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Using Concepts from Self-Determination Theory to Enhance the Application of an Already-Existing Coach Assessment in Youth Coach Professional Development: Autonomy Support and the CoachDISC Profile

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ABSTRACT

Grounded in self-determination theory, the purpose of this study was to determine the existence of autonomy-supportive coaching characteristics within the CoachDISC Profile evaluation system. Expert researchers in autonomy support with a familiarity with sport coaching were recruited for this study (N = 11 participants; 4 males, 7 females; M_{age} = 40.45, SD_{age} = 8.27). Participants had on average 12 years of experience in working with self-determination theory in both research and applied settings. After providing demographic information, each participant completed a full CoachDISC profile as if they were acting as an autonomy-supportive coach. Across all categories (dominance, influence, steadiness, and conscientiousness) a distinct profile emerged, verified via intraclass correlation, ICC = 0.97, p < .001. These results indicate that an autonomy-supportive profile exists, which allows coach developers to potentially utilize the assessment to provide feedback and contribute to reflective practices that are grounded in motivational theory.

KEYWORDS

Self-determination theory; need support; coaching behaviors; coaching profile

Introduction

A recent systematic review identified the coaching motivational climate as a primary focus in defining the relationship between coaching practice and athlete outcomes (Nichol et al., 2019). Within this relationship, coaches' application of autonomy-supportive behaviors (Mageau & Vallerand, 2003) and avoidance of controlling behaviors (Bartholomew et al., 2009) facilitates the optimal motivational environment to fulfill athletes' basic psychological needs of autonomy, relatedness, and competence. Such behaviors include acknowledging athletes' feelings and perspectives, providing choice within specific rules and limits, providing explanations for exercises, rules, and drills, providing athletes with opportunities to take initiative and engage in independent work, providing non-controlling competency feedback, avoiding controlling behaviors, and preventing ego involvement (Mageau & Vallerand, 2003). Here, self-determination theory (SDT; Ryan & Deci, 2000) provides the framework for the coach-created motivational climate as a way to foster more self-determined or intrinsic forms of motivation for the athlete (Amorose & Horn, 2000) and promote athlete well-being (Cheval

et al., 2017; Occhino et al., 2014). Current systematic empirical evidence substantiates the use of autonomy-supportive interventions to successfully enhance autonomy-supportive behaviors in sport coaches and physical education teachers while also facilitating positive impacts on athletes' self-determined motivation (Raabe et al., 2019). As such, coach development modalities grounded in SDT are gaining traction (Berntsen & Kristiansen, 2019; Duda, 2017) to address the need for quality coach education that will improve coaches' interpersonal and intrapersonal knowledge (Lefebvre et al., 2016).

Recently, one coach development program called the Motivation Activation Program in Sports (MAPS) trained coaches to be more need-supportive at the intrapersonal and interpersonal level. MAPS proved helpful in instructing coaches to become more aware of their own coaching practice (intrapersonal) and the impact of coach-athlete interactions (interpersonal) (Berntsen & Kristiansen, 2019). Continued research in this area is necessary to effectively disseminate similar coach training resources to larger coaching audiences. However, the creation of independent learning materials (such as the MAPS) can be costly and time-consuming with no promise of its continued use with intended audiences. Therefore, researchers can seek to address this problem by incorporating the ideas of need support, as part of SDT, into existing profiling (or learning) tools to help spread the message and application amongst coaches. To our knowledge, there is no such verification that preexisting learning tools align with the idea of need support.

The current study aimed to assess a specific coaching behavioral assessment (the CoachDISC Profile), which was designed to assess coach behaviors, provide feedback to develop awareness of behaviors, and instruct coaches on how to adapt behavior in favor of more optimal athlete outcomes (Athlete Assessments, n.d.a). The development of the CoachDISC Profile can be traced back to the original work of William Moulton Marston (Marston, 1928) who introduced the categories of DISC to describe the general behavioral styles of humans. Marston's original model used the DISC letters to represent dominance (D), inducement (I), submission (S), and compliance (C), which over time were further developed and explicated to be Dominance, Influence or Interactive, Steadiness and Compliance or Conscientious (Jones & Hartley, 2013). DISC profiling measures an individual's preferences of behavior, and the intensity and frequency of each behavioral style, which results in a score for each of the D, I, S, and C behavioral styles. Figure 1 details the behaviors of individuals who measure high in each of the D, I, S, and C behavioral styles (Athlete Assessments, n.d.b).

Individuals who are assessed to have a high level of Dominance (D) behavior are described as direct and faster-paced (as per the x-axis); guarded and goal focused (as per the y-axis). D behavior is described as direct, decisive, and results focused. Individuals who measure high in Influence (I) behavior are described as direct and faster-paced (as per the x-axis); and open and people oriented (the y-axis). I behavior is defined as extroverted, talkative, and energetic. Continuing to work around the DISC model illustrated, someone with a high level of Steadiness (S) is indirect and slower paced (as per the x-axis) in addition to being open and relationship-oriented (the y-axis). S behavior is described as patient, loyal, and team focused. Lastly, individuals who have high levels of Conscientiousness (C) are described as indirect and slower paced (based on the x-axis); and guarded and task focused (the y-axis); and they show behaviors of being prepared and process driven, and are rule followers.

The CoachDISC Profile (Athlete Assessments, n.d.b) reveals two facets of an individual's DISC Profile; one is the Adapted Style (the individual's perception of the behaviors they use when in their coaching role) and one is the Natural Style (how someone acts when they feel very
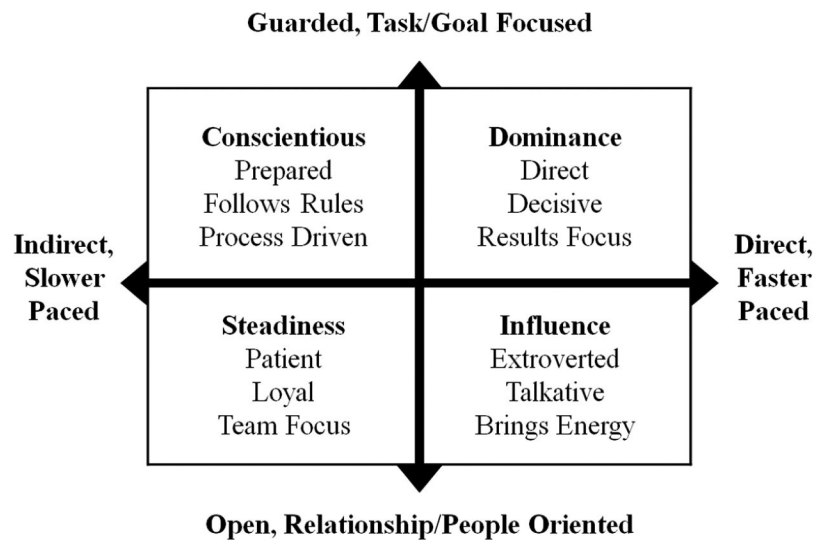
Guarded, Task/Goal Focused

Figure 1. Behavioral descriptors of the DISC model. Note: Figure adapted from Athlete Assessments (n.d. b) and used by permission.

comfortable in an environment or if they are in a stressful situation) (Athlete Assessments, n.d. b). DISC behavioral profiling has been used by governments, businesses, and educational institutions for decades for the purposes of skills trainings, professional and leadership development, job matching and recruiting, and other areas such as personal and team performance (Bauer et al., 2006). It is through this profiling that individuals may expand their understanding of their personal behavioral style in the context of communication, learning, leading, and working with others (Athlete Assessments, n.d.b).

Previous work discussing coaching expertise has identified coaches' knowledge, including professional knowledge (content), interpersonal knowledge (relationships with athletes), and intrapersonal knowledge (self-awareness), to be integral to coaches' effectiveness (Côté & Gilbert, 2009). Markedly, it is through the CoachDISC Profile that coaches can identify their interpersonal knowledge, strengthen their intrapersonal knowledge or ability to reflect upon their coaching behaviors and adapt their coaching behavior to become more effective. This is usually carried out through the use of guided workbooks containing reflective questions. Coaches have an opportunity to reflect upon their coaching strategies as they take the assessment and develop self-awareness of their coaching behaviors by reading the provided feedback (Athlete Assessments, n.d.b). From there, coaches use the feedback to engage in the reflective process. Often this is in addition to having a face-to-face conference with an expert consultant or as part of a formalized coach development experience.

Coupling this with the vast array of research studies that indicate the importance and effectiveness of autonomy-supportive coaching (Ahlberg et al., 2008; Morales-Sánchez et al., 2020), having coaches reflect on their coaching using specific assessments can help them recognize behavior and serve as a catapult for a change in behavior (Cushion et al., 2003). Without reflection, coaches risk coaching methods becoming stale and ineffective due to the lack of insight and new information. No doubt, research-based training programs (Berntsen & Kristiansen, 2019; Raabe et al., 2019) have improved coaches' use of autonomy-supportive

behaviors through reflective processes, but a more time- and money-efficient approach may help spread the word more efficiently. Before that process can begin, it is necessary to determine if preexisting assessments, such as the CoachDISC Profile, are able to produce a specific profile which can be used to enhance training and reflection materials. As such, this study aimed to identify a consistent CoachDISC Profile of an autonomy-supportive coach, based on the perceptions of an expert panel. The profile was completed by experts who were instructed to frame their responses using Mageau and Vallerand (2003) seven behavioral definitions of an autonomy-supportive coach. Given the specificity of behaviors of an autonomy-supportive coach in how they foster athletes' three basic needs (autonomy, relatedness, and competence), it was hypothesized that a distinct CoachDISC profile for autonomy-supportive coaching would emerge.

Methodology

Participants

Purposive sampling was employed given the specific inclusion criteria for this study. Participants were experts in utilizing the Self-Determination Theory (SDT) defined here as accumulating at least two years of experience utilizing the theory in applied work, research settings or both. Participants were also expected to have an interest in applying SDT with coaches and to be currently using SDT principles within research or applied capacities.

A total of 11 (female $n = 7$, male $n = 4$) SDT experts were recruited for this study with a mean age of 40.45 (SD = 8.27). Experts had an average of 12.7 years of experience working with SDT (SD = 5.62). The range of experience spread from 2 years and went up to 24 years. Nine participants were University professors or lecturers with one participant additionally being a licensed Psychologist. One participant was an organizational development consultant for healthcare and one participant was a master's student and part-time football coach. For educational background, ten SDT experts held a PhD. degree in the fields of Educational Psychology ($n = 3$), Psychology ($n = 2$), Sport Psychology ($n = 2$), Experimental Social Psychology ($n = 1$), Industrial-organizational Psychology ($n = 1$), and Sport Sciences ($n = 1$). One participant held a Bachelor of Arts in Sport, Exercise and Physical Activity. SDT experts lived in a variety of countries including Australia ($n = 1$), Canada ($n = 3$), New Zealand ($n = 1$), Spain ($n = 1$), United Kingdom ($n = 1$), and the United States ($n = 4$). Nine of the experts indicated they used SDT in both research and applied work while two participants mostly used SDT in applied work. The combined experiences of our experts using SDT in research and application has included populations of coaches, parents, athletes (adventure/recreationalists, youth soccer, World-cup and Olympic athletes), exercisers, general public (youth and young adults), corporations and employees, nurses, healthcare leaders, sport organizations, managers, teachers (University faculty and pre-service), and undergraduate students.

Procedures

After receiving approval from the institutional review board, the primary researcher employed purposive sampling to recruit experts of SDT. Approximately 10 recruitment e-mail messages were sent individually and through a listserv. Within the recruitment e-mail, participants were encouraged to forward the information to other SDT experts who met the qualifications and

would be interested in participating in this study. Participants were primarily recruited through the Self-Determination Theory Listserv. Participants were eligible to participate in the study if they met the following qualifications: 1) Had at least two years applied or research experience utilizing Self-Determination Theory, 2) Currently used principles of SDT within their research or applied practice, and 3) Had interest and familiarity in the application of SDT principles with coaches. Participants were successfully recruited within 5 days.

Participants consented to participating in the study by completing a demographic questionnaire that was embedded within the recruitment e-mail message. After this, the primary researcher checked the demographics to ensure the inclusion criteria had been met. It was then that the CoachDISC Profile survey was forwarded to the SDT expert to complete. The instructions preceding the CoachDISC Profile survey prompted the SDT expert to take the measure as if they were acting as an autonomy-supportive coach as per the definition given by Mageau and Vallerand (2003). Experts were instructed not to take longer than 12–15 minutes to finish the entire survey as the most accurate responses are typical of this time frame (Athlete Assessments, n.d.b). In adding the time to take the demographic questionnaire, participants each took approximately 20–30 minutes to complete the study.

Instrumentation

Demographic inventory

The demographic questionnaire included age, years of experience working in SDT, gender, current occupation, country of residence, degrees earned, and specific details regarding their applied or research work with SDT.

CoachDISC profile assessment

The CoachDISC Profile survey is a 30-item questionnaire designed to measure the DISC behavioral preferences of individuals as they perceive themselves. For the first 24-items, respondents are asked to indicate two selections per question of four choices. One selection is for the word that is "most" descriptive of their coaching style and one that is "least" descriptive. Each word choice is related to one of the four DISC styles (Dominance, Influence, Steadiness, and Conscientiousness). A commercially-protected algorithm is used to calculate the Adapted Style DISC scores and the Natural Style DISC scores, which are plotted on the displayed bar graphs. The Adapted Style DISC scores are based on the first 24 "most like" answers and the Natural Style DISC scores are based on the inverse of the first 24 "least like" answers. The last six questions in the survey are used when two or more scores are equal and act as a tie-breaker to determine which D, I, S, or C score is highest. Scores are considered relative as the instrument is relying on the honesty and insight of the self-reported answers. Validity and reliability of the assessment was evaluated by two independent organizations, which is common practice in the commercial sector. In 2014, Assessments 24 × 7 LLC ™ provided satisfactory internal consistency for the DISC assessment reporting Cronbach's alpha of 0.65–0.81 (N = 28,204) for the adapted style and natural style scores for dominance, influence steadiness, and conscientious. A secondary evaluation process was carried out in 2019 by Assessment Standards Institute, showing favorable reliability, (Cronbach's = 0.74 to 0.83 for all scores). The most recent assessment was completed in 2021, demonstrating similar favorable reliability. All reports are available upon request.

Data analysis

At the end of the assessment, each participant received two separate sets of scores for their levels of Dominance, Influence, Steadiness, and Conscientiousness – one set of scores for their Natural Style and another for their Adapted Style. Descriptive statistics and frequencies were run on demographic information and participants' scores on the CoachDISC Profile. In order to assess consistency across these eight scores for all participants, an intraclass correlation was run, which allowed for comparisons on each portion of the CoachDISC Profile across participants. An alpha level of 0.05 was adopted.

Results

Mean levels of the four DISC qualities in natural and adapted styles are located in Table 1, with visual representations shown in Figure 2. Across participants, Dominance was low in both natural and adapted styles. With regards to Influence behaviors, higher scores were seen in the natural style than the adapted style. Both Steadiness and Conscientiousness were higher in the adapted style than in the natural style. Across all DISC behaviors, a distinct autonomy-supportive and structured profile emerged, verified via intraclass correlation, $ICC = 0.97$, $p < .001$.

Discussion

The present investigation revealed a distinct CoachDISC Profile representative of an autonomy-supportive coach. The natural style of an autonomy-supportive coach (instinctive and consistent behaviors) showed Influence as the highest factor, Steadiness and Conscientiousness as secondary factors and Dominance as the lowest factor within the profile. Meanwhile, the adaptive style of an autonomy-supportive coach (perception of how one should behave when coaching) showed Steadiness as the highest factor with Conscientiousness as the secondary factor, Influence as the tertiary factor and Dominance as the lowest factor.

For the following explanations and summary statements, information is based on the feedback provided in the CoachDISC assessment reports. It is created by Athlete Assessments but presented here in that context to help the reader connect autonomy-supportive behaviors to those included in the CoachDISC. Based on these CoachDISC Profile results, the coaching style embodied by an autonomy-supportive coach combines accuracy and precision with the patience to continue at something or with someone until it has been achieved. They are interested in producing quality results and will often go to great lengths to ensure that the results of their efforts are the best they can possibly achieve. From

Table 1. Mean values of CoachDISC styles.

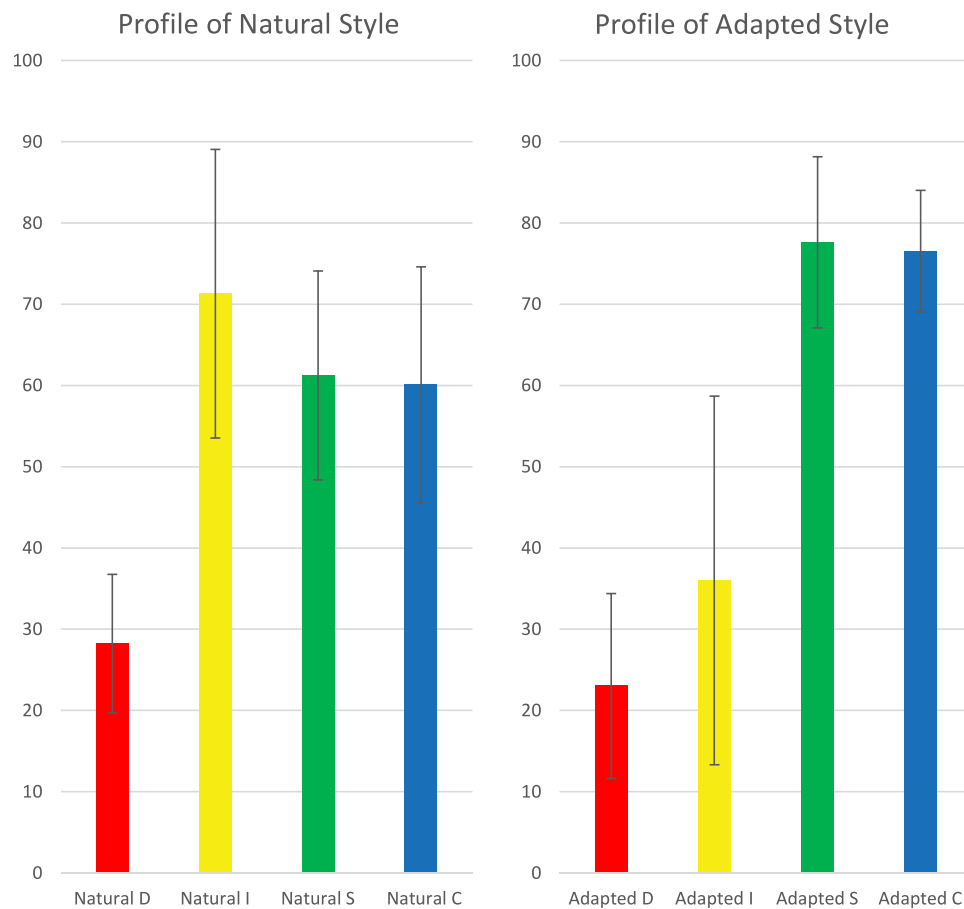|	Natural Style		Adaptive Style	
	Mean	SD	Mean	SD
Dominance	28.2	8.5	23.0	11.4
Influence	71.3	17.8	36.0	22.7
Steadiness	61.2	12.9	77.6	10.5
Conscientiousness	60.1	14.5	76.5	7.5

Figure 2. Natural and adapted CoachDISC styles for an autonomy supportive coach.

an SDT perspective, this reflects the idea of being autonomously motivated with an internal locus of control (Pelletier et al., 2001). A coach with this profile will be observed as calm and rational, who values interpersonal skills. They are not assertive in style and will rarely be overly directive or dominant. Their ability to build strong coach-athlete relationships is achieved through consistency, sincerity, and their relaxed and cooperative approach. In relation to SDT, the characteristic behaviors of this coaching style represent similar behaviors to those seen in autonomy-supportive coaches (Mageau & Vallerand, 2003), specifically acknowledging athletes' feelings and perspectives and providing non-controlling feedback. The coach's high Steadiness lends them patience and a degree of persistence, while their correspondingly high levels of Conscientiousness bring an interest in order, structure and precision. A coach with this profile will be neat, well-organized and orderly. They are patient and provide their athletes with reassurance, and coaching decisions are made based on objective standards and with careful consideration. Figure 3 displays some of the more common descriptive words to describe a coach with this profile.

D	I	S	C
argumentative	emotional	calming	accurate
daring	enthusiastic	loyal	conservative
demanding	gregarious	patient	exacting
decisive	impulsive	peaceful	fact-finder
domineering	optimistic	serene	precise
egocentric	persuasive	team person	systematic
adventurous	charming	consistent	conscientious
risk-taker	influential	cooperative	courteous
direct	sociable	possessive	focused
forceful	trusting	relaxed	high standards
assertive	confident	composed	analytical
competitive	friendly	deliberate	diplomatic
determined	generous	stable	sensitive
self-reliant	poised	steady	tactful
calculated risk	controlled	alert	own person
moderate	discriminating	eager	self-assured
questioning	rational	flexible	opinionated
unassuming	reflective	mobile	persistent
mild	contemplative	discontented	autonomous
seeks consensus	factual	energetic	independent
unobtrusive	logical	fidgety	firm
weighs pro/con	retiring	impetuous	stubborn
agreeing	introspective	active	arbitrary
cautious	pessimistic	change-oriented	defiant
conservative	quiet	fault-finding	fearless
contemplative	pensive	impatient	obstinate
modest	reticent	restless	rebellious
restrained	suspicious	spontaneous	sarcastic

Figure 3. Adapted score word sketch from the 'average' CoachDISC profile report.

Practical recommendations

The feedback given to coaches upon completion of the CoachDISC Profile is specifically written to address the strengths and deficiencies of the adaptive and natural style. Currently, this feedback does not include information salient to the coach-created motivational climate. As the results did in fact reveal a distinctive autonomy-supportive coach profile, this provides an opportunity to add information to the coach feedback that will inform coaches of how their coaching could enhance athletes' motivation according to their adaptive and natural style scores. In addition to the feedback, coaches can be led through exercises to help them explore their current use of autonomy-supportive and/or controlling behaviors and consider the integration of more autonomy-supportive behaviors in their future coaching efforts. In essence, the feedback provided through the CoachDISC Profile, when framed from the perspective of an autonomy-supportive coach, may help to provide more tangible examples and descriptors that coaches can use to reflect on their own behaviors. It is important to note that a coach does not have to

exactly fit this particular DISC profile to be a good coach. However, coaches can use the profile to engage in reflective practices and adapt behaviors necessary to support athlete growth and performance.

Berntsen and Kristiansen (2019) coach workbook provides an excellent framework for providing SDT education to coaches for the integration of autonomy-supportive coaching into the sport environment. Coaches are challenged by this training to spend time with athletes individually, trust their athletes, involve athletes by giving them choice, provide rationales, encourage initiative taking, provide non-controlling competence feedback, and increase athletes' sense of self-improvement. Utilizing a similar approach, the CoachDISC Profile could incorporate the components of SDT into the coach feedback and reflection process as an interactive workbook focused specifically on autonomy-supportive coach behaviors. Within the workbook, coaches could be advised to address their own maladaptive coaching behaviors while exploring more autonomy-supportive behaviors. The workbook would facilitate coach reflection as coaches consider their current coaching practices that are in-line with or directly conflict with the proponents of the theory and as such, have the potential to support, not support, or thwart athlete motivation. As such, self-determined and non-self-determined forms of motivation would be linked with their corresponding coach-created motivational climate.

Limitations

Given the novel nature of this study, certain limitations must be discussed. The sample of participants was small, considering the number of potential experts that could have been recruited. Given the methods of recruitment, we felt that we engaged enough experts to gain consensus, but a larger sample size would build more confidence in our results. In addition, due to the proprietary nature of the CoachDISC Profile, validity and reliability of the CoachDISC are based on information from two independent organizations rather than peer-reviewed sources. In addition, we were not able to inspect the algorithm used by the software, although the reliability data provided by Athlete Assessments was favorable.

Conclusion

As confirmed by our results, experts were able to consistently identify a common coach profile using the CoachDISC Profile software. While the profiles represent experts' perceptions of what an autonomy-supportive coach could look like, the produced profile allows for the possibility to draw connections between motivational theory and common coaching behaviors that are indicative of success. Future research should continue to investigate this link through the study of workbooks or other training materials that already have SDT-related concepts imbedded. By doing so, coach developers and researchers can further apply motivational theory to coaches in real-life situations, thus potentially improving athlete outcomes.

Disclosure statement

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