

Perceived Leadership Self-Efficacy and Coach Competence: Assessing a Coaching-Based Leadership Self-Efficacy Scale

Frode Moen, Norwegian University of Science & Technology, Norway.
Roger A. Federici, Norwegian University of Science & Technology, Norway.

Contact email: frmoe@online.no

Abstract

The first purpose of this study was to develop and test the factor structure of a multidimensional Coaching Leadership Self-Efficacy Scale (CLSES). A second purpose was to validate the CLSES through an inspection of its relation to the Coach Competence Scale (CCS). The CLSES was developed to capture important coaching leadership efficacies in five different areas where leaders must perform in their roles as leaders. Coach competencies were measured by a five dimensional validated version of the CCS. Confirmatory factor analyses supported both a first- and second-order model of the CLSES constituting the five dimensions of coaching leadership efficacies: 1) Work facilitator; 2) Supervising growth and development; 3) Creating relationship with customers; 4) Constructive communication; and 5) Creating relationship with employees. Moreover, the CLSES was positively related to the CCS. The present study extends the literature on leadership efficacy in relation to coaching behaviour. The results of the study are discussed together with limitations and suggestions for further research.

Key Words: Coaching Leadership Self-Efficacy Scale, Coach Competence Scale, leadership, coaching

Introduction

Leadership is often described as a critical variable in determining the success or failure of a business organization (Schein, 2004). Thus, leadership behaviour has been the target of considerable research and debate. During the last four decades, coaching has entered the field of business and leadership (Gallwey, 1974; Moen, 2010; Whitmore, 2002). In business settings, coaching is usually implemented in two different ways. First, coaching may be used as a learning tool for executives, for instance when an *external* consultant coach is coaching executives to improve their performance as executives (Goldsmith & Lyons, 2006; Moen, 2010; Underhill, McAnally, & Koriath, 2007). Second, leadership coaching can be used as a style of leadership which executives use when they feel it is appropriate in their roles. In this case, coaching is conducted formally during a series of dedicated meetings, or informally through executives' day-to-day interactions with their co-workers. This may be defined as an *internal* coach executing coaching-based leadership (Hall, Otazo, & Hollenbeck, 1999; Moen, 2010).

The different methods may also be combined. This occurs when external executive coaching aims to develop executives' coaching-based leadership capabilities in order to create a coaching culture within the organisation (Clutterbuck & Megginson, 2005; Moen, 2010). A *coaching culture* is defined as one where "coaching is the predominant style of managing and working together, and where a commitment to grow the organisation is embedded in a parallel commitment to grow the

people in the organisation” (Clutterbuck & Megginson, 2005, p.19). Thus, executives who work within such cultures must develop their coaching competencies and build strong beliefs in their capabilities to execute necessary actions to be successful in their roles (Bandura, 1997; Moen & Skaalvik, 2009).

The first purpose of the present study was to develop and test the factor structure of a multidimensional *coaching-based leadership self-efficacy scale* (CLSES). The scale measures leaders’ perceived self-efficacy in different areas that are relevant for coaching-based leadership behaviour. A second purpose was to validate the CLSES through an inspection of its relation to leaders’ perceptions of coach competencies, measured by the Coach Competence Scale (see Moen & Federici, 2011 for the validation study). Data in the present study were collected from executives and middle managers at a high-tech *Fortune 500* company who voluntarily participated in a coaching project over a period of one year. The initial data collection was conducted before the coaching project started, the second after six months, and the last after 12 months. Overall, the data were based on three data collections, constituting a total of 395 respondents.

Theoretical Approach

The term *coach* is often used as a metaphor for someone who takes people to a desired place (Zeus & Skiffington, 2002; Gjerde, 2003). Therefore, coaching is concerned primarily with establishing a helping relationship between the coach and the person with whom the coach is engaged, a coachee (or client). Theorists tend to describe coaching as a new route to growth and development. This indicates that coaching is different from counselling, consultation, teaching, mentoring, and other helping relationship roles (Downey, 1999; Whitmore, 2002; Flaherty, 1999). Coaching emphasizes the power of the individual as capable of finding solutions to his or her problems facilitated by a coach (Moen & Kvalsund, 2008). This approach to the field is a client-centred one, influenced by *humanistic psychology*, which emphasizes the importance of listening to the subjective beliefs of the client (Kahn, 1996). This optimistic and trusting view of human nature is central to the field of coaching today.

Today, companies spend millions of dollars annually developing teams and individuals in order to drive growth and deliver desired results. The market is still growing: in 2006 it was estimated to be \$2 billion per annum globally (Fillery-Travis & Lane, 2006). Successful organisations in today’s emerging knowledge economy have to innovate continually to maintain their place in the dynamic marketplace. Employees are expected to (and expect to) constantly upgrade their technical and leadership skills (Fillery-Travis & Lane, 2006). The continuous growth and development of employees is an important factor for organisational success.

Previous studies have demonstrated that coaching is among the most preferred learning methods in business (Underhill et al., 2007). *Coaching-based leadership* occurs when coaching is the predominant style of managing and working together in the organisation (Clutterbuck & Megginson, 2005; Goleman, 2000; S holm, Storch, Juhl, Dahl, & Molly, 2006). Thus, the basic means for enhancing employees’ performance are through the employees’ active involvement and participation in their learning process. These are enabled by their coaching leaders, using powerful questioning and active listening as the most important tools (Moen, 2010; Moen & Kvalsund, 2008). It is about teaching employees to learn how to learn (Gallwey, 2000) as a kind of self-directed learning (Wilson, 2007). The goal is to increase the coachee’s self-awareness about his or her own cares, commitments and potential, and expand the range of choices about what actions can be taken to achieve improved performance. Thus, in coaching-based leadership, several key principles are important.

Key principles in coaching-based leadership

Researchers investigating the coaching process claim that there are some important principles that characterize the coaching process (Auerbach, 2005; Moen, 2010; Moen & Kvalsund, 2008). Thus; there are at least five principles at the heart of coaching-based leadership:

1. The leadership coach must *facilitate employees' learning* so they are increasingly able to do their best at work. In a coaching-based leadership model, there is a commitment to grow the people in the organisation, and this is facilitated by the coaching leader (Clutterbuck & Megginson, 2005). This is consistent with the overarching goal of coaching: to actualize the coachee's potential capacities, abilities, and talents (Moen & Kvalsund, 2008). Interestingly, the leader may also have the opportunity to make decisions that affect the employees' working conditions (performance environment) through his or her role as a leader.
2. The coaching leader must *be goal-oriented towards employees' growth and development*. Achieving growth and development is the central element in coaching, and coaching is preferred because of such aims (Underhill et al., 2007). Business executives expect that the use of coaching will positively impact the organisation in some way. However, the primary goal of coaching is to facilitate employees' goal achievement.
3. The coaching leader must *build effective working relationships* with the employees. In order to create effective relationships with employees they must be met with trust, respect, and dignity. The true nature of the coaching relationship is based on mutuality, in which both parties are equal in the relationship and promote each other's independence while working and learning together (Zeus & Skiffington, 2002; Gjerde, 2003; Kvalsund, 2005; Moen, 2010). Building such relationships is therefore central in coaching-based leadership.
4. The coaching leader must *be a good communicator*. The coaching process is the mechanism that influences the outcome of the helping relationship between a coach and a coachee. To acquire and reveal necessary and important information, communication is fundamental; the conversation is therefore at the heart of the coaching process (Hargrove, 2003). Communication skills are therefore central in coaching-based leadership (Moen, 2010).
5. The coaching leader must *build effective relationships with external customers* (Moen & Allgood, 2009). Especially organisations that are working with HR solutions in business, such as the company in this investigation, building relationships with customers are an important and essential factor to be successful. In order to build effective customer relationships, it is essential for the coaching leader to meet customers with trust and respect. Likewise, this idea is vital within the coaching-based leadership model, where a trusting and respectful relationship is a central component (Moen, 2010).

Therefore, in a coaching culture focusing on coaching-based leadership, leaders who coach must develop their capabilities to engage their employees with the skills that enable good coaching (Clutterbuck & Megginson, 2005; Moen, 2010; Whitmore, 2004). Interestingly, Executive Development Associates (EDA) found that empowering others through leadership was the hottest topic for executive development the next three years (Hageman & Chartrand, 2009/2010). More than 100 *Fortune 1000* and *Global 500* companies responded to the survey. To meet these demands, coaching leaders must develop strong skills and competencies and strong beliefs in their capability to perform well.

Coach competencies

Some trade organisations within the coaching industry aim to advance the coaching profession by setting high professional standards. The leading global organisation is the International Coach Federation (ICF) with more than 17,000 members across the world. The ICF has developed core competencies for coaches to support greater understanding about the skills and approaches used within today's coaching profession. Based on these core competencies (e.g. Auerbach, 2005, Moen, 2010; Moen & Kvalsund, 2008), the authors previously developed and validated a Coach Competence Scale (CCS) (see Moen & Federici, 2011). The CCS measures five dimensions of the most important competencies that are needed for professional coaches: 1) Co-creating the relationship, 2) Communication-attending skills, 3) Communication- influencing skills, 4) Facilitate learning and results, and 5) Make the responsibility clear.

Self-efficacy

Within the last four decades, previous studies have investigated the effects of psychological factors on human performance. *Self-efficacy* has been found to be one of the most important factors contributing to success in different areas of life (e.g. Grant & Greene, 2004; Marsh, 1993; Bandura, 1986). Self-efficacy refers to a judgment of one's own ability to perform a specific task within a specific domain (Bandura, 1997). Thus, self-efficacy is the aspect of self which refers to how sure (or how confident) the individual is that he or she can successfully perform requisite tasks in specific situations, given one's unique and specific capabilities.

Self-efficacy is linked strongly to a variety of behavioural outcomes such as engagement, persistence, strategy use, reduced anxiety, and task performance (Bandura, 1997; Federici & Skaalvik, 2011, 2012; Pajares, 1996; Pajares & Schunk, 2001; Schunk, 1989, 1995). For instance, high self-efficacy is associated with greater cognitive flexibility through the effective use of goal setting, resistance to negative feedback, and self-regulation in academic situations, even when ability is controlled (Bandura, 1993; Zimmerman & Bandura, 1994). Thus, of all the thoughts that affect human functioning, self-efficacy beliefs are at the foundation of social cognitive theory. A logical and anticipated consequence of investing to successfully improve leaders' skills and capabilities as coaching leaders in business should be increased self-efficacy about specific demands in their coaching-based leadership roles.

The present study

There is a demand among researchers from the coaching industry for more empirical studies with strong experimental designs that investigate possible effects of coaching (Grant, 2006; Passmore & Gibbes, 2007). A search on three recognized empirical search portals only resulted in 16 empirical studies with an experimental and control group design since 2000. However, there seems to be increasing evidence within research settings that confirms that coaching is an effective method for creating leadership changes (Grant, Curtayne, & Burton, 2009). Still, more empirical research is needed, especially research that investigates coaching-based leadership (Moen, 2010; Søholm et al., 2006).

The first purpose of this study was to develop a scale for measuring self-efficacy (CLSES) within the role of coaching based leadership. Another purpose was to validate the CLSES. Because of the nature of coaching-based leadership, we expect that the CLSES will be positively related to the Coach Competence Scale (CCS). A positive relation between the CLSES and CCS may contribute to the validation of the CLSES.

Method

Participants

The participants in the present study were the executives and middle managers of a high-tech Norwegian *Fortune 500* company working with HR solutions. Each of the participants originally volunteered to participate in an experiment implemented to investigate possible effects from external executive coaching and coaching-based leadership for a period of one year. During the experiment, the executives and middle managers completed online self-report questionnaires which measured psychological variables concerning their thoughts, feelings, and actions at work at three different points in time (Moen, 2010). The initial data collection was conducted before the coaching project started and included 144 executives and middle managers. The second was conducted after six months and included 124 executives and middle managers. The last data collection was conducted after 12 months, where 127 executives and middle managers participated. In the present study, responses from the three different data collections were used, constituting a total of 395 respondents.

The Coaching Leadership Self-Efficacy Scale (CLSES)

The importance of reflective and accurate conceptual analyses and expert knowledge of what it takes to succeed in given pursuits is essential for constructing self-efficacy scales (Bandura, 1997; Pajares & Urdan, 2006). Therefore, an investigation of the most important requirements viewed by the participants in order to succeed in their specific environment was conducted. The process of inclusion of items was done in close cooperation with the lead executive at this particular company. The researchers developed the scale to measure self-efficacy in relation to the specific coaching-based leadership capabilities viewed as important in this particularly company.

The CLSES consist of 17 items, measuring coaching-based leadership self-efficacy in five areas. The five dimensions were all developed to cover various aspects of a leader's work related to coaching-based leadership. Item construction was conducted following Bandura's recommendations (Bandura, 1997, 2006). Since self-efficacy is concerned with perceived capabilities, the items should contain verbs such as "can" or "be able to" in order to make it clear that the item asked for mastery expectations because of personal competence. The subject in each statement should be "you" since the aim was to assess each leader's subjective belief about his or her own capability. Responses were given on a seven-point scale ranging from 1 (*not at all*) to 7 (*absolutely certain*).

Work facilitator.

Work facilitator consisted of two items with a Cronbach's alpha¹ of .66. An example of an item is "How certain are you that you can facilitate optimal working conditions for all your employees, such as technology and financial resources?" This dimension attempts to capture the leader's mastery expectations in relation to facilitate and sustain satisfactory working conditions for the employees. Despite the low alpha value, this dimension was retained on statistical bases. The correlation between the two items was .505 ($p < .01$), and removing the dimension or one of the items did not contribute to a better fit using confirmatory factor analysis (see *Results*).

Goal oriented

Goal oriented consisted of three items with a Cronbach's alpha of .86. An example of an item is "How certain are you that you can focus and prioritize both your own and your employees' performance and development goals?" These items attempt to examine the coaching leader's ability to focus and monitor the employees' development and goal setting.

¹Cronbach's alpha is commonly used as a measure of the internal consistency or reliability of a psychometric instrument. Rule of thumb: Coefficients above .7 is considered acceptable.

Customer relationships

This dimension consisted of two items with a Cronbach's alpha of .71. An example of an item is "How certain are you that you can establish a constructive cooperation with challenging client groups?" This dimension focuses on the leader's ability to establish relationships with potential clients in the market, and that this is beneficial for the organisation.

Communication and relationship

Communication and relationship consisted of five items in which the questions ask about conditions, such as "How certain are you that you can explain your information clearly so that your employees understand your perspective and the principles of what you mean?" The Cronbach's alpha of this dimension was .86. These items attempt to examine the leader's ability to communicate so that he or she is understood clearly, and in a manner that creates efficient and effective relationships.

Employee relationships

This dimension consisted of five items and had a Cronbach's alpha of .89. An example of an item is "How certain are you that you can be aware of and positive to all your closest employees?" This dimension focuses on the leader's ability to establish good relationships to their employees.

The Coach Competence Scale (CCS)

Perceived coach competencies were measured by a recently developed hierarchical and multidimensional Coach Competence Scale (CCS) (Moen & Federici, 2011). The CCS is comprised of five dimensions and each dimension has different numbers of items. The five dimensions of the CCS include 1) Co-creating the relationship; 2) Communication, attending skills; 3) Communication, -influencing skills; 4) Facilitate learning and results; and 5) Make the responsibility clear. Responses were given on a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*absolutely*).

Co-creating the relationship consisted of two items with a Cronbach's alpha of .86. An example item is "My leader expresses a fundamental thrust and respect in me." The second dimension focused on *communication, attending skills*. This dimension consisted of three items with a Cronbach's alpha of .89. An example item is "My leader seems to understand me well when we speak together." *Communication, influencing skills* consisted of two items. An example item is "My leader asks mainly open and direct questions." The Cronbach's alpha for this dimension was .82. *Facilitate learning and results* consisted of three items with a Cronbach's alpha of .86. An example item is "My leader brings out my solutions on challenges that I meet." The last dimension was *Make the responsibility clear*. This dimension consisted of two items. An example item is "My leader puts a clear responsibility on me in my learning process." This dimension had a Cronbach's alpha of .83.

Moen and Federici (2011) found support both for the five dimensions as well for a strong second-order factor underlying the five dimensions. The CCS was also validated through an inspection of its relation to need satisfaction (self-determination theory). Using structural equation modelling (SEM) the analysis revealed that overall coach competencies predicted need satisfaction with a standardized estimate of .69, $p < .001$ (Moen & Federici, 2011). In the present study the second-order model was of primary interest to explore how a general domain-specific experience of coach competencies relates to the coaching-based leadership self-efficacy scale.

Data analysis

The data were analysed by means of confirmatory factor analysis (CFA) and structural equation modelling (SEM) using the AMOS 18 software. This methodology takes a confirmatory approach to the analysis of data (Byrne, 2010; Jackson, Gillaspay, Jr., & Purc-Stephenson, 2009). Since CFA is part of the larger family of SEM, it usually plays an essential role in evaluating the

measurement model before a structural analysis is conducted. Structural analysis is then used for specifying and estimating models of linear relationships between both observed and latent variables (Jackson et al., 2009; MacCallum & Austin, 2000).

When conducting CFA and SEM, the researcher defines a theoretical model of relations between the variables, which allows the use of two or more observed variables (e.g. items) as indicators of an unobserved underlying construct termed a latent variable. The theoretical model can be statistically tested to determine the extent to which it is consistent with the data. If the goodness of fit is adequate, the plausibility of the postulated relations among the variables is strengthened; if the fit is inadequate, the tenability of the postulated relations is rejected (Byrne, 2010).

The collected data constitute an empirical covariance matrix. This matrix is the foundation for structural equation modelling. When conducting SEM, the analysis produces an estimated population covariance matrix based on the model specified. A key element of SEM is to assess whether the model produces an estimated matrix that is consistent with the sample matrix (see Tabachnick & Fidell, 2007). This consistency is investigated through different measurement indices of goodness of fit. If goodness of fit is adequate, it supports the plausibility of the model specified. Different measures of fit are available and are assessed through indices such as CFI, IFI, TLI and RMSEA, as well as the chi square test statistics. For the CFI, IFI and TLI indices, values greater than .90 are typically considered acceptable and values greater than .95 indicate a good fit to data (Byrne, 2010; Hu & Bentler, 1999). For well specified models, an RMSEA of .06 or less indicates a good fit (Hu & Bentler, 1999).

In the present study we first conducted confirmatory factor analyses to investigate the measurement model of the CLSES and the CCS, respectively. We then used structural equation modelling to investigate a theoretical model of the relation between the concepts.

Results

Measurement model: CLSES

Three theoretical models of the Coaching-based Leadership Self-Efficacy Scale were tested. Model 1 defined CLSES as a single, first-order factor with loading on the 17 observed items. This model was tested to ascertain whether the scale could be treated as a one-dimensional construct. Model 2 defined five correlated primary factors corresponding to the five theoretical dimensions. Model 3 defined five primary factors and one second-order factor underlying the primary factors. The three theoretical models are presented in Figure 1 and the results from the CFA in Table 1.

The results from the CFA reveal that Model 1 did not fit the data. However, Models 2 and 3 had good fit to data. None of the error variances was allowed to be correlated. All regression weights in Models 2 and 3 were significant at $p < .001$. The correlations between the primary factors in Model 2 are presented in Table 2.

Results from the confirmatory factor analyses affirm that coaching-based leadership self-efficacy is a multidimensional construct. In the present study, the CLSES consisted of five correlated primary factors with 17 corresponding items. The correlations are strong. Coaching-based leadership self-efficacy can be regarded as both domain-specific and multidimensional, and the second-order analysis also indicates that the concept may be experienced as a more general experience of self-efficacy.

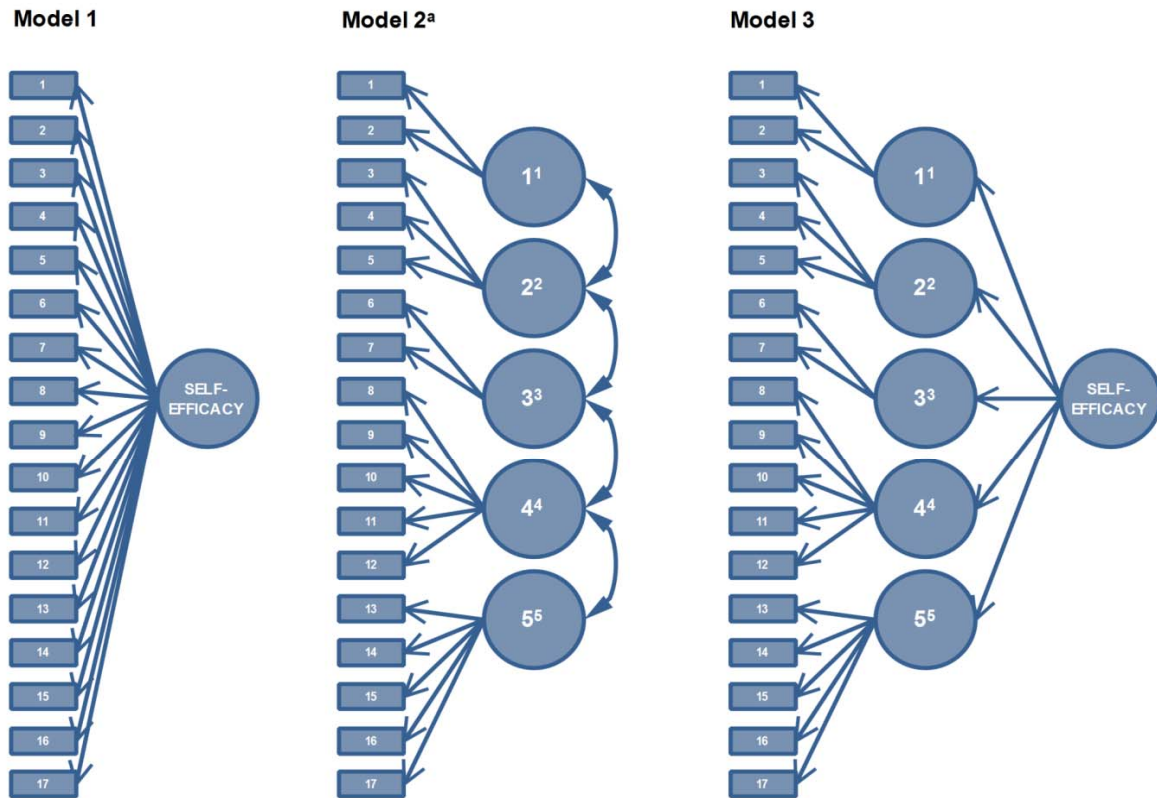


Figure 1. Model 1: One primary factor with regression weights on the 17 observed items. Model 2: Five correlated primary factors and their respective items. Model 3: Five primary factors and one second-order factor. ^aAll latent variables are internally correlated. ¹Work facilitator; ²Goal oriented; ³Customer relationships; ⁴Communication and relationship; ⁵Employee relationships.

Copyright © 2011 Moen & Federici. All rights reserved. Used with permission.

Table 1 - Results from CFA.

Description	X ²	DF	CMIN/DF	RMSEA	IFI	TLI	CFI
Model 1	551.48	119	4.634	0.096	0.831	0.885	0.899
Model 2	241.68	109	2.217	0.056	0.969	0.962	0.969
Model 3	279.77	114	2.402	0.060	0.963	0.956	0.963

Table 2 - Correlations between the latent variables of the CLSES

Latent variable	1	2	3	4	5
1 Work facilitator	-				
2 Goal oriented	.908***	-			
3 Customer relationships	.766***	.859***	-		
4 Communication and relationship	.798***	.905***	.829***	-	
5 Employee relationship	.704***	.786***	.793***	.858***	-

Note. *** $p < .001$

Measurement model: CCS

Three theoretical models of the Coach Competence Scale were tested. Model 1 defined CCS as a single, first-order factor with loading on the 12 observed items. As for the CLSES, this model was tested to ascertain whether the scale could be treated as a one-dimensional construct. Model 2 defined five correlated primary factors corresponding to the five theoretical dimensions. Model 3 defined five primary factors and one second-order factor underlying the primary factors. The three theoretical models are presented in Figure 2 and the results from the CFA in Table 3.

The results from the CFA reveal that Model 1 did not fit the data. However, Models 2 and 3 had good fit to data. None of the error variances was allowed to be correlated. All regression weights in Models 2 and 3 were significant at $p < .001$. The correlations between the primary factors in Model 2 are presented in Table 4.

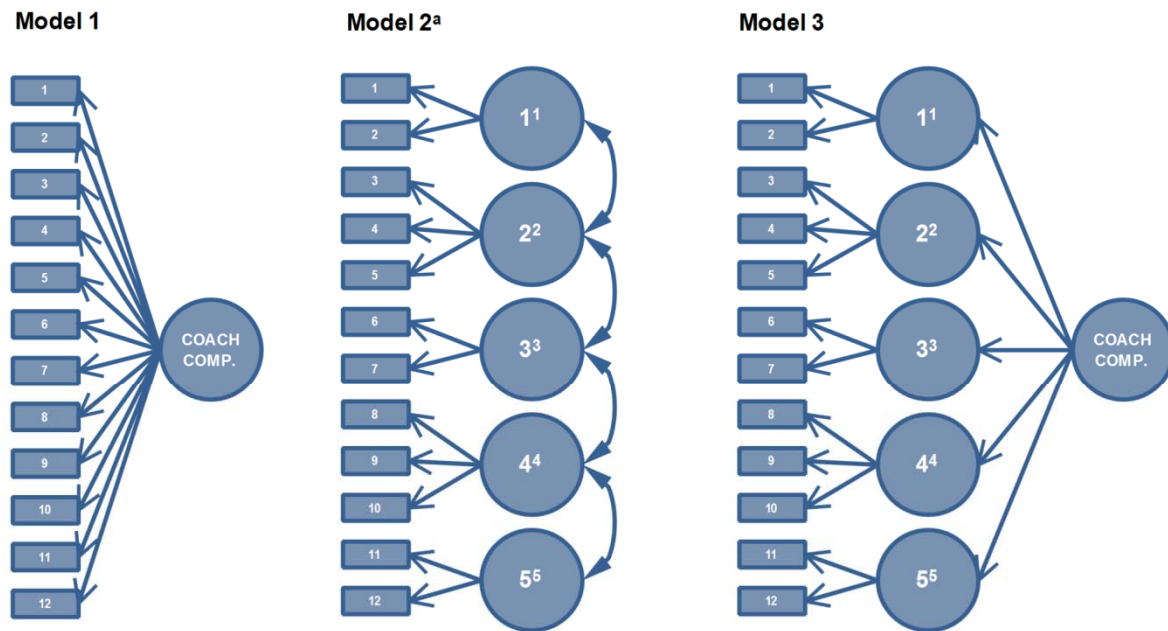


Figure 2. Model 1: One primary factor with regression weights on the 12 observed items. Model 2: Five correlated primary factors and their respective items. Model 3: Five primary factors and one second-order factor. ^aAll latent variables are internally correlated. ¹Creating the relationship; ²Communication- attending skills; ³Communication-influencing skills; ⁴Facilitating for learning and results; ⁵Making the responsibility clear.

Copyright © 2011 Moen & Federici. All rights reserved. Used with permission.

Table 3 - Results from CFA.

Description	X ²	DF	CMIN/DF	RMSEA	IFI	TLI	CFI
Model 1	512.58	54	9.492	0.147	0.866	0.836	0.866
Model 2	98.13	44	2.230	0.056	0.984	0.976	0.984
Model 3	145.84	49	2.976	0.071	0.972	0.962	0.972

Table 4 - Correlations between the latent variables of the CCS

Latent variable	1	2	3	4	5
1 Creating the relationship	-				
2 Communication attending skills	.858***	-			
3 Communication influencing skills	.759***	.784***	-		
4 Facilitation for learning and results	.777***	.814***	.805***	-	
5 Making responsibility clear	.827***	.663***	.715***	.688***	-

Note. *** $p < .001$

Copyright © 2011 Moen & Federici. All rights reserved. Used with permission.

Results from the confirmatory factor analyses verified that coach competencies are a multidimensional construct. In the present study the Coach Competence Scale consisted of five correlated primary factors with 12 corresponding items. The correlations vary from moderate to strong. Coach competencies can be regarded as both domain-specific and multidimensional. The second-order analysis also indicates that the concept may be experienced as a more general experience of coach competencies.

SEM: Relation between the CLSES and the CCS

One purpose of the present study was to develop and test the factor structure of the multidimensional and hierarchical CLSES. A second purpose was to validate the CLSES through an inspection of its relation to CCS. We therefore tested one theoretical model by means of structural equation modelling (SEM). Based on the results from the CFA and for validation purposes, the theoretical model specifies both the CLSES and CCS as second-order models. In the model we let the CCS predict the CLSES. The theoretical model is shown in Figure 3.

The model had an acceptable fit to data ($\chi^2(366, N = 395) = 717.28, p < .001$; CMIN/DF = 1.960, RMSEA = 0.049, IFI = 0.956, TLI = 0.951, and CFI = 0.956). None of the error variances was allowed to be correlated. All regression weights in the model were significant at $p < .001$. In this model the CCS predicted the CLSES with a standardized regression weight of $\beta = .50, p < .001$, explaining 21% of the variance of CLSES.

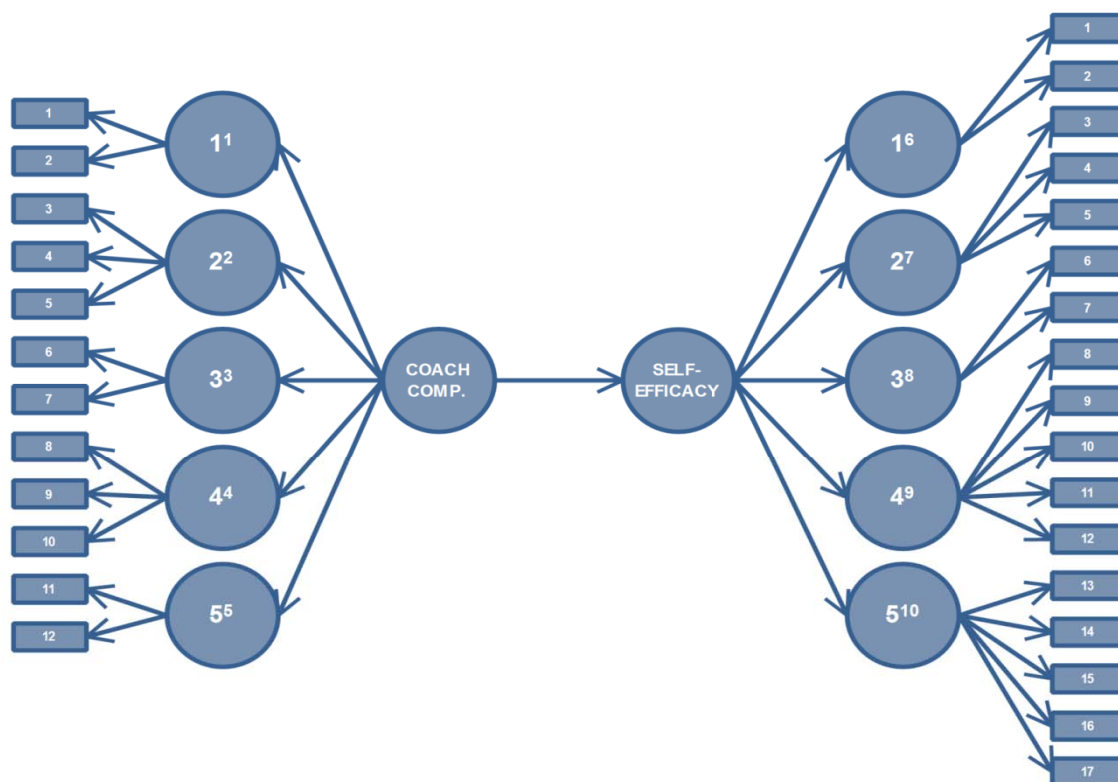


Figure 3. ¹Creating the relationship; ²Communication- attending skills; ³Communication- influencing skills; ⁴Facilitating for learning and results; ⁵Making the responsibility clear; ⁶Work facilitator; ⁷Goal oriented; ⁸Customer relationships; ⁹Communication and relationship; ¹⁰Employee relationships.

Discussion

Organizations spend millions of dollars annually in an effort to develop organizational teams comprised of individuals who can work productively in individual and team configurations for their company. Interestingly, coaching and the importance of empowering others through leadership are found to be among the most preferred approaches. Thus, coaching-based leadership is an area of interest among business executives. However, in spite of the growing focus on coaching-based leadership in business, there is still a claim for more research investigating possible beneficial effects.

The CLSES was developed on the basis of important principles in coaching-based leadership. We first investigated a CFA model defining CLSES as single, primary factor to ascertain whether the scale could be treated as a one-dimensional construct (Figure 1, Model 1). This model did not have an acceptable fit to data. However, a model defining five primary factors had good fit to data (Figure 1, Model 2). This analysis clearly supports the conceptualization of the CLSES as a multidimensional construct consisting of five separate, but correlated, dimensions. We also found support for a strong second-order factor underlying the five dimensions of the CLSES. This finding makes the instrument particularly useful for research purposes when analysing coaching-based leadership self-efficacy as a latent trait (Figure 1, Model 3). The analyses clearly support the argument that the CLSES should be regarded as domain-specific, multidimensional, and hierarchical. The second-order analysis also indicates that the concept is constituted by a more general, domain-specific experience of the CLSES. These findings make the instrument suitable to further examine how a second-order factor relates to other concepts, but it can also be used to explore whether or not the separate dimensions relate differently to other constructs.

Coaching competencies were measured by the CCS. The researchers initially investigated a CFA model defining CCS as single, primary factor to ascertain whether the scale could be treated as a one-dimensional construct (Figure 2, Model 1). This model did not have an acceptable fit to data. However, a model defining five primary factors had good fit to data (Figure 2, Models 2 and 3). This analysis clearly supports the conceptualization of coach competencies as a multidimensional construct consisting of five separate, but correlated, dimensions.

One theoretical model was tested by means of structural equation modelling (SEM) to investigate the relation between the CCS and the CLSES (Figure 3). In the model we let the second-order CCS factor predict the second-order CLSES factor. The result from this analysis revealed a positive relation between perceptions of coach competencies and the CLSES. In the model CCS predicted CLSES with a standardized estimate of .50, explaining 21% of the variance of CLSES. This estimate can be interpreted as a medium-strong relation. Thus, these results may indicate a satisfactory validation of the CLSES.

Implications

Both the first- and second-order models of the CLSES support the conceptualization of five different dimensions of coaching based leadership self-efficacy: (1) Work facilitator; 2) Goal oriented; 3) Communication and relationship; 4) Customer relationships; and 5) Employee relationships. The results also reveal that these dimensions are clearly connected (see Table 2). An interpretation of these results is that relationship issues seem to be central in coaching-based leadership. This is in accordance with findings from the validations study of the CCS which discuss the importance of mutual trust as the key principle to achieve positive benefits from coaching (Moen & Federici, 2011).

Three out of the five dimensions focused on relationship issues: Communication and relationship, Customer relationships, and Employee relationships. Thus, coaching is about establishing beneficial relationships, and coaching aims to establish relationships based on mutuality (Moen & Federici, 2011; Moen & Kvalsund, 2008). However, research indicates that in coaching-based leadership, mutuality can become a struggle because of the demands of the leadership role within the organization (Moen, 2010; Moen & Skaalvik, 2009; Moen & Federici, 2012). In the organisational context, the relationship between the leader and the employee is, in general, considerably different from the relationship between the coach and the coachee in efficient and effective coaching (Søholm et al., 2006).

Importantly, coaching in this article is defined as a method in its own right. Thus, in an organisation that is focused on coaching, there seems to be a minimum of two different roles which have to be fulfilled: the role as a leader and the role as a coach (Moen, 2010; Søholm et al., 2006). To be effective in both roles, it is important to enter the different roles at different times (Moen, 2010; Moen & Federici, 2012). To leave the role as a leader and enter the coach role, self-awareness and interpersonal competencies seem to be a necessity in order to establish a “coaching” climate focusing on mutuality.

An additional important question is the employee’s ability to readjust to the coaching relationship with the leader (in the role as coach). It seems like the coachee must readjust from his or her daily role as an employee in the organisation, where the leader has the authority to make decisions that can influence the employee’s situation in the company. For example, leaders have the authority to decide which employees are going to be in charge of, and participate in, different projects in the organisation. At the end, the role of a leader is based on decision making, defining tasks and quality requirements, setting expectations, and managing promises that meet requirements and achieve goals inside the organisation (among many other things). Thus, the relationship between a manager (as

leader) and an employee seems to be asymmetric: in the natural working climate, it is always the manager who is in power of the two.

The fact that different results have been found from external executive coaching and coaching-based leadership shows the importance of this discussion (Moen & Skaalvik, 2009). Coaching from external coaches resulted in positive changes in psychological performance variables, while coaching from executives did not have the same effects. One can ask if this is a result because the external coaches managed to establish a relationship based on mutuality while the leaders practicing coaching-based leadership did not (Moen, 2010; Moen & Federici, 2012). This is an important question when leaders are coaching their employees: the coach has to facilitate so that the coachee expresses himself or herself openly in the relationship. It is important for the coaching process that all necessary information regarding the situation is communicated.

This might also be a challenge for the coachee (employee): There might be a potential danger that information perceived as unfavorable or disadvantageous for his or her situation in the organization is held back, whereas information thought to be perceived as advantageous is shared. This potential conflict between roles in the company can result in insufficient information regarding the case in focus and influence the potential for growth and learning in a negative way. Thus, there seems to be a tension between *emotionally intelligent* behavior, which serves the coachee through an open and respectful approach, supporting the coachee's well-being and integrity, and behavior that at the same time serves organizational interests through general leadership. Relationships that are truly based on mutuality require that leaders in their role as coach surrender some of their control to the other person (employee/coachee) in the relationship.

The question to be asked is whether this can be achieved in coaching-based leadership. Further research should look into this. However, the importance of relationship issues in the CLSES seems to be well documented. Also, to create a coaching climate, leaders must be able to make decisions that give their employees the opportunity to do their work in a way optimal to them. This can be budgets with enough latitude, the right technology, and choice about how to achieve goals, and so on. As discussed, leadership is also about being responsible for results; therefore, a goal orientation seems to be quite natural in the coaching-based leadership role.

Our theoretical model showed a medium-strong relation between CCS and CLSES. This is an important finding in the validation process of the CLSES. The true nature of coaching-based leadership is predicated on the importance of establishing efficient relationships with both employees and customers. Thus, meeting them with trust, respect, and understanding are essential in coaching-based leadership. Communication skills seem to be essential in order to achieve this. However, the executive role also differs from the role as a coach; the leader has the opportunity to make performance environment changes that can affect the employee. In coaching-based leadership, it seems to be important that the leader (coach) facilitates optimal working conditions for the coachees (employees). Thus, the coachee (employee) meets the leader (coach) in other settings as well and will pay attention to how the leader uses his or her power within the organisation. This seems to be the important dilemma in coaching-based leadership: The coach tries to empower the coachee by eliciting coachee-generated goals and strategies, and the leader has to be clear about the expectations from the perspective of the organisation. Thus, it seems to be logical that the correlation is medium-strong and not very strong; the two constructs share important similarities but also some important differences.

Within a business setting, the coaching industry has grown at a fast rate through the last decades, and it continues to grow (Fillery-Travis & Lane, 2006). Empowering others through coaching-based leadership has been found to be the hottest topic within business (Hageman & Chartrand, 2009/2010). Interestingly, it seems that researchers, the coaching industry, and

organisations in business lack a reliable and valid instrument for measuring leaders' perceived capabilities in the role as leaders who are coaching their employees. The development of the CLSES may contribute to this field and be an important contribution with regards to measure the effect from coaching educational programs among leaders in business.

The CFA and SEM analyses conducted in the present study contribute to the validity of the CLSES and the instrument has several advantages. The instrument allows SEM analyses of the five primary factors and of the second-order factor underlying the primary factors. Analysis of primary factors allows the examination of how the different dimensions of coaching-based leadership may be related to other relevant concepts, for example, goal setting, goal orientation, self-determination, and attribution. Analysis of a second-order factor is particularly useful in more complex models where several concepts are included.

Limitations and Conclusions

The authors believe that the results from this study are an important contribution to the field of coaching. However, this study has several limitations, and further studies need to be conducted before clear conclusions can be drawn. One limitation is the probability that sample size has influenced the results. Both the factor structure of the CLSES and CCS should be verified with larger samples. Another limitation is that the CLSES is yet not tested in cultures other than Norwegian. Also, the CLSES should be considered as a preliminary scale measuring coaching-based leadership self-efficacy. We consider that the five dimensions constituting the CLSES may apply to all coaches or coachees, but other possible dimensions should also be explored in future research.

References

- Arbuckle, J.L. (2009). *Amos 17.0 user's guide*. Mount Pleasant, SC: Amos Development Corporation.
- Auerbach, J. (2005). *Building competence in personal and executive coaching: The complete guide for mental health professionals*. Pismo Beach, CA: Executive College Press.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Upper Saddle River, NJ: Prentice Hall.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117-148
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (2006). Guide for constructing self-efficacy scales. In F. Pajeras & T. Urdan, (Eds.). *Self-efficacy beliefs of adolescents* (pp.307-337). Greenwich, CT:Information Age Publishing.
- Byrne, B.M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. New York: Routledge.
- Clutterbuck, D., & Meggison, D. (2005). *Making coaching work: Creating a coaching culture*. London: CIPD.
- Downey, M. (1999). *Effective coaching*. London: Orion Business.
- Fillery-Travis, A., & Lane, D. (2006). Does coaching work or are we asking the wrong questions? *International Coaching Psychology Review*, 1(1), 23–36.
- Federici, R. A., & Skaalvik, E. M. (2011). Principal self-efficacy and work engagement: assessing a Norwegian Principal Self-Efficacy Scale. *Social Psychology of Education*, 14(4), 575-600.
- Federici, R. A., & Skaalvik, E. M. (2012). Principal self-efficacy: Relations with burnout, job satisfaction and motivation to quit. *Social Psychology of Education*.

- Flaherty, J. (1999). *Coaching. Evoking excellence in others*. Boston: Butterworth-Heinemann.
- Gallwey, T. (1974). *The inner game of tennis*. New York: Random House.
- Gallwey, T. (2000). *The inner game of work*. New York: Random House.
- Gjerde, S. (2003). *Coaching, hva, hvorfor, hvordan*. Bergen, Norway: Fagbokforlaget.
- Goldsmith, M., & Lyons, S.L. (2006). *Coaching for leadership: The practice of leadership coaching from the world's greatest coaches*. San Francisco: Pfeiffer.
- Grant, A.M. (2006). Workplace and executive coaching: A bibliography from the scholarly business literature. In A.M. Grant & D.R. Stober (Eds), *Evidence based Coaching*. Hoboken, NJ: Wiley & Sons
- Grant, A.M., & Greene, J. (2004). *Coach yourself- Make real changes in your life*. Edinburgh, Scotland: Momentum.
- Grant, A.M., Curtayne, L., & Burton, G. (2009). Executive coaching enhances goal attainment, resilience and workplace well-being: A randomised controlled study. *The Journal of Positive Psychology*, 4, 396 - 407.
- Goleman, D. (2000). Leadership that Gets Results. *Harvard Business Review*, 82-83.
- Hageman, B., & Chartrand, J. (2009/2010). *Trends in executive development: A benchmark report*. Oklahoma City, OK: Executive Development Associates.
- Hall, D.T., Otazo, K.L., & Hollenbeck, G.P. (1999). Behind closed doors: What really happens in executive coaching? *Organizational Dynamics*, 27, 39-53.
- Hargrove, R. (2003). *Masterful coaching*. San Francisco: Pfeiffer.
- Hu, L.-t., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55.
- Jackson, D.L., Gillaspay Jr., J.A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: An overview and some recommendations. *Psychological Methods*, 14, 6-23.
- Kahn, E. (1996). The intersubjective perspective and the client centred approach: Are they one at their core? *Psychotherapy*, 33, 30-38.
- Kvalsund, R. (2005). *Coaching: Metode, prosess, relasjon*. Norway: Synergy Publishing.
- Lewin, K., Lippitt, R., & White, R. (1939). Patterns of aggressive behavior in experimentally created social climates. *Journal of Social Psychology*, 271-301.
- MacCallum, R.C., & Austin, J.T. (2000). Applications of structural equation modeling in psychological research. *Annual Review of Psychology*, 51, 201-226.
- Marsh, H.W. (1993). Academic self-concept: Theory, measurement, and research. In J. Suls (Ed.), *Psychological perspectives on the self*. Hillsdale, NJ: Erlbaum.
- Moen, F. (2010). *Coaching and Performance Psychology*. Department of Education, Norwegian University of Science and Technology, NTNU, Doctoral dissertation.
- Moen, F., & Allgood, E. (2009). Coaching and the Effect on Self-efficacy. *The Organization Development Journal*, 4, 69-82.
- Moen, F., & Federici, R.A. (2011). Perceptions of coach competence and perceived need satisfaction: Assessing a Norwegian coach competence scale. *IJCO The International Journal of Coaching in Organizations*, 8, 124-138.
- Moen, F., & Federici, R. A. (2012). The Effect from Coaching based leadership. Manuscript submitted for publication.
- Moen, F., & Kvalsund, R. (2008). What communications or relational factors characterize the method, skills and techniques of executive coaching? *IJCO The International Journal of Coaching in Organisations*, 6(2), 102-127.

- Moen, F., & Skaalvik, E. (2009). The effect from executive coaching on performance psychology. *International Journal of Evidence based Coaching and Mentoring* 7, 31-49.
- Pajares, F. (1996). Self beliefs in academic settings. *Review of Educational Research*, 66, 543-578.
- Pajares, F., & Schunk, D.H. (2001). Self-beliefs and school success: Self-efficacy, selfconcept, and school achievement. In R. Riding & S. Rayner (Eds.), *Self-perception* (pp. 239-266). London: Ablex Publishing.
- Pajares, F., & Urdan, T. (Eds.). (2006). *Self-efficacy beliefs of adolescents*. Greenwich, CT:Information Age Publishing.
- Passmore, J., & Gibbes, C. (2007). The state of executive coaching research: What does the current literature tell us and what's next for coaching research? *International Coaching Psychology Review*, 2, 116-128.
- Schein, E.H. (2004). *Organizational culture and leadership*. (3rd Edition). San Francisco: Jossey-Bass.
- Schunk, D.H. (1989). Self-efficacy and achievement behaviors. *Educational Psychology Review*, 1, 173-208.
- Schunk, D.H. (1995). Self-efficacy, motivation, and performance. *Journal of Applied Sport Psychology*, 7, 112-137.
- Søholm, T.M., Storch, J., Juhl, A., Dahl, K., & Molly, A. (2006). *Ledelsesbaseret coaching*. Copenhagen, Denmark: Børsens Forlag.
- Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics*. Boston: Pearson/Allyn and Bacon.
- Underhill, B.O. , McAnally, K., & Koriath, J.J. (2007). *Executive coaching for results: The definitive guide to developing organizational leaders*. San Francisco: Berrett-Koehler.
- Whitmore, J. (2002). *Coaching for performance. Growing people, performance and purpose*. 3rd ed. London : Nicholas Brealey Publishing.
- Whitmore, J. (2004). Something really has to change: Change management as an imperative rather than a topic. *Journal of Change Management*, 4, 5-14.
- Wilson, C. (2007). *Best practice in performance coaching: A handbook for leaders, coaches, HR professionals and organizations*. London: Kogan Page Ltd.
- Zeus, P., & Skiffington, S. (2002). *The coaching at work toolkit. A complete guide to techniques and practices*. North Ryde, NSW, Australia: McGraw Hill.
- Zimmerman, B.J., & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal*, 31, 845–862.

Frode Moen has a PhD in Coaching and Performance Psychology and has been a teacher in high school for 10 years and sports coach for 13 years. He has been a coach for the national team in Norway for 5 years in Nordic combined, the Olympic Games in Torino 2006 (silver and bronze), world championship in Oberstdorf 2005 (gold, silver and bronze) and Sapporo 2007 (silver and bronze). He is now manager of the Olympic organization in middle-Norway and coach/mental trainer for top level sports.

Roger Federici is a teacher and educator and has a masters degree in Educational Development and a PhD in educational psychology.