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The Effect from Coaching Based Leadership

Frode Moen[1] & Roger Andre Federici[1]

[1] Department of Education, Norwegian University of Science and Technology, Trondheim, Norway

Correspondence: Frode Moen, Department of Education, Norwegian University of Science and Technology, Granliveien 14, 7024 Trondheim, Norway. E-mail: frmoe@online.no

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Abstract

The main purpose of the present study was to implement an experiment to explore the effects from coaching based leadership on goal setting, self-efficacy, and causal attribution. The study comprised of 20 executives and 124 middle managers at a branch of a Norwegian Fortune 500 company who all voluntarily participated in an experiment over a period of one year. The executives who were randomly chosen for the experiment group conducted a coach specific training programme over one year and executed coaching based leadership with the middle managers in the experiment group.

The study uses ANCOVA to explore possible effects from coaching based leadership on psychological variables that have an impact on performance. The ANCOVA analyses from this study supported none out of three proposed hypotheses. Only one significant change in the experiment group was found, as successful attributions to ability increased. This study raises important questions about coaching based leadership. The results are mainly discussed related to possible conflicting roles in coaching based leadership and possible lack of competencies among the executives to efficiently fulfil their roles as coaches.

Coaching in business is a fast growing industry and this study is a contribution to expand the amount of empirical studies with an experiment- and control group design that explore the effects from coaching based leadership.

Keywords: coaching, executives, self-efficacy, goal setting

1. Introduction

During the last decades the use of coaching as a tool to develop requisite skills among employees has increased rapidly in various countries throughout the world (Bacon & Spear, 2003; Diedrich, 2001; Grant & Cavanagh, 2004; Kampa-Kokesch & Anderson, 2001; Kilburg, 1996). Coaching in business is aimed at maximizing individual performance and corporate financial return (Joo, 2005; Sherman & Freas, 2004). From both business owners' viewpoints and an academic point of view, the issue is that the Return on Investment (ROI) of coaching is not easily measurable (AMA, 2008). However, change is a necessity in order to enhance performances and professional development (Prochaska, Norcross & DiClemente, 1994). The process of achieving change is rather complex, but in simplified terms a change process involves efficient cognitive preparations and decisions followed by effective actions. This includes awareness of oneself, one's relationship to what's being investigated, and the potential for growth and development. Thus, coaching focuses on psychological aspects in the process of creating change and should therefore influence important psychological variables impacting human performance (Grant, 2006).

In coaching research there is a trend to investigate how psychological constructs are involved in human change (e. g., Ely, et al., 2010; Evers, Brouwers & Tomic, 2006; Grant, 2002; Grant & Cavanagh, 2004; Grant, Curtayne & Burton, 2009; Green, Oades & Grant, 2006; Spence & Grant, 2007; Spence, Cavanagh & Grant, 2008; Sue-Chan & Latham, 2004). In general, there are numbers of studies that have looked at the effects of psychological factors impacting human performance. For instance, decades of research reveals that psychological constructs such as goal setting, self-efficacy, and causal attributions affect performance in different ways (e. g., Bandura, 1997; Locke & Latham, 2002; Weiner, 1989).

In parallel with the increased use of coaching as a tool to enhance performance in business, published peer-reviewed research has significantly escalated (Grant & Cavanagh, 2004). Still, there is a claim among researchers for more empirical studies with strong designs that investigate possible effects from coaching (Grant,

2006; Passmore & Gibbes, 2007). A literature search yielded only 16 empirical studies with experiment- and control group design since year 2000, and only 2 out of 16 were investigating possible effects from coaching based leadership (Deviney, 1994; Miller, 1990). Thus, more empirical research is needed, especially randomised outcome studies with an experiment- and control group design (Grant & Cavanagh, 2004; Moen, 2010; Søholm et al., 2006). The main purpose of the present study was therefore to implement an experiment to explore the effects from coaching based leadership on goal setting, self-efficacy, and causal attribution.

2. Theoretical Background

2.1 Coaching

In general, coaching can be divided into two different schools of thought; those who claim that coaching is everything an executive consultant or coach does to realize the coachee's potential (Kinlaw, 1989; Schein, 2006; Hargrove, 2003) and those who claim that coaching is a specific method to realize that potential (Downey, 1999; Whitmore, 2002; Flaherty, 1999). The first school of thought places less emphasis on the importance of active participation and responsibility by the client and claims that coaching is everything that is done which results in growth and development. The second school of thought argues that coaching refers to a method in its own right and that recognizable principles must be followed in the process to define it as coaching (Beattie, 2002; Clegg, Rhodes & Kornberg, 2003; Downey, 1999; Flaherty, 1999; Grant, 2001; Moen, 2010; Redshaw, 2000; Whitmore, 2002).

Generally, coaching is about establishing a helping relationship between the coach and the person with whom the coach is engaged (defined as the coachee in this study). One important principle that is emphasized in coaching is the notion that the individual has the capability to find solutions to his or her problems through increased awareness – with the help of a coach (Grant, 2006; Moen & Kvalsund, 2008; Whitmore, 2002). The coach is a facilitator whose aim is to help the coachee to learn (Flaherty, 1999; Whitmore, 2002), as a kind of self-directed learning (Wilson, 2007). This is a client-centered approach, influenced by the field of humanistic psychology, which emphasizes the importance of listening to the subjective beliefs of the client (Kahn, 1996). Attention to the coachee's world is therefore essential in coaching. The importance of asking the right questions followed by the ability to listen deeply to what the coachee is saying are two other important principles which define the coaching process (Kvalsund, 2005). Powerful questions are supposed to open up and expand the information about the focused case, and the listening process is supposed to ensure that the coachee is respected, heard, and understood (Moen, 2010). By using powerful questioning and active listening the coachee will become more aware of the focused case and increase his or her ability to take responsibility in his or her learning. The true nature of a coaching relationship is therefore based on mutuality, in which both parties are equal in the relationship and promote each other's independence while working and learning together (Zeus & Skiffington, 2002; Kvalsund, 2005; Moen, 2010).

2.1.1 Coaching within Business

Coaching in business aims to make companies more competitive in the dynamic marketplace (Joo, 2005; Sherman & Freas, 2004). It is found to be one of the fastest growing interventions in the professional development of managers and employees, and the growing popularity is a response to workplace demands (Gray & Goregaokar, 2007). Today, executives may expect emotional intelligence and soft skills from managers and colleagues. According to Sherman and Freas (2004), executives of flatter, leaner, faster-moving organizations are recognizing a subtler set of competencies: the communication and interpersonal skills necessary for influencing employees, adaptability to rapid change, and respect for people of diverse backgrounds.

A recent survey by the Chartered Institute of Personnel and Development (CIPD) revealed that almost 90% out of 664 organisations regularly used coaching by line managers. Another two-thirds reported the use of external coaches to coach their staff (CIPD, 2005). In business, coaching is usually utilized within these two different approaches. First, coaching is used as a learning method for executives, as when an external consultant coach is coaching executives' to improve their performances as executives (Grant & Cavanagh, 2004; Goldsmith & Lyons, 2006; Hall, Otazo & Hollenbeck, 1999; Moen, 2010; Underhill, McAnally, & Koriath, 2007). This is an external coach executing external executive coaching. Second, coaching is used as a style of leadership, which executives' use when they feel it is appropriate and has a potential in their roles. In this case, coaching is performed formally during series of dedicated meetings, or informally through the executives' day to day interactions with their employees. This is an internal coach executing coaching based leadership (Hall, et al., 1999).

The literature about the executive as a coach has been identified as a way of motivating, developing, and retaining employees in organizations (Evered & Selman, 1989; Orth, Wilkinson, & Benfari, 1987). The present

study focuses on internal coaching .There is a lack of empirical research that investigates possible effects of coaching based leadership, where executives coach their employees for whom they have management responsibilities over a long period of time (Grant, 2006). However, some studies have concluded that executives clearly distinguish between the role as a leader and the role as a coach, and some executives also think there is a role conflict between the two roles (Arnold, 2004; Ellinger & Bostrom, 2002). Some of the main areas that support this role conflict are a possible lack of objectivity from coaching leaders, lack of confidentiality and thrust, and potentially conflicts of interest (personal versus organizational interests).

2.2 Coaching and Goal Setting

Coaching based leadership is used to improve employees' performances and professional roles (Goldsmith & Lyons, 2006; Moen, 2010; Underhill, et al., 2007). When a coachee is faced with an exploration of the potential for enhancing performances, the coach and the coachee begin with pursuing learning goals (Gallwey, 2000; Moen & Kvalsund, 2008; Passmore & Gibbes, 2007; Wilson, 2007).

Locke and Latham (2002) highlight five factors called goal setting moderators, which are essential for goals to positively affect performances (Locke & Latham, 1990). First, the goal has to be specific, meaning that it must be both observable and measurable relative to the desired outcome. This will be referred to as *goal setting clarity* in the present study. One of the major responsibilities for a coach is to discover, clarify, and align what the coachee wants to achieve (Grant, 2006; Whitmore, 2002).

The second factor concerns the perceived level of difficulty of the specific task. It is the judgement of difficulty made by the individual which is the critical element relative to assessing task difficulty (Locke & Latham, 1990). Tasks which are at the limit or close to the limit of the individual's capability have the optimal degree of difficulty in order to positively affect self-efficacy (Bandura, 1986). This factor will be referred to as *goal setting difficulty* in the present investigation. In order to set challenging and realistic goals which are close to the limit of own capacity (Bandura, 1986), awareness about own capacity and task demands is essential. Exploration of this awareness is central in coaching.

Third, the relation between performance and goal setting is strongest when the individual is deeply committed to the goal (Seijts & Latham, 2001). The strength of this engagement is referred to as *goal setting commitment* in this study. Facilitating for coachee generated strategic decisions and solutions is a major responsibility for a coach. Thus, coaching should influence a coachee's commitment.

Fourth, in order for goals to be effective, effective and on-going feedback regarding one's progress in relation to goal achievement is necessary (Locke & Latham, 2002). In order to both improve and achieve the desired performance outcome, individuals need to know how closely their performance approximates or deviates from the intended task. The influence of this important concept is referred to as *goal setting feedback* in the current investigation. A coaching process is a reflection based upon a coachee's experience regarding a focused case (Moen & Kvalsund, 2008). Feedback in this process of change is important in coaching.

Fifth, as the complexity of the tasks needed to achieve a particular goal increases, the individual's capability to possess and effectively implement efficient goal attainment strategies is essential. The individual's ability to execute necessary task strategies is therefore an important variable related to goal attainment and performance. In the present study, this construct will be referred to as *goal setting strategy*. An important responsibility for a coach is to stimulate the coachee to be aware of-, and be able to use efficient strategies in order to reach certain goals.

These five goal setting moderators regulate the strength of the relationship between the goals themselves and actual performance (Locke & Latham, 2002). Previous research reveals that a positive change in these moderators strengthen the relation between goals and performance (Locke & Latham, 2002). Since these different aspects of goal setting are central in coaching (e.g. the GROW model), an expected benefit from coaching is a positive effect on these moderators. It is important to note that goal setting is not the same as actual goal attainment.

Based on these goal setting moderators proposed by Locke and Latham (2002), the following hypothesis was developed (H1): *Coaching based leadership improves employees' goal setting in the following dimensions: clarity, strategy, feedback, commitment and difficulty.*

2.3 Coaching and Self-efficacy

Self-efficacy refers to a specific aspect of the self, concerned with what the individual can do with the skills and capabilities he or she possesses (Bandura, 1997). Bandura defined self-efficacy as: "... beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997,

p. 3). Self-efficacy is strongly linked to a variety of behavioural outcomes such as engagement, autonomy, persistence, strategy use, reduced anxiety, and task performance (Bandura, 1997; Federici & Skaalvik, 2011, 2012; Pajares, 1996; Pajares & Schunk, 2001; Schunk, 1989, 1995). Moreover, high self-efficacy is associated with greater cognitive flexibility, effective use of goal setting, resistance to negative feedback, and self-regulation (Bandura, 1993; Zimmerman & Bandura, 1994).

Self-efficacy is an aspect of the self, concerning how confident the individual is that he or she can successfully perform requisite tasks in specific situations given one's unique and specific capabilities. As a result, self-efficacy has been conceptualized as a forethought process because of its proactive impact on performance (Zimmerman & Cleary, 2006). Interestingly, the cognitive processing of task demands and the coachee's capacity towards these demands is central in coaching as well as it is a part of the cyclical nature of developing self-efficacy (Tschannen-Moran, Woolfolk Hoy & Hoy, 1989). However, during the cognitive process a coachee is assumed to interpret different sources of information in order to determine his or her self-efficacy. Of the four main sources of self-efficacy (experiences of mastery, verbal persuasion, vicarious experiences, and physiological arousal), Bandura (1997) claims that the most essential and dependable source is mastery experiences. The exploration of a focused case in coaching normally results in planned actions to achieve desired outcomes and goals. To develop new experiences of mastery, these actions must be executed with optimal quality during action. The coaching process emphasizes the cognitive processing prior to performance and should therefore have a potential effect on self-efficacy.

Another source of information in order to determine self-efficacy is verbal persuasion. The coaching process is stimulating the coachee to be active in exploring his or her potential. The coach is trying to stimulate the coachee to persuade him- or herself to be confident that he or she is capable of performing specific actions to achieve desired goals. Coaching has therefore the potential to influence self-efficacy in several ways: by optimizing the forethought process prior to performance, by verbal persuasion, and by stimulating the coachee to focus on effective actions during action so that new successful experiences of mastery are made. Thus, successful executive coaching should increase self-efficacy. The following hypothesis was therefore developed (H2): *Coaching based leadership improves employees' self-efficacy related to their work specific tasks.*

2.4 Coaching and Causal Attributions

Intra-personal causal attribution theory focuses on individuals internal processing of thoughts and feelings that are present during the process of judgement and evaluation (Martinko & Thomson, 1998). The coaching process is built upon active involvement and reflection. Thus, the coachee is stimulated to take control of own learning and reflect upon attributional patterns. Weiner (1989) states that in authentic, applied performance situations there are literally thousands of possible reasons people give for success and failure (Weiner, 1989). He hypothesized that attributions hinge on three primary dimensions: (1) locus of causality (internal vs. external), (2) stability (whether the causes change over time), and (3) locus of controllability (whether the cause is under the individual's control) (Weiner, 1985).

Research indicates that people have a general tendency to utilize self-enhancing and self-protecting attribution patterns, by attributing their own successes to internal, stable, and controllable factors such as effort and ability (Skaalvik, 1990, 1994; Zuckerman, 1979; Withley & Frieze, 1985). Failures are attributed to external factors that are both unstable and out of their control. Self-enhancing attributions generally strengthen an individual's self-view and perceived competence, ability, and control. Self-protecting attributions generally maintain an individual's self-view, perceived competence, and ability, because failures are not attributed to low ability or competence abilities (Skaalvik, 1990, 1994).

In general, internal, unstable, and controllable attributions following failure lead to positive future expectations of success because the individual believes that he or she can control the cause of the unsuccessful behaviour (Bandura, 1997). On the other hand, attributions made to internal, stable, and uncontrollable causes after failure, such as lack of ability, might over time, lead to negative future expectancies and "learned helplessness" because the individual perceives that he or she has little control over the cause of his or her unsuccessful behaviour (Abramson, Seligman, & Teasdale, 1978; Maier & Seligman, 1976; Dweck, 2006).

In the coaching process, the coachee is stimulated to be active in his or her learning by a solution oriented focus and a positive asset search. Moreover, cause- and effect relations regarding performances are important, and the value of an internal locus of causality and controllability is stressed (Moen, 2010; Moen, 2011). Since two major responsibilities for a coach are to elicit coachee generated solutions and strategies, and hold the coachee responsible and accountable in the learning process, one effect from coaching should be to increase the tendency to attribute achievement outcomes to internal, unstable, and controllable factors, such as effort and strategy. The

following hypothesis was therefore developed (H3): *Coaching based leadership strengthens employees' causal attributions to internal, unstable and controllable factors, such as effort and strategy.*

3. Method

3.1 Participants and Procedure

This study comprised of 20 executives and 124 middle managers at a branch of a Norwegian Fortune 500 company who all voluntarily participated in an experiment over a period of one year. The executives in the study were the company's CEO's (Chief Executive Officers) and they were all in the company's top management group. Twelve of the executives were randomly chosen for the experiment group and eight were chosen for the control group. The middle managers in the study were the line managers for whom the executives had management responsibilities. They were office managers in different departments in the company. Middle managers who were managed by executives from the experiment group were chosen for the experiment group whereas middle managers who were managed by executives from the control group were chosen for the control group. At the pre-test sixty one middle managers were in the experiment group, and sixty three middle managers were in the control group. A gender breakdown of the subjects included 56.5% men and 43.5% women. In terms of age, 4.8% < 30 years, 61.3 % aged 30 to 45 years, 29.8 % aged 46 to 60 years, and 4% > 60 years.

3.2 Pre-test Post-test Control- group Design

After the executives and middle managers were randomly assigned into either the experimental or control groups, a pre-test was administrated. The middle managers participated in an online questionnaire, which measured the psychological variables in this study. Then, the executives in the experiment group attended a course in coaching based leadership that lasted for one year (see table 1). In parallel with the course, they were supposed to implement acquired techniques and approaches in their interactions and relations with the middle managers in the experiment group. After one year, a post-test was carried out. Out of the124 middle managers who participated in the project, 87% participated in the post-test, 52 from the experiment group and 56 from the control group.

The experiment group (coaching based leadership programme)

The specific intent from the company and the main goal of the coaching programme was to support the middle managers' development and progress in their leadership roles in the company.

Coach specific education and training

The executives in the experimental group participated in a study programme about coaching based leadership. They were given experiences as students, coaches, observers and coachees' during the training programme. The training programme had three different phases: (1) Coach specific training through workshops (May 2007-December 2007). The executives completed five two days specific coach training programs, each of them lasting for about 16 effective hours. The aim was to teach and train the executives in how to use coaching in their executive leadership role, in meetings, conversations and mandatory results- and appraisals conversations with their employees. (2) Group coaching (May 2007-November 2007). The executives in the experimental group were divided into three different groups (4 executives each). Each group completed four group coaching sessions for about three hours with external coaches in the project to support their coaching based leadership role in the company. (3) Individual coaching with external coaches (January 2008- March 2008). Each executive who participated in the experiment completed seven individual coaching sessions with external coaches. The coaching sessions lasted for about 1-1 ½ hour and was completed both through face to face meetings and by telephone. The aim was to support the executive's development and progress as coaching based leaders (see Table 1 for details). The study programme about coaching based leadership was developed, led, and managed by an experienced coach with a MCC (Master Certified Coach) credential. The executive coaching program satisfies the training part required by the International Coaching Federation ACC (Associate Certified Coach) certificate standards except for the requirement of the 100 hours coaching experience with client coaching.

3.3 Executing Coaching Based Leadership

The executives in the experiment group implemented coaching based leadership with the middle managers for whom they had management responsibility (May 2007-March 2008). The executives were required to hold a minimum of one coaching session with their middle managers for whom they had personnel management responsibility between the coach specific training workshops. Each executive completed 1-3 coaching sessions between each of the workshops described above. All executives used the same approach in their coaching processes and followed the principles in coaching as previously described (see "theoretical background").

Table 1. The coaching based leadership programme

Month	Activities
April 2007- March 2008	Coach specific education and training. The executives in the experimental group participated in a study programme about coaching based leadership. The study programme consisted of coach specific training through five 16 hours effective workshops (May 2007-December 2007, four group coaching sessions in small groups (May 2007-November 2007), and at least seven individual coaching sessions with external coaches to support the executives in their roles as coaching based leaders (January 2008- March 2008).
May 2007- March 2008	Coaching based leadership.
Once a month	The executives in the experiment group implemented coaching based leadership with the middle managers in the experiment group. The executives were required to hold a minimum of one coaching session with the middle managers for whom they had personnel management responsibility between each of the coach specific training workshops. The middle managers from the experiment group completed ten to fifteen coaching sessions with the executives from the experiment group. The aim of the coaching sessions was to support the middle managers' development and progress in their roles in the company.

3.3.1 The Control Group

The executives and middle managers who were chosen for the control group continued their daily routines in the company during the experiment. Thus, they were not invited to participate in individual or group coaching processes, but continued their work in teams with executives and middle managers from the experiment group as normal. The coaching programme was completed with no negative remarks from the executives and middle managers in the control group.

3.4 Instruments

The scales measuring goal setting and self-efficacy were developed for the purpose of this particular study. These new scales were developed to investigate important aspects of the participants' specific roles in this specific company. The instrument for measuring causal attribution was based on a previously developed scale. This scale was translated into Norwegian by the first-author with minimal adjustments as a result of the translation.

3.4.1 Goal Setting

In the goal setting literature, the importance of goal setting moderator variables in order for goals to have a desirable and positive effect on performance is quite clear (Locke & Latham, 2002). A measure based on these important moderators was therefore developed, resulting in a 15- item questionnaire measuring the five sub scales (see "coaching and goal setting"). Examples of items from each sub scale are: "I have specific, clear goals to aim for in my job" (clarity), "An average individual will think my goals at work are difficult" (difficulty), "I receive concrete feedback related to my goal attainment at work" (feedback), "I have concrete plans which tell me how to reach my goals at work" (strategy), and finally "It's difficult for me to be serious about my goals at work" (commitment). All sub scales had three items. The participants rated the statements on a seven point scale, ranging from "completely untrue" (1) to "completely true" (7).

3.4.2 Self-efficacy

The importance of reflective and accurate conceptual analysis and expert knowledge of what it takes to succeed in a given pursuit is essential in constructing self-efficacy scales (Bandura, 1997; Pajares & Urdan, 2006). An investigation of the most important requirements viewed by participants in order to succeed in their specific and demanding achievement-oriented environment was therefore conducted. These requirements where defined as key performances for executives in this particular company and were developed in close co-operation with the executive leader group.

A 32 item scale was developed to measure self-efficacy related to specific leadership capabilities viewed as

important. The specific leadership capabilities were divided in to four different dimensions: (1) *General capability as leader* (example of an item: "How certain are you that you can manage reorganizations and finish internal changes without special turbulence."), (2) *Capability as leader related to development, learning and motivation of employees* (example of an item: "How certain are you that you can pay attention to and challenge all your closest employees through encouraging and constructive feedback?"), (3) *Capability as leader in order to build relationships* (example of an item: "How certain are you that you can establish a constructive and efficient cooperation with challenging customer?"), and (4) *Capability as leader to execute management by objectives* (example of an item: "How certain are you that you can be clear and communicate the desired directions to all your closest employee?"). The participants were asked to consider how certain they were that they could manage these different tasks and situations on a seven –point scale ranging from "not at all certain" (1) to "very certain" (7). In the present study the measure is treated as a one- dimensional scale because we sought to explore how a general domain specific experience of self-efficacy may be impacted by coaching.

3.4.3 Attribution

The 20 - item, forced choice Attribution Style Assessment Test (ASAT - I) developed by Anderson, Jennings, and Arnoult (1988), was adjusted and used to measure intra-personal attribution style in specific work related situations. The adjusted instrument was a six- item questionnaire for specific hypothetical work related situations (three for positive outcomes and three for negative outcomes). Four different choices were offered for each item, relating to strategy, ability, effort, and circumstances, which yielded eight different sub-scales. The participants were asked to consider the causality of their performance at work on a seven-point scale, for each of the 4 variables (strategy, effort, ability, and circumstances). Example of a positive outcome statement is: "You have just received successful feedback on tasks performed at work." (a) "I used the correct strategy to achieve it", (b) "I'm good at this", (c) "I worked really hard to achieve it", (d) "Other circumstances (people, situation, etc.) influenced the result". Example of a negative outcome statement is: "You have just made a mistake on an important job task at work." (a) "I didn't use the correct strategy to achieve it", (b) "I'm not good at this", (c) "I didn't work hard enough to achieve it", (d) "Other circumstances (people, situation, etc.) influenced the result".

3.5 Data Analysis

Data were analysed by means of analysis of covariance (ANCOVA). ANCOVA is an extension of analysis of variance (ANOVA) and allows exploration of differences between groups while statistically controlling for an additional continuous variable. In the present study, the covariate is the participants' scores on the pre-test. By considering these as the covariates one can account for pre-existing differences between the experiment and control group. In this study, ANCOVA uses a regression procedure to remove the variation in the dependent variable that is due to pre-existing differences between the experiment group and the control group before normal analysis of variance techniques are completed based on the adjusted/ corrected scores. By removing the influence of pre-existing differences ANCOVA increases the power or sensitivity of the F-test (Pallant, 2010). Thus, ANCOVA increases the likelihood that differences between groups are detected.

4. Results

4.1 Descriptive Statistics

Table 2 shows correlations between the study variables (measured at the pre-test) as well as number of items, statistical means, standard deviations, and Cronbach's alphas at both the pre-test and post-test.

Table 2. Correlations between the variables (pre-test and descriptive statistics from the pre-test and post-test (both experiment and control group)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Self-efficacy	-													
2. Goal clarity	.395*	-												
3. Goal feedback	.375*	.738*	-											
4. Goal difficulty	.177*	.154	.063	-										
5. Goal strategy	.529*	.793*	.649*	.190*	-									
6. Goal commitment	.374*	.498*	.519*	.243*	.498*	-								
7. [a]Attribution strategy	.419*	.291*	.364*	.196*	.339*	.347*	-							

8. [a]Attribution ability	.415*	.275*	.362*	.336*	.365*	.368*	.669*	-						
9. [a]Attribution effort	.258*	.183*	.162	.341*	.217*	.131	.395*	.401*	-					
10. [a]Attribution circumstances	.348*	.047	.123	.105	.048	.078	.359*	.208*	.411*	-				
11. [b]Attribution strategy	-.005	.029	-.015	.054	-.007	.139	.349*	.228*	.104	.127	-			
12. [b]Attribution ability	-.339*	-.298*	-.348*	-.089	-.342*	-.079	-.216*	-.279*	-.090	-.013	.077	-		
13. [b]Attribution effort	-.177*	-.115	-.067	-.067	-.140	-.035	.170	.123	-.149	-.075	.511*	.294*	-	
14. [b]Attribution circumstances	.162	-.047	-.081	.174	-.044	.070	.054	.070	.088	.341*	.267*	.057	-.105	-
Number of items	32	3	3	3	3	3	3	3	3	3	3	3	3	3
Mean (pre-test)	180.0	17.5	17.0	15.7	16.8	25.9	17.7	17.5	17.0	14.7	14.9	9.5	12.4	11.6
Mean (post-test)	185.4	17.3	16.6	16.3	16.8	25.2	18.1	17.9	17.2	14.5	15.3	9.5	12.1	12.4
Standard deviation (pre-test)	25.69	3.07	3.33	4.02	2.81	2.35	2.46	2.41	3.18	3.74	3.83	4.08	5.15	3.87
Standard deviation (post-test)	22.20	3.13	3.23	3.42	2.86	2.86	2.32	2.25	3.34	3.71	4.07	4.46	4.95	3.63
Cronbach's alpha (pre-test)	.97	.70	.77	.90	.76	.49	.85	.85	.88	.83	.80	.82	.88	.84
Cronbach's alpha (post-test)	.97	.82	.79	.91	.86	.69	.90	.90	.93	.91	.85	.90	.88	.88

Note. * $p < .05$. n=124

[a]Successful attribution

[b]Unsuccessful attribution

The zero order correlations between the study variables vary from zero to moderate / strong. All variables had satisfactory Cronbach's alphas except for the variable *goal commitment*. Because of a satisfactory alpha on the post test we chose to keep the variable in the study. We also calculated means and standard deviations for each of the study variables sorted by pre- post-test, and experiment- control group. The results are presented in Table 3.

Table 3. Descriptive statistics from the pre-test and post-test for each group

	Pre-test				Post-test			
	Experiment		Control		Experiment		Control	
Variable	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1. Self-efficacy	183.5	20.42	176.6	29.69	189.7	18.63	181.3	24.55
2. Goal clarity	17.7	3.26	17.4	2.90	17.4	3.20	17.1	3.07
3. Goal feedback	17.0	3.56	17.0	3.11	16.5	3.56	16.7	2.93
4. Goal difficulty	16.2	3.53	15.2	4.41	16.4	2.85	16.2	3.91
5. Goal strategy	17.2	2.60	16.4	2.96	17.2	2.68	16.5	3.00
6. Goal commitment	26.1	2.14	25.6	2.52	25.6	2.15	24.8	3.35
7. [a]Attribution strategy	17.9	2.48	17.6	2.45	18.3	2.18	18.0	2.46
8. [a]Attribution ability	17.6	2.46	17.5	2.38	18.2	2.09	17.6	2.37
9. [a]Attribution effort	17.0	3.13	17.0	3.25	17.3	3.13	17.2	3.55

10. [a]Attribution circumstances	14.8	4.01	14.6	3.48	14.4	3.59	14.5	3.85
11. [b]Attribution strategy	14.5	4.17	15.2	3.45	15.2	4.32	15.4	3.86
12. [b]Attribution ability	9.3	4.19	9.6	3.99	9.3	4.48	9.8	4.45
13. [b]Attribution effort	12.7	5.08	12.0	5.24	11.7	4.91	12.5	5.00
14. [b]Attribution circumstances	12.0	3.96	11.3	3.78	12.9	3.65	11.9	3.59

The results may indicate that there are no, or only small differences in the mean scores between the experiment- and control group. ANCOVA analyses were employed to further investigate possible significant differences.

4.2 ANCOVA Analyses

Table 4 shows the results from the ANCOVA analyses. Only the significant variables are presented here.

Table 4. Results from ANCOVA Middle managers controlling for pre-test scores

Variable	*F*	*Df.*	*Sig.*	*Partial Eta Squared*
Successful Attribution ability				
Attribution ability (pre-test)	41.333	1	.000	.282
Group[a]	4.073	1	.046	.037

Note. [a]Control and experiment group

The results indicate that there are significant differences ($p < .05$) between the experiment- and control group on the post-test when controlling for pre-test scores on successful causal attribution to ability. The eta squared indicates that the effect size is medium (according to Pallant (2010) partial eta squared can be divided into small (.01), medium (.06), and large (.138).

5. Discussion

The main purpose of the present study was to implement an experiment to explore the effects from coaching based leadership on goal setting, self-efficacy, and causal attribution. The analyses supported none out of three proposed hypotheses. *H1* proposed a positive change in the goal setting dimensions *clarity, strategy, feedback, commitment*, and *difficulty*. This hypothesis was not supported, no differences were found between the experiment group compared to the control group. *H2* proposed a positive change in self-efficacy as a result from the experiment. The analyses did not support that coaching based leadership increases self-efficacy. Finally, *H3* proposed an increased tendency to attribute achievements to internal and controllable factors, such as effort and strategy. This hypothesis was not supported. However, successful *attributions to ability* increased in the experiment group compared to the control group (see Table 4).

Goal setting theory states the importance of goal setting moderators such as clarity, strategy, feedback, commitment, and difficulty, and highlights their moderating effect on the relation between goals and actual performance (Locke & Latham, 2002). The main aim in coaching based leadership is to achieve changes and build the middle managers' competence in favour of the company. When middle managers are faced with an exploration of their potential for growth and development they normally begin with pursuing learning goals and find suitable strategies to achieve these (Schunk, 1996; Whitmore, 2002). The result from this study revealed no significant increase in the *goal setting variables* for the experiment group compared to the control group.

In order to fully understand the results related to goal setting, an investigation of the goal structure in the environment would have been helpful. Demands for results are normally high in achievement oriented corporate environments and such a focus was probably present prior to the experiment. Within the goal setting research, two types of goal structures has been emphasized: *mastery goal structure* and *performance goal structure* (see, Lau & Nie, 2008). A mastery goal structure is characterized by learning, task mastery, and improving one's skills whereas a performance goal structure is characterized by focus on results and the importance of demonstrating competence. Coaching emphasizes a mastery oriented goal structure. Future research should therefore investigate goal structure as well to fully understand how coaching effects goal setting. However, the moderator strategy share important similarities with a mastery oriented goal structure, and it is expected that effective

coaching has an influence on this moderator at least.

In leadership domains, previous research have shown that self-efficacy is related to organizational commitment (Paglis & Green, 2002), performance ratings from both peers and superiors (Anderson, Krajewski, Goffin & Jackson, 2008; Chemers, Watson, & May, 2000; Luthans & Peterson, 2002), and environments that effectively overcomes obstacles (Luthans & Peterson, 2002). Moreover, self-efficacy has not only been associated with higher levels of performance for individual leaders, but it has also been linked to higher levels of performance for groups. Despite such previous findings, the results from the present study revealed that the middle managers' self-efficacy did not increase as a result of the experiment. The finding is therefore important and relevant, since the ultimate aim in coaching is to achieve performance enhancements. It is of particularly strength that the self-efficacy measure was designed to capture important and specific facets of the middle managers' jobs as leaders in this specific company.

Causal attributions influence behavior through both motivation and affect. Self-awareness about cause and effect relations regarding own performance is therefore important (Anderson et al., 1996; Weiner, 1985). A coachee must therefore be aware of the most essential factors that influence own performances and learn how to take control and affect them. Coaching is expected to raise self-awareness which in turn should influence the coachees' attribution patterns. However, the results only revealed a significant difference between the experiment and control group in one dimension; attribute successful performances to ability (see Table 4). This is a typical self-strengthening attribution pattern that can be explained by the coaching process which focuses on positive assets and possibilities in favor of the coachee (middle manager). The middle managers were encouraged to focus on their successes and positive assets in the coaching process.

None of the hypotheses were confirmed in this experiment. These results raise important questions about coaching based leadership. A possible explanation of these results may be the fact that in organizations where coaching based leadership is executed, there seems to be a minimum of two different roles which have to be fulfilled: the role as a leader and the role as a coach. In the organizational context, the relationship between the leader and the employee is in general considerable different from the relationship between the coach and the coachee in effective coaching (Søholm, et al., 2006). To leave the role as a leader and enter the coach role, interpersonal competencies seem to be a necessity in order to establish a "coaching" climate focusing on mutuality. Also, another important question is the employee's ability to readjust to the coaching relationship with the coach (leader). The coachee must readjust from his or her daily role as an employee in the organisation, where leaders have the authority to make decisions which can influence the employee's situation in the company. At the end, the executive role is based on decision making, defining tasks and quality requirements, and follows up goals and requirements inside the organisation (among many other things). Thus, the relationship between an executive and an employee is in general asymmetric: in the natural working climate it is the leader who is in power of the two. There may be a tension between coaching behavior which serves the coachee through an open and respectful approach, supporting the coachee's well-being and integrity, and behavior that at the same time serves organizational interests through general leadership. Relationships which are truly based on mutuality require that leaders in their role as coaches surrender some of their control to the other person (employee/ coachee) in the relationship. The results in this study might indicate that the leaders that were executing coaching based leadership did not have the necessary skills to fulfill their roles as coaches efficiently. They completed a coaching educational programme over 1 year, but these results indicate that their skills were not fully developed to meet the demands of combining such two demanding roles. The results might indicate that when executives are combining the role as a leader and the role as a coach, they need extraordinary skills within communication and interpersonal building. However, this is only speculations and need to be investigated in future research.

6. Conclusion

The present study raises questions if coaching based leadership may be an effective tool in order to improve work-related psychological variables and enhancing employees' performances as none out of three hypotheses was supported. The findings in the present study are mainly discussed related to possible conflicting roles in coaching based leadership, and possible lack of competencies among the executives to efficiently fulfill their roles as coaches. Other reasons may be prevailing. This study show that potential effects of coaching based leadership will benefit from further research.

The present study contributes to coaching research and extends the literature of empirical studies with experiment – and control group design. However, the present study has several limitations. Sample size may have influenced the results. Experiments with larger number of participants are therefore called for in future research. Moreover, one should note that the collected data is constituted by self-reporting measures and one do

not know to which extent these self-reports accurately reflect the variables under study. The line of research could further be developed by conducting studies that combine self-report data with data obtained in a more objective matter. Such studies should also link coaching to a measure of coachees' actual performance or effectiveness.

References

Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87*, 49-74. http://dx.doi.org/10.1037/0021-843X.87.1.49

AMA. (2008). *Coaching: A Global Study of Successful Practices*. American Management Association.

Anderson, C. A., Jennings, D. L., & Arnoult, L. H. (1988). Validity and utility of the attributional style construct at a moderate level of specificity. *Journal of Personality and Social Psychology*, *55*, 979-990. http://dx.doi.org/10.1037/0022-3514.55.6.979

Anderson, D. W., Krajewski, H. T., Goffin, R. D., & Jackson, D. N. (2008). A leadership self-efficacy taxonomy and its relation to effective leadership. *Leadership Quarterly, 19*, 595-608. http://dx.doi.org/10.1016/j.leaqua.2008.07.003

Arnold, J. H. (2004). The facilitative approach to coaching: Emerging corporate policies and practices. *Journal of Global Business, 15*(29), 5-16.

Bacon, T. R., & Spear, K. I. (2003). *Adaptive coaching: The art and practice of a client-centered approach to performance improvement.* Palo Alto, CA: Davis-Black.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. N J: Prentice Hall.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*, 117-148. http://dx.doi.org/10.1207/s15326985ep2802_3

Bandura, A. (1997). *Self-efficacy: The exercise of control.* NY: Freeman.

Bandura, A. (2006). Guide for Constructing Self-efficacy scales. In F. Pajeras., & T. Urdan (Eds.). *Self-Efficacy Beliefs of Adolescents* (pp. 307-337). Connecticut: Greenwich.

Beattie, R. S. (2002). Development managers: line managers, as facilitators of workplace learning in voluntary organisations. PhD thesis, University of Glasgow.

Chemers, M. M., Watson, C. B., & May, S. T. (2000). Dispositional affect and leadership effectiveness: A comparison of self-esteem, optimism, and efficacy. *Personality and Social Psychology Bulletin, 26*, 267-277. http://dx.doi.org/10.1177/0146167200265001

CIPD. (2005). *Annual Survey rapport 2005. Training and Development.* London: Chartered Institute of Personnel and Development.

Clegg, S., Rhodes, C., & Kornberger, M. (2003). *An overview of the business coaching industry in Australia.* OVAL Research Working Paper 03-11. Sydney: The Australian Centre for Organisational, Vocational and Adult Learning.

Diedrich, R. C. (2001). Lessons learned in-and guidelines for—coaching executive teams. *Consulting Psychology Journal: Practice & Research, 53*, 238-239. http://dx.doi.org/10.1037/1061-4087.53.4.238

Downey, M. (1999). *Effective coaching*. London: Orion Business.

Dweck, C. S. (2006). *Mindset: The new Psychology of Success.* NY: Random House.

Ellinger, A. D., & Bostrom, R. P. (2002). An examination of managers' beliefs about their roles as facilitators of learning. *Management Learning, 33*, 147-179. http://dx.doi.org/10.1177/1350507602332001

Ely, K., Boyce, L. A., Nelson, J. K., Zaccaro, S. J., Hernez-Broome, G., & Whyman, W. (2010). Evaluating leadership coaching: A review and integrated framework. *The Leadership Quarterly, 21*, 585-599. http://dx.doi.org/10.1016/j.leaqua.2010.06.003

Evered, R. D., & Selman, J. C. (1989). Coaching and the art of management. *Organizational Dynamics, 18*, 16-32. http://dx.doi.org/10.1016/0090-2616(89)90040-5

Federici, R. A., & Skaalvik, E. M. (2011). Principal self-efficacy and work engagement: assessing a Norwegian Principal Self-Efficacy Scale. *Social Psychology of Education, 14*, 575-600. http://dx.doi.org/10.1007/s11218-011-9160-4

Federici, R. A. (2012). Principals` self-efficacy: relations with job autonomy, job satisfaction, and contextual

constraints. *European Journal of Psychology of Education*. http://dx.doi.org/10.1007/s10212-011-0102-5

Flaherty, J. (1999). *Coaching, Evoking Excellence in others*. Boston: Butterworth- Heinemann.

Gallwey, T. (2000). *The inner game of work*. New York: Random House.

Goldsmith, M., & Lyons, S. L. (2006). *Coaching for Leadership: The Practice of Leadership Coaching from the World's Greatest Coaches*. California: Pfeiffer.

Grant, A. M. (2001). *Towards a psychology of coaching.* Coaching Psychology Unit, School of Psychology, University of Sydney.

Grant, A. M. (2002). *Towards a psychology of coaching: The impact of coaching on metacognition, mental health and goal attainment*. Dissertation Abstracts International 63/12.

Grant, A. M. (2006). Workplace and Executive Coaching: A Bibliography from the Scholarly Business Literature. In Grant, A. M., & Stober, D. R. (Eds.), *Evidence Based Coaching.* NJ: Wiley & Sons.

Grant, A. M., & Cavanagh, M. J. (2004). Towards a profession of coaching: Sixty five years of progress and challenges for the future*. International Journal of Evidence Based Coaching and Mentoring, 1,* 1-16.

Grant, A. M., Curtayne, L., & Burton, G. (2009). Executive coaching enhances goal attainment, resilience and workplace well-being: a randomised controlled study. *The Journal of Positive Psychology, 4,* 396-407. http://dx.doi.org/10.1080/17439760902992456

Gray, D., & Goregaokar, H. (2007). Executive coaching in SMEs: Experiences and impact of the coaching process. In proceedings of the *UFHRD/AHRD 8th International Conference on HRD Research and Practice Across Europe*, Oxford, UK.

Green, L. S., Oades, L. G., & Grant, A. M. (2006). Cognitive behavioural, solution-focused life coaching: Enhancing goal striving, well-being and hope. *Journal of Positive Psychology, 1*, 142-149. http://dx.doi.org/10.1080/17439760600619849

Hall, D. T., Otazo, K. L., & Hollenbeck, G. P. (1999). Behind Closed Doors: What really happens in executive coaching? *Organizational Dynamics, 27*, 39-53. http://dx.doi.org/10.1016/S0090-2616(99)90020-7

Hargrove, R. (2003). *Masterful coaching*. California: Pfeiffer.

Joo, B., K. (2005). Executive coaching: a conceptual framework from an integrative review of practice and research. *Human Resource Development Review, 4*, 462-488. http://dx.doi.org/10.1177/1534484305280866

Kahn, E. (1996). The Intersubjective Perspective and the Client centred approach: Are they one at their core? *Psychotherapy, 33*, 30-38. http://dx.doi.org/10.1037/0033-3204.33.1.30

Kampa-Kokesch, S., & Anderson, M. Z. (2001). Executive coaching: A comprehensive review of the literature. *Consulting Psychology Journal: Practice & Research, 53*, 205-228. http://dx.doi.org/10.1037/1061-4087.53.4.205

Kilburg, R. R. (1996). Toward a conceptual understanding and definition of executive coaching. *Consulting Psychology Journal: Practice & Research, 48*, 134-144. http://dx.doi.org/10.1037/1061-4087.48.2.134

Kinlaw, D. C. (1989). *Coaching for Commitment*. San Diego, CA: Pfeiffer & Co.

Kvalsund, R. (2005). *Coaching, metode: prosess: relasjon*. Norway: Synergy Publishing.

Lau, S., & Nie, Y. (2008). Interplay between personal goals and classroom goal structures in predicting student outcomes: A multilevel analysis of person–context interactions. *Journal of Educational Psychology, 100*, 15-29. http://dx.doi.org/10.1037/0022-0663.100.1.15

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance.* Englewood Cliffs, NJ: Prentice Hall.

Locke, E. A., & Latham, G. P. (2002). Building a Practical Useful Theory of Goal Setting and Task Motivation: A 35-year Odyssey. *American Psychologist, 57*, 705-717. http://dx.doi.org/10.1037/0003-066X.57.9.705

Luthans, F., & Peterson, S. J. (2002). Employee engagement and manager self-efficacy: Implications for managerial effectiveness and development. *The Journal of Management Development, 21*, 376-387. http://dx.doi.org/10.1108/02621710210426864

Maier, S. F., & Seligman, M. E. P. (1976). Learned helplessness: Theory and evidence. *Journal of Experimental Psychology, 105*, 3-46.

Martinko, M. J., & Thomson, N. F. (1998). A synthesis and extension of the Weiner and Kelly attribution models. *Basic and Applied Social Psychology, 20*, 271-284. http://dx.doi.org/10.1207/s15324834basp2004_4

Moen, F., & Kvalsund, R. (2008). What communications or relational factors characterize the method, skills and techniques of executive coaching? *Journal of Coaching in Organisations, 2*, 102-123.

Moen, F. (2010). *Coaching and Performance Psychology*. Department of Education, Norwegian University of Science and Technology, NTNU, Doctoral dissertation.

Moen, F. (2011). Executive Coaching and the Effect on Causal Attribution. *The International Journal of Coaching in Organizations, 30,* 90-105.

Orth, C. D., Wilkinson, H. E., & Benfari, R. C. (1987). The manager's role as coach and mentor. *Organizational Dynamics, 15*, 66-74. http://dx.doi.org/10.1016/0090-2616(87)90045-3

Paglis, L. L., & Green, S. G. (2002). Leadership self-efficacy and managers' motivation for leading change. *Journal of Organizational Behavior, 23*, 215-235. http://dx.doi.org/10.1002/job.137

Pajares, F. (1996). Self beliefs in academic settings. *Review of Educational Research, 66*, 543-578.

Pajares, F., & Schunk, D. H. (2001). Self-beliefs and school success: Self-efficacy, self-concept, and school achievement. In R. Riding & S. Rayner (Eds.), *Self-perception* (pp. 239-266). London: Ablex Publishing.

Pajares, F., & Urdan, T. (2006). *Self-Efficacy Beliefs of Adolescents.* Connecticut: Greenwich.

Pallant, J. (2010). *SPSS Survival Manual: A step by step guide to data analysis using SPSS* (4th eds.). Open University Press.

Passmore, J., & Gibbes, C. (2007). The state of executive coaching research: What does the current literature tell us and what's next for coaching research? *International Coaching Psychology Review, 2*, 116-128.

Prochaska, J. O., Norcross, J. C., & DiClemente, C. C. (1994). *Changing for good*. NY: Avon Books.

Redshaw, B. (2000). Do we really understand coaching? How can we make it work better? *Industrial and Commercial Training, 32*, 106-108. http://dx.doi.org/10.1108/00197850010371693

Schein, E. H. (2006). Coaching and Consultation Revisited: Are they the same? In M., Goldsmith & L., Lyons (Eds.), *Coaching for Leadership*. San Francisco: Pfeiffer & Co.

Schunk, D. H. (1989). Self-efficacy and achievement behaviors. *Educational Psychology Review, 1*, 173-208. http://dx.doi.org/10.1007/BF01320134

Schunk, D. (1995). Self-efficacy, motivation, and performance. *Journal of Applied Sport Psychology, 7,* 112-137. http://dx.doi.org/10.1080/10413209508406961

Seijts, G. H., & Latham, G. P. (2001). The effect of learning, outcome, and proximal goals on a moderately complex task. *Journal of Organizational Behavior, 22*, 291–302. http://dx.doi.org/10.1002/job.70

Sherman, S., & Freas, A. (2004). The wild west of executive coaching. *Harvard Business Review*, *82*, 82-90.

Skaalvik, E. M. (1990). Gender differences in general academic self-concept and success expectations on defined academic problems. *Journal of Educational Psychology*, *82*, 591-598. http://dx.doi.org/10.1037/0022-0663.82.3.593

Skaalvik, E. M. (1994). Attribution of perceived achievement in school in general and in maths and verbal areas: Relations with academic self-concept and self-esteem. *British Journal of Educational Psychology*, *64*, 133-143. http://dx.doi.org/10.1111/j.2044-8279.1994.tb01090.x

Spence, G. B., Cavanagh, M. J., & Grant, A. M. (2008). The integration of mindfulness training and health coaching: An exploratory study. *Coaching: An International Journal of Theory, Research and Practice, 1*, 1-19.

Spence, G. B., & Grant, A. M. (2007). Professional and peer life coaching and the enhancement of goal striving and well-being: An exploratory study. *Journal of Positive Psychology, 2*, 185–194. http://dx.doi.org/10.1080/17439760701228896

Sue-Chan, C., & Latham, G. P. (2004). The relative effectiveness of external, peer, and self-coaches. *Applied Psychology-An International Review-Psychologie Appliquee-Revue Internationale, 53*, 260-278.

Søholm, T. M., Storch, J., Juhl, A., Dahl, K., & Molly, A. (2006). *Ledelsesbaseret Coaching*. Denmark: Børsens Forlag.

Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1989). Teacher efficacy: Its meaning and measure. *Review of Educational Research, 68*, 202-248.

Underhill, B. O., McAnally, K., & Koriath, J. J. (2007). *Executive coaching for results: The definitive guide to developing organizational leaders.* San Francisco, CA: Berrett-Koehler.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review, 92*, 548-573. http://dx.doi.org/10.1037/0033-295X.92.4.548

Weiner, B. (1989). *Human Motivation.* NJ: Lawrence Erlbaum.

Whitmore, J. (2002). *Coaching for Performance. Growing People, Performance and Purpose* (3rd eds.). London: Nicholas Brealey Publishing.

Wilson, C. (2007). *Best Practice in performance coaching: A handbook for leaders, coaches, HR professionals and organizations*. Kogan Page Ltd.

Withley, B. E., & Frieze, I. H. (1985). Children's causal attribution for success and failure in achievement settings: A meta-analysis. *Journal of Educational Psychology*, *5*, 608-616. http://dx.doi.org/10.1037/0022-0663.77.5.608

Zeus, P., & Skiffington, S. (2002). *The coaching at work toolkit. A complete guide to techniques and practices.* North Ryde, NSW, Australia: McGraw Hill.

Zimmerman, B. J., & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal, 31*, 845-862.

Zimmerman, B. J., & Cleary, T. J. (2006). Adolescents' development of personal agency: The role of self-efficacy beliefs and self-regulatory skill. In F. Pajares & T. Urdan (Eds.), *Self-efficacy Beliefs of Adolescence* (pp. 45–69). Information Age Publishing.

Zuckerman, M. (1979). Attribution of success and failure revisited: The motivational bias is alive and well in attribution theory. *Journal of Personality, 47*, 245-287. http://dx.doi.org/10.1111/j.1467-6494.1979.tb00202.x