Sink or Swim: Maximizing the Impact of 360° Feedback in Leader Development

by

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Abstract
Sink or Swim: Maximizing the Impact of 360° Feedback in Leader Development

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Leader development initiatives prescribed as isolated events often fall short of their intended outcomes (Avolio, Reichard, Hannah, Walumbwa, & Chan, 2009). Initiatives should instead be enacted as part of an ongoing developmental process that encourages continuous learning and self-improvement through an “integrated set of experiences” (Hernez-Broome & Hughes, 2004). The current study proposes that a combination of factors throughout this continuous process, both external to and within leaders, significantly impact the outcomes following a 360° feedback leader development program (360 LDP). External factors such as a leader’s feedback environment and perceived quality of coaching relationship with his or her boss are proposed to better prepare leaders for the 360 LDP (Gregory & Levy, 2011; Steelman, Levy, & Snell, 2004). Leaders who perceive high quality feedback environments and coaching relationships get more out of these programs as they are accustomed to high-quality constructive feedback and are expected to be more effective at internalizing feedback and using this information for performance improvement. During the 360 LDP, individual differences, such as feedback orientation, self-awareness, and learning agility, enable leaders to more effectively learn from the 360 LDP, resulting in greater instances of behavioral change (Ashley
& Reiter-Palmon, 2012; De Meuse, Dai, & Hallenbeck, 2010; Linderbaum & Levy, 2010). These internal attributes act as tools that leaders rely on to process and then apply the large quantities of feedback received through these types of programs. Results suggest a significant interaction between feedback environment and self-awareness, where favorable feedback environments combined with high levels of self-awareness lead to the highest perceived improvement in 360 LDP outcomes. Separately, favorable feedback environments, high-quality coaching relationships, feedback orientation, self-awareness, and learning agility directly and positively impact perceptions of improvement in leadership effectiveness outcomes.
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Chapter 1

Literature Review

Two rising leaders participate in a 360-degree feedback leader development program (360 LDP), a type of leadership training that incorporates feedback from coworkers (e.g. direct reports, peers, bosses, etc.) as part of the developmental process (Seifert & Yukl, 2010). The first leader returns to his organization feeling overwhelmed with the amount of feedback he received during the program and disappointed that he wasted five days in yet another training program with nothing to show. He is unable to comprehend why his coworkers had so many negative things to say about his performance when they had never voiced any concerns until now. Several months later, he decides to leave his organization in search of a job where he will be more valued and appreciated for his talents. The second leader attends the very same program and returns to her organization feeling energized with knowledge. While her coworkers provided more feedback than she anticipated, she takes the positive and negative in stride because she was accustomed to exchanging constructive feedback with coworkers regularly in the workplace. She then directs her energy towards improving her own leadership skills, and within the year, her boss recognizes her efforts and offers her a promotion to a more senior leadership position. Why did these two high potential leaders witness such drastically different outcomes from the same 360 LDP?

Organizations are devoting significant resources towards developing leaders; yet many of these initiatives fall short, as the above example illustrates. In
a meta-analytic review of leadership impact research, leadership interventions were 66% likely to achieve a positive outcome compared to a 50% random effect for leaders not receiving an intervention. The magnitude of the specific intervention’s effect varied significantly when taking different moderators, or contextual factors, into account (Avolio et al., 2009). A more recent meta-analysis examined the impact of leadership training on four outcomes, including reactions, learning, transfer and results. The findings of this meta-analysis suggest that the overall effect size of training on outcomes is largely dependent on specific moderators, such as training design and delivery, leadership levels, and incorporation of feedback (Lacerenza, Reyes, Marlow, Joseph, & Salas, 2017). Notably, there were no significant differences in outcomes between programs incorporating single-source feedback and programs incorporating 360-degree feedback. Drawing from the findings of these two meta-analytic reviews, it appears that some 360 LDPs may be missing the mark when it comes to training and developing effective leaders.

Prescribing leadership training and expecting an isolated experience to result in a “developed leader” is a flawed assumption that fails to consider a wider range of factors within and around the leader. Organizational stakeholders need to consider several aspects when developing 360 LDPs: a leaders’ organizational environment, individual differences within leaders, and organizational barriers or sources of support following program initiatives. The “Prepare, Engage, and
“Apply” framework laid out by the Center for Creative Leadership (CCL) encompasses many of these features. CCL’s framework suggests that leader development initiatives should be an “integrated set of experiences” as part of a leader’s ongoing work towards self-development (Hernez-Broome & Hughes, 2004).

The first phase of this framework, “Prepare”, is about setting the stage before training. If leaders take steps to prepare before entering a 360 LDP, this type of training feels less overwhelming. Organizations can help to prepare leaders by embedding training experiences within a larger and ongoing developmental process and by fostering supportive feedback climates (McCauley & Moxley, 1996). Organizations that successfully promote favorable feedback environments are essentially providing key resources and support for employee development (Steelman, Levy, & Snell, 2004). With supportive feedback norms in place, organizations create a safe space for leaders to more effectively seek and utilize feedback information for performance improvement without feeling threatened by potential negative feedback.

Boss support is also a critical component of the developmental process. Supportive bosses help leaders feel more prepared for a 360 LDP, and the supported leaders in turn witness more positive post-program evaluations (Young, Champion, Raper, & Braddy, 2017). Leaders who feel supported by their bosses are also more likely to “buy-in” to the goals that are agreed upon from feedback
exchanges between the boss and leader (Chappelow, 2004). Moreover, bosses who are adept at coaching provide a deeper level of support for employees to work towards developmental goals. These types of bosses create collaborative relationships with the goal of assessing potential goal constraints and providing a sense of accountability to create lasting behavioral change (Hall, Otazo, & Hollenbeck, 1999; Ting & Hart, 2004). Coaching oriented bosses also increase the likelihood that their employees will seek and utilize feedback in future interactions (London, Mone, & Scott, 2004).

The “Engage” phase takes place as leaders participate in the 360 LDP initiatives. The development and learning that take place in this phase are comparable to the act of “unfreezing”, as described in Lewin’s (1951) planned change model. Per this model, pushing for change first involves increasing forces that lead to change, or the act of unfreezing. Leaders are introduced to information (e.g. multisource feedback) to highlight behavioral discrepancies and to create the motivation to change behaviors (Lewin, 1951). The extent to which participants are ready to accept and learn from the feedback will facilitate this act of unfreezing (Brutus, Fleenor, & London, 1998). Specifically, three individual difference constructs, feedback orientation, self-awareness, and learning agility, are proposed to equip leaders with a personal inventory of tools to more successfully learn and engage in behavioral change in 360 LDPs. Feedback orientation, self-awareness, and learning agility were examined based on research and literature supporting
these three skills as precursors for behavioral change and performance improvement (Ashley & Reiter-Palmon, 2012; De Meuse, Dai, & Hallenbeck, 2010; Duval & Wickland, 1972; Lombardo & Eichinger, 2000; London & Smither, 2002).

Feedback orientation refers to an individual’s receptivity towards feedback in the workplace (Linderbaum & Levy, 2010). Leaders with low feedback orientation are more likely to react negatively to feedback or may not see the usefulness of feedback in general (Facteau, Facteau, Schoel, Russell, & Poteet, 1998). Leaders with positive perceptions of feedback are expected to more effectively utilize feedback received during the 360 LDP. Leaders high in self-awareness excel at utilizing multiple pieces of information provided by peers and incorporating this information into their own self-appraisals (Moshayl, Brown, & Dodd, 2003). Self-aware leaders are highly motivated to assess progress towards goals by directing attention towards the self and comparing progress against specific standards, such as a behavior or a goal (Ashley & Reiter-Palmon, 2012; Duval & Wickland, 1972). Finally, learning agility refers to an individual’s drive and capacity to transfer learning experiences to adapt and perform under novel conditions. Learning agility is proposed to be a critical skill for leaders engaging in self-development (De Meuse, Dai, & Hallenbeck, 2010; Lombardo & Eichinger, 2000). Leaders high in learning agility glean information from previous experiences to refine their skillsets and are thus better able to navigate the
complexities of ambiguous and changing work environments (Charan, Drotter & Noel, 2000; McCall et al, 1988). Drawing from the above literature, these three constructs, feedback orientation, self-awareness, and learning agility are proposed to prepare leaders with the necessary skills to navigate the ins and outs of using multi-source feedback during a 360 LDP (Ashley & Reiter-Palmon, 2012; De Meuse, Dai, & Hallenbeck, 2010; Duval & Wickland, 1972; Lombardo & Eichinger, 2000; London & Smither, 2002).

The final phase of the framework, “Apply”, refers to the application and sustainment of learning. Leaders who apply information from 360 LDPs to their experiences and interactions in the workplace demonstrate the ability to assess their own strengths and weaknesses and are thus better equipped to initiate behavioral change for improving performance (Antonioni, 1996). Expected outcomes following a 360 LDP include increased leadership effectiveness and capability, and developmental goal setting to strive for learning and increased leadership performance.

Organizations that cultivate competent and effective leaders are more likely to sustain a competitive advantage over other organizations that don’t make such investments (Nohria, Joyce, & Roberson, 2003; Waldman, Ramirez, House & Puranam, 2001). Effective leaders enhance levels of motivation and performance within their subordinates (Lowe, Kroek, & Sivasubramaniam, 1996). Moreover, effective leaders have a greater potential to positively impact organizational

The current study aims to examine how factors within the “Prepare” and “Engage” phases of the framework drive leadership outcomes in the “Apply” phase following a 360 LDP. In a review of leader development research, McCauley (2008) outlines recommendations calling for more in-depth research to examine the context surrounding multi-source feedback. Specifically, practitioners argue for a shift in focus from asking, “Does 360-degree feedback work?” to “Under what conditions, and for whom, do 360 feedback interventions work?” McCauley’s review emphasizes that this shift entails examining the joint effects of individual differences and organizational factors such as organizational support or feedback culture, on the reactions, responses, and effectiveness of 360-degree feedback interventions. There are some such studies that examine the impact of individual differences on leader development outcomes. For example, Braddy and colleagues (2013) found that a leader’s orientation towards feedback was related to more positive reactions to 360-degree feedback. Additionally, Lacerenza and colleague’s (2017) meta-analysis suggested that the magnitude of a program’s effect is in large part dependent on the conditions surrounding program design and delivery. Focusing leader development research on more specific contextual elements and key individual differences should enable a better understanding of the factors driving leader development outcomes. The present study expands on the existing
literature, and addresses McCauley’s call for research by investigating the interaction of specific organizational factors (i.e., feedback environment and quality of coaching relationships) and individual differences (i.e., feedback orientation, self-awareness, and learning agility) and the impact of this interaction on perceived change in leadership effectiveness following a 360 LDP intervention.

The results of this study can help organizations improve the return on their investment in 360 LDP initiatives. From an applied perspective, the findings of this study can inform organizations on how to promote favorable feedback norms to encourage a positive climate for self-development. Moreover, organizations can use this information to encourage senior leaders to create coaching relationships characterized by support and trust with their subordinates (Gregory & Levy, 2010). The results of this study can also provide insights into which leader characteristics promote the most positive outcomes from 360 LDP initiatives. Organizations stand to benefit significantly from more accurately identifying leaders who demonstrate high levels of these characteristics, as resources can then be more wisely invested in these high potential individuals who will be more likely to rise the ranks of the organization and become highly effective leaders.
Chapter 2
Background

Leader Development Programs

Leadership development is defined as an organization’s efforts to expand the collective capacity of its members’ abilities to effectively engage in leadership roles and processes (McCauley, Moxley, & Van Velsor, 1998). The literature on leadership development suggests organizations that place value on and utilize the training and development of their employees are likely to witness significant financial gains (Huselid, 1995; Jacobs & Jones, 1995; Lam & White, 1998; Swanson, 1994; Ulrich, 1997). One important distinction to note is that while leadership development programs emphasize the relational aspect of leadership and build leadership skills across a wider network (e.g., within teams or entire organizations), leader development programs more specifically target the leadership skills of an individual leader (Day, Fleenor, Atwater, Sturm, McKee, 2014). The focus of the current study is leader development programs (LDPs), which prepare and train leaders to work through unpredictable problems that can arise in the work place. LDPs teach leaders the individual knowledge, skills, and abilities related to leadership roles and functions (Day, 2001). The premise of most leader development programs is to create a developmental strategy that builds a leader’s competence in forming an accurate mental model of his or her strengths and weaknesses, and how to address any developmental gaps to improve
performance (Day, 2001; Gardner, 1993). Collins and Holton (2004) suggest that while leader development interventions are ‘pervasive’, organizations are not taking the time to measure and evaluate the desired or actual outcomes after implementing these programs. The authors elaborate that leadership competencies are complex by nature. With jobs requiring varying levels or foci of development, evaluation becomes a more difficult endeavor. The following section highlights the most significant efforts within the leader development literature to evaluate a range of program outcomes.

**Effectiveness of LDPs.** Black and Earnest (2009) suggest using multiple methods of evaluation to determine the effectiveness of a leader development program. The first method is called evidential inquiry, or quantitative strategies. This method involves capturing objective “hard evidence” or facts of what happens to each participating leader during and after a leader development program (Grove, Kibel, & Haas, 2005). Evocative inquiry, or qualitative strategies, is a method that refers to collecting viewpoints and feedback from participants using open-ended surveys and case studies (Grove et al., 2005). LDPs can also be evaluated with a consumer approach, which assesses the needs and opinions of those receiving services. This approach seeks to determine if a program is meeting required needs (Bledsoe & Graham, 2005). The first method, evidential inquiry, will be the primary means of assessment in the current study. While this method assesses one portion of the bigger picture, it is a sound means of evaluating the effects of a
process, program, or intervention over time to explore and compare variations in individual differences of experiences and program outcomes (Patton, 1990).

When focusing on quantitative methods, there are a variety of outcomes that have been assessed across programs to evaluate leader effectiveness. One class of LDPs focuses on educating leaders on various leadership styles and which styles are most appropriate or effective in specific contexts or situations. An example of this type of LDP used longitudinal methods to examine the impact of leadership courses on styles of leadership behaviors using a developmental leadership model (Larsson, Sandahl, Soderhjelm, Sjovold, & Zander, 2017). Assessments were collected from the leader and at least three subordinates before the program, and then once again one and six months after the leaders engaged in the leadership courses. Post-program evaluations saw a slight increase in leadership styles outlined in the developmental leadership model, such as individualized consideration, inspiration, and motivation. Evaluations did highlight significant decreases in laissez-faire style leadership, and other negative leadership behaviors, such as micro-managing and keeping tabs on others’ mistakes. Many other style-oriented leader development programs focus on transformational leadership training and use a combination of self and other ratings to assess changes in transformational leadership behaviors and other associated outcomes. For instance, these types of programs have observed significant increases in a wide range of outcomes, such as perceptions of transformational leadership behaviors,
subordinate organizational commitment, subordinate satisfaction, reactions towards
program initiatives, increases in subordinate positive affect, organizational
performance, and personal sales (Abrell, Rowold, Weibler, & Moenninghoff, 2011;
Barling, Weber, & Kelloway, 1999; Brown & May, 2013; Hassan, Fuwad, & Rauf,
2010; Mason, Griffith, & Parker, 2014).

Other types of LDPs focus on specific leadership competencies and assess
improvement within these targeted competency areas. One such LDP, implemented
by Manitoba Lotteries Corporation, developed 11 leadership competencies based
on an organizational needs assessment of gaps in current leadership competencies
of its employees (Hayes, 2007). These included teamwork and cooperation,
building strategic performance, self-development and initiative, achieving quality
results, coaching and developing competency, communication, valuing diversity,
customer service, integrity and building trust, technical/professional knowledge,
and leading. Before entering the program, each participant, with the help of his or
her manager, completed a baseline measure of each competency. Participants were
then assessed again on each of the competencies one year after completing the
training. The majority of participants observed an overall increase in competencies;
however, some participants did decrease in competency level in the post-measure
evaluation.

Several meta-analyses have examined the overall effectiveness of
managerial leader development programs and have observed a variety of outcomes,
ranging from very positive to no observed outcomes (Burke & Day 1986; Collins & Holton, 2004; Powell & Yalcin, 2009). Burke and Day (1986) reviewed 70 published and unpublished studies on managerial training and leader development and found that training was moderately effective. Their meta-analysis reported mean effect sizes for the four criterion-measure categories, subjective learning (.34), objective learning (.38), subjective behavior (.49), and objective results (.67). One of the conclusions identified from their meta-analysis emphasized the idea that various training methods may not necessarily result in increased knowledge or performance. The authors recommended that organizations should be taking additional steps to evaluate training program effectiveness to measure improvement of performance or leadership behaviors.

Collins and Holton (2004) examined 83 formal training interventions to determine the effectiveness of intervention outcomes such as the enhancement of performance, knowledge and or expertise at individual, team, or organizational levels. Programs focusing on knowledge outcomes demonstrated the greatest mean effect size (ranging from .96 to 1.37, depending on method of program evaluation and study design). Those results were followed by expertise or behavioral outcomes (ranging from .35 to 1.01 depending on evaluation and study design). Finally, system, or results and performance outcomes, exhibited the lowest mean effect sizes (.39). Powell and Serkan (2010) examined the effectiveness of managerial training over a period of 50 years and concluded that effectiveness of
training is largely dependent on study design and measured outcomes. The authors found an overall moderate effect of training and identified learning outcomes as having the largest effects compared to behavioral or results oriented outcomes.

A recent meta-analysis reviewed data from 335 independent samples to question the effectiveness of various leader development initiatives (Lacerenza et al., 2017). Results suggested that while leader development is more effective than previously suggested, improvements in reactions, learning, transfer, and results can vary and often depend on how each program is designed, delivered and implemented. For example, leader training that included a needs analysis, the incorporation of feedback, and multiple training delivery methods were more effective compared to other programs. However, no significant differences were found between programs that relied on single-source feedback and those that implemented 360-degree feedback. The authors presume that this finding may be due to programs not effectively implementing multi-source feedback designs and highlight the need for more research on LDPs using 360-degree feedback (Lacerenza et al., 2017).

The combined results of these four meta-analyses suggest that leader development programs can produce a wide range of outcomes, and that these are largely dependent on contextual factors and program design. Consistent and positive effects were observed for programs evaluating knowledge or learning outcomes. However, small to moderate effects were found across the evaluation of
behavioral and results focused outcomes. Having access to high quality, evaluative feedback is an enabling mechanism proposed to drive learning within the leader development process (DeRue & Wellman, 2009; Halpern, 2004; Morrison & Brantner, 1992). Furthermore, while feedback has been supported as an enabling mechanism for outcomes, more research is needed to understand the driving forces behind the successful implementation of programs using multi-source feedback, or 360 LDPs (Lacerenza et al., 2017).

**The role of feedback in learning.** Leaders are faced with many challenging work experiences that continually test their skillsets and behavioral habits under risky or uncertain conditions. These types of situations highlight any potential gaps between a leader’s present skill set and where this leader may have room for development (McCauley, 2001). Feedback helps to reframe old mannerisms and ways of reacting to these challenges (DeRue & Wellman, 2009). Yet, research on learning and cognition suggests that there is an optimal level for developmentally challenging situations before too much challenge obstructs learning processes (DeRue & Wellman, 2009). Activation theory proposes that when an individual is faced with an unfamiliar task or situation, activation level, or the degree of arousal during cognitive processing, will increase (Scott, 1966). Novel stimuli (i.e. workplace challenges) provoke heightened levels of arousal in leaders. While heightened arousal is positively related to learning, there appears to be a diminishing return on this relationship, in that this linkage is best observed at
intermediate levels of arousal. Any stimuli above these intermediate levels can stunt cognitive processing due to the anxiety and uncertainty associated with selecting an appropriate response (Scott, 1966).

Drawing from cognitive resource theory and cognitive load theory (Fiedler & Garcia, 1987; Sweller, 1988, 1994), when an individual faces a challenging and stressful situation, cognitive resources, such as attention, are redirected from the task at hand towards the anxiety of avoiding failure. This misdirection of attention can lead to a cognitive overload, leaving fewer cognitive resources to direct towards the challenging task. One proposed solution to mitigating the effects of cognitive overload is that of feedback availability in the workplace (DeRue & Wellman, 2009).

Feedback availability can be thought of as an essential resource and source of support for a leader to use before engaging in a challenging learning task. The availability of feedback enhances an individual’s self-awareness and creates a more comprehensive picture of his or her performance gaps. Research on feedback and leader development strongly emphasizes the criticality of feedback availability in a leader’s developmental process (Avolio, 2004; McCauley & Van Velsor, 2004). Having available access to feedback is proposed to reduce anxiety and uncertainty (Ashford, 1986; DeRue & Wellman, 2009). With feedback information readily available, leaders can then direct more cognitive resources towards learning without the ambiguity associated with these novel or challenging tasks. Research
has supported feedback as a moderator between developmentally challenging situations and the learning of new leadership skills (DeRue & Wellman, 2009). The work of DeRue and Wellman (2009) implies that leaders with more access to feedback were less likely to experience the diminishing returns associated with highly challenging situations.

**360-Degree Feedback Leader Development.** 360-degree feedback leader development programs (360 LDPs) use multi-source feedback in conjunction with training to target and develop leadership competencies. Ratings of leadership competencies are collected from the leader’s perspective of his or her own skill level in addition to ratings from sources surrounding the leader such as, direct reports, co-workers, bosses, and sometimes even customers (Conger & Toegel, 2010). The idea behind this method is to increase leader awareness of individual leadership competencies in need of development, often based on the gap between self and other ratings, that will in turn motivate leaders to improve their own performance and effectiveness. 360 LDPs encourage leaders to compare and synthesize a large quantity of information from many different rating sources, triggering a state of self-reflection, and ultimately increased awareness of leadership “blind-spots” (Conger & Toegel, 2010; Tornow, 1993; Yammarino & Atwater, 1993). These comparators against the self-concept are critical for improving leadership performance.
A leader’s behavior is shaped by his or her own self-schema, and feedback helps to attenuate some of the inflation observed in self-ratings by creating a more accurate schema of the self (London & Smither, 1995). The discrepancies between self-perceptions and the perceptions of others regarding specific leadership competencies can serve as a baseline for future goal setting and for striving to improve performance through aligning self and other perceptions (Conger & Toegel, 2010). Lawler (1967) first proposed that a single organizational perspective provides only one portion of the picture for understanding an individual’s effectiveness. Unique performance information can be gleaned by tapping into diverse sources of information that can be used to address various leadership competency areas relevant to each of the various sources. 360 LDPs are particularly helpful for leader development because leaders receive data from multiple perspectives (Fleenor, Taylor, & Chappelow, 2008), thus enabling leaders to change or “unfreeze” behaviors as part of a continuous learning process that comes from within (Fleenor et al., 2008).

While multi-source feedback aims to improve performance, certain drawbacks of these types of programs can contribute to intervention failures. These drawbacks include conflicting sources of information, too much feedback information, and inappropriate organizational cultures that do not support learning and development initiatives (Abrell et al., 2011; Cheung, 1999; Conger & Toegel,
Conflicting perspectives can stem from raters not sharing a common frame of reference regarding the feedback recipient, differing implicit theories of the job or job performance, unequal opportunities in observing behaviors, differing norms in responding to items, or even a rater’s self-interest (Cheung, 1999). Conflicting 360-degree feedback can lead to ambiguity and uncertainty in the recipient. The development process typically involves a leader identifying specific competencies to work on and develop. When the feedback provided by different rater sources conflicts, it is more difficult for a leader to identify the most appropriate competencies for development.

Additionally, the sheer amount of feedback information received from 360 LDPs can be overwhelming to process all at once. 360 feedback reports are usually detailed and comprehensive with both positive and negative feedback, which could be threatening or lead to information overload. In such cases, feedback recipients may shut down and ultimately disregard the feedback (Smither, London, & Reilly, 2005).

The outcomes of implementing multi-source feedback can also largely depend on the cultural context of the organization (Conger & Toegel, 2010). When organizations launch new performance management tools, it is imperative for them to first consider the potential implications or the readiness and fit of the
organization for such interventions. For instance, one study reviewed the impact of
two contextual variables, supervisory style and feedback seeking environment, on
attitudes towards 360-degree feedback (360 FB) systems (Funderburg & Levy,
1997). Results suggested that participants in 360 FB systems had more favorable
reactions when bosses had more participative styles and when participants
perceived a more favorable feedback seeking environment. Another example
highlights the importance of organizational context in the effectiveness of 360 FB
systems. Results in a study of 150 managers suggest that attitudes toward a 360 FB
system are significantly and positively linked to perceived characteristics of the
feedback recipients’ work context (Maurer, Mitchell, & Barbeite, 2002).
Specifically, managers who perceived work environments that were supportive
towards training and developmental activities had more favorable attitudes toward
feedback systems compared to those who did not.

360 LDPs may not achieve the intended performance improvement
outcomes if they ignore the organization’s culture. To further illustrate this point, a
study of a multi-source leader development intervention implemented in a
healthcare setting assessed leaders before and after the intervention, with a control
group for comparison (Malling, Mortensen, Bonderup, Scherpbie, & Ringset,
2009). One year following the leadership intervention, no differences were
observed in the multi-source feedback scores in either the intervention or the
control group. The authors speculate that the intervention might have failed due to
a lack of organizational support or the nature of the organizational culture during the leadership intervention. Another leadership intervention utilized 360 FB and coaching to put forth a plan for leaders to practice transformational leadership behaviors in the workplace. No increase in these behaviors was observed three months after the intervention. However, six, nine, and 12 months after the intervention, transformational leadership behaviors had increased (Abrell, Rowold, Weibler, & Moenninghoff, 2011). These two leadership intervention examples demonstrate negative outcomes an organization can experience when failing to consider organizational factors or program fit before implementing 360 FB systems.

For stakeholders in organizations to witness more positive outcomes after intervention efforts, it would greatly benefit them to consider contexts, both within and outside, of their organizational leaders before they blindly prescribe training interventions. 360 LDPs are a huge investment that often do not yield the expected performance improvement outcomes. The current study aims to examine factors that are expected to enhance the learning of leadership competencies in a 360 LDP, and consequently to improve the resulting program outcomes such as increased leadership effectiveness. The subsequent sections outline specific contextual factors and individual differences proposed to drive more positive leadership outcomes.
Feedback Environment

Perceptions of feedback processes within an organization are influenced by the contextual aspects of day-to-day interactions among coworkers and between bosses and subordinates (Steelman, Levy & Snell, 2004). These contextual aspects comprise the feedback environment. The feedback environment model is divided into two overarching factors, the supervisor factor, and the coworker factor. For the purpose of consistency with the other LDP measures, the supervisor factor will be referred to as the boss factor in the current study. Each of these factors is comprised of seven facets that influence perceptions of the feedback environment within the organization. The seven factors include: source credibility, feedback quality, feedback delivery, favorable and unfavorable feedback, source availability, and the promotion of feedback seeking. The present study focuses on the boss factor.

Source credibility refers to the expertise and the general trustworthiness of the desired source of feedback (Giffin, 1967). Sources are credible if they are perceived as knowledgeable of the feedback recipient’s job performance and job roles, able to accurately judge the performance of the recipient, and can be trusted to give accurate information about the recipient’s performance. Feedback quality is considered to be high when the feedback is perceived as useful, specific, and consistent across time (London, 2003). The overall quality of the feedback influences whether the recipient accepts and uses the provided information from the source (Ilgen, Fisher, & Taylor, 1979). The perceived intentions of the feedback
source influences the utilization and acceptance of the feedback from the feedback recipient (Fedor, Eder, & Buckley, 1989). If the source is perceived to be more considerate with helpful intentions, the recipient will be more likely to utilize and accept the feedback. Favorable feedback refers to the perceived number of instances of positive feedback from coworkers or bosses that is given in response to good performance warranting favorable feedback. Conversely, unfavorable feedback refers to the perceived number of instances of negative feedback from coworkers or bosses and is given in response to actual instances of poor performance. Unfavorable feedback can include expressed dissatisfaction or criticisms. Both favorable and unfavorable feedback encompass the recipient’s perceptions that the feedback accurately reflects his or her performance. Source availability refers to the perception that feedback is easily obtained based on the amount of contact with coworkers and bosses. Feedback-seeking promotion refers to the environment’s level of support for employee feedback seeking. Favorable feedback seeking environments reward and encourage employees for seeking feedback, and as a result, employees feel more comfortable requesting information regarding performance (Williams, Miller, Steelman, & Levy, 1999).

When leaders participate in multi-source feedback interventions, what they may not realize is that their perceptions and attitudes towards their organization’s feedback environment could play a significant role in their engagement and ensuing success in these initiatives. Participants receive large quantities of feedback through
such programs, and a critical concern is how individuals process and use the feedback they receive for performance improvement, if at all (Maurer & Taruilli, 1996). Simply having awareness of desired performance improvement behaviors is not always sufficient to motivate individual change (Atwater, Waldman, Atwater, & Cartier, 2000).

Favorable feedback environments provide situational cues that encourage employees to continuously seek feedback in a supportive environment. In such environments, feedback content is more likely to be honest and credible, and delivered in a more tactful manner. Feedback environments characterized by regular high-quality feedback exchanges create favorable climates for development and learning, such that the learning from 360 LDPs is placed into context in a workplace that promotes positive feedback norms. By promoting a favorable feedback environment, organizations are essentially providing key resources and sources of support for employees to engage in development (Steelman, Levy, & Snell, 2004).

Supportive feedback environments promote informal exchanges of constructive feedback in a leader’s daily work environment. As such, receiving formal multi-source feedback should come as less of a surprise, with fewer instances of the negative emotional reactions that can stem from receiving unfavorable feedback (Kluger & DeNisi, 1996). Instead of feeling overwhelmed or anxious from receiving such a large amount of feedback, 360 LDP participants can
instead direct attention towards problem solving and action planning to address feedback concerns and improve subsequent leadership performance.

Perceptions of organizational support for development is a construct similar to the supportive aspects of a favorable feedback environment and these perceptions of support are also suggested to positively impact performance improvement from 360-degree feedback initiatives (Facteau et al., 1998; Santos & Stuart, 2003). In one study, leaders who felt supported by their organizations to engage in developmental activities reported greater levels of change after receiving 360-degree feedback (McCarthy & Garavan, 2006). Other studies examining the impact of 360-degree feedback are consistent with the notion that perceptions of organizational support for development can impact the effectiveness of multi-source feedback for performance improvement (Lynch, Eisenberger, & Armeli, 1999; Maurer & Taruli, 1999). More generalized perceived organizational support positively enhances training outcomes (Holton, Cheng, & Naquin, 2003) because training recipients believe that their organization demonstrates care and concern about their well-being and values their individual contributions to the organization (OST; Eisenberger, Huntington, Hutchison, & Sowa, 1986; Eisenberger & Stinglhamber, 2011; Shore & Shore, 1995). If the use of multi-source feedback fits into the organization’s goals and participants feel supported by various organizational constituents to use feedback for development, behavioral change for performance improvement is thus more likely.
Conversely, unfavorable attitudes towards an organization can negatively impact development and learning initiatives. For example, McCarthy and Garavan’s (2006) study also examined the impact of organizational cynicism on behavioral change following a multi-source feedback intervention. Cynicism towards an organization is defined as a negative attitude that there are problems in the workplace or that the organization is lacking in integrity, and often manifests in cynics as negative or critical behaviors directed towards the organization (Andersson, 1996; Dean, Brandes, & Dharwadkar, 1998; Vance, Brooks, & Telsuk, 1995). In the multi-source feedback study, feedback recipients who expressed organizational cynicism were less likely to engage in behavioral change (McCarthy & Garavan, 2006). Interestingly, Atwater and colleagues (2000) found that 50% of participants did not improve after from 360-degree feedback, and further that organizational cynicism negatively impacted change after receiving feedback. Participants who are cynical about their organization or who are unclear about how multi-source feedback fits into organizational goals are less likely to improve and may resist the process.

Organizations can prevent the development of cynicism and other negative attitudes by promoting supportive and favorable feedback environments. Higher quality feedback environments are associated with decreased perceptions of organizational politics (Rosen, Levy, & Hall, 2006). Organizational politics are defined as the presence of self-serving behaviors that are not sanctioned by the
organization, and that often have a negative impact on organizational members (Ferris & Kacmar, 1992). With high-quality feedback environments, the goals of using feedback are clearer to employees, and thus perceptions of politics and other negative attitudes are less likely to develop. Favorable feedback environments can also prevent cynicism through enhancing employee role clarity (Whitaker, Dahling, & Levy, 2007). Regular and constructive feedback exchanges convey clear expectations for desired behaviors and performance and provide a message regarding the current level of an individual’s relevant work behaviors in comparison to the expectation (London, 2003; Steelman, Levy, & Snell, 2004). With less ambiguity surrounding performance expectations, employees are less likely to display negative reactions, such as cynicism towards the organization, and will be more likely to put forth efforts towards improving performance.

**Perceived Quality of Coaching Relationship**

Employee coaching is a popular developmental tool in which a boss provides regular coaching and guidance to one or more of his or her subordinates (Gregory & Levy, 2011). The most effective bosses foster a supportive coaching-oriented relationship among their subordinates, where the coaching relationship can be defined as, *a working partnership between an employee and his or her direct supervisor that is focused on addressing the performance and development needs of that employee* (p. 111). Gregory and Levy (2010) outline four dimensions as being critical components of a strong employee coaching relationship. These dimensions
were developed and selected after a review of the coaching literature and a subsequent validation study on the construct and were deemed as being essential for an effective coaching relationship. The first dimension is the genuineness of the coaching relationship, or the subordinate’s perceptions that the coaching boss and the ensuing relationship is of a genuine nature. Effective communication, the second dimension, refers to the perception that the boss is providing quality communication and is available. The third dimension, comfort with the relationship, pertains to how comfortable the subordinate feels working with his or her coaching boss and comfort with sharing goals or developmental needs. Finally, facilitating development makes up the fourth dimension and refers to a coaching relationship where the boss facilitates learning and developmental outcomes from the subordinate.

High quality coaching relationships develop over time from high quality boss-subordinate interactions, where there exists a high level of trust (London & Smither, 2002). These relationships go beyond specific coaching behaviors and are shaped from previous work experiences and evaluations, feedback exchanges, and other aspects of that boss and employee’s combined history. Similar to leader-member-exchange (LMX) theories, an employee will be motivated to engage in behaviors that benefit the organization, when the employee feels supported and has high levels of trust in his or her boss (Dienesh & Liden, 1986). Maurer and colleagues (2002) suggest that employees will be more likely to engage in
continuous self-development activities when LMX is perceived as high. Research has supported the linkage between relationship quality between a leader and subordinate, or LMX, and the propensity for leaders to engage as coaches with these subordinates (Anderson, 2013). While LMX quality is a distinct construct from coaching, these findings suggest that the nature of the relationship between an employee and his or her boss can significantly affect the outcomes experienced by that employee in a positive or negative way. Perceived boss support during training and development activities is another distinct construct that partially aligns with the “facilitating development” dimension of the coaching relationship. Perceived boss support, as it relates to training, can be defined as a subordinate’s perception that his or her boss is encouraging and reinforcing newly learnt knowledge or skills through the provision of support or resources (Holton, Bates, & Ruona, 2000). When bosses actively support subordinates throughout learning and development activities, this signals to subordinates that their boss values these types of activities and will be more likely to provide assistance throughout and after training (Lancaster, Milia, & Cameron, 2013). There are mixed findings regarding the impact of perceived boss support on training outcomes, and one review of the construct suggested that outcomes can depend largely on contextual factors and individual differences among participants (Ghosh, Chauhan, & Rai, 2014).

While quality coaching relationships do entail perceptions of boss support, the nature of these relationships are often more complex and are characterized by
the history of the boss-subordinate comprising the dyad. As Evered & Selman (1989) state, effective coaching takes place between these individuals when the relationship is ‘action-oriented, results-oriented, and person-oriented’ (p. 23). High quality coaching relationships can bring great value to employees and organizations (Gregory & Levy, 2010). Nonetheless, few studies have examined actual outcomes of a coaching relationship or have developed theory to explain the mechanisms driving the relationship and its associated outcomes (Gyllensten & Palmer, 2007; Stober & Parry, 2005). The existing literature on coaching relationships suggest that there are a number of positive outcomes for the coaching target, including increased self-development, empowerment, trust, and motivation (Evered & Selman, 1989; Ladyshewsky, 2009; McLean, Yang, Kuo, Tolbert, & Larkin, 2005). Strong employee coaching relationships provide a foundation for employees to set and work towards goal and to feel more comfortable receiving and using feedback from his or her boss (London, Mone, & Scott, 2004). Coaches provide feedback to their subordinates to increase self-awareness and subsequent behavioral change through monitoring progress towards agreed upon goals (Gregory et al., 2011). Leaders who develop favorable coaching relationships with their bosses stand to benefit greatly from this relationship. Through a series of interactions between leader and coach, coaches provide a supportive and constructive space for leaders to internalize and implement feedback information. These informal interactions provide leaders with the support, tools, and
opportunities for self-development towards improving their own leadership performance (Peterson & Hicks, 1996).

Where Context and Individual Differences Meet

The current study proposes that a supportive feedback environment and high-quality coaching relationship promote more positive leadership outcomes following multi-source feedback. If leaders are encouraged to seek and utilize feedback information in a positive feedback climate, he or she will be less likely to experience the disappointment or despair associated with negative self-feedback information. If these feelings are experienced, the supportive environment will in the very least provide a safety net for the leader to work through these negative reactions and instead direct attention towards positive self-development. Furthermore, if a leader has developed a high-quality coaching relationship with his or her boss, that leader will receive increased support, feedback and guidance to work towards agreed upon performance improvement goals.

Many presume that supportive feedback environments will always lead to beneficial outcomes for employees and organizations; however, too few studies have examined the boundary conditions that could enhance or diminish the linkages between feedback environment to various outcomes (Gabriel, Frantz, Levy, & Hilliard, 2014). Similarly, while research has also pointed to the benefits of coaching relationships, some suggest that the range outcomes witnessed depend largely in part on the specific individual characteristics of the two parties involved.
(Gregory & Levy, 2011). Per McCauley’s (2008) review on leader development research, there is a lack of research examining the combined effects individual differences and organizational context factors on the impact of multi-source feedback initiatives. Feedback orientation, self-awareness, and learning agility are three individual difference factors that are expected to interact with a leader’s feedback environment and perceived quality of coaching relationship to promote more favorable leadership outcomes following 360 LDP initiatives.

**Feedback orientation.** An individual’s feedback orientation refers to that person’s receptivity to feedback in the workplace. Feedback orientation is made up of four related, yet distinct dimensions, including, utility, social awareness, feedback self-efficacy, and accountability (Linderbaum & Levy, 2010). The first dimension, utility, refers to an individual’s perception that feedback is an instrumental means to obtaining or achieving specific outcomes or goals at work. The dimension of social awareness refers to a person using feedback for the purpose of increasing his or her own awareness of how others view him or herself and the demonstration of sensitivity to other’s views. Feedback self-efficacy is a demonstration of confidence in approaching feedback or feedback situations. Finally, the fourth dimension of accountability can be thought of as a person’s sense of obligation to use and act upon feedback after receiving performance information.
Leaders high in feedback orientation are more likely seek out feedback information from the work environment and then interpret and use this information to improve performance outcomes (London & Smither, 2002). High feedback orientation increases positive perceptions of feedback and lowers apprehension towards receiving it. Feedback oriented individuals place more value on feedback information received from coworkers and bosses and so will more effectively use feedback information by processing it in a mindful manner (London, 2003; London & Maurer, 2004; London & Smither, 2002). Some suggest that feedback orientation is a quasi-trait, (i.e. a trait that stays relatively stable but may shift over longer periods of time), and as such, there is evidence that feedback orientation can be shaped through situation influences or interventions (Deshon & Gillespie, 2005).

Feedback orientation has also been suggested to shape the way that leaders interact and form relationships with their bosses. Having a stronger orientation towards feedback is linked with an increase in feedback seeking, and this act of feedback seeking helps to build a trusting, high quality relationship between bosses and direct reports (London, 2003; London & Maurer, 2004; Steelman & Wolfeld, 2016). As such, an openness to feedback should be considered a critical component of a coaching oriented relationship between bosses and their direct reports. Supporting this notion, London and Smither (2002) suggest that individuals who are more oriented towards feedback are more responsive and
receptive to coaching, and thus stand to witness greater benefits from coaching relationships.

Favorable feedback environments are positively related to increased feedback seeking and higher levels of feedback orientation among employees (Linderbaum & Levy, 2010). Yet, there is still a need to understand the ‘person-by-situation interactions that occur related to feedback (Linderbaum & Levy, 2010, p.1399; Gregory & Levy, 2010; London & Smither, 2002; Smither, London, & Reilly, 2005). London and Smither (2002) discuss the likely interaction between an individual’s feedback orientation and his or her feedback culture, made up of organizational support for feedback and coaching to interpret feedback. They suggest that feedback orientation is fostered by organizations that value and support individual development and learning, and that organizational practices emphasizing the importance of feedback enhance the likelihood that organizational members will develop a positive orientation towards feedback. However, few studies have empirically examined the outcomes of this proposed interaction between an organization’s feedback culture and an individual’s orientation towards feedback. One study posited that favorable feedback environments lead to more positive outcomes for individuals who are more oriented towards feedback, and conversely, less beneficial outcomes for individuals lower in feedback orientation (Gabriel, Frantz, Levy, & Hilliard, 2014). This proposition was tested in a study of full-time employees working for a correctional facility organization. Results of the study
suggested that favorable feedback environments are related to higher levels of psychological empowerment and meaningfulness of work, and that these relationships are stronger for individuals with high feedback orientations (Gabriel, Frantz, Levy, & Hilliard, 2014). These results highlight the positive impact of a favorable feedback environment, but as London and Smither (2002) suggest, more research is needed to examine the combined impact of feedback orientation and feedback culture (e.g. feedback environment) on outcomes such as job performance and leadership effectiveness.

**Self-awareness.** Self-awareness is defined as an evaluative process that individuals engage in to increase knowledge of the self by reflecting inwards to make a comparison of the self against a standard (Ashley & Reiter-Palmon, 2012). Per self-awareness theory, highly self-aware individuals excel at using and incorporating information from others in their environment into their own self-appraisals (Moshayl, Brown, & Dodd, 2003). Duval and Wickland’s (1972) theory of objective self-awareness suggests that self-aware individuals intermittently direct attention towards the self with the intent to make a comparison against a specific standard, such as a behavior or goal. This comparison leads to an assessment of any discrepancies or gaps between the existing self-perception and the expected behavior or goal. It is of importance to note that self-awareness differs from the construct of self-monitoring. Where self-awareness involves a process of focusing attention inward with the purpose of increasing knowledge of the self,
self-monitoring entails the act of monitoring behaviors with the purpose of managing self-presentation to others (Snyder, 1979).

In the context of leadership research, findings suggest that leaders with a high level of self-awareness are perceived as more effective leaders by their followers (Butler, Kwantes, & Boglarsky, 2014). Leaders who act to enhance their own self-awareness engage in self-reflection, the process of visualizing the self from the perspective of another person or coworker to make comparative self-evaluations (Ashley & Reiter-Palmon, 2012).

Similar to feedback orientation, some researchers suggest that self-awareness is a quasi-trait, in that individuals can be trained to increase self-awareness through intervention efforts (Ashley & Reiter-Palmon, 2012). Research has supported the notion that leader self-awareness improves through multiple sources of feedback and coaching (Smither, London, & Reilly, 2005). Multi-source feedback is said to direct attention to the discrepancies between a standard for expected performance and a leader’s current standing on the competency being rated (VanVelsor, Taylor, & Leslie, 1993).

Organizations are increasingly recognizing the value of self-aware leaders, and in particular, those leaders who seek feedback to increase and maintain a high level of awareness and interpersonal acumen (Ashford, Blatt, & VandeWalle, 2003; Goleman, 1998). Leaders with high self-awareness are more cognizant of their own emotions and how these emotions can influence others. They are able to use this
awareness to exercise flexible strategies in solving problems, speak to various audiences, and to encourage trust and cooperation among followers (George, 2000). Self-aware leaders engage in reflections of the self and their surrounding environments to identify negative or positive discrepancies in current behaviors versus behavioral expectations (Wicklund, 1975). One recent study examined the impact of feedback seeking and reflection after a formal training program and found that these two behaviors interacted to significantly enhance the transfer of learning outcomes from a training program (Sparr, Knipfer, & Willems, 2017). Thus, it is expected that leaders high in self-awareness who are also embedded in a favorable feedback environment, will be more likely to utilize and apply performance information to improve their effectiveness. Leaders who are high in self-awareness will be more adept at fully comprehending and understanding how to apply feedback information to decrease any areas in need of development. Without self-awareness, a leader may seek and even accept the feedback information, but he or she may not fully understand how to apply this information to improve his or her performance. Additionally, this interaction of high self-awareness and high engagement in a favorable feedback environment should help leaders be perceived as more capable in their leadership roles by their bosses. Self-aware leaders can more adeptly focus self-development efforts on areas in need, such as the improvement of interpersonal relationships. Leaders low on self-awareness may become overwhelmed with the amount of performance information
provided in 360 LDPs and not know the best way forward to direct developmental efforts.

**Learning agility.** Learning agility refers to an individual’s drive and capacity to learn from previous experiences and the ability to apply this knowledge to successfully adapt and perform under novel conditions (Lombardo & Eichinger, 2000). While this construct originated in a practitioner context, it is proposed to be a critical skill for successful leaders (De Meuse, Dai, & Hallenbeck, 2010). Learning agility is proposed to be related to, but different from the construct of learning goal orientation. Individuals high in learning goal orientation possess the motivation to increase competence and knowledge within a specific or general domain driven by the genuine desire to learn more (Drinka, 2018). Drinka (2018) proposes that learning goal orientation plays the role of antecedent to learning agility; where those high in learning goal orientation possess increased motivation to seek out opportunities that will enable quick learning (i.e. learning agility). Leaders who demonstrate rigidity in sticking to familiar behaviors are less likely to apply an appropriate reaction to a novel situation or to cope with unforeseen challenges. Effective leaders develop leadership skills on the job from daily experiences and interactions with direct reports and fellow coworkers (McCall, Lombardo & Morrison, 1988; Tannenbaum, 1997). Learning agility is an ability that is suggested to differentiate high-potential employees from the rest (Lombardo & Eichinger, 2000).
The Center for Creative Leadership (CCL) conducted a series of studies, “The Lessons of Experience,” and from the results, proposed that individuals do differ in their capacity to learn from previous experiences. As part of the developmental process, individuals need to be comfortable breaking ways with old habits and routines for learning and personal growth. This stream of research also suggests that this process can be emotional and with real-life consequences, but that individuals who possess this ability are more likely excel in self-development (McCall et al., 1988). A second series of studies conducted by CCL compared derailed executives to their more successful counterparts. While the two groups had many aspects in common, such as being identified as high potential early on, earning many records of achievement, and demonstrating ambition and sacrifice, one factor that distinguished the two groups was the ability to change or adapt. These findings held over time, organizational level, culture, gender, and type of organization (Hogan, Hogan, & Kaiser, 2010; Lombardo, Ruderman, & McCauley, 1988; McCall & Lombardo, 1983). The more successful group demonstrated the ability to handle failure, to accept responsibility and admit mistakes, and take action to remedy existing problems. Conversely, derailed leaders exhibited defensiveness on previous failures and attempted to cover up mistakes or place blame on others.

This ability becomes even more critical as leaders receive promotions and as job functions become more ambiguous and complex in nature (Charan, Drotter
& Noel, 2000). As leaders reach new levels of an organization, the demands of his or her job require more complex skills and decision-making styles to remain effective in these changing environments (DeMeuse, Dai, & Hallenbeck, 2010; Broussea, Driver, Hourihan, & Larsson, 2006).

Individuals higher in learning agility should be more receptive to feedback and more capable of using and applying feedback information for self-improvement. Based on the extent literature, leaders high in learning agility are expected to be better equipped to set aside the negative emotions often associated with negative feedback, and to use this knowledge for self-improvement and to develop leadership skills.

In summary, feedback orientation, self-awareness, and learning agility, are three individual difference constructs that are proposed to interact with contextual factors in a leader’s work environment (i.e. feedback environment and coaching relationship) to promote increased learning and engagement in a 360 LDP. Through enhanced learning and engagement during the 360 LDP, this combinations of context and individual differences is thus expected to also increase outcomes of the 360 LDP.

**Leader Development Outcomes**

Training participants are expected to apply new knowledge and experiences from training into their daily tasks and behaviors in the workplace. Some estimate that a mere 10 to 20% of content learned during training is applied by participants
following training interventions (Kirwan & Birchall, 2006). This is particularly problematic given the large investment required to develop and implement 360 LDPs and suggests a need for research to measure intervention outcomes to maximize likelihood of program success. While some studies on 360 FB tools and interventions do examine outcomes, the focus tends to be on reactions and attitudes towards the intervention. Attitudes and reactions are still of importance to understanding intervention impact, as more favorable attitudes suggest that participants will be more invested and likely to use the feedback received as part of developmental efforts (Maurer, Mitchell, & Barbeite, 2002). However, for a more comprehensive understanding of factors impacting the success of 360 LDPs, research outcomes need to expand beyond solely examining reactions and attitudes towards training. In particular, there seems to be a lack of research evaluating leadership effectiveness following 360 LDPs. Traditional conceptualizations of leadership define leadership effectiveness in terms of the positive outcomes leaders produce on a group or organization (Dhar & Mishra, 2001). Measuring this type of leadership effectiveness normally entails examining the performance or attitudes of a leader’s subordinates, or even performance of the organization as a whole as a result of that leader’s actions, skills, or leadership style (Mandanchian, Hussein, Noordin, & Taherdoost, 2017; Yukl, 2008).

Measuring leadership effectiveness as an outcome of a 360 LDP entails capturing leadership effectiveness improvement as a result of the content learned in
the program. Three outcomes that capture leader improvement as the result of a 360 LDP include leadership effectiveness, leadership capability, and developmental goal setting. Leadership effectiveness as an outcome of a 360 LDP refers to the successful application of the knowledge and skills acquired in the program towards improving job performance and contributing to an organization’s success (Young, Braddy, Champion, & Raper, 2017). In this instance, the 360 LDP facilitates effective leadership through focusing on improving the knowledge, skills, and abilities related to leadership behaviors.

Following a comprehensive 360 LDP, leaders should also experience enhanced feelings of competence and capability based on their newly acquired knowledge and skills. Specifically, leadership capability is a construct that can be defined as the extent to which leaders feel capable of performing their respective roles following intervention efforts (Young et al., 2017).

360 LDPs emphasize multi-source feedback as a tool to set and monitor developmental goals for performance improvement. As such, another leadership outcome that would indicate improved leadership effectiveness improvement as a result of the 360 LDP is an increase in setting developmental goals. To highlight this contention, the results of a study on leaders who took part in a 360 LDP suggest that those leaders who set multiple goals for behavioral change were perceived as improving across multiple competencies following the program in comparison to leaders who only set one or no goals (Johnson, Garrison, Hernez-
Broome, Fleenor, & Steed, 2010). Goal setting theory suggests that when individuals set goals, goal achievement likelihood increases through increased goal commitment, planning behaviors, and motivation to achieve goals (Locke, 1996). Leaders who learn to set appropriate and challenging goals are more likely to engage in continuous efforts of self-improvement through increased self-monitoring, reflective self-appraisals, and self-reactions (Latham & Locke, 1991).

To summarize, leadership effectiveness as an outcome of 360 LDPS can be conceptualized as a leader’s improvement following the program in terms of his or her effectiveness as a leader, feelings of competence and capability in his or her leadership role, and goal setting behaviors for continued learning and leadership performance improvement.

Chapter 3

The Current Study

The current study seeks to understand how elements within the “Prepare” and “Engage” phases of the LDP framework interact to drive more favorable leadership outcomes in the “Apply” phase. Specifically, the overarching question driving the current research effort is, “Under what conditions and for whom does multi-source feedback work?” (McCauley, 2008, p. 33). To find the answers to this question, the combined effects of individual differences and context are examined as drivers of leadership outcomes following a 5-day multi-source feedback LDP (360 LDP). Contextual support factors, a leader’s boss feedback environment and
perceived quality of coaching relationship, should work to prepare leaders for the 360 LDP, and will be measured at “Time 1” (T1). T1 in this case refers to the point in time when leaders complete the self-report assessments, normally during a break from the training within the duration of the 5-day program. A favorable feedback environment and high-quality coaching relationship are thought to provide leaders with the necessary sources of support, guidance, and feedback to be able to get the most out of the 360 LDP. These sources of guidance and feedback are proposed to enable leaders to apply knowledge and skills acquired in the program to increase their own leadership effectiveness in a supportive environment. Individual differences, including feedback orientation, self-awareness, and learning agility are proposed to equip leaders with the necessary tools to engage and learn in the 360 LDP. Self-awareness and learning agility were measured just before program participation, while feedback orientation was measured during the program, on a break from program activities. These three individual differences are then proposed to enable leaders to more effectively seek, accept, and use feedback to enhance learning and subsequently, leader development outcomes. Leadership outcomes were measured 2 months after the 360 LDP training at “Time 2” (T2) to assess the “Apply” phase of the framework. Leadership outcomes include boss-rated measures of perceived leadership improvement in the areas of leadership effectiveness, leadership capability, and developmental goal setting. See Figure 1 in the appendix for the proposed model within the current study.
A favorable feedback environment increases the likelihood of feedback seeking and high-quality feedback exchanges, providing valuable performance information in the context of a supportive environment (Steelman, Levy, & Snell, 2004). The encouragement of positive feedback seeking norms and a supportive feedback environment positively shapes attitudes towards feedback, and thus increases the likelihood of leaders using feedback received from the 360 LDP for behavioral change in the form of increased leadership performance (Ajzen, 1991). With perceived support for feedback seeking, leaders are less likely to be cynical about the 360 LDP. Moreover, having regular and available access to feedback likely induces positive feedback habits. This should reduce some of the anxiety associated with hearing unfavorable information about oneself (Kluger & DeNisi, 1996). Leaders who are accustomed to exchanging favorable and unfavorable feedback in the workplace should be better equipped to utilize the large quantity of feedback received from the 360 LDP. These leaders should be able to focus more resources on learning and developing strategies to use feedback towards improving leadership performance across multiple work contexts (Ashford, 1986; DeRue & Wellman, 2009). Based on the extant literature, the current study proposes that leaders who are accustomed to a more favorable feedback environment will be perceived as improving in leadership performance following a 360-degree LDP.

**Hypothesis 1a, b & c:** A favorable feedback environment (T1) is positively related to perceptions of improvement in (a) leadership effectiveness (T2), (b) leadership capability (T2), and (c) developmental goal setting (T2) following the LDP.
The nature of an employee’s relationship with his or her boss can significantly impact the outcomes that employee experiences (Anderson, 2013). When an employee perceives high levels of boss support during learning and developmental opportunities, this signifies that his or her boss places value in these types of activities and will be more likely to provide practical support and assistance to enable more positive learning outcomes (Lancaster et al., 2013). Research has suggested that supportive bosses better prepare leaders for 360 LDPs, and that these leaders have more positive outcomes following these programs (Young et al., 2017). Quality coaching relationships do require boss support, but the nature of these relationships are often more complex and involve a great deal of investment from the boss to directly contribute to the development and performance of his or her subordinate (Gregory & Levy, 2010). Relationships between employees and their bosses that have a coaching focus are characterized by a series of one-on-one interactions with the goal of enhancing the target’s capabilities towards future roles or challenging tasks (Gregory & Levy, 2010). When the coaching target perceives a high-quality coaching relationship, the target is more likely to experience increased self-development efforts, motivation, empowerment, and trust in their coach (Evered & Selman, 1989; Ladyshewsky, 2009; McLean, Yang, Kuo, Tolbert, & Larkin, 2005). Coaching relationships enable leaders to more effectively engage in self-development activities, as coaches act as a constructive source of support to assist in the processing and internalization
of feedback information. Through this working partnership, leaders use feedback information to work towards agreed upon goals, while their boss provides support, resources, and accountability towards goal achievement (London, Mone, & Scott, 2004). Thus, an ongoing high-quality coaching relationship between a leader and his or her boss is expected to drive the continuous learning process that is encouraged in 360 LDPs, and in turn is expected to increase positive leadership outcomes from the 360 LDP.

**Hypotheses 2a, b, & c:** *Perceived quality of coaching relationship (T1) between a leader and his or her boss is positively related to perceptions of improved (a) leadership effectiveness (T2), (b) leadership capability (T2), and (c) developmental goal setting, following the LDP (T2).*

Feedback orientation is proposed to be a critical moderator in the relationship between boss feedback environment and employee attitudes (Gabriel, Frantz, Levy & Hilliard, 2014). The current study expands this proposition to examine whether feedback orientation also moderates the relationship between feedback environment and 360 LDP performance-related outcomes. Individuals high in feedback orientation have a favorable foundation for using and exchanging feedback in their work environment (London & Smither, 2002). A leader who is oriented towards feedback has a higher propensity to process feedback information in a mindful way as part of the self-development process. A favorable feedback environment is expected to result in more positive outcomes for leaders higher in feedback orientation, compared to those leaders who are less interested in receiving or using feedback. Favorable feedback environments encourage processes such as
learning and self-development from feedback in the workplace (Steelman, Levy & Snell, 2004). Leaders with a high feedback orientation are more likely to take advantage of and benefit from the ongoing and continuous feedback taking place within favorable feedback environments. This type of environment provides greater opportunities for practice and experience with feedback, and as such, individuals are more accustomed to processing feedback on a regular basis. Leaders demonstrating an orientation towards feedback should then be able to more effectively synthesize feedback from multiple sources for performance improvement as they have already had a lot of practice in processing large quantities of feedback (London & Smither, 2002). Moreover, the combination of a favorable feedback environment with a high feedback orientation sets the stage for reduced cynicism and less negative reactions towards feedback, both of which impede behavioral change in feedback recipients when present (McCarthy & Garavan, 2006). With reduced cynicism and negativity, feedback recipients can more clearly see the value of multi-source feedback. This, in turn, likely increases feedback buy-in, and subsequently, leaders can direct attention towards constructive performance improvement on the job - rather than directing attention to their self-concept (Kluger & DeNisi, 1996). Feedback orientation is thus expected to interact with the feedback environment in that individuals high in feedback orientation, who also perceive a favorable feedback environment will be more likely to use feedback information from various sources to improve
leadership performance, when compared to individuals who are low in feedback orientation.

**Hypothesis 3a, b, & c:** Feedback orientation will moderate the relationship between a leader’s feedback environment and LDP outcomes, such that a favorable feedback environment is associated with higher perceptions of improvement in (a) leadership effectiveness, (b) leadership capability, and (c) developmental goals following the LDP, when participants also have a positive feedback orientation.

Often, managers find that coaching and providing feedback are daunting tasks, and this is exacerbated by the fact that employees do not always enjoy being coached or receiving feedback (London, 2003). Negative feedback, in particular, can be challenging to give and receive, as many will react negatively and reject the feedback information and feedback provider (Ilgen, Fisher & Taylor, 1979; Kluger & DeNisi, 1996). When bosses take the time to develop high quality coaching relationships with their employees, these relationships are characterized by a sense of trust which promotes genuineness and effective communication (Evered & Selman, 1989; Ladyshewsky, 2009; Levy & Thompson, 2010; McLean, Yang, Kuo, Tolbert, & Larkin, 2005). Leaders with higher feedback orientation are more likely to demonstrate receptivity to coaching and feedback as these leaders place a higher value on feedback and its associated utility for performance improvement (Gregory & Levy, 2012; London & Smither, 2002). A high-quality coaching relationship will likely have the strongest impact on leaders who are more oriented towards seeking and using feedback in the workplace. Coaching relationships are characterized by informal exchanges of feedback, and a higher level of feedback
receptivity enables leaders to get the most out of both positive and negative feedback information to direct towards improving leadership performance.

**Hypothesis 4a, b, & c:** Feedback orientation will moderate the relationship between a leader’s perceived quality of coaching relationship with his or her boss and LDP outcomes, such that a high-quality coaching relationship is associated with higher perceptions of improvement in (a) leadership effectiveness, (b) leadership capability, and (c) developmental goal setting following the LDP, when participants have a positive feedback orientation.

Research has supported the notion that leader self-awareness improves through multiple sources of feedback and coaching (Smither, London & Reilly, 2005), and that self-aware leaders are perceived as more effective by subordinates (Butler, Kwantes, & Boglarsky, 2014). Highly self-aware individuals are also expected to be more adept in directing attention towards the self to make comparisons based on feedback information provided from multiple sources. The combined effect of feedback seeking and reflection enhances learning outcomes from training programs (Sparr et al., 2017). Contextual factors such as a leader’s feedback environment and perceived quality of coaching relationships are expected to better prepare participants for the experiences and training encountered in the 360 LDP. Having high self-awareness should further enhance the quality of experiences and learning from the 360 LDP.

Favorable feedback environments enable employees to become accustomed to regular feedback exchanges in the workplace. Developing constructive feedback habits prepares a leader to be able to get more out of a multi-source feedback type program. When these leaders also have an acute sense of self-awareness, a
favorable feedback environment gives these individuals a leg up in being able to mindfully process and utilize information from outside sources that is directed towards the self. This information can then be used to constructively work towards reducing any discrepancies between self-schemas and areas in need of improvement as part of the 360 LDP. Conversely, leaders low in self-awareness are more likely to discount feedback information (Ashford, 1989), even in the presence of the high-quality feedback that comes from favorable feedback environments. Low self-aware leaders lack the same skillset of accurately and reliably incorporating comparators (i.e. feedback information) into the schema of their actual behavior (Nasby, 1989), and as such are not expected to be able to as effectively utilize feedback sources or their boss’s coaching nature. Ultimately, this lack of self-awareness decreases the likelihood that leaders set realistic or appropriate developmental goals, as these leaders are unable or unwilling to recognize and deviate from their own faults and mistakes.

With involvement in a coaching oriented relationship, the coachee is regularly exposed to critically evaluating feedback information directed towards the self through regular one-on-one discussions regarding goals and performance (Gregory & Levy, 2011). A coaching oriented boss is essentially providing a supportive space for his or her employees to process this critical feedback information without fear of judgment or repercussion. Self-awareness may even further enhance the positive outcomes witnessed by leaders involved in coaching.
relationships. To elaborate, the coaching boss can provide an external and objective perspective to help the leader to more meaningfully engage in reflection to identify areas needing development. A coaching oriented boss can then also assist in providing resources and support as self-aware leaders work towards goals or standards they have set after identifying these areas of improvement.

Self-aware leaders possess a necessary skillset that enable growth and learning from using the abundant multi-source feedback present in favorable feedback environments, and thus are expected to experience more positive outcomes following the 360 LDP. Similarly, self-aware leaders who are a part of a high-quality coaching relationship are better able to tap into the support and resources provided by their boss to identify areas of improvement and set developmental goals to work towards. As identifying areas of improvement and setting developmental goals are core components of 360 LDPs, these leaders are proposed to be better enabled to witness more positive outcomes from this type of program.

**Hypothesis 5a, b, & c:** Self-awareness will moderate the relationship between a leader’s feedback environment and 360 LDP outcomes, such that a favorable feedback environment is associated with higher perceptions of improvement in (a) leadership effectiveness, (b) leadership capability, and (c) developmental goal setting following the LDP, when participants have high levels of self-awareness.

**Hypothesis 6a, b, & c:** Self-awareness will moderate the relationship between a leader’s perceived quality of coaching relationship with his or her boss and 360 LDP outcomes, such that a quality coaching relationship is associated with higher perceptions of improvement in (a) leadership effectiveness, (b) leadership capability, and (c) developmental goal setting following the LDP, when participants have high levels of self-awareness.
Learning agility is an ability that enables leaders to critically analyze past experiences and to apply this information to future encounters, even under novel or ambiguous circumstances. (Lombardo & Eichinger, 2000). As job roles become more challenging and complex in nature, learning agility has proven to be an essential skill for leaders seeking to rise in the ranks of an organization. Leaders who demonstrate high levels of learning agility quickly adapt to new roles and novel situations. Possessing this ability to learn and adapt does not go unnoticed by those in their surroundings, as leaders high in learning agility are more likely to be promoted (Connolly, 2001; De Meuse, Dai, & Hallenbeck, 2010). Research has supported the notion that leaders who can effectively build and diversify their own skillsets through continuous learning are essential personnel for successful organizations (Eby, Butts, & Lockwood, 2003). Agile learners recognize the importance of knowing his or her own strengths and limitations, and how to leverage and improve their personal capabilities to become more successful leaders (Anseel, Lievens, & Schollaert, 2009; Bennis & Thomas, 2002; Day & Harrison, 2007). Based on their drive for knowledge and self-improvement, these leaders most likely place high value on feedback and thus should be more capable of setting aside the negative feelings associated with receiving unfavorable feedback. It is expected that leaders who are agile learners rely on feedback information to identify past shortcomings or personal areas of improvement and then seek corrective action for improved performance.
Leaders who excel in learning agility are expected to witness even more benefits from this skill when working in a favorable feedback environment. The feedback environment first provides a space where leaders feel encouraged and supported to seek out new information for continuous learning and self-development. Without first creating a space for positive feedback norms, the leader may have a drive for learning, but may not perceive the support and resources necessary to engage in self-development behaviors. Favorable feedback environments foster a constructive and safe space for leaders to admit mistakes while learning. Within these types of environments, leaders feel more comfortable approaching their boss or other quality feedback sources to ask for feedback on how to handle failure and accept responsibility to remedy problems. These sources of guidance enhance a leader’s capacity for learning and personal growth (McCall et al., 1988). Learning agility is proposed to enhance the impact of leader development initiatives, which then have a direct effect on that leader’s success (De Meuse, 2017). Leader development initiatives which include 360-degree feedback as part of the development plan are likely to be extremely beneficial for agile learners who are accustomed to positive feedback norms. These agile leaders are not only familiar with exchanging feedback, but will also likely extract more meaning from the 360-degree feedback and use this information to set more appropriate and challenging goals for improvement.
High quality coaching relationships also encourage continuous learning and self-development. Coaches provide clear expectations for performance and regular constructive feedback on how to reach these expectations (Gregory & Levy, 2010). Similar to the support that is present in a favorable feedback environment, coaching relationships provide a supportive space in which leaders become accustomed to receiving the critical feedback they need to improve their own performance. The primary goal of a coaching relationship is to address the performance and development needs of the coachee (Gregory & Levy, 2011). Agile learners are already inclined to engage in self-improvement efforts and are thus likely to thrive under the guidance of a coaching relationship. Not unlike a coaching relationship, the goal of a 360 LDP is also to address the performance and development needs of the leaders who take part in these programs. Agile learners who are fortunate enough to be a part of a coaching relationship, will also likely be more successful when taking part in a 360 LDP. These leaders have received feedback to set performance goals on a regular basis through the help of their coaching oriented bosses. The coaching relationship becomes a place where agile leaders can hone in on their abilities to target areas needing improvement. Once placed in an environment such as a 360 LDP, these leaders will be leagues ahead of the rest of the participants and will likely witness more positive outcomes compared to the rest of their cohort.
The current study proposes that learning agility serves as a boundary condition between a leader’s feedback environment and performance, such that leaders who are accustomed to favorable feedback environments, and who also demonstrate high levels of learning agility will be perceived as more effective and capable leaders and will be more likely to set developmental goals as a result of the 360 LDP. Similarly, leaders who are engaged in high quality coaching relationships who are also agile learners will witness more positive leadership outcomes such as perceived improvement in leadership effectiveness, capability, and developmental goal setting following the 360 LDP.

**Hypothesis 7a, b, & c**: Learning agility will moderate the relationship between a leader’s feedback environment and LDP outcomes, such that a favorable feedback environment is more likely to be associated with higher perceptions of improvement in (a) leadership effectiveness, (b) leadership capability, and (c) developmental goal setting following the LDP, when participants have high levels of self-awareness.

**Hypothesis 8a, b, & c**: Learning agility will moderate the relationship between a leader’s perceived quality of coaching relationship with his or her boss and LDP outcomes, such that a quality coaching relationship is more likely to be associated with positive leadership outcomes, (a) capability, (b) effectiveness, and (c) developmental goal setting, when participants have high levels of self-awareness.

**Chapter 4**

**Methodology**

**Procedure**

Participants in this study consisted of full-time employees who were enrolled in the 360 LDP external to each leader’s organization. On average, 90% of participants engage in the 360 LDP program voluntarily. The 360 LDP is a 5-day
long, open enrollment program designed for leaders of managers, or “managers in
the middle”. The 360 LDP focuses on strengthening leader ability to manage
complexity, balance competing priorities, and collaborate across the organization.
Specifically, the program targets 6 factors that have been identified as vital to the
success of managers: influence, communication, thinking and acting systematically,
self-awareness, resiliency, and learning agility. An average of 24 participants enroll
per LDP, with 2 instructors leading each LDP course. The program has a 3-phased
approach of “Prepare, Engage, and Apply”. Phase 1, “Prepare”, takes place pre-
program and includes a comprehensive assessment of leadership skills. At this
point, leaders were also asked to complete self-rated assessments of feedback
orientation, feedback environment, and perceived quality of coaching relationships.
These assessments included the two study variables, self-awareness and learning
agility.

Leaders then participated in the 5-day program, referred to as the “Engage”
phase. This phase is led by highly qualified faculty to encourage a challenging
environment for learning, practice, reflection, and goal setting. At some point
during the engage phase, leaders were asked to complete self-rated assessments of
feedback orientation, feedback environment, and perceived quality of coaching
relationships. The final phase, “Apply”, is where leaders return to the organization
to apply and sustain their newly learned skills with the support of external coaches
provided by the 360 LDP. Two months after the 360 LDP, leaders and their bosses
were asked to complete post-program assessments to measure skill and behavioral progress. Leaders completed a self-report assessment to measure their perceived improvement in leadership effectiveness and capability as a result of the 360 LDP. Leaders’ bosses were also asked to complete assessments of that leader’s improved leadership effectiveness and capability, as well as developmental goal setting as a result of the 360 LDP.

**Participants**

In the first phase of the study (T1), 185 middle to senior level leaders completed the Time 1 self-report measures (e.g., perceptions of feedback environment, perceived quality of coaching relationship, and feedback orientation) during a break in the 360 LDP. In the second phase of the study (T2), 52 bosses completed measures about their direct reports’ (i.e. leaders who participated in the LDP) perceived improvements from participating in the 360-degree feedback leader development program (360 LDP). Only two leaders in the current sample shared the same boss, and as such, the data were generally not considered nested. For the 360-degree feedback measures, data was collected from leaders, their bosses, superiors, at least four peers, four direct reports, and two other outside sources during the 360 LDP. Corresponding 360-degree feedback data was pulled for the 52 leaders whose bosses completed the T2 measures. Based on the low frequency of matched cases between the 360-degree feedback participants and the T2 self-report participants, the T2 self-report ratings were excluded from the
current analysis. Demographic information was collected for the 52 leaders for whom 360-degree feedback was provided. Leaders were on average, 44 years of age and 59% were male. Out of the 52 leaders, 79% were Caucasian, 6% were Asian or Indian, 6% were Hispanic, 4% were multiracial, 2% were African American, and 2% were Chinese. Approximately 6% of leaders had an Associate degree, 51% had a Bachelor’s degree, 4% had a Doctorate degree, 39% held their Master’s degree, and 10% had another Professional certification. Leaders came from wide range of organizations and industries across the United States.

Participant industries in the current study included, education (4%), engineering, architecture and design (4%), finance (4%), general executive (8%), health care (2%), information technology (12%), legal and regulatory affairs (8%), marketing and sales (16%), materials management (2%), project management (14%), research and development (8%), and other industries (19%).

Table 1 - Participant Breakdown of Study Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Data Source</th>
<th>N</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback Environment</td>
<td>Leaders</td>
<td>178</td>
<td>1</td>
</tr>
<tr>
<td>PCQR</td>
<td>Leaders</td>
<td>185</td>
<td>1</td>
</tr>
<tr>
<td>Feedback Orientation</td>
<td>Leaders</td>
<td>185</td>
<td>1</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>360-degree Feedback</td>
<td>51</td>
<td>1</td>
</tr>
<tr>
<td>Learning Agility</td>
<td>360-degree Feedback</td>
<td>51</td>
<td>1</td>
</tr>
<tr>
<td>Leadership Effectiveness</td>
<td>Bosses</td>
<td>52</td>
<td>2</td>
</tr>
<tr>
<td>Leadership Capability</td>
<td>Bosses</td>
<td>52</td>
<td>2</td>
</tr>
<tr>
<td>Developmental Goal Setting</td>
<td>Bosses</td>
<td>52</td>
<td>2</td>
</tr>
</tbody>
</table>

Note. PCQR = Perceived Quality of Coaching Relationship; Leadership Effectiveness, Capability, and Developmental Goal Setting are all perceived improvement measures
Measures

**Feedback environment scale.** The feedback environment was measured via self-report with the 21-item shortened version of the Supervisor Feedback Environment Scale (FES), developed by Steelman, Levy, and Snell (2004) at Time 1. Items were revised for the purpose of using consistent terms between the 360-degree feedback LDP measures and additional measures in this study. As such, all instances of the term, “Supervisor” were revised to the term, “Boss” in the following items. The FES measures employee perceptions of contextual and situational characteristics of organizational feedback processes, or the feedback environment. The boss feedback environment measures perceptions of the following facets: source credibility, feedback quality, feedback delivery, favorable and unfavorable feedback, source availability, and promotion of feedback seeking. The boss factor includes items such as, “My boss is generally familiar with my performance on the job”, and “My boss gives me useful feedback about my job performance”. Steelman et al. (2004) reported internal consistency reliability ranges of .82 to .92 for the boss factor (i.e. supervisor factor). Steelman et al. (2004) also reported validation evidence for their scale. The pattern of relationships found supported predictions that the particular FES facets were more strongly associated with associated variables than with less associated variables. For example, boss credibility was more strongly related to employee satisfaction with boss feedback (r=.73), than it was to employee satisfaction with coworker feedback.
The shortened version of the FES has been used in other studies such as Young and Steelman (2014) and Moukarzel and Steelman (2012), and the shortened version has demonstrated adequate evidence of reliability and validity. The current study found an acceptable level of scale reliability (alpha = .91).

**Feedback orientation.** Feedback orientation was assessed via self-report using Linderbaum and Levy’s (2010) Feedback Orientation Scale (FOS) at Time 1. The FOS measures four facets of feedback orientation, and each facet is represented with five items, for a total of 20 items. Items are answered on a 7-point Likert type scale (1=strongly disagree, 7=strongly agree). The four facets are utility, feedback self-efficacy, social awareness, and accountability. Example items include, “I feel confident when responding to both positive and negative feedback,” and “I find that feedback is critical for reaching my goals.” The internal consistency reliability for this measure in the current study is at an acceptable level of alpha = .80, per Nunnally’s (1979) standard for internal consistency, with alpha = .70 as a cutoff.

**Perceived quality of coaching relationship.** Leaders also completed Gregory and Levy’s (2010) Perceived Quality of Coaching Relationship Scale (PCQR) at Time 1 during the 30 LDP. This 12-item scale assesses the leader’s perception of a quality coaching relationship with his or her boss, and contains 4 facets, genuineness of the relationship, effective communication, comfort with the relationship, and facilitating development, all measured on a 7-point Likert type
scale (1=strongly disagree, 7=strongly agree). The developers of the scale found an acceptable internal consistency reliability of alpha = .96 (Gregory & Levy, 2010), which is consistent with the current study which also found alpha = 0.96. Example items include, “My boss helps me to identify and build upon my strengths,” and “My boss and I have mutual respect for one another.”

**Self-awareness.** The current study utilized the Leading Managers 360 measure of self-awareness, a 5-item scale, at Time 1. Leaders, their boss, superior, peers, direct reports, and other sources were asked to indicate the extent to which the leader has an accurate picture of the self and seeks feedback to improve, on a 5-point Likert-type Scale, with a not applicable option (1=To a very little extent, 5=To a very great extent; DK= Don’t know/Not applicable). One example item includes, “Sorts out his/her strengths and weaknesses fairly accurately (i.e. knows him/herself)”. The LDP has reported an acceptable internal consistency reliability of a = .83. Self-awareness scores were computed by aggregating all rating sources for a mean score of self-awareness, excluding self-ratings. Literature surrounding 360-degree feedback suggests that self-ratings are suggested to be the least accurate, the most biased, and inconsistent with other rating sources (Atkins & Wood, 2002; Harris & Schaubroeck, 1988).

**Learning agility.** The current study utilized Leading Managers 360 measure of learning agility, a 5-item scale, at Time 1. Leaders, their boss, superior, peers, direct reports, and other sources were asked to indicate the extent to which
the leader seeks opportunities to learn and can learn quickly, on a 5-point Likert-type Scale, with a not applicable option (1=To a very little extent, 5=To a very great extent; DK= Don’t know/Not applicable). One example item includes, “Seeks out new and diverse work experiences”. The LDP has reported an acceptable internal consistency reliability of $a = .81$. Learning agility scores were averaged across all sources excluding self-ratings.

**Leadership effectiveness.** The current study measured leadership effectiveness with an adaptation to the Return on Leadership Learning measure, which is administered at Time 2, two months after leaders participate in the LDP. Leaders’ bosses provided ratings on a 10-point Likert-type scale (1 = Not at all, 10 = Very great extent) regarding how much they felt their direct reports had improved in leadership effectiveness as a result of the 360 LDP. One example item states, “As a result of this program, my direct report has improved in his or her job performance”. The current study found an acceptable internal consistency reliability of alpha = .95 for boss ratings of leadership effectiveness.

**Leadership capability.** The current study adapted the Return on Leadership (Young, Braddy, Champion, & Raper, 2017) measure of leadership capability, which is administered at Time 2, two months after leaders participate in the LDP. Leaders’ bosses provided ratings on a 10-point Likert-type scale (1 = Not at all, 10 = Very great extent) regarding how much they feel their direct reports improved in capability as a result of the 360 LDP. Boss-ratings included items such
as, “As a result of this program, my direct report is better prepared to carry out his or her current job responsibilities”. The current study found an acceptable internal consistency reliability of alpha = .94 for boss ratings of leadership capability.

**Developmental goal setting.** The leader’s boss answered three items regarding developmental goal setting, administered at Time 2, two months after leaders participated in the LDP. One example item is, “As a result of this program, my direct report has set developmental goals to work towards.” Bosses rated the leader on a 10-point Likert-type scale (1 = Not at all, 10 = Very great extent) regarding how successful leaders have been in setting developmental goals as a result of the 360 LDP. The current study found an acceptable internal consistency reliability of alpha = 0.88 for boss ratings of developmental goal-setting.

**Analysis**

Multi-source data was collected for two of the variables in this study, self-awareness and learning agility, prior to the 360 LDP. Rating sources for these two leadership competencies included self-ratings from the leader participating in the 360 LDP, the leader’s boss, the leader’s superior, four of the leader’s peers, four of the leader’s direct reports, and two other sources surrounding the leader. This wide range of rating sources provides a more complete picture of self-awareness and learning agility. During the 360 LDP, leaders completed self-ratings of their own feedback orientation, boss feedback environment, and perceived quality of coaching relationship with their boss, as these variables are un-observable from
outside perspectives, and best represented through self-ratings of a leader’s perceptions of each of these constructs (Spector, 2006). Two months after the 360 LDP (Time 2), bosses of each leader completed measures of improved leadership effectiveness, leadership capability, and developmental goal setting as a result of the program. Data from all sources was stored in one data base and aligned so that each source could be tied to the leader he or she rated.

For the current analysis efforts, self-awareness and learning agility were examined from a group perspective. The group score entailed aggregating mean scores, or shared perceptions, of that leader’s level of competency on self-awareness and learning agility, excluding self-ratings. This method attenuates some of the inflation that can occur with single-source self-reports (e.g. common method bias) by targeting one variable through multiple perspectives, and thus providing a more complete and accurate view of a leader’s standing, or “true score” (Podsakoff & Todor, 1985).

Atkins and Wood (2002) examined the validity of various ratings sources in predicting assessment center performance and found that group ratings and boss ratings significantly and positively predicted assessment center ratings, while self-ratings were negatively and nonlinearly related to performance. Further, research has suggested that observers tend to have higher agreement with each other than they do with self-ratings (Atwater & Yammarino, 1992). Agreement between self and other rating sources were examined in the current study, and no significant
relationships were observed between self and others for self-awareness. The relationships between self and other rating sources of learning agility were also non-significant, with the exception of self and superior ratings of learning agility ($r = .49, p < .01$). In other words, for most variables measured by the 360, self-ratings did not agree with other ratings of that variable. See Tables 2 and 3 below for all correlations between rating sources for self-awareness and learning agility.

To assess the appropriateness of aggregating rating sources, within group agreement was first determined to help determine if perceptions of self-awareness and learning agility are shared among raters. There was an average of 15 outside sources providing ratings per leader in the 360-degree feedback, with a minimum of 7 raters per leader and a maximum of 33 raters per leader. Within-group agreement was determined through the calculation of and Intraclass correlation coefficient ($ICC(2)$) (Shrout & Fleiss, 1979). $ICC(2)$ is an estimate of the reliability of the group means. Thus, an $ICC(2)$ indicates whether groups can be reliably differentiated based on the group mean. Although there are no strict standards of acceptability for $ICC(2)$ values, Glick (1985) recommended an $ICC(2)$ cutoff of .60. The $ICC(2)$ scores for self-awareness and learning agility fell above the cut-off (self-awareness $ICC(2) = 0.65$; learning agility $ICC(2) = 0.64$).
Chapter 5

Results

Means, standard deviations, reliabilities, and correlations were calculated prior to testing study hypotheses (see Table 4). Hypotheses were tested with a moderation analysis using the Preacher, Rucker, and Hayes (2007) approach, which utilizes conditional process modeling, the PROCESS macro, run with the Statistical Package for Social Sciences (SPSS) to analyze data (Hayes, 2012). PROCESS uses bootstrapping and allows the testing of conditional effects (Preacher & Hayes, 2004). Hayes suggests there is no advantage to estimating the conditional effects.
simultaneously for multiple dependent variables, and that the macro can be run as many times as there are dependent variables.

Table 4 - Descriptives and Relationships Between Study Variables

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>FES</td>
<td>5.22</td>
<td>0.91</td>
<td>(0.91)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2.</td>
<td>PCQR</td>
<td>5.51</td>
<td>1.21</td>
<td>0.85**</td>
<td>(0.96)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>FBO</td>
<td>5.97</td>
<td>0.56</td>
<td>0.31**</td>
<td>0.35**</td>
<td>(0.80)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Self-Awareness</td>
<td>3.90</td>
<td>0.39</td>
<td>0.45**</td>
<td>0.26</td>
<td>0.13</td>
<td>(0.65)</td>
<td></td>
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</tr>
<tr>
<td>5.</td>
<td>Learning Agility</td>
<td>4.06</td>
<td>0.31</td>
<td>0.23</td>
<td>-0.06</td>
<td>0.12</td>
<td>0.64**</td>
<td>(0.64)</td>
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</tr>
<tr>
<td>6.</td>
<td>Leader Effect.</td>
<td>7.29</td>
<td>1.47</td>
<td>0.33*</td>
<td>0.17</td>
<td>0.35*</td>
<td>0.42**</td>
<td>(0.95)</td>
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</tr>
<tr>
<td>7.</td>
<td>Leader Capability</td>
<td>7.62</td>
<td>1.36</td>
<td>0.20</td>
<td>0.08</td>
<td>0.22</td>
<td>0.36*</td>
<td>0.40**</td>
<td>0.83**</td>
<td>(0.94)</td>
</tr>
<tr>
<td>8.</td>
<td>Dev. Goal Setting</td>
<td>8.13</td>
<td>1.50</td>
<td>0.40**</td>
<td>0.33*</td>
<td>0.35*</td>
<td>0.39**</td>
<td>0.35*</td>
<td>0.81**</td>
<td>0.70**</td>
</tr>
</tbody>
</table>

Note. Scale reliabilities listed in the diagonals; ICCs (2) listed for self-awareness and learning agility (aggregated to group level, excluding self-ratings); 6,7,8 refer to boss ratings; **Significant at the 0.01 level (2-tailed); *Significant at the 0.05 level (2-tailed).

Hypothesis Testing

Hypothesis 1. Hypothesis 1 states that a favorable feedback environment at T1 is positively related to boss perceptions of leader improvement in (a) leadership effectiveness, (b) leadership capability and (c) developmental goal setting as a result of the 360 LDP. This hypothesis was tested by assessing the direct effect of the feedback environment (self-perspective) on the outcome variables (boss perspective). Feedback environment was positively and significantly related to leadership effectiveness \((r = 0.33, p < 0.05)\) and developmental goal setting \((r = 0.40, p < 0.01)\). However, the relationship between feedback environment and leadership capability, while positive, was not significant \((r = 0.20, p = .18)\). These findings provide support for hypotheses 1a and 1c, but not for hypothesis 1b.
**Hypothesis 2.** Hypothesis 2 proposes that the perceived quality of a leader’s coaching relationship with his or her boss at T1 is positively related to boss perceptions of leader improvement in (a) *leadership effectiveness*, (b) *leadership capability*, and (b) *developmental goal setting*. These relationships were examined by assessing the direct effect of the perceived quality of the coaching relationship (self-perspective) on the outcome variables (boss perspective). Perceived quality of the coaching relationship was positively and significantly related to *developmental goal setting* at T2 ($r = 0.33, p < 0.05$); however, no significant relationships were found with *leadership effectiveness* ($r = 0.17, p = 0.24$) or with *leadership capability* ($r = 0.08, p = 0.56$). Results provide support for hypothesis 2c, but not for hypotheses 2a or 2b.

**Hypothesis 3.** Hypothesis 3 states that feedback orientation moderates the relationship between feedback environment and perceived improvement the three leadership outcomes mentioned above (i.e. a, b, and c). Conceptual model 1 was used from the PROCESS macro to test the moderating effect of feedback orientation. The overall model was significant ($F_{(3, 44)} = 6.70, p < 0.001$), and there was a direct effect of feedback environment on *leadership effectiveness* ($\beta = 10.02, p < 0.01$). The interaction was significant ($\beta = -1.55, p = < 0.01$), however, the conditional effect of feedback environment on *leadership effectiveness* was highest when feedback orientation was low. When examining feedback orientation as a moderator between feedback environment and *leadership capability*, the overall
model was not significant \( F(3, 44) = 2.02, p = 0.12 \), and while both relationships approached significance, there was no direct effect of feedback environment on leadership capability \( \beta = 5.75, p = 0.07 \) and the interaction was also not significant \( \beta = -0.89, p = 0.08 \). The last outcome followed a similar pattern to the first, where the overall model was found to be significant \( F(3, 41) = 5.99, p < 0.01 \), and there was a direct effect of feedback environment on developmental goal setting \( \beta = 8.65, p < 0.01 \). The interaction term was also significant \( \beta = -1.30, p < 0.05 \), yet, again the relationship was in the opposite direction as expected. The strongest conditional effect of feedback environment on developmental goal setting was found at the lowest level (e.g., the 10th percentile) of feedback orientation \( \beta = 1.74, p < 0.01 \). While significant moderation effects of feedback orientation on the feedback environment to leadership outcome relationships were observed, the moderation occurred in the opposite direction as predicted and this hypothesis was not supported (see Tables 5 and 6 below for FBO moderation results). Figures 2 and 3 in the appendix provide a graphic depiction of these two significant interactions.
Table 5 - FBO Moderates FES and Leadership Effectiveness

<table>
<thead>
<tr>
<th>Direct Effects</th>
<th>Effect</th>
<th>SE</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y: Leadership Effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-51.70</td>
<td>16.22</td>
<td>.00</td>
<td>-84.38</td>
<td>-19.01</td>
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<tr>
<td>M: FBO</td>
<td>9.17</td>
<td>2.65</td>
<td>.00</td>
<td>3.83</td>
<td>14.51</td>
</tr>
<tr>
<td>X: FES</td>
<td>10.02</td>
<td>2.94</td>
<td>.00</td>
<td>4.09</td>
<td>15.95</td>
</tr>
<tr>
<td>Interaction X*M</td>
<td>-1.55</td>
<td>0.48</td>
<td>.00</td>
<td>-2.51</td>
<td>-0.59</td>
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Conditional Effects at Values of Moderator

<table>
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<th>SE</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.33</td>
<td>1.76</td>
<td>0.49</td>
<td>0.00</td>
<td>0.79</td>
</tr>
<tr>
<td>5.92</td>
<td>0.86</td>
<td>0.31</td>
<td>0.01</td>
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<td>6.08</td>
<td>0.60</td>
<td>0.29</td>
<td>0.04</td>
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<td>6.42</td>
<td>0.09</td>
<td>0.32</td>
<td>0.78</td>
<td>-0.54</td>
</tr>
<tr>
<td>6.83</td>
<td>-0.56</td>
<td>0.43</td>
<td>0.20</td>
<td>-1.43</td>
</tr>
</tbody>
</table>

Table 6 - FBO Moderates FES and Developmental Goal Setting

<table>
<thead>
<tr>
<th>Direct Effects</th>
<th>Effect</th>
<th>SE</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y: Dev. Goal Setting</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-43.18</td>
<td>17.16</td>
<td>0.02</td>
<td>-77.83</td>
<td>-8.54</td>
</tr>
<tr>
<td>M: FBO</td>
<td>7.75</td>
<td>2.80</td>
<td>0.01</td>
<td>2.09</td>
<td>13.41</td>
</tr>
<tr>
<td>X: FES</td>
<td>8.65</td>
<td>3.09</td>
<td>0.01</td>
<td>2.39</td>
<td>14.90</td>
</tr>
<tr>
<td>Interaction X*M</td>
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<td>0.50</td>
<td>0.01</td>
<td>-2.31</td>
<td>-0.28</td>
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Conditional Effects at Values of Moderator

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<th>LLCI</th>
<th>ULCI</th>
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<td>5.33</td>
<td>1.74</td>
<td>0.52</td>
<td>0.00</td>
<td>0.71</td>
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<tr>
<td>5.92</td>
<td>0.98</td>
<td>0.32</td>
<td>0.00</td>
<td>0.33</td>
</tr>
<tr>
<td>6.08</td>
<td>0.77</td>
<td>0.30</td>
<td>0.02</td>
<td>0.16</td>
</tr>
<tr>
<td>6.42</td>
<td>0.34</td>
<td>0.33</td>
<td>0.31</td>
<td>-0.33</td>
</tr>
<tr>
<td>6.83</td>
<td>-0.20</td>
<td>0.45</td>
<td>0.66</td>
<td>-1.12</td>
</tr>
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</table>

**Hypothesis 4.** Hypothesis 4 proposes that feedback orientation moderates the relationship between perceived quality of coaching relationship and perceived improvement in the three leadership outcomes (i.e. a, b, and c). Conceptual model 1 was used from the PROCESS macro to test the moderating effect of feedback.
orientation. The overall model was significant ($F_{(3,47)} = 4.09, p < 0.05$), and there was a direct effect of the perceived quality of coaching relationship on leadership effectiveness ($\beta = 4.34, p < 0.05$). The interaction was significant ($\beta = -0.70, p < 0.05$), however, the conditional effect of the perceived quality of coaching relationship on leadership effectiveness was highest when feedback orientation was low ($\beta = 0.59, p = 0.06$). When examining feedback orientation as a moderator between PCQR and leadership capability, the overall model was not significant ($F_{(3,47)} = 1.38, p = 0.26$), and there was no direct effect of PCQR on leadership capability ($\beta = 2.64, p = 0.18$) and the interaction was not significant ($\beta = -0.43, p = 0.18$). Similar to the moderation effects observed in the previous hypothesis, feedback orientation demonstrated the strongest effect on developmental goal setting, at the lowest value of feedback orientation ($\beta = 1.88, p < 0.01$). The overall model was also found to be significant ($F_{(3,44)} = 9.00, p < 0.01$), and there was a direct effect of PCQR on developmental goal setting ($\beta = 11.22, p < 0.01$). The interaction term was also significant ($\beta = -1.75, p < 0.01$). Again, significant moderation effects of feedback orientation on the PCQR to leadership outcome relationships were observed, the moderation occurred in the opposite direction as predicted and hypothesis 4 was not supported (see Table 7 below for FBO moderation results). See figure 4 in the appendix for a graphic depiction of this relationship.
Table 7 - FBO Moderates PCQR and Developmental Goal Setting

<table>
<thead>
<tr>
<th>Direct Effects</th>
<th>Effect</th>
<th>SE</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y: Dev. Goal Setting</td>
<td>Constant</td>
<td>-64.83</td>
<td>17.45</td>
<td>0.00</td>
<td>-100.03</td>
</tr>
<tr>
<td>M: FBO</td>
<td>11.47</td>
<td>2.83</td>
<td>0.00</td>
<td>5.77</td>
<td>17.17</td>
</tr>
<tr>
<td>X: FES</td>
<td>11.21</td>
<td>2.87</td>
<td>0.00</td>
<td>5.43</td>
<td>17.01</td>
</tr>
<tr>
<td>Interaction X*M</td>
<td>-1.75</td>
<td>0.46</td>
<td>0.00</td>
<td>-2.68</td>
<td>-0.82</td>
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<table>
<thead>
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<th>Conditional Effects at Values of Moderator</th>
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<th>SE</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.33</td>
<td>1.88</td>
<td>0.44</td>
<td>0.00</td>
<td>1.00</td>
<td>2.76</td>
</tr>
<tr>
<td>5.92</td>
<td>1.00</td>
<td>0.24</td>
<td>0.00</td>
<td>0.51</td>
<td>1.49</td>
</tr>
<tr>
<td>6.08</td>
<td>0.56</td>
<td>0.18</td>
<td>0.00</td>
<td>0.19</td>
<td>0.94</td>
</tr>
<tr>
<td>6.42</td>
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<td>0.20</td>
<td>0.92</td>
<td>-0.43</td>
<td>0.39</td>
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<tr>
<td>6.83</td>
<td>-0.75</td>
<td>0.34</td>
<td>0.03</td>
<td>-1.44</td>
<td>-0.06</td>
</tr>
</tbody>
</table>

**Hypothesis 5.** Hypotheses 5 predicts that self-awareness moderates the relationship between feedback environment and perceived improvement in the three 360 LDP leadership outcomes (i.e., a, b, and c), such that when feedback environment and self-awareness are high, participants will observe the highest level of perceived improvement. This hypothesis was also tested with conceptual model 1 of the process macro. Self-awareness was aggregated using all rating sources, excluding self-ratings. The overall model was significant ($F_{(3, 43)} = 4.96, p < 0.01$), and both the direct effect of feedback environment ($\beta = -5.14, p < 0.05$) and the interaction term were significant ($\beta = 1.52, p < 0.05$). When examining the conditional effect of feedback environment on *leadership effectiveness* at various levels of self-awareness, the strongest effects were found at the highest levels (i.e., the 90th percentile) of self-awareness ($\beta = 1.32, p < 0.01$). See figure 5 in the
appendix for a graphic depiction of this interaction. Additionally, the $R^2$ increase due to the interaction was also significant ($R^2\Delta=0.11$, $F_{(1, 43)} = 6.29, p < .05$).

When *leadership capability* was tested as the outcome, the overall model was significant ($F_{(3, 43)} = 2.87, p < 0.05$), but the direct effect of feedback environment ($\beta = -3.66, p = 0.11$) and the interaction term were not significant ($\beta = 1.03, p = 0.10$). The overall model was significant for the third outcome, *developmental goal setting* ($F_{(3, 40)} = 3.81, p < 0.05$), but the direct effect of feedback environment ($\beta = -2.21, p = 0.37$) and the interaction term on *developmental goal setting* were both not significant ($\beta = 0.78, p = 0.25$). However, when examining the conditional effects of feedback environment on *developmental goal setting*, the strongest and most significant effects were found at the highest level of self-awareness (i.e., the 90th percentile) ($\beta = 1.08, p < 0.05$). Conversely, the conditional effect dropped to insignificant at the two lowest levels (i.e. the 10th and 25th percentiles) of self-awareness. Based on these results, hypothesis 5a was supported, hypothesis 5b was not supported, and hypothesis 5c was partially supported (see Table 8 below for self-awareness moderation results).
Table 8 - *Self-awareness Moderates FES and Leadership Effectiveness*

<table>
<thead>
<tr>
<th>Direct Effects</th>
<th>Effect</th>
<th>SE</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y: Leader Effectiveness</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>31.12</td>
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<td>6.84</td>
<td>55.40</td>
</tr>
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<td>M: SA</td>
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<td>0.03</td>
<td>-13.97</td>
<td>-0.66</td>
</tr>
<tr>
<td>X: FES</td>
<td>-5.14</td>
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<td>0.03</td>
<td>-9.70</td>
<td>-0.58</td>
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<tr>
<td>Interaction X*M</td>
<td>1.53</td>
<td>0.61</td>
<td>0.02</td>
<td>0.30</td>
<td>2.76</td>
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<table>
<thead>
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<th>SE</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.26</td>
<td>-0.16</td>
<td>0.40</td>
<td>0.68</td>
<td>-0.97</td>
<td>0.64</td>
</tr>
<tr>
<td>3.57</td>
<td>0.32</td>
<td>0.32</td>
<td>0.31</td>
<td>-0.31</td>
<td>0.96</td>
</tr>
<tr>
<td>3.91</td>
<td>0.83</td>
<td>0.34</td>
<td>0.02</td>
<td>0.15</td>
<td>1.53</td>
</tr>
<tr>
<td>4.17</td>
<td>1.24</td>
<td>0.43</td>
<td>0.01</td>
<td>0.36</td>
<td>2.11</td>
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<tr>
<td>4.23</td>
<td>1.32</td>
<td>0.46</td>
<td>0.01</td>
<td>0.40</td>
<td>2.25</td>
</tr>
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</table>

**Hypothesis 6.** Hypotheses 6 postulates that self-awareness is a moderator between PCQR and perceived improvement in the three leadership outcomes (i.e., a, b, and c) following the 360 LDP. With *leadership effectiveness* tested as the first outcome, the overall model was not significant ($F_{(3, 46)} = 2.28, p = 0.09$), and neither the direct effect of PCQR ($\beta = -0.94, p = 0.60$) nor the interaction term were significant ($\beta = 0.27, p = 0.55$). Similarly, the overall model for testing *leadership capability* ($F_{(3, 46)} = 2.09, p = 0.11$) and the interaction term were not significant ($\beta = 0.11, p = 0.79$). The overall model for the third outcome, *developmental goal setting* was significant ($F_{(3, 42)} = 3.77, p < 0.05$), but the direct effect of PCQR ($\beta = 1.47, p = 0.41$) and the interaction term between self-awareness and PCQR ($\beta = -0.30, p = 0.52$) on *developmental goal setting* were not significant. These results suggest that hypotheses 6a, 6b, and 6c were not supported.
**Hypothesis 7.** Hypothesis 7 predicts that learning agility moderates the relationship between feedback environment and perceived improvement in the 360 LDP *leadership improvement outcomes* (i.e., a, b, and c), such that when feedback environment and learning agility are highest, perceptions of *leadership improvement* are also highest. The overall model for *leadership effectiveness* as an outcome was significant \( (F(3, 43) = 4.08, p < 0.05) \), but the direct effect of feedback environment \( (\beta = 1.12, p = 0.73) \) and the learning agility and feedback environment interaction term \( (\beta = -0.15, p = 0.85) \) were not significant. Testing *leadership capability* as the outcome, the overall model approached significance \( (F(3, 43) = 2.67, p = 0.06) \), and the direct effect of feedback environment \( (\beta = 1.82, p = 0.57) \) and the learning agility and feedback environment interaction term \( (\beta = -0.40, p = 0.62) \) were not significant. *Developmental goal setting* was the final leadership outcome tested in this hypothesis. The overall model was significant \( (F(3, 40) = 3.56, p < 0.05) \), but the direct effect of feedback environment \( (\beta = 1.33, p = 0.70) \), and the interaction term between feedback environment and learning agility \( (\beta = -0.15, p = 0.86) \) were not significant. These combined results suggest that hypotheses 7a, 7b, and 7c were not supported.

**Hypothesis 8.** Hypothesis 8 states that perceived improvements in the three 360 LDP outcomes (i.e., a, b, and c) is highest when PCQR and learning agility are also high. The first outcome, *leadership effectiveness* was examined using Conceptual model 1 from the Process macro. The overall model was significant
(\(F(3, 46) = 5.44, p < 0.01\)), but the direct effect of PCQR (\(\beta = 4.51, p = 0.06\)), and the interaction term between PCQR and learning agility were not significant (\(\beta = -1.01, p = 0.07\)). The strongest conditional effect of PCQR on leadership effectiveness (\(\beta = 0.91, p < 0.05\)) was observed at the lowest level of learning agility (e.g. 10\(^{th}\) percentile). This observed relationship was in the opposite direction as was predicted. For the second outcome, perceived improvements in leadership capability, the overall model \(F(3, 46) = 3.91, p < 0.05\) was significant, but the direct effect of PCQR (\(\beta = 3.62, p = 0.11\)), and the interaction term between PCQR and learning agility were not significant (\(\beta = -0.83, p = 0.12\)). The final overall model, testing developmental goal setting as the outcome, was significant \(F(3, 42) = 5.37, p < 0.01\), but the direct effect of PCQR and the interaction term between learning agility (\(\beta = 4.00, p = 0.10\)) and PCQR (\(\beta = -0.83, p = 0.14\)) were not significant. Interestingly, when examining the conditional effects of PCQR on developmental goal setting, the highest effect was found at the lowest level of learning agility (i.e., the 10\(^{th}\) percentile) (\(\beta = 1.04, p < 0.05\)). These combined results do not support hypotheses 8a, 8b, and 8c.

**Exploratory Analyses**

Additional analyses were conducted to explore the impact of self-other rater discrepancies, other potential moderators, such as reactions to training and other leadership competencies, and the relationship between the two antecedents and overall favorability of 360-degree feedback ratings.
Rater discrepancies were calculated by computing difference scores between self-awareness self-ratings and the mean of all other self-awareness ratings \((mean\ difference = -0.05, SD = 0.67)\) and between learning agility self-ratings and the mean of all other learning agility ratings \((mean\ difference = -0.28, SD = 0.53)\). Rater discrepancies were also recoded into “over-raters” and “under-raters”, where those leaders who provided a -higher than other average rating were categorized as “over-raters”, and those leaders who provided a lower than other average rating were categorized as “under-raters”. The discrepancy rating of self-awareness was not significantly related to any of the examined outcomes in the current study (e.g. perceived improvement in leadership effectiveness, capability, and developmental goal setting). The discrepancy rating of learning agility significantly and negatively related leadership effectiveness \((r = -0.29, p < .05)\) and approached significance in its negative relationship to leadership capability \((r = -0.27, p = .06)\) and developmental goal setting \((r = -0.27, p = .07)\). Discrepancy scores for self-awareness and learning agility were also examined as moderators, and no significant moderation effects were detected in the proposed relationships within the current study. Additionally, two independent samples t-tests were conducted to compare over-raters and under-raters on the three 360 LDP outcomes in the current study. While under-raters were observed to have higher levels of perceived improvement in all the three 360 LDP outcomes for self-awareness and learning agility, these differences were not statistically significant (see Table 9).
Reactions to training, such as overall satisfaction of training and increased job engagement as a result of training, were examined as potential moderators and/or mediators of feedback environment and the three study outcomes, improvement in leadership effectiveness, capability, and developmental goal setting (Process macros 1 and 4 were used to test these effects). In any of the examined relationships, overall training satisfaction and increased job engagement as a result of training were not observed to significantly moderate or mediate the relationships between feedback environment and the three 360 LDP outcomes.

In examining the other 360-degree feedback rated competencies, one competency stood out as a potential moderator between feedback environment and the examined outcomes, thinking and acting systematically (TAS). Systems thinking is a perspective that takes into consideration the interrelationships of a system’s parts and the environment as a whole, rather than just the parts themselves (Sterman, 2000). Some researchers suggest systems thinking is a critical competency of leadership performance in that it is the ability to analyze multiple

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t (df)</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-Awareness</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader Effectiveness</td>
<td>0.50(49)</td>
<td>0.62</td>
<td>0.21</td>
</tr>
<tr>
<td>Leader Capability</td>
<td>1.37(49)</td>
<td>0.18</td>
<td>0.52</td>
</tr>
<tr>
<td>Dev. Goal Setting</td>
<td>0.26(45)</td>
<td>0.56</td>
<td>0.26</td>
</tr>
<tr>
<td><strong>Learning Agility</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader Effectiveness</td>
<td>1.07(49)</td>
<td>0.29</td>
<td>0.47</td>
</tr>
<tr>
<td>Leader Capability</td>
<td>0.65(49)</td>
<td>0.52</td>
<td>0.41</td>
</tr>
<tr>
<td>Dev. Goal Setting</td>
<td>0.78(45)</td>
<td>0.44</td>
<td>0.36</td>
</tr>
</tbody>
</table>

Table 9 - *Mean Comparisons of Over- and Under-Raters*
pieces of information (e.g., 360-degree feedback) and contextual information and understanding how these lead to ineffective or outstanding performance (Boyatzis & Goleman, 2007). The Center for Creative Leadership defines this competency as taking a systems perspective to work, and is measured with items such as, “Considers the impact of his/her actions on the entire system,” and “Deals effectively with contradictory requirements or inconsistencies in the organization.”

Model 1 from the Process macro was used to test this moderator. Results suggested that TAS was a significant moderator between feedback environment and perceived improvement in leadership effectiveness. The overall model was significant \(F(3, 43) = 4.61, p < 0.01\), as well as the direct effect of feedback environment \(r = -6.12, p < .05\) and the interaction term between feedback environment and TAS \(r = 1.83, p < .05\) on leadership effectiveness (see Table 10 for TAS moderation results). As TAS increased, the conditional effect of feedback environment on leadership effectiveness also grew stronger, where the strongest effects of feedback environment were observed at the highest level (i.e., the 90th percentile) of TAS \(\beta = 1.95, p < 0.01\). These results suggest that leaders high in this competency have a greater understanding of their contextual feedback environment. Furthermore, when this environment is deemed favorable, systems thinkers are likely better able to leverage the multiple pieces of feedback information from the 360-degree feedback and then incorporate this into their holistic self-view in relationship to the wider system, the organization. With this
information at hand, leaders high in TAS can then more effectively work towards adjusting his or her performance to reduce any potential contradictions or discrepancies highlighted from the 360-feedback.

Table 10 - *TAS Moderates FES and Leadership Effectiveness*

<table>
<thead>
<tr>
<th>Direct Effects</th>
<th>Effect</th>
<th>SE</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y: Leader Effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>38.10</td>
<td>13.65</td>
<td>0.01</td>
<td>10.58</td>
<td>65.63</td>
</tr>
<tr>
<td>M: TAS</td>
<td>-9.41</td>
<td>3.72</td>
<td>0.02</td>
<td>-19.92</td>
<td>-1.90</td>
</tr>
<tr>
<td>X: FES</td>
<td>-6.12</td>
<td>2.56</td>
<td>0.02</td>
<td>-11.29</td>
<td>-0.96</td>
</tr>
<tr>
<td>Interaction X*M</td>
<td>1.84</td>
<td>0.69</td>
<td>0.01</td>
<td>0.44</td>
<td>3.23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conditional Effects at Values of Moderator</th>
<th>Effect</th>
<th>SE</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.32</td>
<td>-0.02</td>
<td>0.38</td>
<td>0.95</td>
<td>-0.79</td>
<td>0.74</td>
</tr>
<tr>
<td>3.50</td>
<td>0.30</td>
<td>0.32</td>
<td>0.34</td>
<td>-0.33</td>
<td>0.94</td>
</tr>
<tr>
<td>3.91</td>
<td>1.06</td>
<td>0.33</td>
<td>0.00</td>
<td>0.38</td>
<td>1.73</td>
</tr>
<tr>
<td>4.23</td>
<td>1.64</td>
<td>0.48</td>
<td>0.00</td>
<td>0.67</td>
<td>2.61</td>
</tr>
<tr>
<td>4.40</td>
<td>1.95</td>
<td>0.58</td>
<td>0.00</td>
<td>0.78</td>
<td>3.12</td>
</tr>
</tbody>
</table>

Based on the current study’s results of feedback orientation and learning agility moderating feedback environment and 360 LDP outcomes, exploratory analyses were conducted to explore possible reasons for these unexpected moderation effects. Leaders low in feedback orientation or learning agility, who also had favorable feedback environments, were perceived as most improved compared to other groups, including those who were rated highly on both of these competencies. One plausible explanation for these findings is that while a favorable feedback environment prepares leaders for the 360 LDP, those low in these desired competencies have the greatest room for improvement. Ideally, baseline measures would be collected before and after the 360 LDP; however, as this was not possible
in the current study, that remains a suggestion for future research. Instead, the
relationships between the overall favorability of 360-degree ratings across 15
competencies and the three 360 LDP outcomes were examined, with feedback
environment proposed to be a moderator of this relationship.

Ratings were first aggregated to the group level, excluding self-ratings, for
each competency. An overall favorability score was then calculated using the
average of all aggregated ratings. Results of this analysis suggest that overall
favorability of 360-degree ratings is significantly related to perceived improvement
in leadership capability ($r = .30, p < .05$), and closely approached significance for
leadership effectiveness ($r = .27, p = .054$) and for developmental goal setting ($r =
0.29, p = .052$). Feedback environment was then examined as a moderator of these
relationships. No significant moderation effects were detected for perceived
improvements in leadership capability or developmental goal setting. When
examining leadership effectiveness as an outcome, the overall model was
significant ($F_{(3, 43)} = 3.32, p < 0.05$); however, the direct effect of feedback
favorability ($\beta = -7.88, p = 0.12$) and the interaction term ($\beta = 1.63, p = 0.09$) were
not significant. While the interaction term was not observed as significant, the
conditional effects of feedback favorability on leadership effectiveness did increase
as the favorability of feedback environment increased. Further, the conditional
effect of feedback favorability on perceived improvement in leadership
effectiveness became significant ($\beta = 2.35, p < 0.05$) at the highest level of
feedback environment (i.e., the 90th percentile). Findings of this exploratory analysis find preliminary and partial support for the idea that those high in feedback environment and low in leadership competencies have the most potential and room for growth and improvement. This idea should be further explored in future research with larger sample sizes and baseline measures of performance and leadership competencies.

Chapter 6
Discussion

A recent meta-analysis examined the impact of leadership training on various outcomes and found that the overall impact and effect size of training was largely dependent on moderators such as training design and delivery, leadership levels, and the incorporation of feedback into training (Lacerenza et al., 2017). The authors of the meta-analysis explain that the incorporation of feedback enhances developmental training programs by signaling discrepancies between expectations and actual performance and through the encouragement of metacognitive activities (e.g., planning, monitoring, and revising behavior) that accelerate learning (Brown, Bransford, Ferrara, & Campione, 1983; Nadler, 1977). Results of this meta-analysis suggested that while programs including feedback had significantly larger effect sizes compared to programs that did not use feedback, effect sizes between single source and 360-degree based feedback did not greatly differ. The authors reference Kluger and DeNisi’s (2000) argument that multisource feedback may not be
universally useful and highlight the complexity involved in determining how 360-degree feedback relates to training outcomes, and thus the need for more research on this type of training. These findings, in line with the results of the current study, also imply that there may indeed be a wide range of contextual and individual difference factors to consider when designing, implementing, and studying 360-degree feedback leader development programs (360 LDPs). Contextual factors such as a leader’s perception of his or her boss’s feedback environment and the perceived quality of coaching relationship between a leader and boss impact outcomes following 360 LDPs. Individual difference constructs such as feedback orientation, self-awareness, and learning agility may also play a part in determining leadership improvement outcomes following the 360-degree feedback-based training. However, when examining the interactions between context and individual differences and the ensuing impact on improvement outcomes, the current results provide mixed findings.

The purpose of the current study was to examine the main and interaction effects of and between feedback environment, perceived quality of coaching relationship and self-awareness, learning agility, and feedback orientation on the perception of improvement in leadership effectiveness, capability and developmental goal setting after participating in a 360 LDP.

Hypothesis 1 proposed that a favorable feedback environment at time 1 (T1) would be positively related to boss perceptions of leader improvement in leadership
effectiveness, leadership capability, and developmental goal setting as a result of participating in the 360 LDP. Results indicated that feedback environment was positively and significantly related to two out of the three outcomes, leadership effectiveness and developmental goal setting. These findings are in alignment with research suggesting that a positive feedback environment leads to positive behavioral change, and in particular, increased leadership performance (Ajzen, 1991; Ashford, 1986; DeRue & Wellman, 2009). The results of the current study suggest that leaders who are accustomed to positive feedback norms established from the feedback environment are able to focus more resources on strategies to use feedback towards improving leadership performance, and thus witnessed higher instances of improvement following the 360 LDP.

Similarly, hypothesis 2 predicted that a high-quality coaching relationship between a leader and his or her boss would lead to higher perceptions of improvement in the three examined leadership outcomes. A leader’s perceived quality of the coaching relationship with his or her boss at T1 was positively related to perceived improvements in developmental goal setting as a result of the 360 LDP at T2, but not to the other two outcomes, leadership effectiveness or capability. The coaching relationship is described as a working partnership in which leaders can use feedback from their coaching boss to work towards agreed upon goals (London, Mone, & Scott, 2004). This type of relationship is focused on feedback and goal setting with the purpose of promoting continuous learning and
self-development, and the findings of the current study support the goal setting aspect of the coaching relationship. It may be that leadership effectiveness and leadership capability are two skillsets that are driven by other factors that are more relevant to these outcomes.

Feedback orientation was proposed to moderate the relationships between a leader’s feedback environment and improvement outcomes and quality of coaching relationship and improvement outcomes. While no significant moderation effects were detected on the relationship between feedback environment and leadership capability, feedback orientation was a significant moderator of the relationship between feedback environment and perceived improvements in leadership effectiveness and developmental goal setting. Likewise, feedback orientation significantly moderated the relationship between PCQR and perceived improvement in leadership effectiveness and developmental goal setting. However, these relationships were observed in the opposite pattern as expected. With high levels of feedback environment, and as the level of feedback orientation decreased, the effect of feedback environment on the two leadership outcomes became stronger and significant. The same pattern of effects was observed for the interaction between PCQR and feedback orientation. These results are particularly perplexing, as the $R^2$ increase due to the interaction of feedback environment and feedback orientation was significant and observed to be 0.17 for improved leader effectiveness and 0.11 for improved developmental goal setting. The interaction of
PCQR and feedback environment also produced a significant $R^2$ increase of 0.08 for improved leadership effectiveness and 0.21 for improved developmental goal setting. In other words, 17% and 11% of the variance in improved leadership effectiveness and developmental goal setting, respectively, is explained by the interaction between feedback orientation and feedback environment. Additionally, 8% and 21% of the variance in these two outcomes is explained by the interaction of feedback orientation and PCQR.

To further examine these results, the interaction effects were depicted in graph form. In the graphs, it becomes immediately apparent that the groups with the highest perceived improvements in leadership effectiveness were those with the most favorable feedback environments and lowest feedback orientation levels as well as those with the highest quality coaching relationships and lowest feedback orientation levels (see Figures 2, 3 and 4 in Appendix). Feedback orientation is proposed to be a critical moderator in the relationship between feedback environment and employee attitudes, and furthermore, leaders with high feedback orientation are more likely to be receptive to coaching and see utility in feedback for performance improvement (Gregory & Levy, 2012; London & Smither, 2002). However, these interactions typically take the form of high levels of each of these constructs interacting and leading to more positive outcomes (Gabriel et al., 2014). One possible explanation for these unexpected results could be that those low in feedback orientation had the most to gain and more room to improve from the
training. If this were the sole driver of improvement, the relationship between feedback orientation and improvement outcomes would likely be negative. As the relationships between feedback orientation and the leadership outcomes were all observed to be positive, and two were significant, this suggests that a favorable feedback environment and a high-quality coaching relationship may be key components for those low in feedback orientation to witness improvement. This is further supported by the observation that those low in feedback orientation and low in feedback environment had the least favorable outcomes from the 360 LDP. Favorable feedback environments prime individuals who are low in feedback orientation to become accustomed to receiving feedback (Steelman, Levy, Snell, 2004), and this priming may be occurring whether feedback recipients are ready to accept this information or not. In a similar manner, a high-quality coaching relationship could be providing the necessary prerequisites for learning and development, but the coaching recipient may not be ready to take the next step due to their negative feelings towards feedback. These individuals then take part in a 5-day program that teaches them specifically how to use feedback to improve leadership skills and may in fact increase the participant’s orientation towards feedback in general. As these participants have the lowest levels of feedback orientation, at least initially, it is possible that their performance levels may also have been lower compared to other participants, leaving the most room for
performance improvement compared to those who started the program as high performers.

Another possible explanation for these findings could be that there was range restriction in the T2 sample. Participants who completed the T1 survey were asked if their boss could be contacted to take part in the T2 phase of the study. In this item, it was explained to participants that their boss would be asked questions about their performance improvement as a result of the 360 LDP. When examining the characteristics of those participants who opted in or out of the T2 study, negative relationships were observed between the decision to say no and feedback environment ($r = -0.16, p < 0.05$), perceived quality of coaching relationship ($r = -0.25, p < 0.01$), and feedback orientation ($r = -0.26, p < .01$). These findings suggest that those with unfavorable feedback environments, low quality coaching relationships, and/or low feedback orientation were less likely to ask their boss to take part in the study and provide critical performance information. It is possible that the T2 sample is restricted in that those lowest in these three constructs are not fully represented as they chose to opt out of the study. To further explore this possibility, three independent samples t-tests were conducted to compare mean levels of feedback orientation, perceived quality of coaching relationship, and feedback environment between participants who said yes to taking part in the T2 study and those who said no. The mean levels and standard deviations of those who said no to contacting their boss for the T2 study had significantly lower levels of
feedback orientation ($t (88.3) = 3.38, p < 0.01$) and quality coaching relationships ($t (89.7) = 2.63, p < 0.05$). These findings suggest that the T2 sample may not be entirely representing the full range of these constructs.

Hypothesis 5 proposes that self-awareness moderates the relationship between feedback environment and 360 LDP outcomes, such that a favorable feedback environment is associated with higher perceptions of improvement in the three examined outcomes. Self-awareness, as rated by others, significantly moderated the relationship between feedback environment and perceived leadership effectiveness. In support of hypothesis 5a, the strongest effect of feedback environment on perceived improvement of leadership effectiveness occurred at the highest level of self-awareness. Additionally, 11% of the variance in improved leadership effectiveness was explained by the interaction between feedback environment and self-awareness. This finding suggests that self-aware leaders are able to mindfully process and use the high-quality feedback information that is available in a favorable feedback environment and 360 LDP to direct attention towards reflection and subsequent performance improvements (Sparr et al., 2017, Steelman et al., 2004). The interaction between self-awareness and feedback environment was not significant in predicting leadership capability improvement or developmental goal setting improvement. However, when examining the conditional effect of feedback environment on perceived improvement in developmental goal setting at varying levels of self-awareness, the strongest and
significant effects were observed at the highest levels of self-awareness. While a significant interaction was not observed, this finding still suggests that participants with a favorable feedback environment and high levels of self-awareness are the most adept at performance improvement, and in particular, at learning to set appropriate developmental goals using the training from the 360 LDP.

Hypotheses 6a, 6b, and 6c proposes that self-awareness moderates the relationship between PCQR and perceived improvement in the 360 LDP outcomes. The results did not support this hypothesis for any of the three leadership improvement outcomes. While self-awareness was positively and significantly related to all three improvement outcomes, and PCQR was positively and significantly related to perceived improvements in developmental goal settings, the results of this study imply that these two factors do not interact to produce these outcomes. It may be that other unexamined factors moderate the relationship between PCQR and developmental goal setting improvement outcomes. Future research should seek to examine other potential moderators of this relationship.

The final two hypotheses predict that learning agility moderates the relationships between feedback environment and perceived improvement in 360 LDP outcomes and between PCQR and perceived improvement. No significant learning agility moderation effects were detected between feedback environment and any of the three measured outcomes in the current study. Likewise, learning agility also did not moderate the relationship between PCQR and perceived
improvement for any of the 360 LDP outcomes. Once again, while strong main effects were observed for learning agility on performance improvements, the interaction effect was not a significant predictor of this improvement. These results suggest that learning agility is an essential skillset enabling leaders to critically analyze and learn from past experiences (Lombardo & Eichinger, 2000), and it is possible that the presence of this ability alone may be enough to provide leaders with successful outcomes. Leaders who are agile learners may be able to glean enough information from their surroundings, regardless of their contextual environment or sources of support or feedback.

In summary, it appears that the majority of the study variables were, at least in some part, determinants of perceived performance improvements following a 360 LDP. However, the proposed interaction effects, with the exception of feedback environment and self-awareness, were not observed in the current study. Interestingly, one of the proposed interactions of feedback environment and feedback orientation did occur, but in the opposite direction as was expected. While it appears that these contextual and individual factors all played a part in contributing to positive outcomes from the program, the nature of some of these inter-relationships remains unclear.
Chapter 7

Future Research and Limitations

The findings of the current study suggest that a favorable feedback environment and high-quality coaching relationship are related to outcomes such as boss ratings of perceived improvement in leadership effectiveness and developmental goal setting. Self-awareness and learning agility were positively related to all three outcomes, while feedback orientation was positively related to perceived improvements in leadership effectiveness and developmental goal setting. Unexpectedly, feedback orientation interacted with feedback environment in such a way, that participants with low feedback orientation and favorable feedback environments had the highest perceived improvement outcomes in leadership effectiveness and developmental goal setting. One implication for practice is that these types of training that are based so heavily in feedback should first discuss the value of feedback before moving into the results, or 360-degree feedback information. Future research should examine this relationship more closely to understand why this is occurring. For example, feedback orientation could be measured before a 360 LDP as a baseline measure, and then once again after program completion to capture any changes in this construct. Along these same lines, future research could incorporate baseline performance measures prior to participants engaging in the 360 LDP and then measure actual performance improvement at a second point in time, post-program. The exploratory analyses in
the current study revealed that leaders who received the most favorable 360-degree rating overall, were more likely to be perceived as improving as a result of the 360 LDP. While feedback environment did not significantly moderate this relationship, the interaction term approached significance, and the relationship was observed in the expected direction. Future research should also examine this relationship with a larger sample size that may have more power to detect potential moderation effects.

Another potential avenue of research includes examining other moderators of the relationships between contextual factors such as feedback environment and coaching relationships and 360 LDP outcomes. For example, exploratory analyses revealed that thinking and acting systematically (TAS) interacted with feedback environment, such that at the highest levels of TAS and with a favorable feedback environment, participants witnessed the highest perceived improvements in leadership effectiveness. While the current study partially answers McCauley’s (2008) questions of “for whom and under what conditions do leader development initiatives work?”, there is more to uncover. As the results of Lacerenza and colleague’s (2017) meta-analysis also suggest that the effectiveness of leadership training programs are largely dependent on moderators, future research should continue to focus in this area to understand how context and person interrelate to produce the most positive outcomes following training initiatives.

The current study is not without limitations. First and foremost, a larger number of participants would have allowed more confidence in some of the study
findings. Moreover, with a larger sample size, additional analyses could have been conducted. Unfortunately, there were not enough matched cases between all data sources (i.e., 18 participants) to conduct more advanced analyses such as structural equation modeling to test the entire proposed model.

A potential concern arises with whether the amount of time that passed between the 360 LDP and the post-program Time 2 measures is enough to show improvement. While the current study did find significant reports of perceived improvement, longitudinal research with multiple points in time can be used to track performance gains and losses. Researchers in the field of leader development have suggested that multiple measurement administrations over longer periods of time may be required to fully understand lasting behavioral change (Dai, De Meuse, & Peterson, 2010). Ideally, outcomes would be evaluated at two, six, and twelve months post-program to be able to more accurately and effectively model trends in behavior change and lasting impacts from engaging in training. Future research should incorporate performance baseline measures prior to 360 LDPs in addition to multiple post-program measures to track performance improvements following training.

Participants who took part in the 360 LDP selected one of several locations across the United States to complete the leader development training. The 360 LDP instructors varied depending on the location and timing of the program administration. While the program curriculum is the same across locations, one
potential limitation is that program outcomes could be dependent on exposure to a particular 360 LDP instructor. A one-way ANOVA was conducted to compare boss-rated outcomes across locations, and no significant differences based on 360 LDP location were found, suggesting this limitation may not have had a major impact on the results.

Finally, there is a possibility that the Time 2 sample was restricted to individuals with higher levels of feedback orientation and perceived quality of coaching relationships compared to the entire sample from the Time 1 group. Approximately 28% of participants who voluntarily completed the Time 1 measures declined when asked if their bosses could be contacted to participate in the Time 2 follow-up. Participants were informed that their boss would be asked questions about their performance improvement as a result of the 360 LDP. Additional analyses revealed that declining boss participation was negatively related to feedback orientation, feedback environment, and perceived quality of coaching relationships, and further, that the participants who declined had significantly lower means and standard deviations in both feedback orientation and perceived quality of coaching relationships. From these additional analyses, it appears that the sample in Time 2 may have been restricted in terms of representing the full range of these constructs and may have biased results.
Chapter 8
Implications and Conclusions

The current study aimed to investigate how the factors within the “Prepare” and “Engage” phases of a 360 LDP impact a leader’s success in the “Apply” phase following the 360 LDP. As leaders prepare to take part in a 360 LDP training initiative, factors within their organizational culture and specific work units increase leadership outcomes following training. Results of the current study suggest that a leader’s feedback environment and perceived quality of coaching relationship with his or her boss provide leaders with the support and accountability that are necessary to witness greater benefits from the leadership training initiatives. The follow-up exploratory analyses also provide further support for this finding, in that more favorable feedback environments at time 1 were positively related to overall favorability of 360-degree feedback ratings. Exposure to a favorable feedback environment essentially creates an avenue for receiving consistent high-quality feedback information on a regular and informal basis (Steelman et al., 2004). This exposure to regular feedback helps to prepare leaders for development initiatives such as a 360 LDP that provide an enormous amount of feedback information in a short period of time. If a leader is not accustomed to receiving critical feedback, he or she might react defensively or negatively and not mindfully and effectively use this information for meaningful behavioral change (Atwater et al., 2000). One practical implication from these findings is that 360
LDPs will have a greater return on investment if a leader’s feedback environment is favorable at the start of the program. Organizations should be encouraging bosses to create favorable feedback environments with their direct reports to increase the chances that developmental initiatives succeed. This recommendation is in line with research suggesting that these types of initiatives should not be isolated incidents, but instead an “integrated set of experiences” (Hernez-Broome & Hughes, 2004). These results also suggest that feedback environment is an important antecedent of both individual performance outcomes in addition to processes such as learning from training. Future research should explore the nature of this relationship to further understand how feedback environment leads to individual learning processes.

Similarly, high quality coaching relationships provide a trusted source for leaders to ask for feedback and to set and work towards developmental goals (Gregory and Levy, 2010; London et al., 2004). Coaching bosses highlight areas of improvement that require behavioral change and are able to help leaders monitor progress towards their agreed upon goals (Gregory et al., 2011). Results provide support for this notion, as high-quality coaching relationships were found to be positively related to perceived improvements in developmental goal setting post-360 LDP. These findings are also in line with a previous study conducted on 360 LDP outcomes, where boss support lead to more positive post-program outcomes at 2 months (Young et al., 2017). Organizations should strive to create environments
in which senior leaders feel supported and empowered to provide regular feedback and to develop coaching relationships with their direct reports. Internal trainings could be developed to highlight the value of feedback and how to provide both favorable and unfavorable feedback in a manner that will provide the most value to the recipients. Moreover, organizations could provide training to senior leaders on how to foster coaching relationships with direct reports, including specific information on effective coaching behaviors that are action, results, and person-oriented (Evered & Selman, 1989).

Results of this study also support the idea that individual differences can improve leader effectiveness post training. Specifically, feedback orientation, self-awareness, and learning agility equip the 360 LDP participant with the necessary tools to process and utilize the feedback and knowledge acquired during the program. Feedback orientation decreases apprehension towards receiving and using feedback (London, 2003) and a higher level of this suggests that leader development participants are better able to utilize the 360-feedback received in the program.

Self-awareness is the ability to reflect inwards and make comparisons of the self to standards, such as those received from critical feedback information (Ashley & Reiter-Palmon, 2012). Highly self-aware individuals are able to take information from their environment (e.g., feedback from the 360 LDP), and channel this into reducing discrepancies between expected performance standards and a leader’s
current standing in that performance domain (Smither, London, & Reilly, 2005; Van Velsor et al., 1993). Additionally, the significant interaction between self-awareness and feedback environment suggests that self-aware individuals will witness the most positive outcomes when accustomed to regular high-quality feedback information from trusted sources. Finally, learning agility was supported as being a critical skill in developing successful leaders (De Meuse et al., 2010). Highly agile leaders possessed the motivation to take the information and feedback provided in the 360 LDP and apply this knowledge to increasing their own leadership effectiveness.

With this knowledge at hand, organizations could take one of two approaches related to selection and development. As these traits have been linked in the current study, as well as in other research, to leadership success, organizations could incorporate measures of feedback orientation, self-awareness, and learning agility into assessment batteries to select individuals into leadership positions. Assessments of these constructs could also be used to identify leaders who would benefit from leader development training. For one, leaders high in these traits may be the most likely to succeed in training that contains a high level of personal and potentially critical feedback. Alternatively, leaders who are low in these traits may greatly benefit in training that targets improvement in these specific areas. Feedback orientation and self-awareness in particular have been
suggested to be quasi-traits that can be trained within individuals (Ashley & Reiter-Palmon, 2012; Deshon & Gillespie, 2005).

This study answers a call to research to examine the specific conditions and individual differences that drive more positive leadership outcomes from a 360 LDP (Lacerenza et al., 2017; McCauley, 2008). Through examining the interaction of context and leader personal characteristics, multi-source feedback programs can better understand the factors that drive successful outcomes for program participants. This line of research can thus inform organizations on some of the contextual factors that encourage organizational leaders to engage in targeted self-improvement efforts to become better leaders. This study adds to the growing literature of 360-degree feedback leader development programs by highlighting specific individual traits and contextual factors driving success from these initiatives as well as areas within this domain that would greatly benefit from future research.
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Appendix A: Measures

Boss Feedback Environment (Steelman, Levy, & Snell, 2004)

(Time 1: Self-report)

Source Credibility

1. My boss is generally familiar with my performance on the job.

2. In general, I respect my boss’s opinions about my job performance.

3. My boss is fair when evaluating my job performance.

Feedback Quality

4. My boss gives me useful feedback about my job performance.

5. The feedback I receive from my boss helps me do my job.

6. The performance information I receive from my boss is generally not very meaningful. (R)

Feedback Delivery

7. When my boss gives me performance feedback, he or she is considerate of my feelings.

8. My boss generally provides feedback in a thoughtless manner. (R)

9. My boss is tactful when giving me performance feedback.

Favorable Feedback

10. I seldom receive praise from my boss. (R)

11. My boss generally lets me know when I do a good job at work.

12. I frequently receive positive feedback from my boss.
Unfavorable Feedback

13. On those occasions when my job performance falls below what is expected, my boss lets me know.

14. On those occasions when I make a mistake at work, my boss tells me.

15. I frequently receive negative feedback from my boss.

Feedback Availability

16. My boss is usually available when I want performance information.

17. My boss is too busy to give me feedback. (R)

18. The only time I receive performance feedback from my boss is during my performance review. (R)

Promotes Feedback Seeking

19. My boss is often annoyed when I directly ask for performance feedback. (R)

20. I feel comfortable asking my boss for feedback about my work performance.

21. My boss encourages me to ask for feedback whenever I am uncertain about my job performance.

Feedback Orientation (Linderbaum & Levy, 2010)

(Time 1: Self-report)

Utility

1. Feedback contributes to my success at work.

2. To develop my skills at work, I rely on feedback.

3. Feedback is critical for improving performance.
4. Feedback from bosses can help me advance in a company.

5. I find that feedback is critical for reaching my goals.

   **Accountability**

6. It is my responsibility to apply feedback to improve my performance.

7. I hold myself accountable to respond to feedback appropriately.

8. I don’t feel a sense of closure until I respond to feedback.

9. If my boss gives me feedback, it is my responsibility to respond to it.

10. I feel obligated to make changes based on feedback.

   **Social Awareness**

11. I try to be aware of what other people think of me.

12. Using feedback, I am more aware of what people think of me.

13. Feedback helps me manage the impression I make on others.

14. Feedback lets me know how I am perceived by others.

15. I rely on feedback to help me make a good impression.

   **Feedback Self-Efficacy**

16. I feel self-assured when dealing with feedback.

17. Compared to others, I am more competent at handling feedback.

18. I believe that I have the ability to deal with feedback effectively.

19. I feel confident when responding to both positive and negative feedback.

20. I know that I can handle the feedback that I receive.
Perceived Quality of Coaching Relationship (Gregory & Levy, 2010)

(Time 1: Self-report)

Genuineness of the Relationship
1. My boss and I have mutual respect for one another.
2. I believe that my boss truly cares about me.
3. I believe my boss feels a sense of commitment to me.

Effective Communication
4. My boss is a good listener.
5. My boss is easy to talk to.
6. My boss is effective at communicating with me.

Comfort with the Relationship
7. I feel at ease talking with my boss about my job performance.
8. I am content to discuss my concerns or troubles with my boss.
9. I feel safe being open and honest with my boss.

Facilitating Development
10. My boss helps me to identify and build upon my strengths.
11. My boss enables me to develop as an employee of our organization.
12. My boss engages in activities that help me to unlock my potential.
Appendix B: Figures

Figure 1. Proposed model

Figure 2. FBO moderates FES and leadership effectiveness improvement
Figure 3. FBO moderates FES and developmental goal setting

Figure 4. FBO moderates PCQR and developmental goal setting
Figure 5. Self-awareness moderates FES and leadership effectiveness.