

Learn to Influence Yourself: Full Range Self-leadership Training

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Self-leadership, the process of self-influence on one's thought and behavior patterns is growing in its importance due to increasing demands for organizations in a fast-paced world. Thus, self-leadership skills have become essential for individual (self-organization of work processes), group (self-management teams, shared leadership), and organizational levels (flat hierarchies, achievement-oriented organization cultures). However, training programs of self-leadership skills have so far not been investigated, leaving open the question as to which extent self-leadership may be acquired and fostered by training or intervention programs. In the current study, $N = 29$ participants were supervised and trained for over four weeks in all self-leadership strategies (full-range self-leadership training), and then compared to a control group ($N = 29$) without such training. Findings from a mixed method approach (with quantitative and qualitative data) indicate important effects of cognitive orientation towards personal strategies for an improvement in intrinsic motivation and goal pursuit. These findings show that specific self-leadership skills (such as natural reward strategies and constructive thought patterns) can be improved and optimized in targeted trainings. Given the rising importance of self-leadership in organization and personnel development (e.g., self-responsibility and self-determination of employees), findings are highly relevant for applied contexts.

Keywords: self-leadership, self-leadership training

Due to the increasing challenges for organizations in a rapidly changing environment self-leadership is gaining in importance. The growing worth of autonomy and self-determination in organizations (Wood, Stride, Wall & Clegg, 2004) demonstrates the need for individuals to have strong self-leadership skills. These skills are needed at the individual level (e.g. self-organization of work processes), at the group level (e.g. self-managed teams, shared leadership) and at the level of the organization (flat hierarchies, performance-oriented organizational culture). Self-leadership is a learnable and competency-based skill, which has not much been empirically investigated so far (see Furtner & Rauthmann, 2010; Furtner, Rauthmann, & Sachse, 2010; Müller, 2004). Only two self-leadership training

studies are described in literature, both with unsatisfactory results. While Neck and Manz (1996) were integrating the constructive thought patterns (thought self-leadership) into their training another research from Steward et al. (1996) showed no significant major effect on the self-leadership training. Müller and Wiese (2010) assume that there is a general lack of solid and comprehensive self-leadership training interventions. Compared to previous self-leadership training studies the present study (a) integrates the complete self-leadership strategies (behavior-focused strategies, natural reward strategies and constructive thought patterns) into the training, (b) considers personal relevant goals of the participants and (c) uses quantitative and qualitative methods for a broad analysis.

Theoretical background

Self-leadership

Self-leadership is a development of the behavioral self-management approach (Manz & Sims, 1980; Manz, 1986) and is defined as “the process of influencing oneself” (Neck & Manz, 2010, p. 4). It considers behavior-focused strategies, controlling and self-regulatory components as well as motivational aspects (see Deci & Ryan, 1985). One’s thoughts and behavior are aligned with the achievement of (intrinsic) set goals. Houghton and Neck (2002) distinguish three primary categories of self-leadership strategies: (1) behavior-focused strategies (subcategories: self-goal setting, self-reward, self-punishment, self-observation, self-cueing), (2) natural reward strategies (= intrinsic motivation) and (3) constructive thought patterns (subcategories: visualizing successful performance, self-talk, evaluating beliefs and assumptions). Attention is drawn to their own behavior in the behavior-focused strategies. If discrepancies are perceived between a current state and a specific goal or standard (= desired situation), then there will be attempts to reduce them with self-regulatory strategies. The current state is noticed through self-observation, which is followed by (proactive) self-goal setting to reach a desired situation.

In addition to the social cognitive learning theory of Bandura (1991) the second root of the self-leadership construct is Carver and Scheier’s (1998) self-regulation theory. According to that theory people proactively set goals and cause a deliberate increase in the discrepancy between current state and desired situation, which they can reduce through specific behavior later on. Self-observation is a suitable instrument for controlling the perceived discrepancy or goal progress during the process of goal achievement. Self-reward and self-punishment systematically reinforces desirable and weakens undesirable behavior.

Self-cueing is based on external memory aids like memos, post-it’s, motivational posters and social cues (see Neck & Houghton, 2006). Natural reward strategies are based on intrinsic motivation and put their focus on the pleasant and enjoyable characteristics of a task or activity. If a task or activity includes such pleasant and enjoyable characteristics, then the performance of that task or activity will already be a natural reward for the acting person (Deci & Ryan, 1985; Manz, 1986). There are two possible strategies to raise intrinsic motivation: (1) a person is increasingly removing from the unpleasant characteristics and is concentrating more on the natural rewarding aspect of a task or (2) a person is increasingly installing pleasant and enjoyable characteristics into a task so that the performance of it is already natural rewarding (see Neck & Houghton, 2006). These strategies associate feelings of competence and self-determination (Deci & Ryan, 1985). Constructive thought patterns relate to the (positive) self-influence and control of habitual thought patterns (Neck & Manz, 1992). The individual motivation can be improved or maintained through the usage of visualizing successful performance, a positive influence and evaluation of own beliefs and assumptions and self-talk regarding the process of goal achievement.

Self-Leadership Training

According to Müller and Wiese (2010) self-leadership is learnable and therefore described as a competence or a capability (see Neck & Manz, 2010). So far, two self-leadership training studies are described in literature: Neck and Manz (1996) conducted a two hours per week self-leadership training that took a total of six weeks. Overall, 48 employees of the accounting department of a U.S. airline took part in the training study. The allocation into control (N = 24) and training group (N = 24) was randomized. The training was focused on the constructive thought patterns (Thought Self-Leadership), the third strategic dimension of self-

leadership. Training contents were (1) visualizing successful performance, (2) self-talk and (3) evaluating beliefs and assumptions. Compared to the control group, the training group had an increase of cognitive (mental) performance after they had finished the training. Especially subcategory evaluating beliefs and assumptions improved regarding success- and opportunity thinking. Furthermore, the training group showed a stronger self-efficacy, which in fact is an important mediator between self-leadership and performance (Prussia, Anderson & Manz, 1998).

Stewart et al. (1996) implemented a self-leadership training for 59 employees of the hotel industry. The control group was assigned to 54 subjects. The training group received a series of three exercises with the following contents: (1) skills for difficult or unattractive, but necessary tasks, (2) capabilities to enhance the natural reward strategies and (3) skills to improve the constructive thought patterns. That training did not show any significant main effect. At last Stewart et al. (1996) could show that those subjects with lower conscientiousness benefit more regarding to the self-leadership training, than those with high expression in that personality dimension.

According to Müller and Wiese (2010) it is unclear what benefits self-leadership training programs actually produce. The authors assume that self-leadership strategies often take place unconsciously and automatically and therefore must become aware and reflexible first by using appropriate interventions. So far the studies by Neck and Manz (1996) and Stewart et al. (1996) remained the only investigated self-leadership training interventions. In the study of Neck and Manz (1996) only the third dimension of self-leadership strategies was integrated into the training, which is critical. Those training study by Stewart et al. (1996) was explicitly focused on the two self-

leadership strategy dimensions natural reward strategies and constructive thought patterns. How the behavior-focused strategies were integrated into the training and how the training effects for all three self-leadership strategy dimensions are in detail remains unclear. The study also could not demonstrate a significant training effect. It is also noted critically that the two recent studies have indeed carried out a general training in self-leadership skills, but they did neither consider task context nor personal goal achievement.

The present study

In the present study's training intervention all three self-leadership strategy dimensions, including the nine self-leadership sub-strategies are investigated and integrated into the training program for the first time at all. The recent training studies were carried out as parts of field studies, in which the training effects could not be controlled. The study of Neck and Manz (1996) was accomplished in a company that was in a bankruptcy. It remains questionable how positive thinking and intrinsic motivation of employees can be trained or encouraged under such conditions. Self-leadership is a development of the (behavioral) self-management approach and is characterized by its focus on intrinsic motivation. Intrinsically motivated behavior requires self-determination, autonomy and convenience towards the own behavior. People have got feelings of (self-) competence, as well as having fun, joy and interest in their own work (Deci & Ryan, 1985). No suitable training framework for the promotion of intrinsic motivation was created in the recent self-leadership training interventions by Neck and Manz (1996) and Stewart et al. (1996). In this study, the training participants were allowed to choose either a relevant study-related or a personal goal. That goal should be followed or achieved within the next four weeks. At the same time, the various self-leadership

strategies should be used in the process of goal achievement.

Based on literature following central hypothesis was formulated: A significant training effect regarding to the self-leadership strategies - particularly in the natural reward strategies and the constructive thought patterns - is expected within the training group as well as between training and control group (Neck & Manz, 1996). For quantitative analysis, three hypotheses were derived: Hypothesis 1: It is assumed that control and training group do not differ in their self-leadership expressions at the time of measurement 1 (pre test). Hypothesis 2: Due to the training intervention, significant differences in self-leadership expressions are expected between control and training group at the time of measurement 2 (post test). Hypothesis 3: In an intra group comparison, it is assumed that there are significant differences within the training group between the time of measurement 1 (pre test) and the time of measurement 2 (post test). Regarding to the qualitative analysis, it was examined, when and which self-leadership strategies were used and which one have been identified as individually important.

Compared to previous self-leadership training studies, this study uses a combination of qualitative and quantitative methods. According to Mayring (2002) the method of triangulation is the most complex link between qualitative and quantitative data. Its goal is mutual support and supplement. The result refers to the intersection of both methods (Jick, 1979).

Method

Participants:

Participants comprised 58 students of the Bachelor's degree in Psychology of the University of Innsbruck, Austria, who took part in this study (42 female and 16 male subjects, $M = 22.6$ years, $SD = 2.68$ years, range = 20-29 years). Subjects were assigned

randomly to control ($N = 29$) or training group ($N = 29$).

Procedure:

At the beginning of the study all participants of control and training group had to answer a Self-Leadership Questionnaire (pre test) (Andreßen & Konradt, 2007). In contrast to the control group, who received no further information on self-leadership, the training group had a five-hour training session, which started with the offering of initial information and exercises: (1) an overview regarding to the training sequence, (2) an arouse of interest in and a connection to the personal significance of self-leadership and (3) an exercise on specific and challenging goals (SMART). Afterward the different self-leadership subcategories were illustrated (c.f., Houghton & Neck, 2002): (1) self-goal getting, (2) natural reward strategies (= intrinsic motivation), (3) self-observation, (4) self-talk, (5) evaluating beliefs and assumptions, (6) visualizing successful performance, (7) self-cueing, (8) self-reward and self-punishment. The exercise and transfer phase begun after finishing the five-hour training session. Within these, the subjects of the training group were told to implement their set goals. Furthermore, the training participants were instructed to intentionally use the appropriated self-leadership strategies as well as reflect on them. In the four-week exercise and transfer phase the subjects of the training group had access to an online platform, on which they could share their used methods and their progress in goal achievements. At the same time, they received weekly reflection exercises, which they had to submit in time. The training group received the opportunity for a final reflection after the expiry of the exercise and transfer phase. A personal meeting was held to exchange views on the individual achievement and on the used self-leadership strategies. For post test and (quantitative) assessment of a possible

transfer or training effect, both the control and the training group had to answer the Self-Leadership Questionnaire again. Furthermore, the training group had the opportunity to evaluate the training and the self-leadership strategies regarding to the personal significance and frequency of use. The control group received no intervention in the meantime.

Measures:

Self-leadership was recorded towards the German version of the *Revised Self-Leadership Questionnaire* (RSLQ-D) (see Andreßen & Konradt, 2007; Houghton & Neck, 2002). Overall, it includes 27 items, each with a five-point Likert scale rating (from 1 *totally disagree* to 5 *totally agree*). Example items are: "I constantly set specific goals for my own work performance" and "Before I approach a task, I imagine how I can carry out successfully."

Qualitative text analysis. After the end of the four-weeks' exercise and transfer phase the subjects of the training group received questions, which were related to the used self-leadership strategies and their process of goal achievement. Sample question (s): "How do you rate the individual strategies in retrospect? Which ones are useful and why? How did you implement them (in detail)?" Regarding to the goal achievement and importance of the applied self-leadership strategies, the answers were analyzed using content analysis. Here, keywords have been defined, whose frequency could be shown quantitatively.

Statistical analyses

Within the first hypothesis the difference between control and training group was examined by using the *t*-test for independent samples (pre test: time of measurement 1). The second hypothesis assumed a difference between control and training group which was also examined by using the *t*-test for independent samples (post test: time of

measurement 2). To verify the third hypothesis (intra group comparison of the training group, time of measurement 1 versus time of measurement 2) the *t*-test for dependant samples was used.

Results

Quantitative analysis. Hypothesis 1: There are no significant differences between control and training group regarding self-leadership and its subcategories at the time of measurement 1 (pre test) (all *ps* > .05). Hypothesis 2: There are significant differences between control and training group in the following self-leadership strategies and its subcategories at the time of measurement 2 (post test): constructive thought patterns ($t = -1.87$, $d = 0.49$), visualizing successful performance ($t = -3.61$, $d = 0.44$) and self-talk ($t = -2.72$, $d = 0.71$). Each (sub-) strategy has got significant higher mean expressions in the training group (all *ps* < .05). Self-punishment has got a significant lower mean expression in the training group ($t = 1.91$, $d = 0.50$, $p < .01$). Hypothesis 3: Measuring of training or transfer effects within the training group (pre test vs. post test) regarding to self-leadership and its sub-categories shows following significant differences: self-leadership (global) ($t = -4.65$, $d = 0.68$, $p < .001$), self-cueing ($t = -2.63$, $d = 0.23$, $p < .01$), natural reward strategies ($t = -3.27$, $d = 0.48$, $p < .01$), constructive thought patterns ($t = -4.20$, $d = 0.68$, $p < .001$), visualizing successful performance ($t = -4.38$, $d = 0.86$, $p < .001$) and self-talk ($t = -2.57$, $d = 0.49$, $p < .01$). Each (sub-) strategy has got significant higher mean expressions at the time of measurement 2 (post test) (see table 1).

Qualitative analysis. After the four-week exercise and transfer phase a final reflection on the evaluation of the training application and significance of the proposed self-leadership strategies and their goal

Table 1. Descriptive statistics: control and training group (pre and post test)

Variable	CG (t1)		CG (t2)		TG (t1)		TG (t2)	
	M	SD	M	SD	M	SD	M	SD
Self-Leadership (global)	3.64	0.39	3.67	0.32	3.49	0.47	3.74	0.40
Behavior-focused strategies	3.67	0.34	3.80	0.38	3.62	0.58	3.68	0.47
Self-goal setting	3.78	0.65	3.77	0.63	3.74	0.68	3.90	0.63
Self-reward	3.67	0.92	3.87	1.00	3.74	1.03	3.75	0.91
Self-punishment	3.56	0.75	3.75	0.82	3.52	0.98	3.28	1.03
Self-observation	3.87	0.64	3.85	0.69	3.72	0.66	3.78	0.59
Self-cueing	3.48	0.99	3.78	0.89	3.39	1.34	3.69	1.31
Natural reward strategies	3.86	0.51	3.85	0.48	3.57	0.75	3.91	0.65
Constructive thought patterns	3.37	0.58	3.37	0.45	3.27	0.58	3.62	0.45
Visualizing successful performance	3.41	0.74	3.36	0.65	3.03	0.77	3.61	0.49
Self-talk	3.21	0.83	3.26	0.80	3.41	0.85	3.79	0.66
Evaluating beliefs and assumptions	3.48	0.66	3.48	0.66	3.36	0.91	3.47	0.93

Note: CG = control group, TG = training group, t1 = time of measurement 1, t2 = time of measurement 2. The main dimensions behavior-focused strategies and constructive thought patterns match the mean expressions of its assigned sub strategies

achievements was held with the training group. Both study-related and personal goals were specified as personal relevant goals (e.g., increase in conscientiousness, improvement of time management to create implement learning plans and optimizing personal performance, smoking cessation). 88% of all students said that they have already reached (55%) or have partially reached their goals (33%). Only 12% of all students admitted that they did not reach their goals. The main reason was that the participants have had set too difficult or unrealistic goals. For instance, one person said that he could not stand behind his self-set goal. About two-thirds of all subjects had chosen a goal which they wanted to realize for a long time. 60% of all subjects admitted that they still want to follow their goals after the trainings end. 90% of all subjects could imagine using the learned and applied self-leadership strategies in the future. Nearly two-thirds of all subjects reported about a constant process of goal achievement, which was maybe interrupted by a “depth”. A quarter of all subjects experienced capricious process of goal achievement. In a further analysis step, the subjects were asked about the personal significance and the frequency of usage of the self-leadership (sub-) strategies. The five most important and most

frequently used strategies were: (1) Natural reward strategies, (2) self-cueing, (3) self-talk, (4) visualizing successful performance and (5) self-reward.

(1) *Natural reward strategies.* 76% of the participants said that they used this strategy most often to increase intrinsic motivation and they also consider that this self-leadership strategy is the most important one: “... I think this strategy is very motivating, because you are not only reaching for a goal, which is difficult but you are also giving a “gift” to yourself. Then you are not only feeling that everything is hard and your duty, you can get something good at all, too”(participant 15).

(2) *Self-cueing.* 69% of the subjects called self-cueing a very important and frequently used strategy. The usage of personal and social cues is (1) a reminder of the personal goals, (2) important to maintain motivation while reaching for goals and (3) essential to prevent a relapse into old habitual patterns of behavior: “Every night I created a new plan for the next day with new goals, which always reminded me of the big goal. I visibly hung up the plans, as well as some post-it’s with milestones” (participant 1).

(3) *Self-talk.* 60% of all subjects admitted that self-talk was used very often: “At first this

strategy seems to be negative. However, I've tried to improve myself and make the persuasion as I would talk to someone whom I want to motivate." (participant 23).

(4) *Visualizing successful performance.* Almost 60% of all subjects considered this strategy as very important: "In addition, I have achieved to integrate sports into my day and I have thought about what could go wrong, so that I do not reach my goal" (participant 27).

(5) *Self-reward.* It is used for positive and systematic reinforcement of own thoughts and behaviors regarding to goal achievement. More than half of all subjects reported that this strategy is very important and therefore often used. Cause of self-reward, the subjects were able to constantly motivate themselves: "The rewards... are small rays of hope to which you also can work out in unmotivated phases" (participant 11).

In contrast to self-reward, self-punishment has only been described as important and often used strategy by seven percent of all subjects. The training participants commented very critically on that

behavior-focused strategy: "A punishment would rather pull even more down, if I'm dissatisfied with myself anyway" (participant 11).

Qualitative-quantitative analysis. The results refers to the intersection of both methods: (1) The (quantitative) comparison between control and training group shows significant higher mean expressions in the constructive thought patterns (including visualizing successful performance and self-talk). (2) The (quantitative) difference testing within the training group between the time of measurement 1 (pre test) and the time of measurement 2 (post test) shows significant higher mean expressions (post test) for self-leadership (global), self-cueing, natural reward strategies and constructive thought patterns (including visualizing successful performance and self-talk). (3) The qualitative analysis (interviews and content analysis) shows that constructive thought patterns (especially visualizing successful performance and self-talk), natural reward strategies and self-cueing are perceived as most important and most frequently used (see table 2).

Table 2. Self-Leadership convergences based on qualitative-quantitative analysis

Method	SL (g)	1	1a	1b	1c	1d	1e	2	3	3a	3b	3c
Qualitative analysis				x			x	x		x	x	
Quantitative analysis (TG: t1 vs. t2)	x						x	x	x	x	x	
Quantitative analysis (CG vs. TG: t2)					x				x	x	x	

Note: CG = control group, TG = training group, SL (g) = Self-Leadership (global), 1 = behavior-focused strategies, 1a = self-goal setting, 1b = self-reward, 1c = self-punishment, 1d = self-observation, 1e = self-cueing, 2 = natural reward strategies, 3 = constructive thought patterns, 3a = visualizing successful performance, 3b = self-talk, 3c = evaluating beliefs and assumptions; qualitative analysis: x = Ranking of the five most important Self-Leadership strategies; quantitative analysis: x = significant results ($p < .05$).

Discussion

In the present study, all three self-leadership strategy dimensions and their sub-strategies were investigated as a part of the training intervention. The most important and

frequently used self-leadership (sub-) strategies were identified by qualitative-quantitative analysis. In particular, the cognitive self-influencing strategies (natural reward strategies, visualizing successful performance and self-talk) and self-cueing

have got the biggest effects on training (see Neck & Manz, 1996).

(1) *Self-leadership (global)*. The quantitative analysis of the intra group comparison of the training group (pre test vs. post test) showed a significant training effect regarding self-leadership (global). This in fact, is a contrast to the results of Stewart et al. (1996) because their training did not have any significant effect regarding to the global self-leadership skills.

(2) *Behavior-focused strategies*: self-goal setting and self-observation are the self-regulatory basis for goal achievement (Bandura, 1991; Carver & Scheier, 1998). Those two were rarely mentioned as important and frequently used by the subjects. This effect could possibly be due to the student sample because they already needed to use those for several times and occasions before (A-Levels, university). Probably there would be a more significant effect, if the sample consists of a different target group, which do not often use these strategies. Honourably self-goal setting and self-observation are the most important strategies regarding goal achievement but both are not always consciously accessible during the process of goal achievement (see Carver & Scheier, 1998). In the quantitative and the qualitative analysis, no explicit training effects were confirmed for both sub-strategies. Self-reward and especially self-punishment only have got a minor role in the significance and frequency of usage of a self-leadership strategy. The quantitative group comparison (control vs. training group) showed a significant decrease on the usage of self-punishment. The qualitative analysis could also show that self-punishment was perceived as the least important and least used strategy. The usage of self-punishment carries the risk that people are too critical towards themselves. This may be associated with reduced motivation (Neck & Manz, 2010). The qualitative analysis also confirms that self-

cueing is one of the most frequently used and therefore most important strategies for the training participants. The quantitative intra group comparison showed a significant higher mean expression regarding to self-cueing at time of measurement 2 (post test).

(3) *Natural reward strategies*. The training intervention leads to positive effects regarding the usage of natural reward strategies or intrinsic motivation. The cognitive orientation of intrinsic motivation and the usage of natural reward strategies are key features of self-leadership (Manz, 1986). The qualitative analysis showed that the training subjects admitted that the natural reward strategies are the most important and most frequently used self-leadership strategies. The quantitative intra group comparison showed that the natural reward strategies have got significant higher expressions at the time of measurement 2 (post test). The positive training effect on natural reward strategies illustrates that the effectiveness of intrinsic motivation can be improved by the usage of cognitive strategies. According to Neck and Manz (2010) two strategies can be applied for that: (a) a person is increasingly removing from the unpleasant characteristics and is concentrating more on the natural rewarding aspect of a task or (b) a person is increasingly installing pleasant and enjoyable characteristics into a task so that the performance of it is already natural rewarding (see Neck & Houghton, 2006). According to Ryan and Deci (2000) it is essential that certain behavior is internalized and integrated. Relevant regulatory processes regarding intrinsic motivation include interest, fun and joy and an inherent satisfaction with the task or activity.

(4) *Constructive thought patterns*. The results of the training intervention by Neck and Manz (1996) are largely confirmed for this strategy. The authors could show a positive training effect concerning the constructive thought patterns (Thought Self-

Leadership). However, they did not show how much impact a specific training effect have on the three sub-categories of constructive thought patterns. The quantitative (between group comparison: control vs. training group; intra group comparison: pre and post test of the training group) as well as the qualitative analysis show a significant effect regarding visualizing successful performance and self-talk. The training effect in constructive thought patterns is particularly obvious in the positive direction of one's own thoughts. Pessimistic self-talk can be limited and eventually replaced by more optimistic self-talk through careful reflexive analysis (see Seligman, 1991). Use of mental imagination serves to anticipate and achieve a successful future behavior (Stewart, Manz & Courtright, 2011). Persons, who are mentally visualizing that they are already successful in a task or activity, actually show even more successful behavior (Neck & Manz, 2010). On the basis of 35 studies, the meta-analysis by Driskell, Copper and Moran (1994) confirmed a significant positive association between the usage of mental visualizing and individual performance. Evaluating beliefs and assumptions show no significant training effect. Within this as well as within the sub-categories self-goal setting and self-observation personal beliefs, desires and attitudes take a vital role in the initial process of self-interference. Negative (dysfunctional) thoughts should be identified and replaced by constructive thought patterns (see Ellis, 1977). After an initially conscious alignment of personal beliefs and views, these strategies have got a bigger impact on a higher "normative" level and that's why they do not have any explicit training effect.

A few critical facts need to be noted regarding to the present training study. First of all, a student sample was investigated under relatively controlled conditions. The subjects of the training group were able to choose either a study-related or a personal goal to promote intrinsic motivation and

personal significance. Future studies should examine whether natural reward strategies (= intrinsic motivation) can improve, even under less personal significance (e.g. extrinsic motivated studies or job-related tasks). It also remains questionable how the cognitive strategies are preferred based on specific socialization effects of the student sample. Future studies should examine whether it is possible to replicate the results of the training intervention under controlled conditions in an organizational context, because of the high importance of self-leadership skills in organizations (see Stewart et al., 2011). A central question is how intrinsic motivation can be extended in an organizational environment or how employees' personal goals can be matched with these of organizations. Secondly, the present study does not included any comparison between the self-leadership Training intervention and other traditional training programs (e.g. self-management training). Self-leadership is a further development of the self-management approach, which refers to the behavior-focused strategies. Interestingly, the training effects did not show in the behavior-focused strategies, but in natural reward strategies and constructive thought patterns. Third, the evaluation of applied self-leadership strategies and goal achievement included self-reports of the students. Future studies should consider not only self-reports, but more objective performance-related information (e.g. quantifiable performance criteria, external assessment, behavioral observation). Fourth, the present study's self-leadership training took four weeks followed by an evaluation of the training participants. Longitudinal studies could give a lot more insight about which self-leadership strategies are used for long-term performance and lead to success.

Conclusion

This training-based self-leadership study provides new insights about learning and effectiveness of self-leadership

strategies. In particular, the (intrinsically motivated) self-influence through cognitive strategies among students shows promising results. Visualizing successful performance, self-talk, self-reward and self-cueing shows the biggest training effects. These strategies have mostly been used during the four-week training intervention and have also been considered as very important. Human resource development (self-responsibility by the employees) and organizational development demonstrates the increasing importance of self-leadership. All self-leadership skills can be optimized or developed through specific training. Increased self-responsibility and self-determination of the employees have a positive effect on their intrinsic motivation and on the discharge of management (e.g. wider control margins and reduced need for extrinsic motivation, see Robbins & Judge, 2009). As a role model, an executive with strong self-leadership skills may also increase those of its staff (see Furtner, 2010). Self-leadership also shows its high significance in relation to individual career development. Due to the extensive dissolution of the psychological contract, people need enhanced self-leadership skills to promote individualized and self-directed career.

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