may result in the impact of the intervention becoming obscured (Cook & Campbell, 1979). Accordingly, the researcher thoroughly discussed the plant fire in meetings with the senior human resource manager, the lead training manager, and the business unit and line managers at the firm. In this case, the researcher was satisfied the fire had no more of an impact on the Maintenance control group than the Production test group. Also discussed was a pay and technical certification restructuring that occurred at the start of the intervention. This event adversely impacted only a small group of individuals, while most employees benefitted from it. Again, the researcher was satisfied that the potential local history threat to validity was minimal.

Other Potential Threats to Validity

As noted earlier, Maintenance (the control group) did not return the minimum number of 28 completed UWES instruments (22 at day-0; 16 at day-45; and 21 at day-90). While SPSS 16.0 somewhat compensates for missing data, a non-response bias and less than 95% confidence are still possible for the Maintenance (control group) business unit. Also noted earlier was the possibility of the researcher making a Type II error due to a violation of the multivariate assumption depicted by the Box’s M test p-values, coupled with the low observed powers of Wilks’ Lambda test in both Ho2 and Ho5.
Summary

This chapter presented the descriptive data and tests of hypotheses used in this study. The purpose of the study was to measure the effects of a specific learning intervention on work engagement at the business unit level. The population included 149 line employees at a small manufacturing plant in south Mississippi. Two of 14 business units participated; one test and one control group. Repeated measurements of 32 line employees in Production (test group) and 31 line employees in Maintenance (control group) were taken at day-0, -45 and -90, using the Utrecht Work Engagement Scale (UWES). While Production completed enough instruments to ensure 95% confidence, Maintenance did not, suggesting a possible non-response bias. The UWES instrument, however, returned a high Cronbach’s $\alpha$ of .949 for work engagement. To facilitate the analyses of Mixed Design ANOVAs, UWES raw data were transformed into averages in SPSS 16.0. These composite variables revealed generally higher means and tighter standard deviations for dedication and work engagement in Production, compared to Maintenance. The composite variables were also used to generate Mixed Design ANOVAs in SPSS 16.0 to test the hypotheses. Dedication and work engagement analyses of between-subjects effects for the test and control group were statistically significant and powerful, and the gap between these groups widened considerably by the end of the intervention. The researcher rejected $H_0_1$ and $H_0_4$; $H_a_1$ and $H_a_4$ were therefore plausible. Within-subjects effects of dedication and work engagement, on the other hand, were not statistically significant and they were weak. The researcher failed to reject $H_0_2$ and $H_0_5$; $H_a_2$ and $H_a_5$ were implausible. Finally, Wilks’ Lambda Multivariate Test indicated little or no interaction between the between- and within-subjects tests of dedication and work engagement.
engagement. The researcher failed to reject Ho_3 and Ho_6; Ha_3 and Ha_6 were also implausible. Finally, the potential threats to validity of greatest concern to the researcher were covered. The most notable of these, the potential for a selection-maturation threat, was minimized with the application of Independent Sample t-Tests for both groups using the composite variables from day-0 for both the dedication subscale and the entire work engagement construct. In both instances, the differences between group means were not statistically significant at the start of the study. The next chapter will discuss the findings and recommendations for future research.
CHAPTER V
DISCUSSION

Summary

Restatement of Purpose

The purpose of this study was to expand the current body of knowledge by measuring the effects of a specific learning intervention intended to enhance the capabilities of frontline, immediate managers to increase the level of work engagement at the business unit level in a small manufacturing firm in south Mississippi.

The Basis for This Investigation Revisited

Organizations today are more compelled than ever to make the best use of available talent to help offset critical skills shortages and spur on human creativity and innovation; key ingredients of competitive advantage in a globalized, knowledge economy (Amabile et al., 2005; Amabile et al., 1996; Florida, 2002; Forum for People Performance Management and Measurement, n.d.; Gordon, 2000; Porter, 1990; Senge, 1990; Tellis, Prabhu, & Chandy, 2009). Consequently, finding ways of effectively increasing the level of engagement at work has gained increased significance for practitioners and scholars (Baumruk et al., 2006; Piersol, 2007; “Using Appreciative Inquiry, 2007”). This is because, as a growing body of research suggests, organizations with highly engaged employees enjoy higher levels of productivity, improved business results, increased customer satisfaction and profitability (Baumruk et al., 2006; Beehr et al., 2009; Buckingham & Coffman, 1999; Fitz-enz, 2009; Harter, Schmidt, & Hayes, 2002; Many employees would fire their boss, 2007; Oakley, 2004; Phillips & Phillips, 2007a; Xanthopoulou et al., 2009). Research also suggests that for a growing number of
organizations, increasing the level of work engagement to advance business performance and competitiveness is heavily contingent upon continuously measuring, valuing and improving the learning and performance of human capital (BlessingWhite, 2008; Fitzenz, 2009; Phillips & Phillips, 2007). To be sure, developing frontline managers to make best use of the talents and capabilities of employees has long been an enduring focus of human resource development, particularly in the management of organizational behavior (Hersey et al., 1996; Swanson & Holton, 2009). Today, many practitioners and researchers support learning and development programs aimed at improving the supervisory skills of frontline managers; with the purpose of making gains in productivity, business results, customer satisfaction and profitability (Buckingham & Coffman, 1999; Flagello & Dugas, 2009; Garavan, 2007; Harter, Schmidt, & Hayes, 2002; Many employees would fire their boss, 2007; Oakley, 2004; Swanson & Holton, 2009; Xanthopoulou et al., 2009). While this belief is especially compelling for human resource development practitioners around the globe, there has been little empirical evidence showing the effectiveness of such interventions to increase the level of work engagement (Bakker et al., 2008; Harter, Schmidt, & Hayes 2002; Oakley, 2004). That is, while human performance improvement interventions are not uncommon, scholarly research of specific interventions to increase work engagement has been diminutive (Bakker et al., 2008). Consequently, researchers have called for additional study into the antecedents of engagement; suggested further investigation into the reliability of engagement measures on business results; and recommended the development of models, performance improvement interventions and instruments that help practitioners increase the level of engagement in the workplace (Bakker, et al., 2008; Harter, Schmidt, & Hayes
2002; Oakley, 2004). According to Bakker, Schaufeli, Leiter and Taris (2008), the greatest contribution of any future research will emerge from the focused, systematic investigation of performance improvement interventions that evaluate the impact of innovative management practices on work engagement. Accordingly, in order to advance the body of knowledge, this study answered the call to conduct additional research into interventions for work engagement.

Results of the Study

This study used Mixed Design ANOVAs (Agresti & Finlay, 1997; Green & Salkind, 2004; Lomax, 2001; Shavelson, 1988) to analyze changes in line employee work engagement in one test and one control group business unit at a small manufacturing firm in south Mississippi. The desired outcome was for the test group business unit line employees to outperform the control group business unit line employees in terms of increased, positive perceptions of work environment and work engagement. To determine the overall effectiveness of the learning program, changes in the level of work engagement in the direct reports of the immediate managers participating in the study were examined in a nonequivalent control group, quasi-experimental research design (Cook & Campbell, 1979; Crano & Brewer, 2002; Creswell, 2003). In this scenario, the firm’s Production (test group) immediate managers participated in a 90-day learning intervention founded on the skills presented by Flagello and Dugas (2009), while the Maintenance (control group) immediate managers did not participate in the learning intervention. At three predetermined intervals during the intervention, the researcher collected Utrecht Work Engagement Scale (UWES) data pertaining to the absorption, dedication and vigor (Schaufeli & Salanova, 2008; “UWES”, 2003) of the test and
control group line employees. Hypothesis testing determined (1) whether a statistically significant increase in work engagement occurred in the Production (test group) compared to the Maintenance (control group) line employees; (2) if there were any within-subjects changes for all participants; and (3) if there was an interaction between the between and within subjects tests. The same tests were independently applied to the dedication subscale of the UWES to examine changes in perceived work environment.

To facilitate these analyses, UWES raw data were transformed into averages in SPSS 16.0 (Green & Salkind, 2004). These composite variables revealed generally higher means and tighter standard deviations for dedication and work engagement in the Production (test group) line employees compared to the Maintenance (control group) line employees. The composite variables were also used to generate the Mixed Design ANOVAs in SPSS 16.0 to test the three dedication subscale null hypotheses and the three work engagement null hypotheses. Analyses of the between-subjects effects for dedication ($H_0_1$) and work engagement ($H_0_4$) in Production and Maintenance were statistically significant and powerful, while the gap between these groups widened considerably by the end of the intervention. Independent Sample t-Tests (Green & Salkind, 2004) of both Production and Maintenance line employees indicated that the differences between group means were not statistically significant at day-0. That is, while the gap between these groups widened considerably by the end of the intervention, both groups were at the same level of performance, or capability, at the start of the intervention. Consequently, the researcher rejected $H_0_1$ and $H_0_4$. The within-subjects effects of dedication ($H_0_2$) and work engagement ($H_0_5$), on the other hand, were not statistically significant and they were weak. As a result, the researcher failed to reject $H_0_2$
and Ho$_5$. Finally, there was little or no interaction among the between- and within-subjects tests for dedication (Ho$_3$) and work engagement (Ho$_6$). Moreover, the plots of Production and Maintenance dedication and work engagement failed to intersect at any point during the 90-day test period, further indicating little or no interaction between the group and day test factors. The researcher failed to reject Ho$_3$ and Ho$_6$.

*Instrument Reliability of the Utrecht Work Engagement Scale*

As described in the previous chapter, Cronbach’s $\alpha$ reliability statistics for the Utrecht Work Engagement Scale (UWES) revealed a high degree of consistency for all three subscales (absorption = .865; dedication = .864; and vigor = .892). Notably, work engagement, all three UWES subscales combined, generated an exceptionally high degree of reliability, with a Cronbach’s $\alpha$ of .949. Cronbach’s $\alpha$ values greater than .70 are considered acceptable by work engagement researchers Schaufeli and Bakker (“UWES”, 2003). Additionally, past research has shown that UWES testing of more than 30,000 employees in 17 countries typically yielded Cronbach’s $\alpha$ values between .80 and .90 (Schaufeli & Salanova, 2008; “UWES”, 2003). In this study, the Cronbach’s $\alpha$ value of .949 for work engagement was somewhat higher than expected. Perhaps, the .949 Cronbach’s $\alpha$ value was facilitated by the list of synonyms provided by the researcher with the assistance of the leading human resource managers at the firm. Included at the bottom of the UWES, these synonyms were intended to reduce participant misinterpretation of the items, by providing words more commonly used by the employees (Appendix C).
The remainder of this chapter will discuss the conclusions, limitations, recommendations for policy or practice, and the recommendations for future research pertaining to this study.

Conclusions and Discussion

Organizational Context

The following conclusions and discussion are best understood in the context of a study conducted in a highly dynamic organizational environment. The events reported here were confirmed by the researcher in meetings with the senior human resource manager, the lead training manager, and the business unit and line managers at the firm. The most notable of the items discussed at these meetings included a plant fire and a pay and technical certification restructuring.

The more impactful of these two events occurred in the last 30-days of the intervention, when the firm experienced a plant fire and a number of other mishaps that contributed to (1) the employees working excessive overtime hours; (2) a significant increase in physical labor; and (3) a noticeable increase in motivational and individual performance problems. As individual performance is commonly held by researchers to be a function of motivation, ability and opportunity (Avey et al., 2008; Hellriegel & Slocum, 2004; Hersey et al., 1996; Kelloway & Barling, 2000; Miner, 2005; Siemsen et al., 2008; Vroom & Jago, 2007; Wilson, 2003), these events could reasonably be expected to have had some impact on the results. In this case, line employee perceptions of work environment (dedication subscale) and work engagement decreased in both groups during the period spanning from day-45 to day-90 of the intervention. This decline, however, was much steeper in the Maintenance (control group) than in the Production (test group)
line employees (Figures 5.1 and 5.2), suggesting that the with-intervention Production immediate managers may have been better equipped to deal with the plant fire and the other work related issues than their Maintenance business unit counterparts.

![Figure 5.1. Estimated Marginal Means of Dedication at Day-0, -45 and -90.](image1)

![Figure 5.2. Estimated Marginal Means of Work Engagement at Day-0, -45 and -90.](image2)

Other contextual issues included a pay and technical certification restructuring that occurred in the first 30-days of the intervention. Policy changes to the pay scale and technical certification requirements may have had a negative impact due to (1) a miscommunication about the new pay scheme that caused some individuals to receive an
overpayment that was later recuperated by the firm; and (2) crew realignments that resulted in some individuals permanently losing pay and status. On the other hand, the pay and technical certification restructuring resulted in a pay increase for most employees. The pay increase was favorably received by those who benefitted, and could reasonably be expected to factor into individual motivation and performance (Hellriegel & Slocum, 2004; Hersey et al., 1996; Miner, 2005). In this case, the pay and technical certification restructuring policy changes may have had some bearing on the rise in dedication and work engagement for both groups at day-45 (Figures 5.1 and 5.2).

*Group Differences for Work Environment (Dedication) and Work Engagement*

The between-subject effects for the test and control group, using both the UWES dedication subscale (F(1, 36) = 17.258; p < .001; \(\eta^2 = .324;\) observed power = .981) and the entire work engagement construct (F(1, 36) = 12.739; p = .001; \(\eta^2 = .261;\) observed power = .935), were statistically significant and powerful, and they displayed a high level of practical significance (Green & Salkind, 2004). Moreover, the Production (test group) dedication mean of 4.5 (standard error = .16) was noticeably higher than the Maintenance (control group) mean of 3.5 (standard error = .18), while the Production work engagement mean of 4.0 (standard error = .15) was higher than the Maintenance mean of 3.2 (standard error = .17). Also, the gap between these groups widened considerably by the end of the intervention, indicating that dedication and work engagement were not only greater in Production compared to Maintenance, but the differences between these groups were increasing. Simply put, line employee perceptions of work environment (UWES dedication subscale items 2, 5, 7, 10, 13) and work engagement (UWES items 1-17) were greater in Production than in Maintenance, suggesting the intervention may
have had an overall positive impact on Production line employees compared to Maintenance line employees, whose frontline managers did not receive the intervention. As stated earlier, Independent Sample t-Tests (Green & Salkind, 2004) of both Production and Maintenance line employees indicated that the differences between group means were not statistically significant at day-0; both groups were at the same level of performance at the start of the intervention. More specifically, the difference between the Dedication_Day_0_MEANs for the test and control groups were not statistically significant at the start of the intervention; \( t(33.04) = 1.39, p = 0.173 \). Further, the difference between the WE_Day_0_MEANs for the test and control groups were also not statistically significant at the start; \( t(30.56) = 1.12, p = 0.273 \). It is also notable that while line employee perceptions of work environment (dedication subscale) and work engagement decreased in both business units during the last 30-days of the intervention, the decline was much steeper in Maintenance. That is, the with-intervention Production immediate managers may have been better equipped than their Maintenance (control group) counterparts when dealing with the plant fire and other performance issues.

Additionally, a large proportion of the dependent variables could be explained by the independent variables. “\( \eta^2 \) [values] of .01, .06, and .14 are, by convention, interpreted as small, medium, and large effect sizes, respectively” (Green & Salkind, 2004, p.178). In this case, the between-group dedication subscale effect size was 32% (\( \eta^2 = .324 \)), while the effect size for overall work engagement was 26% (\( \eta^2 = .261 \)). These effect sizes not only support the possibility of learning interventions having a positive impact on work engagement, but may also suggest an attractive opportunity for practitioners wanting to prevent work engagement from declining sharply during periods of high organizational
stress. This possibility of developing practical interventions also favors the proposition that competencies can be learned, developed and supported in immediate managers to more positively impact the work engagement and performance of their direct reports (Aggarwal et al., 2007; Baumruk et al., 2006; Beehr et al., 2009; Buckingham & Coffman, 1999; Catteeuw et al., 2007; Chen et al., 2009; Fitz-enz, 2009; Flagello & Dugas, 2009; Harter, Schmidt, & Hayes 2002; Hersey et al., 1996; Kaplan et al., 2009; Oakley, 2004; Phillips & Phillips, 2007b; Sanghi, 2007; Sekiguchi et al., 2008; Swanson & Holton, 2009; Xanthopoulou et al., 2009). At the very least, this study supports the call for additional research into interventions for work engagement; particularly in the context of organizational settings (Bakker, et al., 2008; Harter, Schmidt, & Hayes 2002; Oakley, 2004).

Individual Differences in Work Environment (Dedication) and Work Engagement

Between group differences notwithstanding, the individual, within-subjects tests for dedication (F = 1.362; Hypothesis df = 2.0; Error df = 35.0; p = .269; observed power = .274) and work engagement (F = .799; Hypothesis df = 2.0; Error df = 35.0; p = .458; observed power = .175) were not statistically significant and both were weak, indicating little or no improvement in personal dedication and work engagement across all line employees in Production and Maintenance. The question of why individual changes in dedication and work engagement were not statistically significant, while the differences between business units were both statistically and practically significant, may have a number of answers. Given the organizational context, the most plausible explanation may be that the intervention was more preventive in nature, especially in light of the difficulties resulting from the plant fire that occurred in the last 30-days of the study; the
Production (test group) supervisors may have been better equipped to keep employee performance from declining as sharply as the Maintenance (control group) supervisors. Given the dynamic nature of the participating organization, it is also possible that a period of study longer than 90-days may have shown some within-subjects improvement. As noted in Chapter IV, violations of the multivariate assumption coupled with low observed powers made a Type II error (Huck, 2004) possible; therefore suggesting the feasibility of some improvement occurring in personal dedication and work engagement, if given a period of study longer than 90-days. Accordingly, longitudinal studies of work engagement interventions that include measurements of business impact (Phillips & Phillips, 2007a) may be better suited to capturing the long term effects and results of such endeavors.

*Tests of Interaction Between Groups and Individual Differences*

Given the results of the between-group and within-subject tests, it is not surprising that there was little or no interaction between these tests indicated by Wilks’ Lambda Multivariate Tests of Dedication*Group (F = .398; Hypothesis df = 2.0; Error df = 35.0; p = .675; observed power = .109) or Work Engagement*Group (F = .20; Hypothesis df = 2.0; Error df = 35.0; p = .82; observed power = .079). As previously stated, the most plausible explanation may be that the intervention was more preventive in nature for Production (test group); especially in the context of the plant fire and the period of high stress that occurred in the last 30-days of the study. It is possible that a period of study longer than 90-days may have shown some within-subjects improvement, making an interaction among the between- and within-subjects tests feasible.
Accordingly, longitudinal studies of work engagement interventions may be better suited to capturing the long term effects of such initiatives.

Limitations

The uniqueness of this study, coupled with the practical necessity to employ a nonequivalent control group, quasi-experimental research design, meant that any results or inferences drawn would be confined to the participating organization. Another limitation included a possible non-response bias for the control group line employees, who failed to return the minimum number of 28 completed surveys needed to ensure 95% confidence (Dillman, Smyth, & Christian, 2009). Additionally, a violation of the multivariate assumption and low observed powers for the within-subjects tests for both work environment (UWES dedication subscale) and work engagement made a Type II error (Huck, 2004) possible for hypotheses Ho2 and Ho5.

Recommendations for Policy or Practice

The researcher recommends that interested organizations (1) first assess the work engagement needs of employees in the context of organizational objectives to determine whether an intervention is warranted and practicable; (2) integrate measurement and evaluation into work engagement interventions that visibly link work engagement to on-the-job performance and meaningful business outcomes; and (3) ensure such interventions are firmly grounded in research in order to maximize their effectiveness.

“Gallup estimates that the lower productivity of actively disengaged workers costs the U.S. economy about $382 billion” per year (Many employees would fire their boss, 2007, n.p.). In a world where the lack “of engagement is endemic, and is causing large and small organizations… to incur excessive costs, underperform on critical tasks, and
create widespread customer dissatisfaction” (Rampersad, 2008, p. 11), the possibility of effective work engagement interventions presents an attractive opportunity to elevate the level of performance. Perhaps just as important, work engagement interventions may keep employee performance from declining sharply during difficult periods of high organizational stress. Practitioners should be aware of the conditions of success before implementing an intervention. For example, since most programs fail due to a lack of clear objectives (Phillips & Phillips, 2007a), assessing business needs and objectives and organizational capabilities in the context of work engagement is an important first step to ensuring the intervention is needed and actionable. Another key issue for organizations is to determine whether the work engagement interventions they implement have a positive impact on business outcomes and objectives, and provide a level of value that is meaningful and exceeds program costs.

Having a positive impact on performance outcomes may be possible through the implementation of systematic, cradle-to-grave measurement and evaluation of work engagement interventions. Effective program evaluation that links investment, impact, application, learning and reaction needs and objectives, and isolates the effects of such interventions (Phillips & Phillips, 2007a), can enlarge the practical application of psychological constructs, like work engagement, to on-the-job performance, business outcomes and results. That is, practitioners can gain greater executive support and help ensure more positive outcomes for work engagement interventions by building in evaluation from the assessment of needs through implementation (Phillips & Phillips, 2007a). While evaluation is important, the quality of interventions can be greatly
enhanced through the application of practicable approaches that are firmly grounded in research.

The most effective work engagement interventions can reasonably be expected to have some basis in research. For example, more than 50 years of organizational behavior research has shown that the emotions, needs and motivations of employees profoundly impact performance (Avey et al., 2008; Hellriegel & Slocum, 2004; Hersey et al., 1996; Miner, 2005). Needs and motivations are shaped by environmental factors that manifest themselves as employee behaviors; employee behaviors effect business outcomes; and business outcomes can either enhance or hinder the attainment of organizational goals and objectives (Azevedo & Akdere, 2008; Chen et al., 2009; Doest et al., 2006; Gagnon et al., 2008; Hellriegel & Slocum, 2004; Hersey et al., 1996; Kaplan et al., 2009; May et al., 2004; Miner, 2005; Podsakoff et al., 2009; “Using Appreciative Inquiry, 2007”). As individual performance is commonly held by researchers to be a function of ability, motivation and opportunity (Avey et al., 2008; Hellriegel & Slocum, 2004; Hersey et al., 1996; Kelloway & Barling, 2000; Miner, 2005; Siemsen et al., 2008; Vroom & Jago, 2007; Wilson, 2003), effective work engagement interventions that focus on these factors can have a positive impact on results, particularly those aimed at improving frontline management practices at the business unit level (Buckingham & Coffman, 1999; Flagello & Dugas, 2009; Harter, Schmidt, & Hayes, 2002; Many employees would fire their boss, 2007; Xanthopoulou et al., 2009).

Recommendations for Future Research

This study supports the call for additional research into interventions for work engagement, particularly in the context of organizational settings and individual business-
units (Bakker, et al., 2008; Harter, Schmidt, & Hayes 2002; Oakley, 2004). However, a wider variety of intervention research applications should be explored for the highly reliable Utrecht Work Engagement Scale (UWES). These applications should include the longitudinal study of interventions that measurably link the psychological construct of work engagement (absorption, dedication and vigor) to meaningful on-the-job performance indicators and business outcomes (Fitz-enz, 2009; Phillips & Phillips, 2007a). Further intervention research should be applied towards developing a more common, and practical understanding of engagement. For instance, the antecedents of employee engagement may be included in the examination of work engagement interventions to determine their relationships. The Gallup Q12, for example, gauges overall worker satisfaction, as well as employee perceptions of how well immediate managers demonstrate the best practices Gallup researchers have identified as antecedents of employee engagement (Harter, Schmidt, & Hayes, 2002). Gallup’s overall employee satisfaction indicator, however, is somewhat vague, especially when compared to the more robust work engagement construct. Accordingly, interventions designed to clarify the degree to which the employee engagement antecedents posited by Gallup influence the level of work engagement may prove to be an important contribution. The same logic may also be applied to studying work engagement interventions in the context of Kahn’s (1990) theoretical framework of personal engagement, with its three conditions of meaningfulness, safety and availability. Work engagement intervention research should also include studies of the immediate managers themselves to see how closely this group’s work engagement correlates to the work engagement of their direct reports. It is perhaps in the research of interventions that a more common and practical engagement
construct can emerge; one that links together the preconditions, psychological factors, behavioral outcomes, and business results of engagement into a unified, actionable whole.

Conclusion

The purpose of this study was to expand the current body of knowledge by measuring the effects of a specific learning intervention designed to enhance the capabilities of frontline managers to increase the level of work engagement at the business unit level in a small manufacturing firm in south Mississippi. The study answered the call of researchers for the focused, systematic investigation of interventions that evaluate the impact of innovative management practices on work engagement (Bakker et al., 2008). In this scenario, the firm’s Production immediate managers participated in a 90-day learning intervention founded on the self-management skills outlined by Flagello and Dugas (2009), while the Maintenance immediate managers did not. At three predetermined intervals during the intervention, the researcher collected Utrecht Work Engagement Scale (UWES) data pertaining to the instrument’s dedication subscale, as a measure of work environment, as well as the overall work engagement of Production and Maintenance line employees. While Mixed Design ANOVA between-group differences were statistically and practically significant and powerful, with large effect sizes, the within-subjects tests were not. Additionally, there was little or no interaction between the between-group and within-subjects tests. In the context of a dynamic organizational environment, including a disruptive plant fire, the researcher suggests that the intervention was more preventive in nature, helping the Production
frontline managers and their direct reports fare better than their Maintenance counterparts during a period of high organizational stress.

Recommendations for practitioners suggest that interested organizations should (1) first assess the work engagement needs of employees in the context of organizational objectives to determine whether an intervention is warranted and practicable; (2) integrate measurement and evaluation into work engagement interventions that visibly link work engagement to on-the-job performance and meaningful business outcomes; and (3) ensure such interventions are firmly grounded in research in order to maximize their effectiveness. Researchers were encouraged to (1) conduct additional research into interventions for work engagement, particularly in the context of organizational settings and individual business-units; (2) explore a wider variety of intervention research applications for the highly reliable UWES, including the longitudinal study of interventions that measurably link the psychological construct of work engagement to meaningful on-the-job performance indicators and business outcomes; (3) use intervention research to move towards a more common and practical engagement construct; one that links together the preconditions, psychological factors, behavioral outcomes, and business results of engagement into a unified, actionable whole. In a world where the lack “of engagement is endemic, and is causing large and small organizations… to incur excessive costs, underperform on critical tasks, and create widespread customer dissatisfaction” (Rampersad, 2008, p. 11), the promise of effective interventions presents an excellent opportunity to raise the level of organizational performance in a wide variety of settings.
APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

118 College Drive #5147
Hattiesburg, MS 39406-0001
Tel: 601.266.6820
Fax: 601.266.5509
www.usm.edu/trb

Institutional Review Board

HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE
NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the “Adverse Effect Report Form”.
- If approved, the maximum period of approval is limited to twelve months.
- Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 29091404
PROJECT TITLE: A Study of the Effectiveness of a Pilot Training Program in an Organizational Setting
PROPOSED PROJECT DATES: 08/31/09 to 01/01/10
PROJECT TYPE: Dissertation or Thesis
PRINCIPAL INVESTIGATORS: John Kmiec
COLLEGE/DIVISION: College of Science & Technology
DEPARTMENT: Department of Economic and Workforce Development
FUNDING AGENCY: N/A
HSPRC COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 09/21/09 to 09/20/10

Lawrence A. Hosman, Ph.D.
HSPRC Chair

Date 9.24.09
APPENDIX B

AUTHORIZATION TO PARTICIPATE IN RESEARCH PROJECT

THE UNIVERSITY OF SOUTHERN MISSISSIPPI
AUTHORIZATION TO PARTICIPATE IN RESEARCH PROJECT
(Short Form - to be used with oral presentation)

Participant’s Name _____________________________

The participant is hereby giving consent to be included in a research project entitled:

A Study of the Effectiveness of a Pilot Training Program in an Organizational Setting

All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained by _______________________. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected. Specifically, participation in this study poses no known risks or hazards.

The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.

Questions concerning the research, at any time during or after the project, should be directed to John Kmiec at (228) 365-2559. This project and this consent form have been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 266-6820.

____________________________________________ ____________________
Signature of participant Date

____________________________________________ ____________________
Signature of person explaining the study Date
The following information should be included:

1. **Purpose**: The purpose of this study is to measure the effectiveness of a pilot training program in an organizational setting.

2. **Description of Study**: A paper-based survey will be administered to all supervisory and line personnel assigned to two business-units within the participating organization. The survey will be administered at three predetermined intervals over the course of 90-days. All surveys will be administered by the project manager, with the support of the participating organization’s training manager. In order to maintain the integrity of the data, each occurrence of the survey must be distributed, completed and returned to the project manager within five business days.

3. **Benefits**: Group results of the study will be shared with the organization. Individual data, however, will remain strictly confidential and protected.

4. **Risks**: Participation in this study poses no known risks or hazards.

5. **Confidentiality**: Participation in the study is strictly voluntary, and all personal information will remain strictly confidential and protected. No names will be disclosed.

6. **Participants Assurance**: This project has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board at (601) 266-6820. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits. Any questions about the research should be directed to John Kmiec at (228) 365-2559.

______________________________________________ ____________________
Signature of Person Giving Oral Presentation Date
APPENDIX C
UTRECHT WORK ENGAGEMENT SCALE

Please check the appropriate response(s):

<table>
<thead>
<tr>
<th>Role:</th>
<th>Team Member</th>
<th>Supervisor/Manager</th>
<th>Other (specify):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit:</td>
<td>Polymer</td>
<td>Maintenance</td>
<td>Other (specify):</td>
</tr>
</tbody>
</table>

Instructions: The following 17 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your role. If you have never had this feeling, cross the "0" (zero) in the space after the statement. If you have had this feeling, indicate how often you felt it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

Note: Infrequently used words, and words needing further clarification are described below, as footnotes.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Almost</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At my work, I feel bursting with energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. I find the work that I do full of meaning and purpose</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. Time flies when I am working</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. At my job, I feel strong and vigorous</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. I am enthusiastic about my job</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. When I am working, I forget everything else around me</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. My job inspires me</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. When I get up in the morning, I feel like going to work</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. I feel happy when I am working intensely</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. I am proud of the work that I do</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11. I am immersed in my work</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12. I can continue working for very long periods at a time</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>13. To me, my job is challenging</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>14. I get carried away when I am working</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>15. At my job, I am very resilient, mentally</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16. It is difficult to detach myself from my job</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>17. At my work, I always persevere, even when things do not go well</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1. vigorous (energetic, enthusiastic)
2. enthusiastic (excited, passionate)
3. inspires (motivates, encourages)
4. intensely (passionately, with focus, with concentration)
5. immersed (wrapped up, engrossed, absorbed)
6. challenging (stimulating, exciting, thought-provoking)
7. resilient (flexible, elastic, recover easily from setbacks)
8. perseveres (keep trying, persist, stick with)

Sources: Schaufeli et al., 2006; "UWES", 2003

"Schaufeli & Barker (2003)"
APPENDIX D
PERMISSION TO USE THE UTRECHT WORK ENGAGEMENT SCALE


Date: Thu, 9 Apr 2009 16:05:37 +0200
From: "Schaufeli, W. (Wilmar)" <w.schaufeli@uu.nl>
To: "John J. Kniec, Jr." <John.Knic<@um.edu>
Subject: RE: Doctoral Dissertation Research - UWES

Dear John,

Thanks a lot for your interest in my work on work engagement. You may use the UWES freely for your dissertation project, and I would be happy to receive your data in return in due time. I believe it is extremely important that interventions to foster work engagement are developed and tested. Currently, I'm supervising a PhD project on that issue as well (which just has been started). So I would be very interested in the type of intervention you are carrying out. Could you send me some more detailed information, please?

With kind regards (from Tokyo, where I'm currently spreading the gospel of work engagement),

Wilmar

Wilmar B. Schaufeli, PhD
Professor of Work and Organizational Psychology
Utrecht University PO Box 80.140, 3508 TB Utrecht, The Netherlands
T: 31 30 253 9093 M: 31 614 75784
http://www.schaufeli.com

-----Oorspronkelijk bericht-------
Van: John J. Kniec, Jr. [mailto:John.Knic<@um.edu]
Verzonden: woensdag 8 april 2009 20:31
Aan: Schaufeli, W. (Wilmar)
Onderwerp: Doctoral Dissertation Research – UWES

Good day Dr. Schaufeli

My name is John Kniec. I am a doctoral student in the Human Capital Development program at The University of Southern Mississippi.

My dissertation topic involves a 90-day self-coaching (self-management) learning intervention for immediate supervisors, and the impact these supervisors have on the work engagement of their employees. I plan to use the UWES to measure the work engagement of the direct reports of the supervisors receiving the intervention (test). I will also be using the UWES to measure the employees of the supervisors not receiving the intervention (control). I will have test and control groups in two organizations. One is a manufacturing plant and the other is a university teaching hospital. Both organizations are located here in Mississippi.

I'm currently writing the methodology section of my dissertation (proposal). At present, I'm considering within (test and control) group comparisons for each organization over three years.

measurements (pre-, mid-, and post-intervention) in the form of Repeated Measures ANOVAs. I don't recall seeing this approach in the literature involving the UWES, and I'm not yet familiar enough with the instrument to say it can be done (or should be done) this way.

I have been to your site (http://www.schaufeli.com/) and downloaded the manual and the English versions of the UWES. I want to confirm that my study is for non-commercial educational research purposes only. Also, I agree to share my SPSS data with you.

Thanks so much for all the research you've done on work engagement, and for allowing the use of the UWES for educational research.

Best Regards

John J. Knicer Jr., Graduate Assistant
Human Capital Development PhD Program
The University of Southern Mississippi
Jack and Patt Phillips Workplace Learning and Performance Institute
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Office: (228) 214-3492
Fax: (228) 214-3115
Cell: (228) 365-2539
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