

Exploring Strength and Conditioning Coaches' and Stakeholders' Perceived Value of A Workshop for Learning Psychosocial Coaching Competencies

Brian T. Gearity¹, Bettina Callary², Kimberley Eagles², and Christoph Szedlak³

¹Kinesiology and Sport Studies; Graduate School of Professional Psychology, University of Denver, Denver, CO, USA; ²Experiential Studies in Community and Sport, Cape Breton University, Nova Scotia, Canada; ³Department of Sport, Hartpury University, Hartpury, United Kingdom

Corresponding Author: Brian.Gearity@du.edu

ABSTRACT

Commonly used since at least the middle of the 20th century, action research can bridge the gap between science and practice, but within the field of strength and conditioning (S&C), it is a novel research approach. The education and development of S&C practitioners is essential to their understanding of evidence-informed practice and the application of knowledge to improve athletic performance, fitness, and other outcomes, including athlete-centered outcomes, such as well-being. Using a novel, multi-method action research approach, the purpose of this study was to understand S&C stakeholders' perceived value of learning psychosocial S&C coaching knowledge. In collaboration with the United Kingdom S&C Association (UKSCA), we designed, delivered, and assessed a workshop that included modules on psychological, pedagogical, philosophical, and sociocultural S&C psychosocial coaching competencies. A total of 11 UKSCA participants, including 6 S&C coaches (5 men, 1 woman) and 5 stakeholders (3 men, 2 women), between 38-57 years of age, attended one of the two workshops. Multiple learner-centered activities were completed in the workshop, and then, participants completed data collection methods, including reflection grids and semi-structured interviews. Researchers

performed a thematic analysis on the interviews, reflection grids, and field notes that resulted in two overarching themes: participants' learning and instructional approaches used in the workshop. Participants perceived value from the content and instructional approach used in the workshop, while expressing challenges and recommendations for improvement. This original action research study advances the knowledge about S&C through a novel methodological approach and the education of S&C stakeholders' psychosocial competencies.

Keywords: pedagogy, psychology, andragogy, education, action research

INTRODUCTION

Strength and conditioning (S&C) practitioners need to know and apply a wide range of knowledge and skills (12,27). Developers of S&C practitioners, accreditation programs, S&C certification exams, and a body of research on S&C practitioners demonstrate the importance of knowledge acquisition across the natural, social, and behavioral sciences and the capacity to apply this knowledge (16,17,43,53). Furthermore, S&C practitioners can gain knowledge and skills by reflecting on their practice and the wide array of evidence that

informs their real-world experiences and problem solving (1,25,39). Given the pervasiveness of S&C related fallacies, myths, and pseudoscience, and the need to develop a specialized knowledge base to develop S&C as an emerging profession, knowledge of physiology, biomechanics, and training theory became established in S&C (40). Research on the significance, immanence, and usefulness of S&C psychosocial knowledge and skills lags behind these established traditions, but continues to grow, particularly in recent years (8,18,50,51). S&C psychosocial knowledge and skills have been categorized across pedagogical (e.g. skill acquisition, instruction), philosophical (e.g., values, style), psychological (e.g., motivation, learning), and sociocultural (e.g., sport norms, diversity) domains (8).

Following the experimental and quantitative approach of the natural sciences, early research on S&C practitioners' psychosocial knowledge and skills typically used quantitative survey methods as their instrument for data collection (5,13,28,35). For example, researchers have quantified a range of S&C practitioners' self-perceptions of psychosocial knowledge and skills, such as instructional (e.g., praise, criticism) and leadership (e.g., democratic and autocratic decision making, feedback, support social) behaviors (5,52,53). Taking a similar methodological approach but collecting data from the other perspective in the S&C practitioner-athlete/client dyad, are studies from the athletes' or clients' perspective about S&C practitioners. For example, surveys have been used to quantify injured collegiate athletes' perceptions of S&C coach social support (24) and to show relationships between physiological and psychological qualities, such as athletes' self-perceptions of physical strength being positively correlated with physiological strength gains (23).

Qualitative research was nearly nonexistent amongst primary research in S&C; one exception is a short-duration ethnography on the sport of weightlifting (21). Outside of sociology or anthropology, which had long accepted ethnography and other forms of qualitative methods, qualitative research was gaining legitimacy during the early years of S&C as a developing (quasi)profession (6). Given social and behavioral scientists' lack of interest in S&C during the latter's founding, the use of qualitative research was often limited to descriptive surveys that thinly described what S&C practitioners did and their social contexts (35). Throughout the 1980s and 1990s, as S&C was establishing itself, becoming

larger and more expansive, so too did qualitative research approaches proliferate (6). Descriptive survey research has continued in S&C and, at times, qualitative or multiple methods research includes interviews, open-ended survey questions, and observations to enrich its quality (12,31-34). Presently, qualitative research approaches are thriving in many disciplines and subdisciplines, including sport coaching, sport psychology, and sport sociology (9), and to a lesser extent, S&C (1,16,17,26,44,45,51). Qualitative research can richly describe real-world interactions amongst people in specific contexts, report emic or insider perspectives in deep and meaningful ways, and address practical concerns outside the laboratory. The acceptance and use of diverse qualitative research approaches, along with multiple or mixed methods, offer great benefit to the science of S&C because they are well-suited to elucidate the dynamic and complex biopsychosocial realities and experiences of S&C practitioners (6,9). There is a growing need to use qualitative and mixed or multiple methods research approaches to empower the many S&C organizations throughout the world with the mission to (a) create and disseminate evidence-based biopsychosocial knowledge and (b) prepare S&C practitioners for entry-level practice and lifelong professional development.

Few studies have used a qualitative or multiple methods approach to advance biopsychosocial knowledge creation specific to S&C contexts. One such study drew upon theory and research from education and expertise, specifically an in-depth qualitative case study collecting data from observations of a S&C coach, interviews from S&C coaches and athletes, and documents within a S&C coaching setting, to show the vast subject matter knowledge and practical knowledge of an expert S&C coach (12). Another study used a multiple method Delphi approach to identify S&C practitioners' perceptions of practical skills related to (a) expert S&C coaching and (b) competent S&C coaching (27). A recent study on S&C interns used a self-reported questionnaire, qualitative interviews, and a written self-reflective prompt to capture the interns' perceived benefits of interning as S&C coaches (29). These three studies used novel methodological approaches within a S&C context to conclude S&C practitioners' significantly value psychosocial knowledge. Moreover, they all showed that S&C practitioners need to create and maintain relationships with athletes, communicate effectively, establish cultural values, and develop themselves as coaches. Additional research has

shown that athletes desire S&C coaches to exhibit behaviors and values that enhance the S&C coach-athlete relationship (47,53).

In summary, it has been established that S&C practitioners, and those tasked with developing them, need to acquire a breadth of knowledge, particularly S&C specific psychosocial knowledge, given its peripheral history in the field. Furthermore, remaining unclear and under researched is how S&C practitioners acquire this depth and breadth of knowledge; that is, studies that theorize (i.e., explain) how S&C practitioners might learn any kind of biopsychosocial S&C knowledge. Self-reports from S&C practitioners identify learning from: university degree programs, reflecting on applied S&C coaching experience, peers, mentors, professional literature, and trainings outside S&C (12,17,55). However, studies with greater explanatory strength on how S&C practitioners learn and their perceptions of learning, using theory, detailed procedures, and a specific focus on learners, context, and more, is needed. As part of ongoing action research, the purpose of this study was to understand S&C stakeholders' perceived

value of learning psychosocial S&C coaching knowledge. This study adds value to the field by expanding the use of qualitative methods within S&C and empirically demonstrating S&C practitioner learning of S&C psychosocial knowledge.

METHODS

Research Design

With variations in philosophical and methodological assumptions, action research as a whole is a heterogeneous approach to experiential or in situ research in real-world contexts (42). Our approach to action research begins with setting the stage (i.e., formulating the practical problem or capacity to improve) with a community partner, then successive cycles of look, think, act (42). The overarching aim of our ongoing action research with our community partner, the UKSCA, is to increase their capacity to enhance psychosocial coaching competencies within their curriculum and accreditation process through collaborative systematic inquiry (42,46). After coming to this understanding, we

Table 1. Outline of Workshop

Topic Outline	Schedule	Instructional Approach
Psychosocial competencies	15 min.	Question: What are psychosocial competencies? (Explanation from research) Lecture – competencies, reflective cycle Group discussion
Psychological Competencies	35 min.	Question: What does it mean for a S&C coach to be psychologically competent? (Explanation from research) Video clip and discussion Poll for psychological competencies Lecture on content Reflection – gaps in knowledge (using grid)
Pedagogical Competencies	35 min.	Question: What does it mean to be a pedagogically competent S&C coach? Breakout room exercise (questions to discuss in small group and report back to large group) Lecture on content Reflection – gaps in knowledge (using grid)
Break	10 min.	
Philosophical Competencies	35 min.	Question: What does it mean for a S&C coach to be philosophically competent? Lecture on content Exercise (which profile(s) best describe(s) your approach?) Poll on coaching philosophy and discussion Reflection – gaps in knowledge (using grid)
Sociocultural Competencies	35 min.	Question: What do you think it means to be a socioculturally competent S&C coach? Lecture on content Group discussion Watch video clip Breakout room exercise regarding video Lecture on content Reflection – gaps in knowledge (using grid)
Summary	15 min.	Summary, debrief, and sharing learning “take away points”

developed shared definitions of psychosocial S&C competencies (8) and extensively planned for a potential workshop (7). Upon completing this workshop, our plan was to glean from these findings to create an online workshop that could be more widely distributed within the UKSCA.

This phase of our action research design used qualitative, semi-structured interviews to evaluate the UKSCA participants' perceived value of a virtual, synchronous workshop to facilitate their learning of S&C psychosocial coaching competencies. The workshop included modules on psychological, pedagogical, philosophical, and sociocultural S&C psychosocial coaching competencies. Each module encouraged peer learning and reflection. See Table 1 for details on the structure of the workshop.

Participants

The study received institutional ethical clearance from Cape Breton University, Canada (Research Ethics File # 2021-119 approved June 25, 2021). Prior to signing an institutionally approved informed consent to participate in the study, participants were informed of the benefits and risks of the investigation. Using purposive sampling to select information rich participants to fulfill the research purpose, eligible participants for this study were comprised of UKSCA stakeholders (board members, tutors, assessors) and accredited coaches. The Director of the board at the UKSCA emailed stakeholders and members of the UKSCA informing them that a workshop on psychosocial competencies was taking place on two dates and forwarded responses to that email to the fourth author, who is also a member of the UKSCA. A total of 11 participants, including 6 S&C coaches (5 men, 1 woman) and 5 UKSCA stakeholders (3 men, 2 women) between 38-57 years of age, attended one of the two workshops. The 5 stakeholders had also participated in prior phases of the collaboration (7,8,44). The first workshop consisted of 5 participants (3 women, 2 men), and the second consisted of 6 participants (6 men).

Data Collection

To obtain voluntarily motivated responses with robust data, participants were encouraged, but not required, to complete a reflection grid, which was submitted to the researchers and included in the data analysis (see Figure 1). Five participants (3 male coaches, 2 female stakeholders) submitted reflection grids.

Reflect - What is your psychological 'take away' point?

Psychological	Pedagogical
Philosophical	Sociocultural

Figure 1. Reflection grid for participants of the workshop.

The workshop participants were invited to participate in a semi-structured interview on the value of the workshop and their learning. The workshop was facilitated by the fourth author, with the third author present to create field notes of the participants' responses. Ten of the 11 workshop participants participated in a one-on-one interview led by the third author that ranged between 30 and 45 minutes. One participant declined the interview as they felt uncomfortable discussing some of their experiences. A semi-structured interview guide was developed based on the Value Creation Framework that included immediate, potential, and applied value (57). This framework has been used to evaluate sports coaches' learning (2). The interview started with demographic questions (age, profession, role within UKSCA), followed by general questions such as, "Was the workshop informative? Please elaborate?" and "What did you think about the structure?" Next, the interview questions addressed Immediate Value and included questions such as, "What were the significant aspects that you engaged with? Why?" Then, questions about Potential Value were asked, such as, "In what ways have you gained a deeper understanding of a psychosocial competencies?" Finally, Applied Value was explored by asking, "Looking at the grid that you created: Did one of the competencies stand out in terms of you needing more information and understanding? Why?" The interview concluded with summary questions like, "What would your thoughts be on how to develop more specific workshops in the future?"

Data Analysis

A thematic analysis was used to analyze the interviews, the reflection grid, and the field note data (4). Conducted by the third author, the thematic analysis started with reading and rereading of the data, followed by identifying patterns that resulted in assigning codes. Then, codes were formulated into themes and subthemes (3). For analytical rigor, the remaining authors acted as "critical friends", which helped develop a credible analysis (41). To engage in reflexivity and prolonged engagement,

the criteria of quality qualitative research, the authors met regularly to discuss the data and ensure consistent interpretation, trustworthiness, and thematic development (41).

FINDINGS

There are two overarching themes to the findings that answer the research to understand S&C stakeholders' perceived value of learning psychosocial S&C coaching knowledge: participants' learning (with three sub-themes: time, importance, and feelings) and the instructional approaches used in the workshop (with five sub-themes: video clips, polls, breakout rooms, exercises, and subject matter content).

Participants' Learning

This theme involves understanding participants' perspectives of learning in the workshop, which includes its length of time learning, the importance of learning the psychosocial competencies, and their feelings about the content. The participants gave insight regarding the length of the workshop in relationship to the novel psychosocial content covered. The workshops were approximately three hours, with both coaches and stakeholders feeling that the three hours allotted was a good amount of time, "it didn't feel like three hours, the time went really quickly, and it was all really engaging" (S3) and "the allocation [amount of time] is about right, hit the spot for this group...definitely the minimum of time" (S1). Some participants within both cohorts felt that the workshop could have been longer, "it could have easily been longer....it felt ...like a highlight reel of the four topics and I really wanted to sink my teeth into them more." (C1)

When discussing the importance of knowledge gained from the workshop, both coaches and stakeholders reported that the workshop covered content typically omitted from higher education curricula and the UKSCA. Participants shared that psychological and pedagogical skills are usually minimally covered, with philosophical and socio-cultural competencies never being discussed, thus limiting their understanding of cultural aspects across sports.

"We spend... a ridiculous amount of time trying to understand the science, but the science without the art simply doesn't work...I think of it [workshop] as a first step towards a wider understanding of what

strength and conditioning really is" (S2)

Despite the stakeholders' previous involvement in earlier phases of the research that provided them with a preliminary understanding of the psychosocial competencies, one stakeholder felt that the workshop gave them a deeper understanding of how they could teach the competencies when in the role of tutor, "having a better grasp on those [psychosocial competencies] when I am trying to communicate them to people in an educational role is really important" (S3). This stakeholder further indicated that the workshop, "made me think again as a coach and challenge my own coaching premise as to why I do what I do". Overall, the stakeholders noted the workshop's educational value as a beginner's guide to psychosocial competencies for coaches and how teaching psychosocial competencies would benefit coaches going through the educational processes of the UKSCA. Indeed, the workshop gave the coaches, who were less familiar with the content than the stakeholders, a starting point to learning about psychosocial competencies, "I now understand that this [philosophical and socio-cultural competencies] is a big area of my coaching ability that I need to work on" (C3).

When reflecting on the value that the workshop provided, most of the coaches felt that the workshop clarified complex terms and facilitated an understanding of how to implement the learned competencies within their coaching, "I felt much clearer on what is meant by values, what that means to me, and how I can apply that to my coaching" (C2). Additionally, the workshop showed how the coaches gained knowledge and reflected on how they would coach going forward:

"For my coaching...how can I improve my coaching? And where can I add whatever skills I have in that area... [The workshop] allowed me to think deeper into some of my practices and how they apply to my context. I think it definitely makes you think a lot about the wider point of view rather than just the reps, sets and technical models" (C4).

Finally, some of the participants suggested that to enhance the applied value of the workshop, they wanted to go deeper and have clear, applied advice of how to fill the identified knowledge to action gaps. They suggested that:

Some practical take aways would be great for people who are wondering, "Where do I go with this

next? What else could I read? How could I better reflect on my own coaching practice to see if I am utilizing these as part of my skillset?" (S3).

Also, participants expressed feelings related to learning challenging, new psychosocial information. One coach reported they, "felt nervous, not wanting to look stupid... [thinking] is that psychological or pedagogical? I am not sure" (C5). Another coach attributed these sorts of feelings to a lack of knowledge about the competencies, "I remember often thinking, this requires prior knowledge that I don't have, you feel like he's [workshop presenter] asking us to discuss things that I'm not quite sure what I'm talking about" (C1). Other coaches discussed only wanting to engage in the discussion if they felt the content was relatable and if they were confident with it, noting that, "How much I engaged with the topic was more dependent on how much I could relate to that topic" (C4) and "I engaged with those first competencies [psychological and pedagogical] more because I understood them a little bit better" (C5).

Compared to the coaches, the stakeholders were more familiar with the content, and they wanted to listen to their colleagues' experiences and knowledge, and to share their own ideas with the group, "I enjoyed hearing different people's perspectives...personal experiences in relation to the theory" (S5). Moreover, some of the stakeholders felt that the workshop provided a safe environment with multiple perspectives to discuss S&C concerns, "it was an opportunity to have some engagement with some other peers and talk these things [performance-oriented coaching practice] through"(S3) and "the content started raising some really important issues for our profession...it was a comfortable space to be able to openly talk and raise issues" (S1).

The Instructional Approach

Participants found the range of instructional approaches, which included video clips, polls, breakout rooms, exercises, and subject matter content, in the virtual, synchronous workshop to be well-balanced. Created in prior phases of the action research, YouTube videos were shared in the workshops to allow participants to see and discuss how S&C coaches might draw upon the psychosocial competencies in an applied way. Some participants found the videos highly beneficial and appreciated hearing one another's feedback or thoughts on what they saw. The videos, "brought

things to life because it was a real situation you could work with" (S3). One coach found this method created more self-awareness, "I never get to sit back and watch my coaching session...observe how I've done, how I've communicated with them [athletes], what's my approach been...so I found those videos of watching other coaches beneficial." (C2)

An app called Poll Everywhere was used a few times during the workshop to question the participants, which was then discussed deeply. Most participants felt that using the app was useful, along with the breakout rooms used to explore the questions further, "I like how we submitted an answer [through the app] and they all popped up on the screen and then we had a group discussion around that" (C2). However, most of the stakeholders found that accessing the poll was difficult, "I struggled with that, I struggle with all technology" (S2). When participants were unable to engage with the poll or felt they were falling behind in contributing to the workshop, they tended to use the chat option in Teams.

Participants appreciated having the psychosocial competencies discussed in small group breakout rooms with personal coaching experiences, "the peer [discussion] stuff was good. You've got such a wide range of coaches where we're all coming at it from different angles" (C4). The breakout rooms were particularly useful when coaches felt uncomfortable sharing their (lack of) knowledge of the concepts being discussed, "[The breakout room] gives a little bit of safety and an environment where these people are in the same position as you" (C5). The stakeholders, who in most cases were also tutors and assessors for the UKSCA, valued the breakout room discussions because they did not have to be the expert with the answers, but learned from others, "it was just nice to have the opportunity to be a sponge rather than the person that people are ringing out the sponge" (S3). On the same note, another stakeholder shared that, "what made it valuable, apart from the topic, was the experience of the people in the discussion... I enjoyed hearing different people's perspectives and recalling personal experiences that related to the theory" (S1). S5 concisely summarized, "the discussion-based components were one of the best bits really and learning from one another; that's a real key component".

The workshop also included a reflective exercise (using the grid) where the participants divided a

piece of paper into four quadrants (one quadrant for each of the four competencies). After learning about each competency, they wrote a reflection in the corresponding quadrant, where they could deepen their understanding. The exercise allowed for continued reflection after the workshop because participants could return it. One coach shared, "Upon reflection, I realized that I probably changed my coaching style to adapt to the environment... so after this course, you know it made me realize that as a coach, I'd take an awareness of the social and cultural environment I was in, of the sport of the athlete, of the coaches I was working with and it was only until this course that I actually had a chance to reflect on that." (C3)

Several of the participants reflected more on sociocultural issues, such as the importance of "...context, since it pertains to the environment, varying situations, the athlete, and their overall well being" (C3). Others reflected on philosophical issues, such as "the power of words" (S3) they use in practice, and still, some participants connected philosophical and sociocultural competencies, with S3 noted, "language and behaviors that can be normalized" within S&C culture. Reflections also centered on sound pedagogical approaches, such as when athletes "understand the rationale" (C4) and how this could lead to psychological closeness, such as the "Why of what they are doing, this can build rapport" (C3). This analysis of the evidence suggests that the use of a constructionist learning approach throughout the workshop to encourage critical reflection can enhance learning of psychosocial competencies.

To enhance the discussions and reflections, participants suggested that pre-workshop information would have helped them feel more confident and comfortable. Participants shared they would have appreciated, "a paper on just the four competencies...or a PowerPoint that you could watch before you go to the workshop where these things are explained...then you have time to reflect and think on it before coming" (C4) and "[watching] the videos ahead of time [would help] for people to be able to reflect" (S1). As a result, participants could have felt more prepared to share and reflect on their experiences. "You [could] come with some examples of your coaching experience where you saw evidence of that, or how you used that or how you wish you'd known that because of this example" (S3). The pre-workshop information could allow participants to develop their understanding of the workshop's purpose in relation to their individual

coach development. One stakeholder proposed the pre-workshop information could give some context of the importance of the topic, "It may need a bit of contextualization of why this content is important... people have signed up because they think it's the right thing to do...they might need a little bit more of an overarching 'why' right from the beginning" (S2). Explaining why these workshops are important from the start could help motivate coaches to register, "It's one of those workshops people don't realize how important it is until they do it and then link it back to reflecting on their process [as a coach]" (C4). In summary, participants stated that the workshop, "served its purpose, which was about self-awareness and reflection and getting people to really think about this area" (S4)

DISCUSSION

Using a novel qualitative action research approach, the purpose of this study was to understand S&C stakeholders' perceived value of learning psychosocial S&C coaching knowledge. In general, S&C stakeholders believed that the workshop had value in content, organization, and delivery. Stakeholders felt the content was important and pertinent to S&C practice and that the workshop used a variety of instructional methods to facilitate learning.

This study extends the growing presence of the discipline of psychology and psychological subject matter within S&C (36). Stakeholders were most familiar with psychological content, whereas other subject matter areas were less understood, although also deemed valued. The stakeholders' understanding of the psychology of S&C is likely enhanced due to several reasons, such as the expansion of psychological subject matter to two full chapters in the National S&C Association's (NSCA) popular *Essentials of S&C* textbook (19); psychology specific resources on S&C are readily available, such as an entire book on the psychology of S&C is now over a decade old (54); growing awareness around mental health in sport and S&C contexts (14); and the relative popularity of psychology degree awarding programs in higher education. Insufficient depth and breadth of psychological subject matter have reported by S&C coaches as a barrier to implementing psychological strategies (37). Similarly, sport coaches' confidence in the efficacy of sport psychology interventions or consultation was found to be the strongest predictor of intention to use sport psychology (58).

This study found that relative to other psychosocial competencies, S&C stakeholder's perceived knowledge and confidence with psychology the highest. Also, the instructional strategies used were perceived as valuable to enhancing psychosocial competence and confidence.

After psychological subject matter, stakeholders were most familiar with pedagogical competencies, and less so with sociocultural and philosophical (8). Stakeholders' understanding of pedagogy is understandable given that S&C and sport and exercise science emerged from physical education, which highly centers pedagogy (40). Furthermore, as higher education and scientists (i.e., professors) are charged with teaching and developing students, pedagogy, including the scholarship of teaching and learning, holds tangential interest. An exemplar bringing together psychological and pedagogical subject matter specific to S&C is a recent article in the NSCA's Strength and Conditioning Journal that details how S&C practitioners can draw upon psychology and pedagogy to implement effective coaching behaviors (22). There is a paucity of empirical research on S&C practitioner learning and development, much of the existing scholarship is rather speculative and draws upon research from other fields, and there have been calls to increase empirical evidence on S&C practitioner teaching, learning, and development (15,18,30).

Sociocultural and philosophical competencies were perceived as the most unfamiliar, but stakeholders found the workshop to enhance their awareness of this subject matter, including their values underpinning S&C practice. They perceived value from the workshop's sociocultural and philosophical subject matter, particularly noting issues relating to values, context, and social norms. In general, the disciplines of sociology and philosophy are smaller university programs by several metrics and marginalized in university curricula, particularly majors in or related to S&C, as well as certification or accreditation programs in S&C throughout the world. There are no chapters devoted to these disciplines or competencies in the NSCA's Essentials textbook (19). While the workshop was constructed anticipating these concerns, such as by using videos to show these competencies in S&C specific situations, fear of looking ignorant and giving the impression of confidence and competence were reported.

Furthermore, while stakeholders perceived some value from all subject matter presented in the

workshop, being less familiar, competent, and confident prompted some uncertainty and anxiety. In adult learning theory, disjuncture is a concept that explains when a learner's biography and background knowledge are destabilized and challenged with conflicting information (56). Within science education and S&C practitioner education, scaffolding has been suggested to mediate disjuncture (7,10). Scaffolding is teaching and learning supports provided to learners based on their current level of understanding. S&C internships are another area where themes related to disjuncture and scaffolding have arisen (29,38). Qualitative and quantitative data support S&C interns reporting to want clearer guidelines (i.e., scaffolding) for their internship while also gaining new and valuable (i.e., disjuncture) S&C knowledge and skills. This study advances this research by showing that participants recommended pre-workshop instructional methods, such as reading, videos, or lectures. Such methods could be offered for a range of subject matter knowledge and left to the discretion of the learner to engage with or required for learners with relatively less S&C experience.

To develop S&C stakeholders' psychosocial competencies, this study used a constructionist learning approach that encourages an athlete-centered approach to coaching, the latter focusing both on athletes' performance and well-being (20). Constructionist approaches, or learning from experience through reflective practice, narrative learning, and peer-to-peer interactions, have been recommended for S&C practitioner development (18). This study encouraged critical reflection through the use of a reflection grid and narrative learning by discussing video vignettes that depicted psychosocial competencies (48) and peer-to-peer interactions, considering narrative or leadership profiles such as the performer, achiever, and helper coach (49). Recent research suggested that longitudinal, guided reflective practice is effective in developing some elements of psychosocial S&C practice, including understanding of coaching values and philosophies (49). This study builds on these findings and is the first to include multiple constructionist strategies to develop the four competencies of psychosocial coaching competencies. Our findings suggest that experienced S&C coaches and coach developers value these constructionist strategies; however, presently, S&C practitioner development has only sporadically implemented constructionist approaches (18), which limits S&C practitioners' development of psychosocial competencies that

underpin athlete-centered coaching practice.

Although outside the scope of the current study, future research could seek statistical generalizability and replication. Research has shown that actual learning compared to perceptions of learning varies amongst college students (11). However, such randomized experimental designs in educational research are challenging for a number of reasons (e.g., cost, multi-factorial designs), and for other reasons (e.g., building trust and ongoing applied research), action research designs are preferable (42). Furthermore, this study was limited to perceptions of the workshop, not actual behavior change or other forms of knowledge assessment (e.g., exam). Finally, although a strength of action research is to adjust to unforeseen or emergent challenges, the design and delivery of the workshop cannot offer simple causal explanations for the stakeholders' perceived value. As such, pinpointing exactly which instructional strategy led to a specific perceived value was outside the scope of the current study; however, this study details a methodology to advance the study and improve the practice of S&C.

The results of this study are most applicable to people and organizations responsible for the education of S&C practitioners. Organizations, such as the International Universities Strength and Conditioning Association, UKSCA, NSCA, and others, can use these results to create materials for the teaching, learning, and development of their members. To offer a workshop, or similar instructional strategy, to enhance S&C practitioners' knowledge that has perceived value, organizers should consider duration of the strategy, breadth and depth of content, level and background of the learner, and use of multiple constructivist methods. Because S&C psychosocial knowledge is likely to be somewhat unfamiliar or lesser known compared to S&C natural science knowledge, organizers of S&C practitioner development should probably begin or ensure that learners acquire basic knowledge first, such as operational definitions and general subject matter knowledge, before moving on to more complex psychosocial knowledge. Multiple instructional methods, such as using real-life or life-like videos depicting S&C practice, live polling, and discussion, are likely to promote learning and have perceived value from learners. Finally, this study shows how action research could be used by researchers and practitioners to collaborate and improve an agreed upon goal. Action research can be used to enhance real-world performance and

other outcomes deemed important by researchers and practitioners. Such an approach can be extended beyond psychosocial knowledge and reflects an important advance in S&C.

ACKNOWLEDGEMENTS

The researchers thank the UKSCA and their staff and stakeholders for their support and participation.

CONFLICTS OF INTEREST

The authors report no conflicts of interest.

FUNDING

Social Sciences and Humanities Research Council of Canada, Partnership Engage Grant, File # 892-2020-3050.

ETHICAL APPROVAL

Ethics for this study were approved in line with University's ethics procedure.

DATES OF REFERENCE

Submission - 31/03/2025
Acceptance - 19/09/2025
Publication - 27/03/2026

REFERENCES

1. Abitz CL, Gearity BT, Kuklick CR, Potrac P. "He trusts me": navigating the male weight room: emotions and reflective practice of a young, female strength and conditioning coach. *Sports Coaching Review*: 1-21, 2023.
2. Bertram R, Culver DM, Gilbert W. A university sport coach community of practice: Using a value creation framework to explore learning and social interactions. *International Journal of Sports Science & Coaching* 12: 287-302, 2017.
3. Braun V, Clarke V. Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health* 11: 589-597, 2019.
4. Braun V, Clarke V, Weate P. Using thematic analysis in sport and exercise research. In: *Routledge handbook of qualitative research in sport and exercise*. B. Smith, A. Sparkes, eds.: Routledge, 2016, 213-227.
5. Brooks DD, Ziatz D, Johnson B, Hollander D. Leadership behavior and job responsibilities of NCAA Division 1A strength and conditioning coaches. *Journal of Strength & Conditioning Research* 14: 483-492, 2000.

6. Bryman A. Paradigm peace and the implications for quality. *International Journal of Social Research Methodology* 9: 111-126, 2006.
7. Callary B, Gearity B, Eagles K, Szedlak C. Planning for the development of strength and conditioning coaches' psychosocial competencies. *Qualitative Research in Sport, Exercise and Health*: 1-18, 2024.
8. Callary B, Gearity BT, Eagles K, Szedlak C. Defining psychosocial strength and conditioning coaching competencies: A participatory action research approach. *International Journal of Sports Science & Coaching* 18: 382-391, 2023.
9. Campbell S, Mills J, Atkinson O, et al. Engaging in Paradigmatic Dialogue: A Bibliometric Analysis of Coaching Scholarship From 1970 to 2020. *International Sport Coaching Journal* 10: 16-28, 2023.
10. Davis EA. Scaffolding learning. *Encyclopedia of science education* 21: 362-364, 2015.
11. Deslauriers L, McCarty LS, Miller K, Callaghan K, Kestin G. Measuring actual learning versus feeling of learning in response to being actively engaged in the classroom. *Proceedings of the National Academy of Sciences* 116: 19251-19257, 2019.
12. Dorgo S. Unfolding the practical knowledge of an expert strength and conditioning coach. *International Journal of Sports Science & Coaching* 4: 17-30, 2009.
13. Gallo GJ, De Marco Jr GM. Self-assessment and modification of a Division I strength and conditioning coach's instructional behavior. *The Journal of Strength & Conditioning Research* 22: 1228-1235, 2008.
14. Gearity B, Moore EWG. National Strength and Conditioning Association's endorsement of the National Collegiate Athletic Association Sport Science Institute's "Mental Health Best Practices: Inter-Association Consensus Document: Best Practices for Understanding and Supporting Student-Athlete Mental Wellness". *Strength & Conditioning Journal* 39: 1-3, 2017.
15. Gearity BT. Coaching Education. *Strength & Conditioning Journal* 36: 1, 2014.
16. Gearity BT, Metzger LH. Intersectionality, microaggressions, and microaffirmations: Toward a cultural praxis of sport coaching. *Sociology of Sport Journal* 34: 160-175, 2017.
17. Gearity BT, Mills JP. Discipline and punish in the weight room. *Sports Coaching Review* 1: 124-134, 2012.
18. Gearity BT, Szedlak C, Kuklick CR, et al. Enriching selves in strength and conditioning society: A multilevel proposal to enhance strength and conditioning psychosocial practice as part of the council on accreditation of strength and conditioning education. *Strength & Conditioning Journal* 43: 92-103, 2021.
19. Haff GG, Triplett NT. Essentials of strength training and conditioning 4th edition. Human kinetics, 2015.
20. ICCE A, LBU. The international sport coaching framework, v2.0. Human Kinetics, 2013.
21. Ittenbach RF, Chissom BS. Social involvement and the sport of weight lifting: A microethnography. *The Journal of Strength & Conditioning Research* 7: 55-61, 1993.
22. Jones D, Newland A. Implementing Effective Coaching Behaviors and Pedagogical Practices Into Strength and Conditioning. *Strength & Conditioning Journal* 44: 80-87, 2022.
23. Jones MT, Matthews TD, Murray M, Van Raalte J, Jensen BE. Psychological correlates of performance in female athletes during a 12-week off-season strength and conditioning program. *The Journal of Strength & Conditioning Research* 24: 619-628, 2010.
24. Judge LW, Bellar D, Blom LC, et al. Perceived social support from strength and conditioning coaches among injured student athletes. *The Journal of Strength & Conditioning Research* 26: 1154-1161, 2012.
25. Kuklick CR, Gearity BT. A review of reflective practice and its application for the football strength and conditioning coach. *Strength & Conditioning Journal* 37: 43-51, 2015.
26. Kuklick CR, Gearity BT. New Movement Practices: A Foucauldian Learning Community to Disrupt Technologies of Discipline. *Sociology of Sport Journal* 36: 289-299, 2019.
27. LaPlaca DA, Schempp PG. The characteristics differentiating expert and competent strength and conditioning coaches. *Research Quarterly for Exercise and Sport* 91: 488-499, 2020.
28. Magnusen MJ. Differences in strength and conditioning coach self-perception of leadership style behaviors at the National Basketball Association, Division IA, and Division II levels. *The Journal of Strength & Conditioning Research* 24: 1440-1450, 2010.
29. Martin E. Perceived Benefits of Participating in an Undergraduate Strength and Conditioning Internship. *International Journal of Kinesiology in Higher Education* 5: 115-131, 2021.
30. Massey CD, Maneval M. A Call to Improve Educational Programs in Strength and Conditioning. *Strength & Conditioning Journal* 36: 23-27, 2014.
31. Massey CD, Maneval MW, Phillips J, et al. An analysis of teaching and coaching behaviors of elite strength and conditioning coaches. *The Journal of Strength & Conditioning Research* 16: 456-460, 2002.
32. Massey CD, Schwind JJ, Andrews DC, Maneval MW. An analysis of the job of strength and conditioning coach for football at the Division II level. *The Journal of Strength & Conditioning Research* 23: 2493-2499, 2009.
33. Massey CD, Vincent J. A job analysis of major college female strength and conditioning coaches. *The Journal of Strength & Conditioning Research* 27: 2000-2012, 2013.
34. Massey CD, Vincent J, Maneval M. Job analysis of college Division IA football strength and conditioning coaches. *The Journal of Strength & Conditioning Research* 18: 19-25, 2004.
35. Pullo FM. A profile of NCAA Division I strength and conditioning coaches. *The Journal of Strength & Conditioning Research* 6: 55-62, 1992.
36. Radcliffe JN, Comfort P, Fawcett T. Psychological Strategies Included by Strength and Conditioning Coaches in Applied Strength and Conditioning. *The Journal of Strength & Conditioning Research* 29: 2641-2654, 2015.
37. Radcliffe JN, Comfort P, Fawcett T. Barriers to the Prescription of Psychological Strategies by Strength and Conditioning Specialists. *The Journal of Strength & Conditioning Research* 32: 1948-1959, 2018.
38. Read P, Hughes JD, Blagrove R, et al. Characteristics and experiences of interns in strength and conditioning. *Journal of Sports Sciences* 35: 269-276, 2017.
39. Roy X, Gavrilu SE, Sercia P. Reflective practice: Helping coaches improve their coaching. *International Journal of Strength and Conditioning* 1, 2021.
40. Shurley JP, Todd J, Todd T. Strength coaching in America. University of Texas Press, 2021.
41. Smith B, McGannon KR. Developing rigor in qualitative research: Problems and opportunities within sport and exercise psychology. *International Review of Sport and Exercise Psychology* 11: 101-121, 2018.
42. Stringer ET, Aragón AO. Action research. Sage, 2020.

43. Szedlak C, Batey J, Smith MJ, Church M. Examining experienced S&C coaches' reflections on the effectiveness of psychosocial behaviors in coaching. *International Sport Coaching Journal* 9: 1-9, 2022.
44. Szedlak C, Callary B, Eagles K, Gearity BT. An exploration of how dominant discourses steer U.K. strength and conditioning coach education. *Sport, Education and Society*: 1-14, 2024.
45. Szedlak C, Callary B, Gearity BT. UKSCA Stakeholders' perceptions of psychosocial coaching practices: An interim report. *Professional Strength & Conditioning*: 7-10, 2022.
46. Szedlak C, Callary B, Gearity BT. Psychosocial coaching practice: An introductory workshop. *Professional Strength & Conditioning*: 5-7, 2023.
47. Szedlak C, Smith M, Day M, Greenlees I. Examining athletes' perceptions of effective behaviours in strength and conditioning coaching. *International Journal of Sports Science & Coaching* 10: 967-984, 2015.
48. Szedlak C, Smith MJ, Callary B, Day MC. Using written, audio, and video vignettes to translate knowledge to elite strength and conditioning coaches. *International Sport Coaching Journal* 6: 199-210, 2019.
49. Szedlak C, Smith MJ, Callary B, Day MC. Examining how elite S&C coaches develop coaching practice using reflection stimulated by video vignettes. *International Sport Coaching Journal* 7: 295-305, 2020.
50. Thomas G, Devine K, Molnár G. Experiences and perceptions of women strength and conditioning coaches: A scoping review. *International Sport Coaching Journal* 10: 78-90, 2022.
51. Thomas G, Guinan J, Molnár G. "It's not particularly PC, you know...": Women coaches' performing gender in strength and conditioning. *Women in Sport and Physical Activity Journal* 29: 106-116, 2021.
52. Tiberi S, Esformes JI, Jennings G, Cooper S, Moody J. Exploring coaching leadership behaviours in strength and conditioning coaching: Preferences of NCAA Division I and II collegiate student-athletes based on task dependence. *Journal of Coaching and Sports Science* 3: 76-89, 2023.
53. Tiberi S, Esformes JI, Jennings G, Cooper S, Moody J. Preferred strength and conditioning coaching leadership behaviours of NCAA Division I and II collegiate student-athletes based on sex *International Journal of Physical Education, Fitness and Sports* 12: 23-35, 2023.
54. Tod D, Lavalley D. *The psychology of strength and conditioning*. Routledge, 2013.
55. Tod DA, Bond KA, Lavalley D. Professional Development Themes in Strength and Conditioning Coaches. *The Journal of Strength & Conditioning Research* 26: 851-860, 2012.
56. Trudel P, Culver D, Richard J-P. Peter Jarvis: Lifelong coach learning. In: *Learning in sports coaching*. L. Nelson, R. Groom, P. Potrac, eds. London: Routledge, 2016, 202-214.
57. Wenger E, Trayner B, De Laat M. Promoting and assessing value creation in communities and networks: A conceptual framework. Netherlands: Open Universiteit Nederland, 2011.
58. Zakrajsek R, Zizzi S. Factors influencing track and swimming coaches' intentions to use sport psychology services. *Athletic Insight* 9: 1-21, 2007.