Leadership Intelligence
Before and After Participation
in UGL Leadership Training

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The aim of this study was to examine whether there was a difference in three types of leadership intelligence (spiritual intelligence, emotional intelligence, and rational intelligence) before and after participation in a specific leadership training course. Leadership intelligence was assessed with the aid of the Leadership Intelligence Questionnaire (LIQ; Dåderman, Ronthy, Ekegren, & Mårdberg, 2013). The study included 125 participants (M = 38 years, SD = 8), 82 of whom were women. The participants achieved significantly higher mean scores in the three types of leadership intelligence after participation in leadership training, than their mean scores before the training. This professional development program may have contributed to the increase in leaders' mean scores in leadership intelligence, hopefully leading to a higher quality of leadership.

According to Stead and Stead (2014), organizations are needed to develop sustainability-centered strategic spiritual capabilities, and it is for this reason strategically important to develop managers with unique core abilities to lead these organizations. Spiritual capability involves, among other things, the development of spiritual intelligence (SQ), which is one component of leadership intelligence (Ronthy, 2006, 2013). This paper sets out to compare the levels of three types of leadership intelligence (spiritual, emotional, and rational), before, directly after, and six months after participating in a leadership development program.

There seems to be an almost blind belief in the outcome of leadership development programs (Jackson & Parry, 2008). Companies and organizations spend huge amounts of money to develop the skills of their managers, but the effectiveness of such leadership training is not always well-known (Collins & Holton, 2004). This prompted us to investigate whether leadership training is effective in developing leadership intelligence, and if so, to what degree. The latter is assumed to be an important predictor of the quality of leadership (Ronthy, 2006, 2013), because it involves all aspects of the organization (Dale, 2003). A leadership training program known as "UGL" (Understanding Group and Leader) has been used since 1981 as a basic course for new officers in the Swedish armed forces, and has subsequently become a frequently used course in the Swedish commercial and public administration sectors. We present here an evaluation of the efficacy of UGL.

Ronthy (2006, 2013) claimed that leadership intelligence may be developed by practice. Practicing SQ may lead to transcendence, personal transformation, and a more holistic understanding. Ronthy believed that this intelligence can be developed by self-awareness, dialogue, reflection, and feedback. UGL focuses on these processes, and we have sought to answer the following question: Are there differences in the leadership intelligence of participants before and after taking UGL? One of the marketing claims for UGL (2013) is: "UGL is a total experience for both the heart and brain," which inspired us to examine leadership intelligence within the context of UGL.

Ronthy's Theory of Leadership Intelligence

Ronthy's (2006, 2013) theory of leadership intelligence has been empirically derived from discussions with managers and leaders about their daily work. The theory has been influenced by a philosophy of work-integrated learning, because it was created within and for working life, and because it stresses the importance of continued learning. Ronthy educated about 4000 leaders from different organizations in how to conduct a dialogue.

She asked them what they considered to be necessary to develop good leadership, and which qualities followers expected in their managers. These discussions were integrated with the participants' work, and led Ronthy (2006, 2013) to create a holistic approach to leadership, which she termed "leadership intelligence." Ronthy defined the concept of leadership intelligence as the sum of SQ (spiritual intelligence), emotional intelligence (EQ), and rational intelligence (RQ). Leadership intelligence is centered on the following skills: self-awareness and value creation, meaning (SQ), empathy and relationship building (EQ), and skills in targeting, planning and monitoring performance (RQ). Ronthy believes that leadership intelligence, which is the sum of the leader's SQ, EQ and RQ, describes all aspects of leadership. However, this construct remains new, and needs more empirical evidence. Furthermore, it is not easy to measure awareness of spirituality. SQ answers the question "Why?" using one's soul (volition), in the process of adapting to, shaping, and selecting from and within one's environment. "Volition" in this context describes an ultimate human longing and striving for the highest level of one's potential. SQ, as defined by Ronthy (2006, 2013), and as defined in the Leadership Intelligence Questionnaire (LIQ; Dåderman, Ronthy, Ekegren, & Mårdberg, 2013), deals with a person's relationship within himself or herself, the ability to feel meaning and coherence in life, the ability to find a sense of purpose and meaning at work, the ability to discover context by taking a comprehensive view. SQ is the human ability to achieve self-awareness that is more than "simply" self-knowledge. SQ deals with positive ethical values and visions, and Brytting and Trollestad (2000) argued that fundamental values are the glue that holds an organization together. SQ measures the depth of one's desire and willingness to see meaning, the innermost core that stands for value and meaning (Antonovsky, 1987; King, Mara, & DeCicco, 2012; Tischler, Biberman, & McKeage, 2002). Zohar and Marshall (2000) defined SQ as a psychological skill used by people to deal with the meaning and value of life, and to find solutions to these issues. Vaughan (2002) noted that SQ is beyond conventional developmental psychology. She described how SQ relates to EQ through the sharing of intrapersonal and interpersonal sensitivity.

EQ is a reasonably well-known and accepted concept. EQ answers the question "How?" and involves motivation, self-control and social skills, such as the ability to build social contacts and experience empathy (Dulewicz & Higgs, 2000; Goleman, 1995). The social skills involve emotions, and are related to caring and how to be in a relationship with others. EQ is an ability to acquire good self-knowledge (Dåderman et al., 2013), to manage one's emotions and those of others, to experience empathy, to manage relationships with others (social skills), and to reflect the information of others' emotions on their relationship with oneself (i.e., introspection of emotions). Ronthy (2006, 2013) considered that key elements of this intelligence are personal skills (such as the ability to achieve greater self-confidence and emotional awareness) and social skills (such as the ability to increase one's ability to understand others, that is empathy, to manage conflict and to cooperate). It has been shown that EQ is significantly related to psychological health and morale (Dulewicz, Higgs, & Slaski, 2003). Carmeli (2003) showed that EQ is important for developing positive work-related attitudes and for contextual and task performance.

RQ measures logical, structural and analytical thinking skills, and this is the type of intelligence that most people develop during academic study. RQ answers the question, "What to do?" RQ is an ability to apply logical and analytical skills (Dåderman et al., 2013), to achieve one's goal, to solve the task. It is, in other words, to determine *what* is to be done, mainly using one's intellect, logical capacity and problem-solving skills. RQ requires the mobilization and use of one's expertise, and developing a high capacity for abstract thinking and the ability to solve logical problems. RQ is based on linear, analytical and mathematical thinking.

Leadership intelligence concerns the balance between SQ, EQ, and RQ. This is possible only after becoming aware of the types of skill that are used most frequently in one's leadership (Ronthy, 2006, 2013). Ronthy stated that the most powerful approach to developing leadership intelligence is to become self-aware and to "be in" dialogue with others. She pointed out that it is also necessary to use reflection to capture what has been heard and experienced during the dialogue. Further, it is difficult to develop as a leader without feedback. The skill of giving feedback requires EQ. According to Ronthy, a good leader needs to be both a mentor and a coach, and he or she needs the following skills: listening, questioning, and the ability to provide feedback and monitoring. Such a leader is characterized by the following properties: self-

awareness, responsiveness, psychological knowledge of people's behavior in different situations, and perception and understanding of how others think. Bowell (2005) believed that it is not enough to possess high RQ and EQ, and suggested that a complete intelligence model must consider more than what one knows (RQ) and feels (EQ). Bowell believed that SQ is required to make intelligence complete.

Spirituality and Emotions as Measured by LIQ and a Transpersonal Perspective

Spirituality and emotions, as they are reflected in Ronthy's (2006, 2013) SQ and EQ, fit quite well within a transpersonal perspective, but it should be noted that the term "spirituality" does not have a clear, universal definition (Rousseau, 2014). Viewpoints on transpersonal psychology from 41 international theorists and practitioners have been summarized by Caplan, Hartelius, and Rardin (2003), and it is clear that these viewpoints are multifaceted and wide-ranging. One aspect of Ronthy's EQ is to "achieve empathy by using one's heart," which may be reflected in Sylvia Boorstein's idea (Caplan et al., 2003) of the difference between being a transpersonal psychologist and a conventional psychologist. Boorstein described a transpersonal psychologist as "more compassionate," and one who relies "on the wisdom of the hearts of the people I work with to provide them with clues for the skillful life choices they make" (p. 145). One aspect of Ronthy's SQ is "an ability to achieve self-awareness that means more than 'simply' self-knowledge," and this may be similar to Daniel Deslauriers' view that transpersonal psychology is "the positive transformation in consciousness, the practice of wisdom and the pursuit of self-knowledge" (Caplan et al., 2003, p. 146). Another aspect of Ronthy's definition of SQ includes "the ability to find a sense of purpose and meaning at work," (Dåderman et al., 2013, p. 65, Table 1), which is similar to Laura Boggio Gilot's view of transpersonal psychology, which comprises "consciousness to the universal meanings of life" (Caplan et al., 2003, p. 148).

Leadership Intelligence and a Transpersonal Perspective

Ronthy's (2006, 2013) concept of leadership intelligence shows that a good leader should find wholeness and balance between SQ (soul), EQ (heart), and RQ (brain). This is in line with Vernice Solimar's view (Caplan et al., 2003), that "with body, emotion, mind, heart and soul integration, we know ourselves to be the whole world, embodying wisdom, compassion and joy in the service of all" (p. 154). Moreover, Jorge N. Ferrer, following Marcie Boucouvalas (1999), observed that the transpersonal field now encompasses business and entrepreneurship; Ferrer stated that transpersonal psychology focuses on spirituality, and "strives to understand and nurture the wholeness of human nature – body, instincts, heart, mind, and consciousness" (Caplan et al., 2003, p. 147). Olga Louchakova formulated the function of transpersonal psychology as "to balance the contemporary self, and to provide it with the means of regaining wholeness, fullness and vitality" (Caplan et al., 2003, p. 151). In addition, Kaisa Puhakka pointed out that transpersonal psychology is concerned with wholeness: "the 'whole' is limitless, includes everything (physical, mental) as well as other subtle worlds" (Caplan et al., 2003, p. 152). Frances Vaughan stated that "transpersonal psychology addresses the whole person, body, emotions, mind and spirit, in the context of community and culture" (Caplan et al., 2003, p. 157). We suggest, therefore, that leadership intelligence, including SQ, is a transpersonally related construct.

Understanding Group and Leader (UGL)

UGL is a course for managers intended to enable participants to become more effective as group members, leaders, and trainers. Lundin (2013) described how UGL provides training in recognizing how a group develops and matures over time, what happens in the group during the course of this development, and what kinds of behavior or actions promote or inhibit constructive development. UGL has been developed by researchers and experienced supervisors: the Swedish National Defense College owns the concept of UGL. The original concept was developed from the *Leadership and Management Development Course*, which was implemented in the United States armed forces course *Organization and Effectiveness*. In recent years, UGL has become popular and widespread outside of the Swedish defense community. The objectives of UGL include that the participants will increase insight into their own personality during the course, work with reflection about learning, and appreciate the need for different management styles. The objectives include also that the participants learn a number of skills: to give and receive effective feedback, to identify and handle conflicts, to communicate in a direct and clear way, to understand the impact of emotions, to understand values that may impact leadership, and to recognize different stages of a group's development.

UGL is an example of transboundary experiences and exchanges within work-integrated learning. The training method is based on Kolb's (1983) theory of experiential learning, in which practical experience is the focus of learning. Experiential learning in UGL is carried out in a stranger group in which the participants do not know each other before the course. The course is a five-day residential course, with a minimum of 8 participants and a maximum of 12. Only information regarding arrangements for the course is given to participants before the course. Other training methods used during UGL are intended to develop the participants' reflection skills (individually and in groups, orally and in writing), to perform an analysis after different exercises/tasks, and to give and receive feedback. The other methods comprise also evaluation exercises. Lundin (2013) described how UGL has undergone quality assurance, and stated that it meets all scientific and ethical standards for this kind of education. Quality assurance has focused on the following three areas: (1) the concept itself (the course material is based on recent research, validated and published, and all parts of the material have been scientifically examined by Professor Christer Sandahl, Karolinska Institutet); (2) the UGL course materials (all materials have been tested in a large number of UGL courses); and (3) the UGL supervisors (it is necessary to pass the training required for supervisors in the Swedish armed forces to become a qualified UGP supervisor). UGL focuses on dialogue, reflection and feedback, and Ronthy (2006, 2013) has shown that these processes are needed to develop SQ and EQ.

Study

The aim of the work presented here was to investigate the efficacy of UGL by determining mean scores on a scale that measures leadership intelligence before, immediately after, and six months after participation in the program. The description of the course and the rationale behind the education led us to hypothesize that the mean scores on SQ, EQ, and RQ would increase.

Participants

The participants were 125 managers (82 women), with a mean age of 39 years (SD = 8, range 20-62). More than 30% of them (N = 39) worked in administration, 12% (N = 15) in industrial production, just under 10% (N = 12) with sales/purchasing/marketing, and the remainder in such fields as health/medical care, computing/IT, and education. More than 70% of participants had more than three years of post-secondary education, while almost 20% had less than three years of post-secondary education. Half of the participants (N = 63) were in managerial positions (8 at a superior level, 38 at an intermediate level, and 17 at a subordinate level). The other half were project managers (N = 15), HR specialists (N = 8) and doctors, lawyers or environmental managers (N = 39). The average duration of experience as a manager was 5.4 years (SD = 4.9, range 1-21). The average number of followers whom they managed was 31 (SD = 47, range 1-220). According to course leaders, the sample was sufficient to provide generalizable findings and implications, because it consisted of typical participants of UGL. A document from the Swedish Research Council (Vetenskapsrådet, 2013) formed the basis for the ethical guidelines applied during this study.

All 125 participants took part in the study at Time 1 (before the UGL), 98 (78%) participated at Time 2 (immediately after UGL), and of these 30 were eligible, by virtue of completing both prior questionnaires within a previously-specified time period, for participation at Time 3 (six months after the completion of training). All 30 eligible participants were invited to participate at Time 3, and 25 (87%) of these accepted the invitation.

Because there was no control group for comparison, and in order to dispel any concern that the self-selection of participants at Time 3 might somehow be biased, consideration of how the groups might have changed due to drop-out or other factors over time is warranted. Therefore, we performed comparison analyses between those who participated through Time 3, those who participated through Time 2, and those who participated only at Time 1. The results showed that there was no significant association between any of these groups and the variables of sex (Chi-squared = 0.62, p = .733), age (F = 1.70, p = .187), occupational field (Chi-squared = 39.63, p = .166), level of education (Chi-squared = 3.75, p = .710), type of managerial position (Chi-squared = 5.74, p = .453), average duration of experience as a manager (F = 0.82, p = .445), average number of followers whom they managed (F = 0.17, p = .842). In addition, those higher in social desirability did not participate at Time 3 more than those with lower social desirability, compared to Time 1 and Time 2 (Chi-squared = 3.73, p = .155). The definition of "high in social desirability" was achieving a T-score higher than 60 for this factor on the Swedish Universities Scales

of Personality questionnaire. Thus, the participants at Time 1, Time 2, and Time 3 had similar demographic and occupational backgrounds. We conclude, therefore, that the comparison groups did not change in any important ways over time due to drop-out or other known factors, and that the self-selection of participants at Time 3 does not appear to have introduced a bias.

Instruments

We used the self-reported Leadership Intelligence Questionnaire (LIQ) created by Ronthy (see Dåderman et al., 2013 [Appendix], for the items in LIQ) to measure leadership intelligence. The LIQ consists of 71 items that measure: SQ (31 items), using such statements as "I act in accordance with my values," EQ (22 items), such as: "I inspire others to be creative"; and RQ (18 items), such as "I specify strategies to achieve the goals set." Responses are on a 7-point Likert-type scale ranging from 1 (Strongly disagree) to 7 (Fully agree). Three control items are included, and these are reversed. The reliability of the scale, measured by Cronbach's (1951) alpha, was satisfactory in the present study (Table 1).

We used a scale from the self-reported Swedish Universities Scales of Personality questionnaire (Gustavsson et al., 2000) to measure social desirability. This scale comprises seven items, and includes statements such as: "No matter whom I'm talking to, I'm always polite and courteous." Replies are given on a 4-point Likert-type scale. Cronbach's alpha in the present study was .50 (Time 1) and .61 (Time 2), while the mean inter-item correlation was .12 at Time 1. Values of Cronbach's alpha below .70 and mean inter-item correlations below .20 are generally considered to be unacceptable (Cohen & Swerdlik, 2002), and this 7-item scale could not, therefore, be used to measure social desirability of the participants. The removal of the three items with lowest item-scale correlations, however, increased the mean inter-item correlation to .20, and we were able to use this 4-item scale to measure social desirability.

Procedures

Two companies that provide UGL training were contacted by the first author. During a period of 29 weeks in 2011 these companies gave 22 courses. All 400 participants in the courses given by these companies were approached individually by letter, which accompanied the information accepting them into UGL. They were informed about the aim of the study and how data was to be collected. Those who agreed to take part in the study were given the questionnaires and instructions in how complete them. It was possible for participants to complete a paper version and mail the completed questionnaire to the authors, or complete it electronically and send it to an e-mail address created especially for this study. Replies were collected on three occasions: Time 1: two weeks before UGL, when participants were invited by e-mail to participate; Time 2: directly after participation in UGL; and Time 3: within the time frame of the study (which expired six months after completion of the UGL), again by an e-mail invitation sent to 30 of the 98 original participants who participated at Time 1 and Time 2. The participants created a self-identification number, which ensured that they were anonymous, while enabling us to match the data.

Analyses

No outliers were present in the study variables; Levene's test for equality of variances was non-significant; and the differences between pairs of scores formed a normal distribution, allowing parametric tests for repeated measures (*t*-tests and ANOVA), and Pearson

	Time 1						Time 2						Time 2 – Time 1	
	N	Min	Max	Mean	*SD*	α	*N*	Min	Max	Mean	*SD*	α	Diff mean	*t*
SQ	125	131	203	165.9	14.4	.83	98	136	203	171.2	14.8	.86	5.51	5.09**
EQ	125	78	139	113.6	12.3	.84	98	84	144	116.7	12.2	.86	4.21	5.16**
RQ	125	63	109	89.1	10.4	.78	98	65	112	90.6	11.0	.80	2.11	3.26**

Table 1. Descriptive statistics and internal consistency results of paired t-tests before and immediately after participation in UGL

Note. N = 98. Time 1 = before participation in UGL, Time 2 = immediately after UGL; SQ = spiritual intelligence, EQ = emotional intelligence, RQ = rational intelligence, SD = standard deviation. Differences in means concerns Time 2. **p < .01.

correlation coefficients to check social desirability to be used. We also report effect size coefficients, partial η^2 (Levine & Hullett, 2002).

Results

Pearson correlation coefficients between scores on the social desirability scale and SQ, EQ, and RQ were .27 (p = .002), .28 (p = .002), and -.04 (p = .700), respectively. These results show that 7% and 8% of the variation in SQ and EQ, respectively, was explained by social desirability. There was no indication that social desirability is correlated with RQ.

Table 1 presents descriptive statistics of LIQ at Time 1 and Time 2, with t-statistics for differences in mean scale scores between these two occasions. Mean scores for SQ, EQ, and RQ were significantly higher at Time 2 than they were at Time 1, for those 98 participants who were measured twice.

Table 2 presents results from Time 3. Mean scale scores for SQ, EQ, and RQ and were significantly higher at Time 3 than at Time 1 for those 25 participants who could be measured three times. A one-way correlated ANOVA showed a significant (p = .027) education effect for the three measurement occasions (SQ: $F_{2,48}$ = 4.57, partial η^2= .16; EQ: $F_{2,48}$ = 5.27, partial η^2 = .18; RQ: $F_{2,48}$ = 3.90, partial η^2 = .14). SQ, EQ, and RQ differed between Times 1 and 3, as shown by related t-tests. These measures did not differ between Time 2 and Time 3, showing that the three properties remained stable for 6 months after UGL.

Discussion

We investigated the efficacy of UGL by determining mean scores on a scale that measures leadership intelligence before, immediately after, and six months after participation in the program. It has been assumed that leadership intelligence can be developed by self-awareness, dialogue, reflection, and feedback. These processes are in focus in the UGL program. Our results show that there were differences in the leadership intelligence of participants before and after taking UGL. SQ, EQ, and RQ were significantly higher after participation in UGL than before, and these values remained stable for at least six months.

Effects of UGL

UGL is a leadership training course that focuses on the development of emotional abilities, rather than cognitive abilities. Mean scores in the rational intelligence component (RQ) of leadership intelligence were higher after participating in UGL, but it is important to note that this kind of intelligence is not similar to the intelligence measured by cognitive intelligence tests. LIQ is a self-report questionnaire that examines what the manager focuses on. Johnson (2008) suggested that successful leaders can be distinguished from less successful leaders by focusing on their mental models, and not on the information that they provide. It is possible that the RQ that is measured by the LIQ assesses the mental models of managers, their cognitive representations of reality, the basis of their views, analysis and behavior, but this issue was not within the scope of the present study. Johnson (2008) also suggested that mental models develop through feedback and critical reflection of one's own behavior, which is a major component of UGL.

Working life is characterized by demands for constant change and organizational flexibility, and a leader's values must be able to evolve and develop, if he or she is to lead teams and organizations in such instability. However, leadership training is a lucrative market, with

Table 2. Descriptive statistics and results of paired t-tests before, immediately after, and six months after participation in UGL

	Time 1		Time 2		Time 3		Time 1 – Time 3		Time 2 – Time 3	
	Mean	*SD*	Mean	SD	Mean	SD	Diff mean	t	Diff mean	t
SQ	163.8	14.6	167.1	14.5	168.7	13.3	4.90	3.1**	1.60	1.12
EQ	109.7	11.9	113.4	11.6	114.6	12.6	4.92	3.0**	1.24	0.79
RQ	86.6	9.8	88.8	11.6	90.1	12.9	3.47	2.7*	1.24	0.90

Note. N = 25. Time 1 = before participation in UGL, Time 2 = immediately after UGL, Time 3 = six months after UGL. Two sided paired t-test; *p < .05; **p < .01. SQ = spiritual intelligence, EQ = emotional intelligence, RQ = rational intelligence.

an almost innumerable range of courses and organizers on offer. The impact of such training is questionable. The vast majority of assessments of leadership programs have examined the participants' subjective perceptions about the courses (Döös & Waldenström, 2008). The present study has not measured perception of UGL, but has measured subjective self-assessments from the participants of how they described themselves. Can a leadership development program of one week's duration really have an effect? This study shows that the participants changed. However, it remains to be determined whether one week of residential training is the most efficient form of leadership education.

Practical leadership training is similar to work-integrated learning. Moxley and O'Connor Wilson (1998) defined practical leadership training as helping people to learn from their jobs in the job situation, rather than taking them away from their jobs to teach them. Jackson and Parry (2008) discussed a wide range of other leadership training methods, such as *developmental assignments* (participation in development programs in different parts of an organization for periods ranging from six months to three years), and *action learning* (the solving of complex problems within the organization by individuals or teams). Such methods, however, are expensive and there is little evidence that they work. Döös and Waldenström (2008) pointed out that more studies examining the organizational impact of such training are needed, as are more studies of the methods and tools used to evaluate them. We have not examined the concept of education itself, but only the self-reported effects of education at the individual level. We do not know whether any organizational consequences followed the UGL training. Special organizational conditions are required to study outcomes at the level of the organization (Lundmark, 2008).

Leadership development efforts should be directed at the whole team, both employees and managers (Jackson & Parry, 2008). Collins and Holton (2004) showed that team training is effective. UGL is open to everybody, and the participants studied here occupied various positions, which should be positive for their organizations. The UGL concept is focused on what are known as "stranger groups," which prevents the members of a workgroup participating at the same time. It is believed that the participation of managers in UGL produces better leaders who experience greater job satisfaction. This is an interesting belief for several

reasons. The definition of a "good" (and thus "better") leader is disputed, and the claim that participation in UGL creates better leaders has not been investigated.

Discussion of the Methods Used

One may wonder whether the present results have been influenced by the UGL philosophy *per se*. Two companies that organize UGL courses were contacted, and these companies managed communication with participants at Time 1. The initiative for the study was, however, undertaken by the first author, who also formulated the research question. The study presented here has not been commissioned by the companies, but they would, of course, benefit from a positive outcome. The companies paid no economic compensation to the authors. The authors took the initial contact with companies that organize UGL courses, they worked independently of the companies, and are solely responsible for the study. They are also responsible for reporting the results in an open and honest manner. The companies that offer UGL training have not been informed of the results prior to publication.

We have measured the effects of the course immediately after its completion, and six months later. Lundmark (2008) suggested that course evaluation to check the individual-related results is possible at the end of the course. If the course evaluation, however, is intended to detect the individual effects of the course, and to detect whether participants have changed their work behaviour (and if so, how), the evaluation should be made at a time that is sufficiently later than the end of the course so that participants have had a real opportunity to use, test, and further develop the knowledge they gained. Such evaluation should be based on several studies conducted 6 months to 1 year after the completion of the course. Collins (2002) argued that management development must be evaluated over extended periods, because it can take several years for organizational changes to take effect. We have studied individual-related results and not organizational impact, but it would be interesting to follow the participants over a longer duration than the 6 months we report here.

All tests are subjective, as are the conclusions of an interviewer. Tests measure what the creator wants them to measure, and the results of this study are thus subjective. Different respondents possess different degrees of self-insight, which affects the way in which they complete self-assessment forms. We compare ourselves with those around us when we make self-assessments,

and different respondents are surrounded by different groups. It is also possible that participants manipulated their responses to achieve a specific result, guided by, for example, social desirability. We have, however, checked for social desirability, and have shown that its effect was marginal. The participants in this study had no relationships with the authors, and had no motive for manipulating their answers. The LIQ contains three control items, and we checked the validity of these items.

Repeat testing may have had an effect. Participants completed the same questionnaire before and after the UGL course, a fact of which they were unaware when they completed it the first time. Their replies at Time 1 were given at a time when they did not know whether they would like UGL. We have not checked for practice effects (retest effects) on repeat testing. Practice effects are "improvements in cognitive test performance due to repeated evaluation with the same or similar test materials" (Duff, Callister, Dennett, & Tometich, 2012, p. 1117). The nature of retest effects is still not completely understood. Statistically significant improvements in mean scores of leadership intelligence may, at least to some extent, be due to practice effects of repeated testing. We have attempted to minimize possible practice effects by presenting the items in the random rather than the blocked version. In addition, the magnitude of these effects for this kind of self-reported measure is unknown; it is, for example, small to negligible for verbal comprehension tests (see Arendasy & Sommer, 2013 for the review of possible sources of measurement bias due to retesting). It would be more appropriate to use an alternate test form at Time 2. However, the development of alternate test forms is costly and time-consuming.

Implications

The present research may contribute to an existing theory of leadership intelligence (Ronthy, 2006, 2013), and may contribute to development of other theories of leadership intelligence. The main contribution is the evidence of an increase of mean scores on the LIQ after participation in the UGL, which aims to develop, among others things, a leader's ability to understand the impact of emotions. Another contribution is to inspire other researchers to evaluate leadership programs. Although leadership programs are often based on scientific theories, more information is needed about the impact the programs have on the participants' own leadership and how the education will be useful in their daily work.

The present research may contribute also to possible applications of this knowledge. For example, one possible application is that some believe that transpersonal actions, feelings, and thoughts stem from universally available internal qualities (e.g., higher self, self, real self, essence, true self, spirit, and heart; Naranjo, 1980). Such entities may be difficult to define and measure. Ronthy (2006) asked whether it is possible to measure leadership intelligence. She suggested that a feasible way of measuring leadership intelligence is through interviews and by self-assessment questionnaires, because a person then answers questions about situations he or she often faces in the workplace. A weakness of the present study is the lack of qualitative methods, such as interviews. It would be possible to use information from other informants, obtained by interviewing, for example, subordinates or followers of the participants, in order to assess the participants' SQ, EQ, and RQ. Knowledge about the importance of leadership training in developing leadership spiritual intelligence may also have a general implication for the future, because a fundamental shift in human consciousness is needed for global sustainability, which may be based on deep spiritual roots in higher-level value systems supporting the sacredness of people and nature (Stead & Stead, 2014). Sustainability focuses on future generations, and is thus closely related to transpersonal actions, feelings, and thoughts. This is because these are not conditioned in a single person.

Conclusions and Suggestions for Future Research

We cannot conclude that participants in UGL become better leaders, but we can conclude that certain self-assessed variables differed significantly before and after participation in UGL; the participants achieved higher mean scores in leadership intelligence, as defined by LIQ. This may be an effect of participating in UGL in combination with workplace learning, a process that Colb (1984) suggested is optimized when reflection, planning, conceptualization, and practical experiences occur within structural learning environments. It is interesting that leadership intelligence remained unchanged six months after participation in UGL.

McDonald and Friedman (2012) noticed a rising trend within transpersonal psychology to measure spirituality, and to relate it to neurobiological correlates. For example, Nilsson et al., (2007) showed that spiritual acceptance is partially determined by genetic variations.

Further research would therefore benefit from using neurobiological correlates to examine the role of SQ and spirituality in leaders. Moreover, research should be conducted on other aspects of leadership programs, such as self-esteem, personality, the participants' experience of their own leadership, and the degree to which followers perceive changes in leadership. The present research opens also the possibility of developing Ronthy's (2006, 2013) theory of leadership intelligence within a transpersonal perspective.

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