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The Effect from Executive Coaching on Performance Psychology

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Abstract

In this study, the authors explore the effects of an executive coaching programme on important performance psychology variables (self-efficacy, causal attribution, goal setting, and self-determination). One hundred and forty-four executives and middle managers from a Fortune high-tech 500 company participated in the experiment over a period of one year. Twenty executives participated in an external executive coaching programme and one hundred and twenty four middle managers participated in a coaching based leadership programme. Findings indicate that there are significant effects of external coaching on psychological variables affecting performance such as self-efficacy, goal setting, intra-personal causal attributions of success and need satisfaction. Findings also indicate that there are significant effects of coaching based leadership on self-efficacy among middle managers. However, the effects regarding coaching based leadership are not as strong as those from external executive coaching.

Key words: Executive coaching, self-efficacy, causal attribution, goal-setting, self-determination

Introduction

In achievement oriented environments exposed to competition, such as companies in business, the performance of individuals is measured by tangible, objective outcomes based on expectations and previous accomplishments. Therefore, companies frequently focus on the growth and development of requisite skills among their employees aimed at maximizing individual performance and corporate financial return. In order to drive growth and development in such environments, the essential components needed to optimize psychological factors impacting human performance should be of great interest to management and employees.

Since 1976 a number of studies have looked at the effects of psychological factors impacting human performance. *Self-efficacy* has been found to be one of the most important factors contributing to success in different areas of life (Grant & Greene, 2004; Marsh, 1993; Bandura, 1986) and refers to a judgment of ability to perform a specific task within a specific domain (Bandura, 1997). *Goal setting* theory has developed over a period of almost four decades and initially emerged from the hypothesis that conscious goals strongly impact performance, achievement and success at a task (Ryan, 1970). A goal is typically defined as achieving a specific standard of achievement within a specified time (Locke & Latham, 2002). The intra-personal approach to *causal attribution* theory also has a well documented influence on self efficacy and thereby performance (Arbin, Appleman, & Burger, 1980; Marsh, 1984, 1986; Marsh, Carins, Relich, Barnes, & Debus, 1984; Skaalvik & Skaalvik, 2005). In its most basic form, intra-personal attribution theory is concerned with the reasons used by individuals to explain why they either succeeded or failed at a given task. *Self determination* theory states that social environments which fulfil basic psychological needs for individual growth and development will result in motivated, engaged and successful individuals (Deci & Ryan, 2002).

Executive coaching is a fairly new discipline related to growth and development, and interest in it has escalated during the last decade (Grant, 2006; Hall, Otazo & Hollenbeck, 1999). Until recently,

evidence that executive coaching could influence individual performance at work was quite insufficient for such claims (Passmore & Gibbes, 2007) and theorists argue that more empirical research needs to be conducted (Grant, 2006). The overarching goal of coaching is to actualize the coachee's potential capacities, abilities and talents (Moen & Kvalsund, 2008).

In the present study, one hundred and twenty seven executives and middle managers in a high-tech Fortune 500 company participated voluntarily in an experiment over a period of one year. The main purpose of this study was to explore the effects from executive coaching on psychological factors such as self-efficacy, goal setting, causal attribution, and need satisfaction.

Theoretical Background

Coaching

The term 'coach' often used as a metaphor for someone who takes people to a desired place (Zeus & Skiffington, 2002; Gjerde, 2003). Coaching is therefore about establishing a helping relationship between the coach and the person with whom the coach is engaged. In this study this person is defined as the coachee.

Theorists tend to describe coaching as a new route to growth and development, which means that at least some people agree that coaching is different from counseling, consultation, teaching, mentoring and other helping relationship roles (Downey, 1999; Whitmore, 2002; Flaherty, 1999). In general, the field 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 group places less emphasis on the importance of active participation and responsibility by the coachee, and claims that coaching is everything that is done which results in growth and development. The second group argues that coaching refers to a particular method and focuses on empowerment of the coachee through active participation and responsibility in the coaching process.

Both groups agree that the overall goal of coaching is to achieve growth and development. Today, companies spend millions of dollars annually developing teams and individuals in order to drive growth and deliver appropriate results, and the marketplace is still growing: in 2006 it was estimated to be at a global \$2 billion per annum (Fillery-Travis & Lane, 2006). Successful organizations in today's emerging knowledge economy have to innovate continually to maintain their place in the dynamic marketplace. Employees are expected to (and expect to) constantly upgrade their technical and leadership skills (Fillery-Travis & Lane, 2006). In this very practical sense, the growth and development of employees should be an important factor for organizational success. Self-actualization is the process of being true to oneself and fully committed to developing one's competence defined as "the total knowledge, skills, abilities and attitudes enabling [one] to perform particular tasks and functions according to defined goals¹" (Lai, 2004, p.48). Based on this, the following definition is offered in this study: *Coaching is a method which aims to achieve self actualization by facilitating learning and developmental processes to promote the resource base of another person. The method is characterized by its active involvement of the coachee through powerful questioning and active listening.*

Executive coaching is recognized as a way for organizations and individuals to improve executives' performance (Morgan, Harkins & Marshall, 2005). It can be understood as a sub-category of a generic business coaching term which is primarily concerned with improving performance at work and

¹ Translated from Norwegian by the authors.

facilitating professional development (Zeus & Skiffington, 2002). In business, coaching is usually delivered by two different types of people (Hall, Otazo & Hollenbeck, 1999); those who are internal to the organization and those who are external consultants. This study will focus on both external coaching of executives in business and executives using coaching based leadership with their line managers for whom they have management responsibility.

Performance psychology

There is a significant amount of research aimed at exploring the effect of psychological factors on performance outcomes, goal attainment and achievement. For the purposes of this investigation, the term *performance psychology* will be used to describe those psychological factors believed to most directly impact performance in achievement oriented environments.

Self-efficacy. Social cognitive theory is rooted in a view of human agency whereby individuals are viewed as executors proactively engaged in their own development and who actively control their actions. The notion of human agency is rooted in the belief that "what people think, believe, and feel, affect how they behave" (Bandura, 1986, p. 25). 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 provided a view of human behaviour in which the belief that people have about themselves related to task specific capabilities are critical elements in the exercise of control and personal agency. Bandura defined self-efficacy as follows: "Perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p.3). Thus, self-efficacy, often called specific self-confidence, is the aspect of self which refers to how sure (or how confident) individuals are that they can successfully perform requisite tasks in specific situations given their unique and specific capabilities. This explanation implies a judgement concerning how well they are able to plan and execute the necessary actions to successfully accomplish the task. The cognitive aspect of self is therefore prominent, significant and influential in terms of performance, outcome and success.

Self-efficacy is linked strongly to a variety of behavioural outcomes such as engagement, persistence, strategy use, reduced anxiety and task performance (Bandura, 1997; Pajares, 1996; Pajares & Schunk, 2001; Schunk, 1989, 1995). High self-efficacy is also associated with greater cognitive flexibility for example, through effective use of goal setting, resistance to negative feedback, and self-regulation in academic situations even when ability is controlled (Bandura, 1993; Zimmerman & Bandura, 1994). Thus, of all the thoughts that affect human functioning, self-efficacy beliefs stand at the very core of social cognitive theory.

Coaching is about building competence (Kvalsund, 2005, p.19). Thus, successful executive coaching should lead to raised self-efficacy beliefs when it comes to specific leadership capabilities. On this basis, the following hypothesis was developed: H1: *Executive coaching improves executive's and middle manager's self-efficacy related to specific leadership capabilities.*

Goal Setting

Locke and Latham (2002) highlight several factors which are essential for goals to affect performances positively (Locke & Latham, 1990):

(1) The goal has to be specific, meaning that it must be both observable and measurable relative to the desired outcome. This can be demonstrated by achieving concrete results on specific tasks. This phenomenon of specificity and observation will be referred to as goal setting clarity in the present study.

(2) The perceived level of difficulty of the specific achievement task through goal achievement. This is difficult to measure objectively based on a universal standard of difficulty and is not particularly desirable according to Locke and Latham (1990). Rather, it is the specific judgement made by the individual which is the critical element relative to assessing task difficulty. Tasks which are at the limit, or close to the limit of the individual's capability (rather than being too high or too low) 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.

(3) The relationship 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. The importance of goal commitment is especially prominent when the goals are viewed as difficult by the individual (Klein, Wesson, Hollenbeck & Alge, 1999). Difficult goals require greater effort and are associated with lower chance for success than for easier goals (Erez & Zidon, 1984).

(4) In order for goals to be effective, effective and ongoing 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. As Folkman (2006, p. xv) aptly states, "Without feedback we are flying blind". The influence of this important moderating variable is referred to as goal setting feedback in the current investigation.

(5) As the complexity of the tasks needed to achieve a particular goal increases, the individual's capability to possess and effectively implement efficient and effective goal attainment strategies is essential. Since people vary greatly in their ability to do so, the effect of goal setting on performance is smaller on complex tasks than it is on simple tasks (Locke & Latham, 2002). The individual's ability to execute necessary task strategies is therefore an important moderating variable related to goal setting and performance. In the present study, this construct will be referred to as goal setting strategy. These five factors are defined as goal setting moderators by Locke and Latham (2002).

One of the major responsibilities for a coach is to discover, clarify, and align with what the coachee wants to achieve (ICF²). Thus, successful coaching should influence the moderators of goal setting. On this basis, a second hypothesis was developed: H2: *Executive coaching improves executive's and middle manager's goal setting through the moderators' clarity, strategy, feedback, commitment and difficulty.*

Causal Attributions

Intra-personal causal attribution theory focuses on the internal processing done by individuals regarding the thoughts and feelings present during this process of judgement and evaluation (Martinko & Thomson, 1998). The present study will focus exclusively on intra-personal attributions.

Causal attribution and self efficacy. The influence on self-efficacy is related to different dimensions of causality for one's successful and unsuccessful achievements. While 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 or is not under the individual's control)

² International Coaching Federation www.coachfederation.org

(Weiner, 1985). Theorists agree that people have a general tendency to utilize self-protecting and self-enhancing attributional patterns (Skaalvik, 1990, 1994; Zuckerman, 1979; Withley & Frieze, 1985) which implies that individuals tend to attribute their own success to internal, stable, controllable factors such as effort and ability, and their failures to external factors that are both unstable and out of their control.

Self-enhancing attributions generally strengthen an individual's self view and perceptions of competence, ability and control. Consequently, individuals who attribute their successful performances to their own abilities should experience concomitant increases in self-efficacy. Because successful outcomes are judged to result from the individual's own capabilities and strengths and to be under his or her personal control, it seems reasonable to hypothesize a positive relationship between self-efficacy and internal, controllable and stable causal attributions following successful performance. Because of the tendency toward self-protection, unsuccessful achievements are generally not attributed to low ability or competence abilities (Skaalvik, 1990, 1994). Research shows that individuals tend to protect the self by attributing unsuccessful outcomes to controllable factors (e.g. "I can work harder or work smarter next time") or to external factors that are unstable or due to external variables such as another person or the situation (e.g., I didn't succeed because of the unique circumstances in this task and as soon as those circumstances change, I shall be successful") (Skaalvik, 1990, 1994; Zuckerman, 1979; Withley & Frieze, 1985). 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, may, 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, 1975). Because people tend to engage in self-protecting attributions when experiencing failure in achievement situations, there should be little or no reduction to self-efficacy beliefs.

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 (ICF), one effect of the coaching should be to increase the tendency to attribute achievement outcomes to internal, unstable and controllable factors, especially to strategy. Based on this a third hypothesis was developed:
H3: *Executive coaching strengthens executive's and middle manager's causal attributions to internal, unstable and controllable factors, such as strategy.*

The Environmental Influence and Self determination Theory

Based on the view of *social cognitive theory* described by Bandura (1997), individuals are both products and producers of their environment and of their social systems. In essence, people are viewed as self-organizing, proactive, self-reflecting and self-regulating. Human functioning is viewed as the product of a dynamic interplay of personal, behavioural, and environmental influences. Therefore, it is important to investigate environmental influences related to performance psychology.

Most researchers agree that motivation has two elements: extrinsic and intrinsic. With extrinsic motivation, reward comes from the environment in some capacity, either from significant others or from the use of salient rewards. Individuals also strive for achievement because of internal factors. The value and importance of intrinsic motivation in the achievement process cannot be overstated. Deci and Ryan (1985, p. 8) define intrinsic motivation as: the life force or energy for the activity and for the inward pursuit to feel competent, self-determining and to enjoy the activity. Further, Deci and Ryan (2002) suggest two approaches to intrinsic motivation:

(1) First, they explain intrinsically motivated behaviour as independent of external reward. This means that individuals find internal, personally gratifying interest in the task and find their reward in a form of pleasure resulting from trying their best, improving their skills and simply engaging in the activity to experience enjoyment, competence and personal growth;

(2) Secondly, one basic foundation of self determination theory supports the existence of basic needs which must be satisfied in the individual's environment in order to achieve personal growth and development (Deci & Ryan, 2002). Thus, in order for individuals to proactively engage in their own learning and development, intrinsic motivation is a requisite and desirable component of achievement pursuits. Social cognitive theory emphasizes the importance and presence of necessary conditions in the environment in order to achieve, maintain or increase intrinsic motivation. Furthermore, Deci and Ryan (2002) believe these needs are fundamental for all humans regardless of culture or stage of development. They especially emphasize the importance of three main groups of psychological needs, forming the foundation for a persisting and enduring intrinsic motivation. These three psychological needs are: (a) the need for competence, (b) the need for autonomy and (c) the need for relatedness.

The need for competence refers to a general feeling of functioning effectively in the social and achievement environment. The need for competence in the environment highlights the importance of experiences, or the lack of experiences, where individuals have the opportunity optimally to utilize and display their strengths and capacity (Deci, 1975; Harter, 1983; White, 1959). The need for competence also leads humans to seek challenges which are optimal in relation to their ability, skills and capacity. Bandura (1986) argues that successful accomplishments in these types of task, where demands match capacity, have an especially desirable, strengthening and positive effect on self efficacy.

The need for self determination, or autonomy, refers to the individual's perception or understanding being the source or origin of the achievement behaviour (de Charms, 1968; Deci & Ryan, 1985; Ryan & Connell, 1989). Self determination implies that actions originate from one's own interests and values and emanate from personal initiative. Even though actions and behaviour could be affected by external sources such as requirements for certain tasks or in agreement with determined values, the individual can still feel a sense of autonomy and self-determination.

The need for relatedness highlights the feeling of connectedness and attachment to other people. It carries a dual view that the individual is taking care of others and that others are caring for the individual. Humans have the need to feel that they belong to and with other people, with individuals and in a community or larger society (Baumeister & Leary, 1995; Bowlby, 1979; Ryan, 1995). The need for relatedness does not consider the wishes of others as the sole or primary determinant for specific outcomes, but rather desires a feeling of integration, acceptance and support from others as members in a mutually safe community.

Self determination theory states that social environments which fulfil the basic psychological needs for individual growth and development will result in motivated, engaged and successful individuals, who achieve the desired outcomes in specific, achievement related tasks. Another major responsibility for the coach is to encourage coachee self-discovery (ICF). Facilitating individual power in favour of the coachee, through facilitating coachee-generated answers and strategies, is an important issue in coaching. Thus, successful coaching should influence both self-determinate and competence values. Based on this, the forth and final hypothesis was developed: H4: *Executive coaching leads to increased need satisfaction among executives and middle managers.*

Method

Participants and Procedure

One hundred and forty four executives (N=20) and middle managers (N=124) in a branch leading Norwegian Fortune 500 company voluntarily participated in an experiment over a period of one year. The twenty executives in the study were the company's CEOs (Chief Executive Officers) and they were all in the company's top management group. Twelve of the executives were chosen for the experiment group in the project 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 for middle managers whereas middle managers who were managed by executives from the control group were chosen for the control group. Sixty one middle managers were in the experiment group, and sixty three middle managers were in the control group at the pre-test.

Pretest- Posttest Control- Group design

After the assignment of the executives and middle managers into experimental and control groups, a pre-test was administrated. The executives and middle managers participated in an online questionnaire which measured psychological variables concerning their thoughts, feelings and actions at work. Then an executive coaching programme was administrated at two levels for a period of one year; (1) External executive coaching and coaching training of the executives in the experiment group and (2) Coaching based leadership of the middle managers in the experiment group. Out of the 20 executives who participated in the project at the pre-test, 19 participated on the post-test after one year (95 %) (11 in the experiment group and 8 in the control group). Out of the 124 middle managers who participated in the project, 108 participated on the post-test after one year (87 %) (52 in the experiment group and 56 in the control group).

The executive coaching programme.

At level one, external executive coaching and coaching training, only the executives in the study participated, they were given experiences as students, coaches, observers and coachees during the training through three phases:

- (a) Coach specific training through workshops (May 2007-December 2007). The executives completed five two day specific coach training programmes, each lasting for about 16 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.
- (b) Group coaching (May 2007-November 2007). The executives who participated in the coaching programme were divided into three different groups (4 executives each). Each group completed four group coaching sessions for about three hours with the external coaches in the project.
- (c) Individual external executive coaching (January 2008- March 2008). Each executive who participated in the coaching programme completed seven individual coaching sessions with external coaches. The coaching sessions lasted for about 1-1 ½ hour and were completed both through face to face meetings and by telephone. The aim was to support the executive's development and progress as leaders.

The coaching based leadership program.

At level two the coaching programme involved both the executives and the middle managers. 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 between the coach specific training workshops with each of the middle managers for whom they had personnel management responsibility. Each executive completed 1-3 coaching sessions between each of the workshops. After the final workshop they completed two coaching sessions with their own employees as a final exam. The exams were judged by an independent external coach and the results were very good.

The executive coaching programme satisfies the training part required by the International Coaching Federation ACC³ (Associate Certified Coach) certificate standards except for the requirement of the 100 hours coaching experience with client coaching. The one year executive coaching programme was developed, led and managed by an experienced coach with a MCC⁴ (Master Certified Coach) certificate. A total of three external coaches worked with the implementation of the coaching programme.

Instruments

Two of the instruments used in this study were based on previously developed scales (causal attribution and self-determination) and two were developed for the purpose of this particular study (self-efficacy and goal setting). The two previously developed scales were translated into Norwegian by the authors and with minimal adjustments as a result of the translation. All instruments used a seven point scale, ranging either from completely untrue (1) to completely true (7), or from not at all certain to very certain (self-efficacy).

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). Therefore, an investigation of the most important requirements viewed by participants in order to succeed in their specific and demanding achievement oriented environment was done. This process of inclusion of items was done in close co-operation with the executive leader group in this particular company. A 32 item scale was developed to measure self-efficacy related to specific leadership capabilities which were viewed as important. For example: "How certain are you that you can manage reorganisations and be in charge of internal changes without causing any particular turbulence." "How certain are you that you can pay attention to and challenge employees through encouraging and constructive feedback?" "How certain are you that you can cooperate in an effective and constructive manner with employees, for instance through establishing effective and efficient teams?" The participants were asked to consider how certain they were that they could manage these different tasks and situations on the seven point scale ranging from not at all certain (1) to very certain (7). The tasks and situations represented challenging obstacles to overcome for the participants (Bandura, 2006). The measurement is treated as a one dimensional scale because of a high Cronbach's alpha (Table 1 and Table 2) and difficulties finding more than one factor during factor analysis. In order to assure high validity, additional items were developed to measure the perceived importance of the content of each item, for example, "How important do you think it is to manage reorganisations and be in charge of internal changes without causing any particularly turbulence?" Importance was measured on a seven point scale ranging from not important (1) to really important (7). The mean score for 'perceived importance' for the total scale was 6.2 with a standard deviation of

³ <http://www.coachfederation.org/NR/rdonlyres/0B15493D-9EC4-4211-A698-250FA031F372/7574/CredentialRequirementsChart3.pdf>

⁴ Master Certified Coach educated by the International Coaching Federation,
<http://www.coachfederation.org/ICF/For+Current+Members/Credentialing/Become+Credentialed/MCC/>

.65, indicating that the participants perceived that the leadership capabilities described in the self-efficacy scale were truly important for them in their roles as executives.

Goal setting. The importance of goal setting moderator variables in order for goals to have a desirable and positive effect on performance is quite clear from the goal setting literature (Locke & Latham, 2002). A measurement for goal setting based on these important moderators was therefore developed, resulting in a 15 item questionnaire, measuring the five sub scales. Participants were asked to consider how true each statement was on a seven point scale concerning their thoughts about their own work. For example (Clarity): "I have specific, clear goals to aim for in my job." (Difficulty): "An average individual will think my goals at work are difficult." (Feedback): "I receive concrete feedback related to my goal attainment at work." (Strategy): "I have concrete plans which tell me how to reach my goals at work." (Commitment): "It's difficult for me to be serious about my goals at work." All sub scales had three items. The Cronbach's alpha of the instruments is shown in Table 1 and Table 2.

Attribution. The 20 - Item, forced choice Attributional Style Assessment Test (ASAT - I) developed by Anderson, Jennings, and Arnoult (1988), was adjusted and used to measure intra-personal attributional style in specific work related situations. The adjusted instrument was a six item questionnaire for specific 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). For example (item 1, positive outcome): "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".

Self-determination. Since the concept of basic psychological needs is central to self determination theory, the most often implemented tool where used for this study, namely, the Basic Psychological Need Satisfaction at Work Scale (Baard, Deci, & Ryan, 2004). The scale is originally a 21 item questionnaire measuring three need satisfaction sub scales. The authors translated the questionnaire into a 20 item questionnaire, including: autonomy (6 items), competence (6 items) and relatedness (8 items). The participants were asked to consider their feelings about their job during the last year and to indicate how true the 20 statements were on a seven point scale. For example (autonomy): "I feel like I can make a lot of input in deciding how my job gets done." (Competence) "People at work tell me I am good at what I do." (Relatedness) "I really like the people I work with." The reliability for the total need satisfaction scale was reported to be .89, and the three sub scales autonomy, competence and relatedness .79, .73 and .84, respectively (Deci et. al., 2001).

Results

Table 1 shows the statistical means and the standard deviations of the psychological variables for the pre-test in the investigation. Table 1 also shows the p-values from the Independent-Samples T Test, analysing differences in variable values between the experiment groups and the control groups, and the Cronbach's alpha for the measurements used in the study. The values are separated into two major groups, CEO executive and Middle manager. Further, the CEO executive group is separated into experiment group (external executive coaching) and control group, and the Middle manager group into experiment group (coaching based leadership) and control group. There were significant differences in values only in the CEO executive group at the pre-test; self-efficacy and goal clarity were significantly higher in the control group, whereas attribution of success to circumstances and attribution of failure to effort were significantly lower in the control group.

Table 1: Means, standard deviations (SD) and p-values analysing the difference between the experiment and the control groups on the pre-test

Study variables	CEO executive				P	Middle manager				Cronbach's Alpha Pre-test
	experiment (N=12)		control (N=8)			experiment (N=61)		control (N=63)		
	mean	SD	mean	SD		mean	SD	mean	SD	
1. Self-efficacy	181.4	21.4	191.1	12.2	*	183.5	20.4	176.6	29.7	.97
2. Goal clarity	17.2	2.7	18.8	1.4	*	17.7	3.3	17.4	2.9	.70
3. Goal feedback	16.4	4.0	16.3	2.3		17.1	3.6	17.0	3.1	.77
4. Goal difficulty	18.0	2.5	16.4	2.9		16.2	3.5	15.2	4.4	.90
5. Goal strategy	16.8	2.4	17.8	1.8		17.2	2.6	16.4	3.0	.76
6. Goal commitment	26.6	2.4	27.3	0.9		26.1	2.1	25.6	2.5	.49
7. Need satisfaction at work	106.1	8.6	106.3	5.4		105.9	9.9	106.1	10.6	.83
8. Autonomy	25.8	1.8	26.1	1.4		25.2	2.8	24.8	2.6	.71
9. Competence	36.7	4.7	36.0	4.7		35.9	4.5	36.4	4.0	.71
10. Relatedness	39.2	3.4	39.3	1.6		39.9	4.5	40.2	5.3	.67
11. Attribution success strategy	17.4	2.3	18.1	1.9		17.9	2.5	17.6	2.4	.85
12. Attribution success ability	17.3	1.9	17.8	1.8		17.6	2.5	17.5	2.4	.85
13. Attribution success effort	16.1	3.0	17.0	3.7		17.0	3.1	17.0	3.3	.88
14. Attribution success circumstances	15.6	2.4	14.3	4.2	*	14.8	4.0	14.6	3.5	.83
15. Attribution failure strategy	13.6	3.7	14.6	4.1		14.5	4.2	15.2	3.5	.80
16. Attribution failure ability	11.6	3.8	10.4	4.6		9.3	4.2	9.7	4.0	.82
17. Attribution failure effort	15.1	2.9	13.0	5.8	*	12.7	5.1	12.0	5.2	.88
18. Attribution failure circumstances	10.3	3.5	10.9	3.7		12.0	4.0	11.3	3.8	.84

Note. Significant different variable values between the experiment group and the control group are marked with bold (* = $p < .05$).

Table 2 shows similar data from the post-test in the investigation. There were significant differences in values in both the CEO executive group and Middle manager group. In the CEO executive group significantly higher values were found in the experiment group for goal difficulty and attribution of success to strategy and ability, whereas attribution of failure to strategy was significantly higher in the control group. Worth noting is that self-efficacy and goal clarity which were significant higher in the control group at the pre-test (Table 1), are now higher in the experiment group. However, these differences are not significant. Also worth noting is that attribution of failure to circumstances, which was higher in the experiment group at the pre-test, now is lower in the experiment group, the difference is not significant. In the Middle Manager group significantly higher values were found in the experiment group for goal clarity, need satisfaction at work, autonomy and relatedness.

Interestingly, there were no significant differences between the experiment and the control group at the pre-test.

Table 2: Means, standard deviations (SD) and p-values analysing the difference between the experiment and the control groups on the post-test

Study variables	CEO executive				P	Middle manager				P	Cronbach's Alpha Post-test
	experiment (N=11)		control (N=8)			experiment (N=52)		control (N=56)			
	Mean	SD	mean	SD		mean	SD	mean	SD		
1. Self-efficacy	202.3	19.2	192.1	12.5		189.7	18.6	181.3	24.6		.97
2. Goal clarity	19.5	1.5	18.9	1.6		17.4	3.2	17.1	3.1		.82
3. Goal feedback	19.0	2.2	17.8	1.8		16.5	3.6	16.7	2.9		.79
4. Goal difficulty	18.0	3.8	16.6	1.3	**	16.4	2.9	16.2	3.9		.91
5. Goal strategy	19.2	1.8	17.3	1.7		17.2	2.7	16.5	3.0		.86
6. Goal commitment	27.4	1.0	26.3	1.8		25.6	2.2	24.8	3.4	*	.69
7. Need satisfaction at work	115.4	7.8	105.0	8.6		107.6	9.1	103.6	12.4	*	.86
8. Autonomy	26.8	1.6	25.6	2.0		25.6	2.2	24.2	3.1	**	.78
9. Competence	38.7	4.7	36.9	3.1		36.9	3.5	35.6	4.7		.71
10. Relatedness	44.7	2.9	37.5	5.1		39.7	4.6	38.9	5.9	*	.75
11. Attribution success strategy	19.5	1.9	18.3	0.9	**	18.3	2.2	18.0	2.5		.90
12. Attribution success ability	19.2	2.5	17.8	1.4	*	18.2	2.1	17.6	2.4		.90
13. Attribution success effort	18.4	2.3	16.9	3.7		17.3	3.1	17.2	3.5		.93
14. Attribution success circumstances	14.8	5.8	15.0	3.9		14.4	3.6	14.5	3.9		.91
15. Attribution failure strategy	14.8	6.8	15.6	2.6	*	15.2	4.3	15.4	3.9		.85
16. Attribution failure ability	8.5	4.8	11.6	5.4		9.3	4.5	181.3	24.6		.90
17. Attribution failure effort	13.6	5.7	15.0	4.1		11.7	4.9	17.1	3.1		.88
18. Attribution failure circumstances	9.5	5.0	11.5	3.7		12.9	3.6	16.7	2.9		.88

Note. Significant different variable values between the experiment group and the control group are marked with bold (* = p < .05) and (** = p < .01).

Table 3 shows the means, standard deviation and the p-values for paired sample t-tests testing differences between the pre- and the post-test for the CEO executive group receiving external coaching in the experiment. Separate analysis was conducted for the experiment- and the control group. The analysis revealed significant and positive changes for self-efficacy, goal clarity, goal feedback, goal strategy, need satisfaction at work (autonomy and relatedness), and attribution of successful achievement to strategy and ability in the experiment group. Attribution of unsuccessful

achievements to ability was significantly lower at the post-test. There were no significant changes in means in the control group.

Table 3: Means, standard deviations (SD) and p-values for the CEO executives receiving external coaching and the control group

Study variables	Experiment group (N=11)					Control group (N=8)				
	pre		Post		P	Pre		Post		P
	mean	SD	Mean	SD		mean	SD	mean	SD	
1. Self-efficacy	179.4	21.2	202.3	19.2	**	191.1	12.2	192.1	12.5	
2. Goal clarity	16.9	2.7	19.5	1.5	**	18.8	1.4	18.9	1.6	
3. Goal feedback	16.2	4.1	19.0	2.2	**	16.3	2.3	17.8	1.8	
4. Goal difficulty	17.7	2.5	18.0	3.8		16.4	2.9	16.6	1.3	
5. Goal strategy	16.6	2.4	19.2	1.8	**	17.8	1.8	17.3	1.7	
6. Goal commitment	26.5	2.5	27.4	1.0		27.3	0.9	26.3	1.8	
7. Need satisfaction at work	105.5	8.8	115.4	7.8	**	106.3	5.4	105.0	8.6	
8. Autonomy	25.5	1.7	26.8	1.6	*	26.1	1.4	25.6	2.0	
9. Competence	36.4	4.8	38.7	4.7		36.0	4.7	36.9	3.1	
10. Relatedness	39.3	3.5	44.7	2.9	**	39.3	1.6	37.5	5.1	
11. Attribution success strategy	17.3	2.3	19.5	1.9	**	18.1	1.9	18.3	0.9	
12. Attribution success ability	16.9	1.5	19.2	2.5	*	17.8	1.8	17.8	1.4	
13. Attribution success effort	16.2	3.1	18.4	2.3		17.0	3.7	16.9	3.7	
14. Attribution success circumstances	15.5	2.5	14.8	5.8		14.3	4.2	15.0	3.9	
15. Attribution failure strategy	13.3	3.4	14.8	6.8		14.6	4.1	15.6	2.6	
16. Attribution failure ability	12.1	3.5	8.5	4.8	*	10.4	4.6	11.6	5.4	
17. Attribution failure effort	15.0	3.0	13.6	5.7		13.0	5.8	15.0	4.1	
18. Attribution failure circumstances	10.3	3.6	9.5	5.0		10.9	3.7	11.5	3.7	

Note. Significant changes in variable values between the pre- and the post-test are marked with bold (* = p < .05) and (** = p < .01).

Table 4 shows the means, standard deviation and the p-values from the paired sample t-test between the pre- and the post-test for the Middle manager group receiving coaching based leadership in the experiment as well as for the control group. We found significant increases for self-efficacy and attribution of successful achievements to ability in the experiment group. There were also significant changes in the control group, however all changes were negative; goal commitment and need satisfaction at work (autonomy, competence and relatedness).

Table 4: Means, standard deviations (SD) and p-values for the Middle managers receiving coaching based leadership and the control group

Study variables	Experiment group (N=52)				P	Control group (N=56)				Cronbach's Alpha		
	Pre		Post			Pre		Post		pre	Post	
	mean	SD	mean	SD		mean	SD	mean	SD			
1. Self-efficacy	182.1	20.2	189.7	18.6	**	177.6	29.7	181.3	24.6	.97	.97	
2. Goal clarity	17.6	3.0	17.4	3.2		17.3	2.9	17.1	3.1	.70	.82	
3. Goal feedback	16.9	3.5	16.5	3.6		17.0	3.0	16.7	2.9	.77	.79	
4. Goal difficulty	15.8	3.5	16.4	2.9		15.3	4.5	16.2	3.9	.90	.91	
5. Goal strategy	17.1	2.3	17.2	2.7		16.4	3.0	16.5	3.0	.76	.86	
6. Goal commitment	26.1	2.1	25.6	2.2		25.7	2.3	24.8	3.4	*	.49	.69
7. Need satisfaction at work	105.3	9.4	107.6	9.1		107.0	10.2	103.6	12.4	**	.83	.86
8. Autonomy	24.9	2.8	25.6	2.2		25.0	2.5	24.2	3.1	*	.71	.78
9. Competence	35.8	4.0	36.9	3.5		37.0	3.4	35.6	4.7	**	.71	.71
10. Relatedness	39.7	4.2	39.7	4.6		40.4	5.4	38.9	5.9	*	.67	.75
11. Attribution success strategy	17.7	2.2	18.3	2.2		17.7	2.2	18.0	2.5		.85	.90
12. Attribution success ability	17.4	2.3	18.2	2.1	**	17.6	2.2	17.6	2.4		.85	.90
13. Attribution success effort	16.9	3.1	17.3	3.1		17.0	3.1	17.2	3.5		.88	.93
14. Attribution success circumstances	14.8	4.0	14.4	3.6		14.7	3.3	14.5	3.9		.83	.91
15. Attribution failure strategy	14.2	3.7	15.2	4.3		15.4	3.5	15.4	3.9		.80	.85
16. Attribution failure ability	9.2	4.1	9.3	4.5		9.4	3.9	9.8	4.5		.82	.90
17. Attribution failure effort	12.3	4.8	11.7	4.9		12.0	5.3	12.5	5.0		.88	.88
18. Attribution failure circumstances	12.3	3.9	12.9	3.6		11.4	3.9	11.9	3.6		.84	.88

Note. Significant changes in variable values between the pre- and the post-test are marked with bold (* = p < .05) and (** = p < .01).

Discussion

The main purpose of this study was to investigate the effects of executive coaching (external executive coaching and coaching based leadership) on variables central to performance psychology. All four predictions, specified in our four hypotheses, were confirmed for the participants receiving external executive coaching. The first hypothesis predicted a positive change in self-efficacy as a result from the experiment. The finding from the paired sample t-test (Table 3) supports that effective external executive coaching increases self-efficacy. The second hypothesis predicted a positive change in goal setting through the important moderators' clarity, difficulty, commitment, feedback and strategy. This hypothesis was partly confirmed, the variables clarity, feedback and strategy increased in the experimental group (Table 3). The third hypothesis predicted an increased tendency to attribute successful performances to internal, unstable, and controllable factors. This hypothesis was confirmed in that both causal attributions to strategy and ability increased during the experiment (Table 3). The last hypothesis predicted a positive change in need satisfaction among the participants in the experiment group. This hypothesis was also confirmed; there was a positive change in the total need satisfaction among the executives in the experiment group, especially through the needs for autonomy and relatedness (Table 3). In comparison, there were no positive significant changes in the control group.

For the executives receiving coaching based leadership, only the first hypothesis was confirmed, i.e. that which predicted a positive change in self-efficacy (Table 4). Interestingly, there were several significant changes in the control group. However, and what makes this finding interesting, all changes were negative; the variables measuring goal commitment and need satisfaction (autonomy, competence and relatedness) all decreased during the experiment.

Self-efficacy is predictive of effort, persistence in the face of difficulty, and performance (Bandura, 1997). It is therefore particularly important to note that self-efficacy was strengthened among both the CEO executives receiving external coaching and the middle managers receiving coaching based leadership. The changes were significant at the $p < .01$ level for both groups. Since self-efficacy is found to be one of the most important factors impacting human performance in general (Bandura, 1997; Grant & Greene, 2004), and leadership self-efficacy is found to be an effective mean to predict, understand, and develop effective leadership (Anderson, Krajewski, Goffin & Jackson, 2008), the findings imply that both external executive coaching and coaching based leadership may be used as one means of increasing performance. It is also worth noting that the self-efficacy level was high before the experiment started both among the CEO executives and the middle managers in both the experiment- and in the control groups (means= 5.6, 6.0, 5.7, and 5.6, respectively⁵).

Goal setting theory states the importance of clear goals with related strategies in order to influence performance (Locke & Latham, 2002). Coaching is about making changes and building competence, thus, making coachees' aware of what to achieve in the future (goals) and explore and agree upon specific actions (strategies) are important elements of coaching. The second hypothesis predicted that the experiment would increase goal setting through the goal setting variables clarity, feedback, difficulty, strategy and commitment. The findings among the executives receiving external coaching partly support this, as the goal setting variables, which are focused in the coaching process, increased significantly during the experiment.

Among the middle managers receiving coaching based leadership however, there were no significant effects on these goal setting variables during the experiment (Table 4). These results are also

⁵ Table 3 and Table 4, Self-efficacy mean/number of items.

interesting and worth noting. In an achievement oriented corporate environment demands for results are high and the focus on goal setting was probably emphasized prior to the experiment. Goal setting theory states the importance of goal setting through the important variables clarity, strategy, difficulty, commitment and feedback. Goal structure, however, is defined as the signals an environment emphasizes as important and valuable in order to achieve (Ames, 1992). Research has focused on two types of goal structures: (a) mastery goal structure and (b) performance goal structure (Lau & Nie, 2008). Mastery goal structure emphasizes learning, task mastery and trying hard to improve one's skills, whereas performance goal structure emphasizes results and the importance of demonstrating competence. Researchers recommend a mastery oriented goal structure in order to enhance motivation and performances (Meece, Anderman & Anderman, 2006). In order to fully understand the results related to goal setting an investigation of the goal structure in the environment would have been helpful. After working with the Fortune 500 Company for over one year, the team of external coaches and the researcher sensed a typical performance oriented goal structure in the company. During mandatory results- and appraisals conversations employees were measured against typical performance oriented results, such as the amount of clients they had worked with (Client Base), new clients they have achieved the last period (New Clients), customers without registered turnover (Lost Clients) and so forth. These were all parts of the company's Key Performance Indicators (KPI). The measurements used in this study however, cannot tell if the goal setting moderators are mastery oriented or performance oriented, or a mix with both. This is important in order to find evidence for both motivational and performance effects from the experiment through goal setting. Coaching is focused on growth and development (Moen & Kvalsund, 2008), thus, coaching has a mastery oriented goal structure. The self-efficacy measurement was also mastery oriented, in the sense that the participants had to consider how sure they were to achieve important leadership tasks in their roles in their company, not to achieve certain results (as for example improving the results on the company's KPI's). Improved performance (self-efficacy) in both experiment groups (external coaching and coaching based leadership) could therefore have been influenced through goal setting by affecting the goal structure. The positive effect on the goal setting variables in the CEO executive group receiving external coaching is therefore worth noting and raises a number of questions: Was the goal structure among the CEOs in the company a more mastery oriented goal structure and did this affect the goal setting variables - clarity, feedback and strategy? Are these results an indication that external coaching is more effective than coaching based leadership? Or are these results indicating that the CEO executives using coaching based leadership needed more time⁶ to implement the coaching based leadership being thought to them to achieve results on the goal setting variables? Future research should be designed to test such questions. Moreover, the missing goal structure variable is in our opinion a weakness in goal setting theory. Our results show the complexity of performance psychology, as several psychological variables interplay in order to affect performance.

We found an increased tendency both among the executives receiving external coaching and the middle managers receiving coaching based leadership to take credit for their successful performances. Among the executives receiving external coaching there was a significant increase in the attribution of successful performances both to strategy and ability as a result of the experiment (Table 3). Among the middle managers receiving coaching based leadership there was a significant increase in the attribution of successful performances to ability (Table 4). Coaching emphasizes the importance of coachee generated solutions and strategies through facilitating for individual empowerment and competence values. Thus, coaching emphasises that the coachee is responsible and should be in control of the situation. The findings among the executives receiving external coaching support that causal attributions to internal, unstable and controllable factors such as strategy, have increased among the CEO executives. This is a typical self-enhancing attribution pattern, which strengthens the

⁶ The external coaching programme was more intensive than the coaching programme involving executives using coaching based leadership.

executive's self view and perceptions of competence, ability and control by taking responsibility for one's successes. The lack of significant changes of attribution of successful performances to strategy among the middle managers receiving coaching based leadership is interesting. This is once more a reason to argue that external coaching is more effective than coaching based leadership. Also, the results could indicate that the coaching based leadership programme needed more time to produce expected results.

The increased change in attribution of successful achievements to ability among the executives receiving external coaching is worth noting. A possible explanation of this finding may be that executives in this achievement-oriented environment perceived ability as a prerequisite for choosing and employing effective and adaptive strategies when working with a task. Thus, the change in causal attribution of successful achievements to ability and strategy might indicate that the executives' receiving external coaching perceived that their strategic skills were predicted by their abilities. Such a view is congruent with the contention of several motivational researchers (e.g., Dweck, 2006). As Dweck (2006, p.7) argued; "This growth mindset is based on the belief that your basic qualities are things you can cultivate through your efforts". People with such a mindset believe that a person's true potential is unknown (and unknowable) and that it is impossible to foresee what can be accomplished after years of passion, toil and quality training.

Balancing the power of individuals to make important decisions for themselves without being influenced by others (autonomy), and the demands in the working environment for results and certain behaviours, is the true challenge in executive coaching (Moen & Kvalsund, 2007). The fourth hypothesis predicted that the self-determinate nature of coaching also should facilitate competence values. Thus, it is the individual's competence which is the origin for strategies and solutions, facilitated by the coach, which again will improve own competence. The findings among the executives receiving external coaching partly support this notion, as the result of the experiment is increased need satisfaction, especially through the needs autonomy and relatedness (Table 3). There is also a change in the need for competence among the executives receiving external coaching; however the change is not significant at the $p < .05$ level. We should point out that the number of participants in this group was only 11, which makes it difficult to find significant changes.

The significant change in relatedness indicates that the executives feel better connectedness and attachment to their fellow workers as a result of the coaching programme. A possible explanation is that their relational skills had been affected as a result of the coaching programme and the intensive work shop training and group coaching. However, this is mostly a speculation and needs to be tested in future research.

The paired sample t-test (Table 3) showed a number of significant positive changes among the executives receiving external coaching, for instance in self-efficacy, autonomy, and relatedness. In comparison, no positive changes were found among middle managers receiving coaching based leadership. The differential outcomes of the coaching programme may be given different explanations which need to be tested in future research. One possible explanation is that the middle managers were not coached by professional coaches. The CEO executives served as coaches at the same time that they were receiving coaching themselves. One possible reason for the results among the middle managers is therefore that it takes more time and training to develop effective coaching skills than was available in this experiment. Another possible reason for the differential results in the two groups may be that external coaching per se works better than coaching based leadership. In coaching based leadership the executives have two possibly conflicting roles; one role as a coach facilitating autonomy, relatedness, and attribution to strategy, and one role being responsible for productivity and control of results as well as processes. However, as pointed out, these speculations need to be tested in future research.

Future research should also include qualitative studies exploring how different types of coaching are perceived or experienced both among the coaches and coachees.

Conclusion

This study gives evidence that external executive coaching is effective in order to improve performance psychological variables, as all our four hypothesis were confirmed. The results indicate that executive coaching can be used to transform individual performance at work. The number of participants in this study was small, which makes it more difficult to show significant changes. A positive change in performance psychological variables is expected to result in, and may already have resulted in, improved performances. On the other hand, this study only partly gives evidence that coaching based leadership is effective in order to improve performance psychological variables, as only one out of our four hypotheses were confirmed. This raises important questions for future research. The results give reasons to discuss whether external coaching and coaching based leadership facilitate different psychological processes with different potential for driving growth and development.

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