*Article*

# Leading to Effectiveness: Comparing Dyadic Coaching and Group Coaching

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**Abstract**

Although numerous studies have shown that coaching works, the search for "active ingredients" of successful coaching is ongoing. We argue that the coach's transactional and transformational leadership behavior contributes to coaching effectiveness. In an experimental study on reducing procrastination, participants ($N$ = 108) defined individual goals related to procrastination. They were then randomly assigned to a dyadic coaching session, a group coaching session, or a control group. Procrastination was reduced in all conditions, but participants in the two coaching conditions were better at attaining their individual goals. Furthermore, compared with participants who received group coaching, participants in the dyadic coaching had a higher increase in goal commitment and showed more goal reflection and higher intrinsic goal motivation. Mediation analyses further revealed that the differences between dyadic and group coaching were explained by the coach's transformational and transactional leadership behavior.

**Keywords**

coaching, transformational leadership, transactional leadership, group coaching, procrastination, effectiveness

Coaching can be defined as "a systematic process that focuses on collaborative goal setting to construct solutions and employ goal attainment process with the aim of fostering the on-going self-directed learning and personal growth of the client" (Grant & Stober, 2006, p. 2). The role of the coach is (a) to set the ground rules by making a

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clear distinction between coaching and other forms of support and clarifying the responsibilities of the coach and the person being coached (i.e., the client); (b) to cocreate the relationship by showing integrity, providing support, and being flexible and open; (c) to communicate effectively by active listening and curious questioning; and (d) to facilitate learning and results by supporting goal setting and developing action plans as well as managing progress and accountability (International Coach Federation [ICF], 2014). In sum, the coach is responsible for leading the client through the coaching process.

The demand for coaching as well as interest in coaching research has steadily increased over the past two decades (Passmore & Fillery-Travis, 2011; Theeboom, Beersma, & van Vianen, 2014). However, much of the existing literature consists of descriptive papers, case studies, and practitioner articles promoting specific coaching interventions (De Meuse, Dai, & Lee, 2009). Over the past decade, researchers have repeatedly stated that there is a need for more empirical studies investigating the effectiveness of coaching (Evers, Brouwers, & Tomic, 2006; Grant & Cavanagh, 2007; Grant, Passmore, Cavanagh, & Parker, 2010; Joo, 2005; Sue-Chan & Latham, 2004). The literature indicates that coaching generally has a positive impact on several individual and organizational outcomes (for an overview, see Grant, 2011; Theeboom et al., 2014) such as return on investment (De Meuse et al., 2009), academic performance (Franklin & Franklin, 2012), self-efficacy beliefs (Evers et al., 2006; Franklin & Doran, 2009), goal attainment (Grant, Curtayne, & Burton, 2009; Losch, 2014), as well as well-being (Green, Oades, & Grant, 2006). Besides the investigation of coaching outcomes and effectiveness, the search for "active ingredients" has been gaining attention recently (De Haan, 2012; De Haan, Duckworth, Birch, & Jones, 2013). It seems that there are common factors that are inherent in all coaching approaches and that positively affect coaching outcomes (De Haan, 2008; De Haan, Culpin, & Curd, 2011). These include the coaching relationship (e.g., Baron & Morin, 2009; De Haan et al., 2013; Duckworth & De Haan, 2009; Gyllensten & Palmer, 2007), personality characteristics of coach (e.g., the coach's regulatory focus, Sue-Chan, Wood, & Latham, 2012) and client (e.g., conscientiousness, openness, and emotional stability; Stewart, Palmer, Wilkin, & Kerrin, 2008), or common coaching techniques (e.g., solution-focused vs. problem-focused questioning; Grant & O'Connor, 2010). However, empirical studies that investigate the coach's behavior are rare (e.g., encouragement and listening; De Haan et al., 2011), and even fewer do so by drawing on psychological theories (e.g., coach–client interaction; Ianiro, Schermuly, & Kauffeld, 2012).

In the current study, we argue that one crucial ability of a coach is to be able to lead the client through the coaching process in order to promote the client in achieving her or his goals. We draw on transactional and transformational leadership theory (Bass, 1998; Bass & Avolio, 1993) to investigate if clients perceive these leadership behaviors from their coaches and if they have a positive impact on coaching effectiveness. For this purpose, we compared dyadic coaching with group coaching. We chose procrastination as a topic for our interventions as this is a problem for many students. To procrastinate means to "voluntarily delay an intended course of action despite expecting to be worse off for the delay" (Steel, 2007, p. 66). Up to 70% of university students

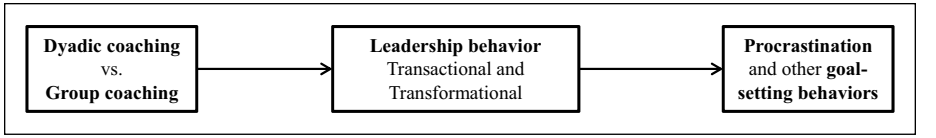


**Figure 1.** Proposed theoretical model describing that the coach's leadership behavior influences the coaching outcomes.

indicate that they procrastinate (Schouwenburg, 2004) and even in the adult population, up to 20% chronically procrastinate (Hammer & Ferrari, 2002). One idea to overcome procrastination and attain one's goals may be to set specific semester goals. Research on goal setting (Locke & Latham, 2002) has shown that setting oneself specific and difficult goals has a positive effect on performance, such as improved grades and academic performance (Richardson, Abraham, & Bond, 2012). The goals one sets should be SMART, that is, specific, measurable, attainable, realistic, and time-bound (Doran, 1981). Another possibility may be to use an intervention method like coaching, in either a dyadic or group setting. Coaching could further facilitate the goal-setting process and support self-development (Grant & Stober, 2006; Greif, 2008). Thus, in the current study, we will compare dyadic coaching with group coaching and a control group, in which participants set themselves SMART goals. We focus on procrastination and other goal-setting behaviors as outcome measures, for example, goal self-efficacy and goal commitment (see Figure 1).

## *Coaching and Leading*

In an article about the role of tomorrow's leadership, Burdett (1998) described coaching as a more evolved form of leadership. This idea was taken up by Kemp (2009), who stated that the relationship between a coach and a client is similar to that of a leader and an employee. He argued that "leadership can be seen as a series of structured relationships" (p. 105) with the aim to support and guide the development and performance of the followers. In general, leadership can be described as an interaction process that involves exerting influence regarding a goal (Von Rosenstiel, 2006), structuring or restructuring the current state, and changing the motivation or competencies of the person being led (Bass & Bass, 2008). Similarly, coaching focuses on collaboratively working on goals and solutions as well as on fostering learning and personal growth (Grant & Stober, 2006). Thus, the definitions of leadership and coaching seem to have some things in common. Both, leading and coaching aim at changing the current state toward attaining a goal by promoting their followers/clients and enabling them to do so.

However, contrary to the leader–follower relationship, where the leader has more power and stands above the follower, coach and client should meet on an equal level (Rauen & Eversmann, 2014)—although their responsibilities are different during the coaching process. Although the clients have the responsibility for their goals and the

goal progress, the coaches are responsible for leading them through the coaching process (Biberacher, Strack, & Braumandl, 2011). Another difference is that the leader supports the follower to attain the leader's or the company's goals, whereas the coach supports the client in attaining personal self-set goals. What could a coach's effective leadership style look like?

## *Transactional and Transformational Leadership*

In our opinion, the distinction between transactional and transformational leadership could be useful in this respect (Bass, 1998; Bass & Avolio, 1993). We argue that leading the coaching process includes (a) making clear what can be expected from coaching and controlling external conditions (transactional leadership) and (b) supporting the clients to achieve more than they would on their own (transformational leadership).

## *Transactional Leadership*

Transactional leaders set clear goals and communicate their expectations to their followers. If the followers meet these expectations, they are rewarded (Bass & Bass, 2008; Felfe, 2006). Leader and follower form an exchange relationship. Transactional leadership consists of the following components (Bass & Bass, 2008; Felfe, 2006): (a) contingent reward, where we see some parallels to coaching and (b) active and passive management by exception, which cannot be transferred to the coaching context. Contingent reward means that leaders create an exchange relationship with their followers in which expectations are clarified and rewards are offered in exchange for meeting these expectations (Felfe, 2006). Key capabilities of a coach are being able to make clear distinctions between coaching and other interventions, to emphasize the client's and coach's responsibilities, and to set and keep clear agreements (ICF, 2014). Thus, we argue that the coach shows facets of contingent reward, for example, by making clear that the client is responsible for the goal attainment process, by making clear what can be expected from the coaching. However, the distinguishing feature of transactional leadership, namely that leaders make use of rewards to stimulate their followers to live up to responsibilities and expectations, is absent in a coaching relationship.[1] Although the coach has the responsibility for the coaching process, she or he would not control if the client does the "right" thing or intervene if she or he thinks that the client makes a mistake in the sense of an active management by exception. The responsibility for finding solutions or resources as well as the actual goal attainment remains with the client.

## *Transformational Leadership*

Transformational leaders motivate and inspire their followers to exceed expectations and foster personal growth. They use four strategies (Bass, 1999; Felfe, 2006): (a) individualized consideration, acknowledging their followers' personal needs, providing constructive feedback, and supporting their personal development; (b) intellectual

stimulation, including behaviors that question the followers' presumptions and ideas and thus stimulate creative thinking and problem solving; (c) inspirational motivation, inspiring visions about the future, talking optimistically about their followers' ideas, and providing challenges; and (d) idealized influence, meaning that leaders influence their followers' attitudes and values by acting as role models and being authentic.

According to definitions of coaching and the role of the coach (Grant & Stober, 2006; Greif, 2008; ICF, 2014), we argue that three of the transformational leadership behaviors are similar to the behaviors that a coach should show, but not all transformational behaviors can be transferred one-to-one to the coaching context. Coaching is a collaborative process in which the coach, similarly to the leader, focuses on the needs and goals of the client (individualized consideration) by, for example, helping the client develop her or his strengths or acknowledging the needs of the client. In contrast to the intellectually stimulating behavior of a leader—controlling if the goals are still appropriate or suggesting new ways to approach a task—the coach encourages the client to think about new perspectives and solutions herself or himself. The coach does not provide a vision but encourages the client to form an optimistic vision for her or his future and think about the way that will lead there (inspirational motivation). The dimension-idealized influence is characterized by behaviors aiming at influencing the follower and by having high expectations about the performance of followers. However, coaching is about facilitating the development and goal attainment of the client by purposeful questioning rather than by actively giving advice (Greif, 2008; ICF, 2014; Stober & Grant, 2006). "The role of the coach is to conduct the process not to direct the outcome, and in this view one of the most valuable skills of the coach is to know how not to interfere!" (Ives, 2008, p. 105). The coach should not act as a role model and influence the client in a sustainable manner as a leader would. The coach would not emphasize the importance of teamwork and a common understanding or talk to others about their own beliefs and values, like a leader would. Thus, we think that this is not compatible with the role of the coach as a facilitator and supporter, and therefore we excluded this dimension.

## *Dyadic and Group Coaching*

To investigate if the coach shows transactional and transformational leadership behavior, we compared dyadic coaching with group coaching. In a dyadic setting, coaching is one-on-one (Brown & Grant, 2010), and the client has a close relationship with the coach (Jowett, Kanakoglou, & Passmore, 2012). Although coaching in a dyadic setting is most common (Ward, 2008) and most studies have used this setting, coaching practice shows that there are other forms like team coaching or group coaching (Brown & Grant, 2010; Greif, 2008). Group coaching implies that a group of people that do not necessarily work together participate simultaneously in a coaching process (Rauen, 2005). The advantage of group coaching is that the clients can use the knowledge and experience of the group to get feedback and jointly develop solutions (Greif, 2008). Furthermore, group coaching enables learning through peer experiences and provides support from others who are in the same situation (Nicholas & Twaddell, 2008).

However, disadvantages of this setting are that it can hinder the work on confidential topics and that there is less support and individualized attention from the coach for the client (Nicholas & Twaddell, 2008; Rauen, 2005). We assume that coaches show transactional and transformational leadership behavior in both dyadic and group settings. However, we argue that the focused attention and transactional and transformational leadership behaviors directed to one client in dyadic coaching result in a higher perception of coaches' leadership behaviors. Thus, we hypothesize that clients in a dyadic coaching session experience (a) more contingent reward as the coach in the dyadic coaching condition has a higher capacity to clarify these agreements and respond to the client's questions; (b) more individualized consideration, because the coach can respond more individually to the client's needs and goals; (c) more intellectual stimulation, because the coach in the dyadic coaching can better support the client to find new perspectives and solutions; and (d) more inspirational motivation, because the coach in the dyadic coaching can better encourage the client to form a personal optimistic vision for the future. Thus,

> **Hypothesis 1:** Participants in the dyadic coaching condition experience more contingent reward, individualized consideration, intellectual stimulation, and inspirational motivation compared with participants in the group coaching condition.

So far, we have argued that coaches show transactional and transformational leadership behaviors and that clients perceive these behaviors more in a dyadic compared with a group setting. But how do transactional and transformational leadership behaviors influence effectiveness?

## *Effectiveness*

Meta-analyses have shown that there is a positive relationship between *transformational leadership* and individual performance, organizational measures of leader effectiveness (e.g., profit), subordinate effectiveness, commitment, effort, satisfaction, and intrinsic motivation. Similarly, a positive relationship between *transactional leadership* and followers' commitment, satisfaction, and performance has been documented (e.g., DeGroot, Kiker, & Cross, 2000; Judge & Piccolo, 2004; Lowe, Kroeck, & Sivasubramaniam, 1996; Wang, Oh, Courtright, & Colbert, 2011). Thus, we would expect similar effects for the coach's transactional and transformational leadership behavior on the effectiveness of coaching. What is effectiveness in the context of coaching?

Goal theory may be a promising framework to understand coaching effectiveness (Grant, 2012). Research on goal setting (Locke & Latham, 2002, 2006) has shown that setting specific and difficult goals positively affects performance through four mechanisms: Goals (a) help people focus on goal-relevant and mask goal-irrelevant activities; (b) mobilize energy; (c) increase persistence; and (d) influence action by fostering the development, discovery, and/or use of task-relevant knowledge and strategies. Following the results of the meta-analyses on the impact of transactional

and transformational leadership behavior and the implications from goal theory, we measured the following aspects of effectiveness, which are further described in the following paragraphs: goal motivation as an energizing element, goal commitment as the assessment of persistence of pursuing a goal, and goal self-efficacy as the belief in one's own knowledge and abilities to reach a goal. As the aim of this study was to help students overcome their procrastination, we further assessed goal attainment as well as the reduction of procrastination and self-reflection as it is a key factor in coaching (Grant, 2003; Greif, 2008).

*Goal Motivation.* In the self-determination theory (Deci & Ryan, 2012), intrinsic motivation is described as a basic, lifelong psychological growth function. "Intrinsically motivated behaviors are those that are freely engaged out of interest without the necessity of separable consequences" (Deci & Ryan, 2000, p. 233). Numerous studies have shown that having a choice, feeling autonomous and competent as well as receiving autonomy support from other persons lead to high intrinsic motivation (for an overview, see Deci & Ryan, 2000). During the coaching process, clients set self-concordant goals, that is, goals that are in accordance with a person's interests and values (Sheldon, 2002; Sheldon & Elliot, 1999) and are supported by the coach to find their own way to achieve them (Spence & Oades, 2011).

*Goal Commitment.* Goal commitment can be described as the determination in attempting to reach a goal, and it is necessary for high performance at high levels of goal difficulty (Locke & Latham, 1990). The conditions under which goal commitment develops are the attractiveness of goal commitment, the expectancy of goal commitment, and motivational force (Klein, Wesson, Hollenbeck, & Alge, 1999). In the coaching literature, it has been shown that goal commitment did not change over the time of the coaching but decreased in the control group (Moen & Skaalvik, 2009; Spence & Grant, 2007). However, it has also been shown that one coaching session can increase goal self-concordance and commitment (Burke & Linley, 2007). We argue that a coaching process focusing on setting attainable and self-determined goals should emphasize the attractiveness of these goals. Furthermore, reflecting on strengths and resources should foster the expectancy to reach these goals.

*Goal Self-Efficacy.* Self-efficacy can be described as a person's belief in having the capabilities needed to perform a specific task or attain one's goals (Bandura, 1986; Luszczynska, Gutiérrez-Dona, & Schwarzer, 2005). One function of a coach is to foster the self-efficacy of the clients (Popper & Lipshitz, 1992). Accordingly, coaching research has shown that coaching increased clients' self-efficacy (Evers et al., 2006; Franklin & Doran, 2009; Moen & Skaalvik, 2009). In line with this research, we argue that in coaching, the reflection on the clients' past success situations makes them recognize their acquired abilities.

*Procrastination.* Coaching is a process of learning and change (Hurd, 2003; Whitworth, Kimsey-House, & Sandahl, 1998), and behavior change is often one goal (Brotman,

Liberi, & Wasylyshyn, 1998; Wasylyshyn, 2003). In the current study, we wanted to use coaching to help students reduce their procrastination behavior. We argue that reflecting on thoughts and behaviors that are connected to procrastination during coaching helps become aware of their origin. This awareness should enable the recognition of situations in which procrastination usually occurs and help develop strategies to avoid postponing and start acting.

*Goal Attainment.* Goal setting is important for the coaching process and helps focus on goal attainment. Meta-analyses have shown that there is a positive relationship between goal setting and performance (Locke & Latham, 1990), such as improved grades and academic performance (Morisano, Hirsh, Peterson, Pihl, & Shore, 2010; Richardson et al., 2012). The coaching literature showed that coaching can increase the attainment of goals (Grant, 2003, 2014; Grant et al., 2009; Grant, Green, & Rynsaardt, 2010; Green et al., 2006; Losch, 2014).

*Goal Self-Reflection.* Self-reflection plays a crucial role in coaching for attaining one's goals and fostering self-development (Greif, 2008), and it increases during coaching (Grant, 2003).

Are the two interventions effective and which is more effective in terms of the different variables we just presented? To investigate this question, we compared dyadic and group coaching with a control group. In this control group, participants only set themselves SMART goals (Doran, 1981) like in the two coaching conditions, but did not get any further intervention. Coaching additionally supports self-congruent goal setting (Stober & Grant, 2006), and it has been shown that coaching has a positive effect on different aspects of effectiveness, for example, on goal commitment (Burke & Linley, 2007), self-efficacy (Evers et al., 2006), goal attainment (Grant et al., 2009), and self-reflection (Grant, 2003). Thus, both coaching interventions, dyadic and group coaching, should be more effective than goal setting alone. We have already argued that clients in a dyadic coaching experience more transactional and transformational leadership behaviors compared with group coaching. Combined with the results of the meta-analyses on the influence of transactional and transformational leadership behavior, which have shown that these leadership behaviors have a positive influence on followers and their performance, we argue that dyadic coaching is better at promoting coaching effectiveness than group coaching. Group coaching, on the other hand, should be better at promoting coaching effectiveness than the control group because clients jointly develop solutions (Greif, 2008), learn through peer experiences, and are provided with support from the others (Nicholas & Twaddell, 2008). Thus,

**Hypothesis 2:** Dyadic coaching is more effective than group coaching, and group coaching is more effective than the control group.

As both—transactional and transformational—leadership styles should be higher in dyadic coaching compared with group coaching and positively influence the effectiveness of coaching, we hypothesize that,

**Hypothesis 3:** The difference between dyadic and group coaching in the different aspects of effectiveness is mediated by the coach's transactional and transformational leadership behavior.

## Method

### Participants and Design

This intervention study was part of a course held at the University of Salzburg, Austria. A total of 115 students at the University of Salzburg completed a questionnaire at Time 1 (T1) and Time 2 (T2). Seven participants were excluded from analysis, because they indicated in the comments at T2 that they could not identify with the task and the predetermined topic "procrastination" (e.g., "I do not procrastinate, so this intervention had no purpose for me at all"). Of the remaining 108 participants, 23 were male, and 85 female, with an average age of 21.83 years ($SD = 3.90$).

We implemented a 2 × 3 factorial design with the within-subject factor time of evaluation (T1, T2) and the between-subjects factor [dyadic coaching, group coaching, no coaching (control)]. Participants were randomly assigned to one of the three groups.

### Procedure

Participants received instructions via e-mail and were told to follow five steps (see Figure 2).

*Step 1: Goal-Setting Task.* Participants were instructed to think about situations in their academic or daily life where they have been procrastinating. Subsequently, they had to think about two goals related to this procrastination behavior and write them down following the SMART characteristics (Doran, 1981). For example, a goal had to be measurable and, therefore, contain a specific behavior ("I will study 2 hours a day.").

*Step 2: Preevaluation (T1).* After the goal setting, participants filled out an online questionnaire. Procrastination, goal attainment, goal commitment, and goal self-efficacy were measured.

*Step 3: Self-Reflection Task.* Only participants in the dyadic and group coaching conditions performed a self-reflection task developed to reduce procrastination (Losch, 2014), because the task was already part of the intervention and served as a preparation for the single coaching session. The task helps people identify behavior patterns and cognitions related to procrastination behavior and think about the benefits that are expected from this behavior.

*Step 4: Intervention.* Three days after participants received the self-reflection task, the interventions started. In the dyadic coaching condition, participants received a 1-hour

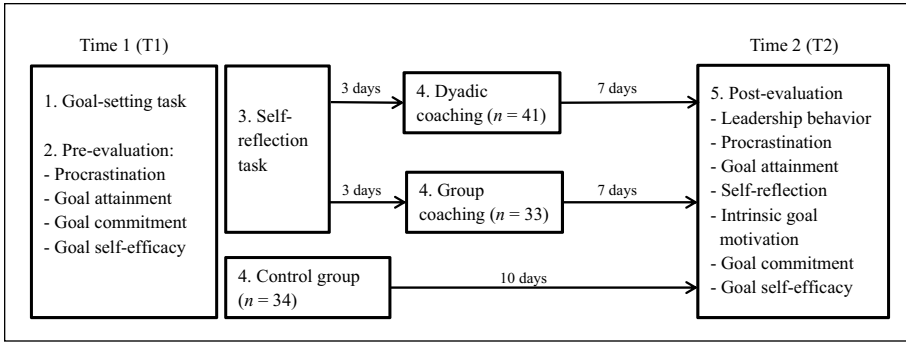


**Figure 2.** Five-step procedure with time of evaluation, measures, and number of participants in the different groups.

coaching session. In the group coaching condition, participants received a 1-hour group coaching with 10 to 16 participants (there were three groups, one with 10, two with 16 participants). The procedure in both interventions was the same: After briefly getting to know each other, the coach and client(s) analyzed the SMART characteristics of the goals, talked about the results of the self-reflection task, and linked these results to the goals. Thereby, the coaches listened carefully to the client(s) and used open solution-focused questioning to elaborate on the two tasks (no special further tools were used). Participants in the control group had the opportunity to perform the self-reflection task and attend a group coaching session after the postevaluation (T2).

*Step 5: Postevaluation (T2).* Seven days after the dyadic or group coaching session, or 10 days after waiting in the control group, all participants filled out an online questionnaire. First, the mediator variables, transactional and transformational leadership behaviors, were assessed. Afterward, procrastination, goal attainment, self-reflection, intrinsic goal motivation, goal commitment, and goal self-efficacy were measured. At the end, participants were asked if they would like to make any comments.

## *Coaches*

The coaches, who conducted the dyadic and group coaching sessions, were blind regarding the specific aim of the study and the investigated variables. They were psychologists with a bachelor's degree who had gone through a 1-year coaching education training imbedded in the curriculum of a master's in psychology program at the University of Salzburg (Braumandl, Amberger, Falkenberg, & Kauffeld, 2013). This standardized training included 250 hours of training (introduction in coaching theory followed by training of specific coaching tools and techniques) and practice. The coaches learned about solution-focused questioning and other tools to stimulate the self-reflection of their clients and promote their goal-directed behavior. In the first semester, these skills were applied in peer coaching. In the second semester, the

coaches continued to use and develop their coaching skills and knowledge in client coaching. During this time, the coaches were supervised.

## Measures[2]

*Procrastination.* Procrastination behavior was assessed with the German translation of the Academic Procrastination State Inventory (Helmke & Schrader, 2000). Items were rated from 1 (*never*) to 5 (*all the time*). An example item is "You allowed yourself to be distracted from your work" ($\alpha_{T1} = .93$; $\alpha_{T2} = .94$).

*Goal Attainment.* To determine the degree of goal attainment, we employed a goal-attainment scale (Biberacher, 2010; Braumandl & Dirscherl, 2005; Ianiro et al., 2012). Participants answered the question, "As of right now, to what extent have you attained this goal?" for each of the two goals (Goal 1 and Goal 2), and at each of the two time points (T1 and T2). The item was rated on a scale of 1 (*0%*) to 11 (*100%*). Goal attainment at T1 was then computed as the mean of goal attainment for Goal 1 and Goal 2.

*Intrinsic Goal Motivation.* Intrinsic goal motivation was assessed with the Situational Motivation Scale (Guay, Vallerand, & Blanchard, 2000), which was adapted to fit the goal context. An example item is "I think that pursuing this goal is interesting" ($\alpha = .84$). The scale ranged from 1 (*not at all correct*) to 5 (*fully correct*).

*Goal Commitment.* Goal commitment was assessed with the German version (Storch, 2009) of the five goal commitment items from Klein et al. (1999). An example item is "I am strongly committed to pursuing this goal" ($\alpha_{T1} = .76$; $\alpha_{T2} = .81$). Items were rated on a scale from 1 (*not at all correct*) to 5 (*fully correct*).

*Goal Self-Efficacy.* Goal self-efficacy was assessed with the General Occupational Self-Efficacy Scale (Abele, Stief, & Andrä, 2000), which was adapted to fit the goal context. An example item is "I know that if I want to, I can meet all the demands that are necessary for attaining my goal." Items were rated from 1 (*not correct at all*) to 5 (*fully correct*) at T1 ($\alpha = .76$) and from 1 (*not correct at all*) to 4 (*fully correct*) at T2 ($\alpha = .70$). Therefore, values were *z*-standardized before the means were computed.

*Self-Reflection.* Self-reflection was assessed with the result-oriented problem- and self-reflection questionnaire (Greif & Berg, 2011), which measures the four dimensions goal reflection ($\alpha = .87$), reflection on self-organization ($\alpha = .81$), reflection on concrete behavior changes ($\alpha = .76$), and reflection together with others ($\alpha = .80$). One example item for goal reflection is "The last time I thought about my goal and myself, I thought about how important that goal is for me and why." Items were rated from 1 (*not correct at all*) to 5 (*fully correct*).

*Transactional and Transformational Leadership Behavior.* Transactional and transformational leadership behaviors were assessed with an adapted German version of

the Multifactor Leadership Questionnaire (Felfe & Goihl, 2002). The transactional leadership behavior contingent reward (e.g., "The coach made it clear that I am responsible for attaining my goals," $\alpha = .85$) as well as the transformational leadership behaviors intellectual stimulation (e.g., "The coach helped me find new ways to reach my goals," $\alpha = .87$), individualized consideration (e.g., "The coach recognized my individual needs, skills, and goals," $\alpha = .91$), and inspirational motivation (e.g., "The coach talked in an optimistic way about the future," $\alpha = .83$), as well as the coach's charisma[2] (e.g., "The coach possessed skills and characteristics that I admired," $\alpha = .88$), were measured. Items were rated on a scale from 1 (*not at all*) to 5 (*frequently, if not always*).

## Results

We provide a table of the correlations between the different effectiveness measures and the transactional and transformational leadership behaviors in the appendix.

*Coach's Leadership Behavior.*[3,4] To test Hypothesis 1, assuming that the participants in the dyadic coaching condition would perceive more contingent reward, intellectual stimulation, individualized consideration, and inspirational motivation compared with those in the group coaching condition, we performed a multivariate analysis of variance (ANOVA). Means and standard deviations are displayed in Table 1.

Analyses revealed a marginally, significantly higher contingent reward, $F(1, 72) = 3.91$, $p = .052$, $\eta^2 = .05$, in the dyadic coaching condition compared with the group coaching condition. Furthermore, participants in the dyadic coaching condition perceived significantly more individualized consideration, $F(1, 72) = 44.59$, $p < .001$, $\eta^2 = .40$, and intellectual stimulation, $F(1, 72) = 12.26$, $p = .001$, $\eta^2 = .15$, compared with the group coaching condition. However, contrary to our assumptions, there was no significant difference in inspirational motivation $F(1, 72) = 1.90$, $p = .172$, $\eta^2 = .03$.

In sum, Hypothesis 1 was partly supported. Participants in the dyadic coaching perceived more contingent reward, individualized consideration, and intellectual stimulation, compared with participants in the group coaching. However, there was no difference in inspirational motivation.

### *Effectiveness*

To test Hypothesis 2, regarding the effectiveness of dyadic and group coaching and the control group, we performed repeated-measures analyses for goal commitment, goal self-efficacy, procrastination, and goal attainment at T1 and T2. Furthermore, we conducted univariate ANOVAs for intrinsic goal motivation and self-reflection at T2. Means and standard deviations for the dependent variables at T1 and T2 are displayed in Table 1.

*Intrinsic Goal Motivation.* A univariate ANOVA did not support our hypothesis, as there was no significant main effect for intrinsic goal motivation, $F(2, 105) = 2.47$, $p = .108$, $\eta^2 = .04$. However, a post hoc comparison (least significant difference) hinted at a

**Table 1.** Means and Standard Deviations for the Dependent Variables for the Three Conditions (Coaching, Group Coaching, and Control) Measured at Time 1 (T1) and Time 2 (T2).

| | | Dyadic coaching | | | | Group coaching | | | | Control group | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | T1 | | T2 | | T1 | | T2 | | T1 | | T2 | |
| | Dependent variable | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Effectiveness | Procrastination | 2.68 | 0.68 | 2.57 | 0.71 | 2.67 | 0.65 | 2.62 | 0.60 | 2.87 | 0.76 | 2.79 | 0.81 |
| | Goal attainment | 4.43 | 1.83 | 6.07 | 2.24 | 4.39 | 1.74 | 6.25 | 2.19 | 3.91 | 1.93 | 4.72 | 2.39 |
| | Goal commitment | 4.22 | 0.67 | 4.38 | 0.59 | 4.30 | 0.57 | 4.21 | 0.64 | 4.21 | 0.56 | 4.07 | 0.69 |
| | Goal self-efficacy[a] | 0.06 | 1.11 | 0.29 | 0.96 | 0.18 | 0.81 | 0.14 | 0.80 | −0.04 | 0.97 | −0.26 | 1.06 |
| | Intrinsic goal motivation | | | 3.17 | 0.82 | | | 2.72 | 0.93 | | | 3.06 | 1.04 |
| | Goal reflection | | | 3.78 | 0.80 | | | 3.23 | 0.84 | | | 3.39 | 0.96 |
| Active ingredients | Intellectual stimulation | | | 3.74 | 1.03 | | | 2.97 | 0.81 | | | | |
| | Individualized consideration | | | 3.68 | 0.99 | | | 2.12 | 0.94 | | | | |
| | Inspirational motivation | | | 3.66 | 0.84 | | | 3.39 | 0.85 | | | | |
| | Contingent reward | | | 3.38 | 0.95 | | | 2.97 | 0.82 | | | | |

[a]z-Standardized values.

difference in intrinsic goal motivation between participants in the dyadic and group coaching conditions, $p = .040$.

*Goal Commitment.* A repeated-measures ANOVA revealed no significant main effect for time of evaluation or intervention, $F$s ≤ 0.77, $p$s ≥ .468. However, as expected, there was a significant interaction, $F(2, 105) = 3.75$, $p = .027$, $\eta^2 = .07$. As simple effects analysis showed, there was a significant increase in goal commitment only in the dyadic coaching condition, $F(1, 105) = 4.13$, $p = .045$, $\eta^2 = .04$, and not in the group coaching and control conditions, $F$s ≤ 2.28, $p \geq .134$. Looked at differently, for T1, there were no significant simple effects, $p$s ≥ .536. However, for T2, participants in the dyadic coaching condition showed significantly higher goal commitment than those in the control condition, $p = .039$. Participants in the dyadic and group coaching conditions, $p = .245$, as well as group coaching and control conditions did not differ, $p = .387$.

*Goal Self-Efficacy.* A repeated-measures ANOVA revealed no significant main effect for time of evaluation or intervention, $F$s ≤ 1.52, $p$s ≥ .223. However, as expected, there was a marginally significant interaction, $F(2, 105) = 3.01$, $p = .054$, $\eta^2 = .05$. As simple effects analysis showed, there was a marginally significant increase in goal self-efficacy only in the dyadic coaching condition, $F(2, 105) = 3.40$, $p = .068$, $\eta^2 = .03$, and not in the group coaching and control conditions, $F$s ≤ 2.57, $p$s ≥ .112. Looked at differently, for T1, there were no significant simple effects $p$s ≥ .370. However, for T2, participants in the dyadic coaching condition showed significantly higher goal self-efficacy than those in the control group, $p = .014$. Participants in the dyadic and group coaching condition did not differ, $p = .510$. In the group coaching condition, participants showed marginally, significantly more goal self-efficacy than those in the control group, $p = .085$.

*Procrastination.* A repeated-measures ANOVA revealed a marginally significant main effect for time of evaluation, $F(1, 105) = 3.39$, $p = .068$, $\eta^2 = .03$, indicating a decrease in procrastination behavior. However, there was no significant main effect for intervention and, contrary to our assumptions, no significant interaction, $F$s ≤ 1.02, $p$s ≥ .365.

*Goal Attainment.* A repeated-measures ANOVA revealed a significant main effect for time of evaluation, $F(1, 102) = 69.03$, $p < .001$, $\eta^2 = .40$, indicating a significant increase in goal attainment. There was a marginally significant main effect for intervention, $F(2, 102) = 3.01$, $p = .054$, $\eta^2 = .06$. Furthermore, as expected, there was a significant interaction, $F(2, 102) = 3.21$, $p = .045$, $\eta^2 = .06$. As simple effects analysis showed, there was a significant increase in goal attainment in the dyadic coaching condition, $p < .001$, group coaching condition, $p < .001$, and control condition, $p = .011$. Looked at differently, for T1, there were no significant simple effects $p$s ≥ .231. However, for T2, compared with the control condition, the dyadic coaching condition, $p = .013$, and the group coaching condition, $p = .008$, showed significantly higher goal attainment. Dyadic coaching and group coaching did not differ, $p = .742$.

*Goal Reflection.* A univariate ANOVA revealed a significant main effect for goal reflection, $F(2, 105) = 3.98$, $p = .022$, $\eta^2 = .07$. A post hoc least significant difference comparison partly supported our hypothesis, indicating that participants in the dyadic coaching condition showed significantly more goal reflection compared with participants in the group coaching, $p = .008$, and marginally significant more than the control group, $p = .056$. The group coaching and control conditions did not differ, $p = .456$. However, contrary to our assumptions, there was no significant main effect for reflection on self-organization, reflection on behavior changes, and reflection together with others, $F$s ≤ 1.85, $p$s ≥ .162.

In sum, Hypothesis 2, assuming that dyadic coaching is more effective than group coaching and group coaching more effective than the control group, was partly supported. Dyadic and group coaching both led to higher goal attainment, goal commitment, and goal self-efficacy compared with the control condition. However, there was no significant difference in intrinsic goal motivation and only participants in the dyadic coaching condition showed more goal reflection than those in the control group. In addition, the increase in goal commitment and goal self-efficacy was significant only in the dyadic coaching condition. Moreover, participants in the dyadic coaching condition showed more goal reflection and there was a hint that they had a higher intrinsic goal motivation than participants in the group coaching condition.

## *Influence of Transactional and Transformational Leadership Behavior on Effectiveness*

To test Hypotheses 3, that the perceived transactional and transformational leadership behavior explains the difference in the effectiveness of dyadic coaching compared with group coaching, we performed mediation analyses with the software PROCESS (Hayes, 2013a, 2013b; Model 4). For all mediation analyses, the 95% bias-corrected confidence intervals (BC CI) were used for all indirect effects using 5,000 bootstrap samples. According to the previous results, we computed the increase in goal commitment and increase in goal self-efficacy as the values at T2 minus the values at T1 and used those as well as goal reflection and intrinsic goal motivation as dependent variables. Furthermore, contingent reward, intellectual stimulation, and individualized consideration were used as mediators. The results of the different mediation models are displayed in Figure 3, which shows the unstandardized regression weights (B) and standard errors (*SE*).

*Increase in Goal Commitment.* As expected, mediation analysis revealed a significant indirect effect of dyadic coaching on increase in goal commitment through intellectual stimulation, B = 0.09, BC CI [0.01, 0.21] (see Figure 3A). Regression analysis revealed a significant influence of dyadic coaching on increase in goal commitment, $p = .029$, and on intellectual stimulation, $p = .001$. A subsequent analysis of the effect of intellectual stimulation on increase in goal commitment showed a marginally significant regression weight, $p = .078$. Finally, when we examined the influence of dyadic coaching and intellectual stimulation on increase in goal commitment

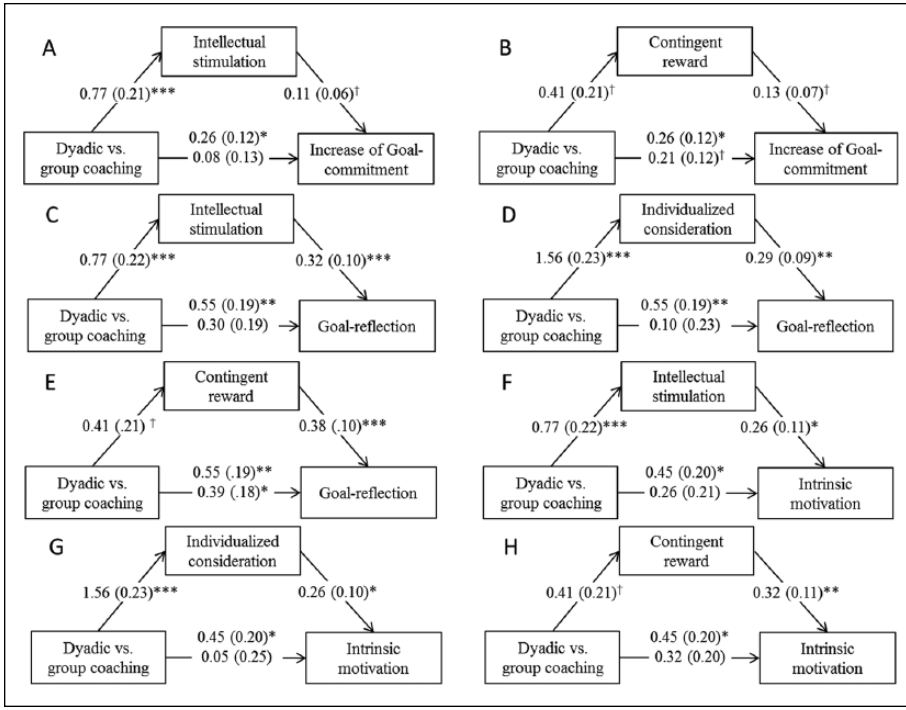


**Figure 3.** Mediation Models A to H.

*Note.* For the path coefficients, unstandardized regression weights (B) are indicated as well as standard errors (*SE*) in parentheses.

†$p < .10$. *$p < .05$. **$p < .01$. ***$p \leq .001$.

concurrently, the effect of dyadic coaching was considerably reduced and became nonsignificant, $p = .208$.

However, the indirect effect of dyadic coaching on increase in goal commitment through individualized consideration was not significant, B = 0.14, BC CI [−0.13, 0.27].

Moreover mediation analyses revealed a significant indirect effect of dyadic coaching on increase in goal commitment through contingent reward, B = 0.09, BC CI [0.01, 0.14] (see Figure 3B). Regression analysis revealed a significant influence of dyadic coaching on increase in goal commitment, $p = .029$, and a marginally significant influence on contingent reward, $p = .052$. A subsequent analysis of the effect of contingent reward on increase in goal commitment also showed a marginally significant regression weight, $p = .056$. Finally, when we examined the influence of dyadic coaching and contingent reward on increase in goal commitment concurrently, the effect of dyadic coaching was reduced and became marginally significant, $p = .082$.

*Increase in Goal Self-Efficacy.* As expected, mediation analysis revealed a significant indirect effect of dyadic coaching on increase in goal self-efficacy through intellectual

stimulation, B = 0.20, BC CI [0.08, 0.41]. However, regression analysis revealed no significant influence of dyadic coaching on increase in goal self-efficacy, B = 0.26, *SE* = 0.19, $t(72) = 1.36$, $p = .178$, but a significant effect on intellectual stimulation, B = 0.77, *SE* = 0.22, $t(72) = 3.50$, $p = .001$. A subsequent analysis of the effect of intellectual stimulation on increase in goal self-efficacy also showed a significant regression weight, B = 0.26, *SE* = 0.10, $t(72) = 2.65$, $p = .001$. Finally, when we examined the influence of dyadic coaching and intellectual stimulation on increase in goal self-efficacy concurrently, the effect of dyadic coaching was considerably reduced and became even less significant, B = 0.06, *SE* = 0.20, $t(72) = 0.30$, $p = .766$.

However, contrary to our expectations, the indirect effect of dyadic coaching on increase in goal self-efficacy through individualized consideration, B = 0.18, BC CI [−0.13, 0.48], or contingent reward, B = 0.06, BC CI [−0.01, 0.21], was not significant.

*Goal Reflection.* As expected, mediation analysis revealed a significant indirect effect of dyadic coaching on goal reflection through intellectual stimulation, B = 0.25, BC CI [0.07, 0.55] (see Figure 3C). Regression analysis revealed a significant influence of dyadic coaching on goal reflection, $p = .006$, and on intellectual stimulation, $p = .001$. A subsequent analysis of the effect of intellectual stimulation on goal reflection also showed a significant regression weight, $p = .001$. Finally, when we examined the influence of dyadic coaching and intellectual stimulation on goal reflection concurrently, the effect of dyadic coaching was considerably reduced and became nonsignificant, $p = .124$.

Furthermore, mediation analysis revealed a significant indirect effect of dyadic coaching on goal reflection through individualized consideration, B = 0.45, BC CI [0.13, 0.85] (see Figure 3D). Regression analysis revealed a significant influence of dyadic coaching on goal reflection, $p = .006$, and on individualized consideration, $p < .001$. A subsequent analysis of the effect of individualized consideration on goal reflection also showed a significant regression weight, $p = .003$. Finally, when we examined the influence of dyadic coaching and individualized consideration on goal reflection concurrently, the effect of dyadic coaching was considerably reduced and became nonsignificant, $p = .671$.

Moreover, mediation analysis revealed a significant indirect effect of dyadic coaching on goal reflection through contingent reward, B = 0.16, BC CI [0.02, 0.41] (see Figure 3E). Regression analysis revealed a significant influence of dyadic coaching on goal reflection, $p = .006$, and a marginally significant influence on contingent reward, $p = .052$. A subsequent analysis of the effect of contingent reward on goal reflection also showed a significant regression weight, $p < .001$. Finally, when we examined the influence of dyadic coaching and contingent reward on goal reflection concurrently, the effect of dyadic coaching was considerably reduced but stayed significant, $p = .034$.

*Intrinsic Goal Motivation.* As expected, mediation analysis revealed a significant indirect effect of dyadic coaching on intrinsic goal motivation through intellectual

stimulation, B = 0.20, BC CI [0.05, 0.45] (see Figure 3F). Regression analysis revealed a significant influence of dyadic coaching on intrinsic goal motivation, $p = .030$, and on intellectual stimulation, $p = .001$. A subsequent analysis of the effect of intellectual stimulation on intrinsic goal motivation also showed a significant regression weight, $p = .019$. Finally, when we examined the influence of dyadic coaching and intellectual stimulation on intrinsic goal motivation concurrently, the effect of dyadic coaching was considerably reduced and became nonsignificant, $p = .234$.

Furthermore, mediation analysis revealed a significant indirect effect of dyadic coaching on intrinsic goal motivation through individualized consideration, B = 0.40, BC CI [0.09, 0.78] (see Figure 3G). Regression analysis revealed a significant influence of dyadic coaching on intrinsic goal motivation, $p = .030$, and on individualized consideration, $p < .001$. A subsequent analysis of the effect of individualized consideration on intrinsic goal motivation also showed a significant regression weight, $p = .014$. Finally, when we examined the influence of dyadic coaching and individualized consideration on intrinsic goal motivation concurrently, the effect of dyadic coaching was considerably reduced and became nonsignificant, $p = .844$.

Moreover, mediation analysis revealed a significant indirect effect of dyadic coaching on intrinsic goal motivation through contingent reward, B = 0.13, BC CI [0.02, 0.33] (see Figure 3H). Regression analysis revealed a significant influence of dyadic coaching on intrinsic goal motivation, $p = .030$, and a marginally significant influence on contingent reward, $p = .052$. A subsequent analysis of the effect of contingent reward on intrinsic goal motivation also showed a significant regression weight, $p = .004$. Finally, when we examined the influence of dyadic coaching and contingent reward on intrinsic goal motivation concurrently, the effect of dyadic coaching was considerably reduced and became nonsignificant, $p = .113$.

In sum, the results of the mediation analyses showed that the higher increase in goal commitment, as well as the higher goal reflection and intrinsic goal motivationin the dyadic coaching condition compared with the group coaching condition were explained by intellectual stimulation and contingent reward. Furthermore, the difference in intrinsic goal motivation and goal reflection was also explained by the coach's individualized consideration. Although there was no significant total effect of dyadic coaching on increase in goal self-efficacy, the indirect effect was significant.

## Discussion

### *Transactional and Transformational Leadership in Coaching*

In the present study, we conducted a randomized controlled study to investigate the role of the coach's transactional and transformational leadership behavior. Therefore, we adapted the concept of transactional and transformational leadership to fit the coaching context. In the case of the transactional leadership, we argued that the coach shows facets of contingent reward, for example, by making clear that the client is responsible for the goal-attainment process. However, the coach would not control the client and correct her or him in the sense of an active management by exception.

Furthermore, we argued that the coach would use individualized consideration by focusing on the needs and goals of the client; intellectual stimulation by encouraging the client to think about new perspectives and solutions by herself or himself; and inspirational motivation by encouraging the client to form an optimistic vision for her or his future. Thus, we assumed that the participants in a dyadic coaching experience more transactional and transformational leadership behaviors than in a group coaching. Supporting Hypothesis 1, participants perceived more contingent reward in the dyadic than in the group coaching condition, indicating that clarifying expectations and setting ground rules was easier to do in dyadic than in group coaching. Moreover, results showed that participants perceived more intellectual stimulation and individualized consideration in the dyadic than in the group coaching condition. However, contrary to our assumptions, participants in both coaching groups experienced an equal amount of inspirational motivation. Interestingly, further analyses revealed that participants in the dyadic coaching condition perceived an equal amount of intellectual stimulation, individualized consideration, and inspirational motivation. On the other hand, participants in the group coaching condition perceived significantly more inspirational motivation than intellectual stimulation or individualized consideration, and significantly more intellectual stimulation than individualized consideration. Thus, it seems that intellectual stimulation and especially individualized consideration are difficult to convey in a group coaching setting. Furthermore, in both groups, intellectual stimulation and inspirational motivation were highest, further indicating their importance.

## *Effectiveness*

To investigate if the interventions were successful and if transactional and transformational leadership behaviors have an influence on coaching effectiveness, we compared dyadic and group coaching with a control condition. Therefore, we assessed different aspects of coaching effectiveness. Participants in the control group set SMART goals just like in the intervention groups, which allowed us to control for the positive effects of goal setting (Locke & Latham, 2002). In Hypothesis 2, we assumed that dyadic coaching is more effective than group coaching, and group coaching is more effective than the control group, and this was partly confirmed. Results revealed that only participants in the dyadic, but not those in the group coaching or control group, had a significant increase in goal commitment and goal self-efficacy, and showed higher goal reflection than those in the control group. This is in line with our argumentation that the higher amount of transactional and transformational leadership behavior in the dyadic setting can positively influence coaching effectiveness. Although the increase in goal attainment was significant for all three groups in the study, further analyses of the mean differences indicated the advantage of dyadic and group coaching over the control condition. This result shows that coaching has a positive effect on goal attainment beyond mere goal setting. Contrary to our hypothesis, dyadic and group coaching were equally effective in attaining their goals. That there was no difference between dyadic and group coaching may be due to the specific advantages of group coaching,

which may compensate the coach's lesser transactional and transformational leadership behaviors. In group coaching, clients can use the knowledge and experience of the group to develop joint solutions (Rauen, 2005). Furthermore, group coaching enables learning through peer experiences and provides support from others who are in the same situation (Nicholas & Twaddell, 2008). Identifying with others, using them as a model and adapting their strategies are aspects that describe learning in terms of Bandura's Social Learning Theory (Pratt et al., 2010). Thus, it seems that participants in the group coaching condition transferred their group learning experiences to their daily lives to promote their goal attainment. A further explanation might be that participants in the group coaching condition worked harder for attaining their goals because they talked about their goals in front of the group. According to self-presentation theory, people reveal information about themselves to others in order to convey a specific impression (Baumeister & Hutton, 1987). The motivation to do so can be activated by the presence of others who evaluate the self. To keep up this impression, people consistently behave in a coherent and complementary way (Schneider, 1981) and, if necessary, may alter their behaviors to influence the impression others have of them (Leary & Kowalski, 1990). Thus, it may be that participants in the group coaching condition wanted to keep up the impression that they are able to attain their goals and reduce procrastination, and they acted accordingly. This effect, however, could be diminished as it is difficult to integrate everybody in the group coaching session (Nicholas & Twaddell, 2008). Thus, it would be interesting for future research to investigate the role of social learning and the effect of self-presentation in the context of group coaching.

Furthermore, contrary to our expectations, participants in all groups equally reflected on their self-organization, on concrete behavior changes, and together with others. As the participants received only a 1-hour coaching session in which the focus lay more on the participants' goals, there may not have been much time left for promoting further self-reflection processes. A more extensive coaching session could facilitate self-reflection in different areas.

Although our coaching interventions were effective in helping participants achieve specific goals, there was only a small marginally significant decrease of procrastination, which was apparent in all three groups of the study. Actually, coached clients should be able to transfer the knowledge and strategies gained in coaching to new situations (Stewart et al., 2008). One explanation could be the equal reflection on self-organization and concrete behavior change. Thinking about the way one organizes oneself and visualizing a change in procrastination behaviors may direct the attention to the problematic behavior and make it more dependable. This would describe a part of the process of transformative learning where one would reflect more critically on problematic beliefs, and change perspectives and habits (Mezirow, 2000). However, this probably takes time, which the participants in our study did not have. Arguing in the same direction, transferring strategies and solutions that developed during the coaching session to one's daily lives would need more time and it might be that there is a transfer problem, which is also mentioned in the training literature (Baldwin & Ford, 1988; Michalak, 1981). Taken together, the factors influencing behavior change

in coaching need further attention. As coaching may be a tool for promoting transformative learning (Gray, 2006), it could be interesting for future research to investigate which factors influence transformative learning in coaching and the transfer of contents the client learned during coaching to different context and for behavior change. Another explanation for why there was no difference in the reduction of procrastination between the three groups might be that all participants used self-imposed deadlines as precommitment mechanisms as they can help overcome procrastination (Ariely & Wertenbroch, 2002).

Regarding participants' intrinsic goal motivations, we did not find a significant difference between the coaching and control groups, indicating that coaching did not facilitate more intrinsic goal motivation than goal setting alone. This may be due to the initial setting of self-congruent, specific, and attractive goals in all three groups or because there was only little variance as we predetermined the topic procrastination, which is per se not very comfortable and motivating.

Taken together, the results of the current study regarding the effectiveness of coaching are in line with previous research (e.g., Evers et al., 2006; Grant et al., 2009; Green et al., 2006; Moen & Skaalvik, 2009) and further support the idea that coaching is indeed an effective instrument for increasing goal-related outcomes. The results showed that coaching, either in a dyadic or group setting, has a positive influence on goal attainment beyond mere goal setting. Furthermore, dyadic coaching has some advantage over group coaching regarding the increase of goal commitment and goal self-efficacy as well as goal reflection and intrinsic goal motivation.

### *Active Ingredients*

The results partly supported Hypothesis 3, that is, that the transactional and transformational leadership behaviors mediate the effect of dyadic compared with group coaching on coaching effectiveness: The greater increase in goal commitment in the dyadic coaching condition could be explained by the coach's contingent reward and intellectual stimulation but not by individualized consideration. Thus, it seems that it is more important for increasing goal commitment to know what can be expected from coaching and to be supported in finding new perspectives and ways to attain one's goals than having one's individual needs acknowledged. Furthermore, the higher intrinsic goal motivation and goal reflection in the dyadic coaching condition was explained by the coach's contingent reward, intellectual stimulation, and individualized consideration. Although results revealed no significant total effect of dyadic coaching on increase in goal self-efficacy, the indirect effect was significant, indicating the same pattern as with the other effectiveness measures, namely that dyadic coaching led to higher intellectual stimulation, which further fostered the increase in goal self-efficacy. Thus, it seems that intellectual stimulation helped people think about their previous performance and use this information to facilitate the belief in mastering new situations, thereby increasing goal self-efficacy. These results are in line with meta-analyses showing that there is a positive relationship between transactional and transformational leadership behavior and various outcomes (e.g., DeGroot et al., 2000; Judge & Piccolo, 2004; Lowe et al.,

1996; Wang et al., 2011). Furthermore, research has shown that individualized consideration, inspirational motivation, idealized influence, and intellectual stimulation are correlated positively with task performance (Li & Hung, 2009) and that intellectual stimulation is associated with innovations (Yasin, Nawab, Bhatti, & Nazir, 2014). Furthermore, individualized consideration, intellectual stimulation, and charisma have predicted the percentage of goals met for the year (Howell & Avolio, 1993), and have correlated positively with subordinates' willingness to show extra effort (Seltzer & Bass, 1990). Thus, future research could further investigate the effects of the different transactional and transformational leadership behaviors in coaching and their impact on coaching effectiveness.

In sum, transactional and transformational leadership behaviors mediate the effect of dyadic coaching compared with group coaching on different aspects of effectiveness: goal commitment, intrinsic motivation, and goal reflection.

### *Future Research*

In general, outcome studies do not refer to a solid theoretical framework (Grant, 2013), although there are some exceptions (e.g., regulatory focus theory and implicit person theory, Sue-Chan et al., 2012; goal-setting theories, Grant, 2012). In our research, we drew on the rich knowledge and research base of transactional and transformational leadership behavior and provided insight into the role of the coach as a leader of the coaching process. Our results support this argumentation and demonstrate the influence of transactional and transformational leadership behaviors on the effectiveness of coaching.

Mühlberger, Traut-Mattausch, Braumandl, and Jonas (2014) presented the results of a study investigating the role of transactional and transformational leadership behavior that compared the effectiveness of a coaching with a training intervention. They found significant indirect effects of coaching on the reduction of procrastination and increase in goal attainment through the coach's transformational leadership behavior, autonomy support, and intrinsic motivation. These results further support our assumption that transactional and transformational leadership behaviors indeed influence the effectiveness of coaching. However, the relationship of the diverse leadership behaviors and coaching outcomes as well as other factors that influence the coaching process have to be investigated. Research has shown that transformational leadership behavior has a positive relationship with subordinates' trust in the leader (e.g., Dirks & Ferrin, 2002). As coaching research has highlighted the importance of the coaching relationship (e.g., Baron & Morin, 2009; De Haan et al., 2013), future research could investigate the influence of the different leadership dimensions on the relationship between coach and client. It may be that transactional and transformational leadership behaviors contribute to a good coaching relationship, which in turn promotes the effectiveness of coaching.

The coaches in the current study showed transactional and transformational leadership behavior automatically. They were not instructed to use a particular leadership style in the study and had not been taught about transactional and transformational

leadership during their 1-year education program. In the future, it would be interesting to investigate if the effects of transactional and transformational leadership behavior increase over time, if this behavior can be trained, and if coaches who are or were executives or managers provide more effective coaching than others.

Research has shown that managerial coaching, which can be defined as an effective managerial practice that improves employees' learning and effectiveness (Ellinger, Ellinger, Hamlin, & Beattie, 2010), is associated with positive employee work-related outcomes (Kim, 2014). A manager applying coaching skills at work communicates clear performance objectives; provides help, training, and guidance; and builds a warm and friendly relationship (Graham, Wedman, & Gravin-Kester, 1994). Furthermore, Grant and Cavanagh (2007) clustered coaching skills into categories covering building a good working alliance, focusing on solutions and goal setting as well as managing process and accountability. These specific coaching skills seem to have at least some commonalities with transactional and transformational leadership behavior. It would be interesting to investigate where there is overlap between coaching skills and transactional and transformational leadership behavior and where there are differences.

Furthermore, it would be interesting to investigate if there are commonalities between our approach, coaching with leadership behaviors, and others, such as coaching with compassion (Boyatsis, Smith, & Beveridge, 2013; Boyatsis, Smith, & Blaize, 2006). Coaching with compassion is defined as "a process that aims to further the coachee's development by focusing on their Ideal Self and on their strengths more than their weaknesses" (Boyatsis et al., 2013, p. 156). Thereby, the coach helps: (a) invoke the Ideal Self, described as the individual's positive vision for the future; (b) reflect on the individual's current situation, identify necessary changes, and form a realistic and exciting plan; and (c) identify individual strengths and foster personal growth and development. In our view the coach's transformational leadership behaviors may support coaching with compassion by (a) inspiring visions about the future and providing challenges (inspirational motivation); (b) questioning the client's presumptions and ideas and, thus, stimulating creative thinking and problem solving (intellectual stimulation); and (c) acknowledging the client's personal needs and supporting personal development (individualized consideration).

## *Implications for Practice*

Although coaching in a dyadic setting is most common, coaching practice shows that there are other forms, such as group coaching (Rauen, 2005). However, only a few models of group coaching have been developed (e.g., Brown & Grant, 2010). The results of our study suggest that group coaching can also be an effective intervention. As the costs for a group setting are lower than for a dyadic setting, group coaching concepts that combine the advantages of dyadic and group settings should be considered. For example, the goal-setting process could be conducted in a dyadic coaching, whereas the search for new strategies and solutions could proceed in a group coaching.

Coaching can be seen as a kind of process consultation (Rauen, 2005; Schreyögg, 2010) in which the helping relationship also plays a central role (Schein, 2003). Process consultation underlies a "philosophy of helping" (Schein, 1990, p. 59) and is about supporting the client to independently master one's complex tasks (Rauen, 2005). Here, the consultant should be the expert for designing and managing the process (Schein, 2003). She or he guides through the process of helping the client to help herself or himself (Rauen, 2005). Thereby, the responsibility for mastering these tasks or attaining one's goals stays with the client (Schein, 1990). Thus, results of the current study on transactional and transformational leadership behavior may be transferred to other forms of consulting, for example, to supervision or mediation. However, this should be investigated in further studies.

The results of the current study suggest that coaching effectiveness improved if the coach showed transactional and transformational leadership behavior. Therefore, it may be beneficial for coaches to learn how to be both a transactional and a transformational leader and implement these behaviors in their coaching practice. Research and practice have already shown that these leadership behaviors can be successfully trained (e.g., Arthur & Hardy, 2014; Mason, Griffin, & Parker, 2014), and we suggest that this training could be integrated as a major component into coaching education programs. For existing as well as new coaches, this training may provide a set of behaviors that help become an effective coach.

### *Limitations*

First, although there is some evidence that the number of coaching sessions is not connected to the effectiveness of coaching (Theeboom et al., 2014), participants in our study received only one coaching session lasting 1 hour. The effects of the dyadic and group coaching sessions might increase over a period of 3 to 4 months with about five sessions. Then, there could also be a visible change in procrastination behavior as identified in other studies (e.g., Karas & Spada, 2009; Losch, 2014). Second, another limitation of this study is the time of data collection and the source of data. Although we measured the mediator variables before the dependent variables, the measurement was within the same questionnaire. Furthermore, we had no multiple sources of data. We relied on the participants' self-assessments and had no concrete measures of procrastination behavior or performance (e.g., grades). Third, the results of the current study are limited to the context of procrastination in an academic setting investigating students. It remains to be seen if our interventions would provide the same results for the 20% of the adult population who are chronic procrastinators (Hammer & Ferrari, 2002).

## Conclusion

In the current study, we introduced a new approach to coaching research in investigating the active ingredients of effective coaching by drawing on transactional and transformational leadership theory. We argued that the coach leads the client through the

coaching process and that her or his transactional and transformational leadership behaviors would positively affect coaching outcomes. The results of the current study support this idea and showed that transactional and transformational leadership mediate the effect of dyadic compared with group coaching on different aspects of coaching effectiveness.

## Appendix

Correlations Between Transactional and Transformational Leadership Behaviors and the Different Measures of Coaching Effectiveness.

| | IS | IC | IM | CR | Proc | GAtt | GComm | GSEff | IntM | GRef |
|---|---|---|---|---|---|---|---|---|---|---|
| Intellectual stimulation (IS) | | .80*** | .69*** | .77*** | .15 | −.01 | .28* | .33** | .34** | .44*** |
| Individualized consideration (IC) | | | .61*** | .70*** | .23* | .05 | .24* | .21 | .37** | .45*** |
| Inspirational motivation (IM) | | | | .78*** | .10 | .11 | .15 | .12 | .35** | .42*** |
| Contingent reward (CR) | | | | | .08 | .15 | .27* | .20 | .37** | .46*** |
| Procrastination[a] (Proc) | | | | | | .26* | .04 | .18 | −.03 | .07 |
| Goal attainment[a] (GAtt) | | | | | | | −.01 | −.02 | −.11 | −.06 |
| Goal commitment[a] (GComm) | | | | | | | | .39** | .15 | .03 |
| Goal self-efficacy[a] (GSEff) | | | | | | | | | .14 | .09 |
| Intrinsic motivation (IntM) | | | | | | | | | | .44*** |
| Goal reflection (GRef) | | | | | | | | | | |

*Note.* $N = 74$.

a. Variable was computed as difference between Time 1 and Time 2, with high values indicating a positive change.

*$p < .05$. **$p < .01$. ***$p < .001$.

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### Notes

1. We thank our anonymous reviewer for this contribution.
2. For another research interest, the following variables were also measured in the current study but not further analyzed: approach or avoidance motivation (line-bisection task); basic psychological needs satisfaction; self-esteem; imposter syndrome; goal clarity; concrete/abstract and self-/other-directed goal setting; satisfaction; estimation of construal level and regulatory focus regarding the tasks; intrinsic motivation regarding the study.

3. In the German validation of the Multifactor Leadership Questionnaire, Felfe (2006) added the dimension charisma, which describes a special aura of the leader and the ability to inspire others and was measured in our study. We assumed that the participants would experience equal charisma in the dyadic and group setting, because the appearance and the fascinating personality should be independent from the setting. Results supported this assumption and showed that there was no difference in charisma between dyadic ($M$ = 3.00, $SD$ = 0.91) and group coaching ($M$ = 2.73, $SD$ = 0.84), $F(1, 72) = 1.76$, $p = .188$, $\eta^2 = .02$.
4. Although in the control condition there was no interaction partner, we thought that using a coaching tool that is tailor-made for the client and activates thinking about one's goals might be perceived as intellectually stimulating and individually considering and, therefore, would allow us to compare it with the coach's leadership behavior. We asked participants in the control condition how intellectually stimulating and individually considering they perceived the goal setting task to be. Univariate ANOVAs showed that participants in the control condition perceived significantly less intellectual stimulation and individualized consideration compared with those in the dyadic coaching condition, $p$s < .01.

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