Developing the Effectiveness of Applied Sport Psychology Service Delivery: A Reflective Practice Intervention

Brendan Cropley[1], Sheldon Hanton[2], Andy Miles[2], Ailsa Niven[3], and Lea-Cathrin Dohme[2]

[1] University of South Wales, UK

[2] Cardiff Metropolitan University, UK

[3] University of Edinburgh, United Kingdom

Correspondence concerning this article should be addressed to Professor Brendan Cropley, School of Health, Sport & Professional Practice, University of South Wales, USW Sport Park, Treforest Industrial Estate, CF37 5UR, United Kingdom. Telephone: +44 (0)1443 654874; E-mail: brendan.cropley@southwales.ac.uk

Abstract

Little empirical evidence exists to corroborate the proposed benefits that reflective practice may have for service delivery effectiveness in Applied Sport Psychology (ASP). To systematically address this gap, we collected data over a five-year period via a staggered, single-subject multiple-baseline intervention that aimed to: (a) investigate the effectiveness of a training program designed to enhance practitioners' abilities to engage in higher levels of reflection; and (b) explore whether developments in level of reflection influenced practitioner effectiveness. Eight trainee and four professionally qualified, UK based practitioners participated in an individualized 14-week study, which contained a two week intervention and a two month post-study retention assessment. All participants demonstrated immediate improvements in the level they were able to reflect at, as well as augmented reflective learning following the intervention. Measures of effective practice (e.g., client feedback, self-assessments) also demonstrated improvements post-intervention. In-depth social validation procedures substantiated these findings, with participants reporting that through more critical levels of reflection they experienced enhanced self-awareness, approaches to meeting client needs, professional judgement and decision making, and a range of other characteristics associated with effective consultants. Our findings offer novel support for the links between reflective practice and service delivery effectiveness, as well as a better understanding of the mechanisms through which such adaptations occur. This study makes a significant contribution by providing an in-depth, longitudinal insight into the value of focusing practitioner training on reflective practice as a meta-cognitive strategy to enhance ASP practice.

Key words: reflective practice, professional practice, effectiveness, knowledge-in-action

Developing the Effectiveness of Applied Sport Psychology Service Delivery: A Reflective Practice Intervention

As the field of Applied Sport Psychology (ASP) continues to grow in professional standing, so too does the basic need for sport psychology consultants (SPC) to be accountable to those they work with (e.g., clients) and for (e.g., sporting organizations, the profession; Winter & Collins, 2016). In association, an increasing emphasis has been placed on SPCs providing services that are ethical, evidence-based, and effective (Keegan, 2016). However, whilst researchers have explored a range of stakeholders' perceptions of the characteristics of effective practitioners (e.g., Anderson, Miles, Robinson, & Mahoney, 2004; Chandler, Eubank, Nesti, & Cable, 2014; Sharp & Hodge, 2014), less is known about the wider concept of effective service delivery or how it is developed (cf. Fortin-Guichard, Boudreault, Gagnon, & Trottier, 2018).

Previously, Cropley, Hanton, Miles, and Niven (2010) investigated a more encompassing definition of effective ASP practice through focus groups with trainee and professionally qualified SPCs. The authors reported that effectiveness should be considered as a "multidimensional process" associated with "meeting the needs of the client" (p. 527). As a result, characteristics associated with effective SPCs (e.g., good communication; ability to develop a working alliance; knowledge and experienced; athlete-centered) are thought to represent the attributes required to engage in this process (Cropley et al., 2010; Fortin-Guichard, 2018). Cropley et al.'s definition also indicated that the process of effective service delivery requires the active use of reflective practice (RP) to assist SPCs in learning from their experiences, affording them the opportunity and mechanisms to explore the effectiveness of their work in a systematic manner. The notion that RP could be an efficacious approach to the improvement of effective service delivery in ASP has intuitive appeal. Indeed, RP has widely been linked to: (a) frameworks of ASP service provision (e.g., Keegan, 2016); (b) the development of practitioners' characteristics associated with effectiveness, including self-awareness (e.g., Mellalieu, 2017); (c) supporting adaptive coping mechanisms that enhance

practice (e.g., Cropley, Baldock, Mellalieu, Neil, Wagstaff, & Wadey, 2016); (d) creative and innovative approaches to practice (e.g., Schinke et al., 2006); and improved congruence between philosophy and practice (e.g., Friesen & Orlick, 2010). Advocates of RP within ASP have also suggested that the concept is intrinsically linked with effectiveness. This is because it facilitates a practitioner's examination and sense making of their practice, subsequently raising *knowledge-in-action* into consciousness (Knowles, Gilbourne, Cropley, & Dugdill, 2014). Knowledge-in-action (e.g., a form of knowing that facilitates better practice through the union and interplay of different sources of knowledge, such as: technical, aesthetical, personal and ethical), developed through RP, is arguably the most essential form of knowledge as it allows practitioners to manage and adapt to the dynamic and context specific nature of their work (Huntley, Cropley, Knowles, & Miles, 2019). Perhaps as a result, RP, which has been considered as a "purposeful and complex process that … transforms experience into learning to better understand and/or improve practice and the situation in which it occurs" (Knowles et al., 2014, p. 10), has been assimilated into formal training pathways for ASP in the United Kingdom (UK) (e.g., British Psychological Society [BPS] Chartership). The British Association of Sport and Exercise Sciences (BASES) has also incorporated a core RP workshop into its accreditation route under the premise that RP offers a legitimate method for practitioners to question their personal effectiveness and responsibilities in the delivery of ASP services.

Despite such developments, a number of issues exist regarding RP, its place within ASP, and its potential for facilitating more effective service delivery. First, in a review of the RP literature in sport, Huntley, Cropley, Gilbourne, Knowles, and Sparkes (2014) found that less than half of the published articles purporting to consider RP adopted a conceptualization considered as accurate enough to appropriately represent RP. Definitions of, and approaches to, RP are often accepted intuitively as a result, making it difficult for practitioners to distinguish between RP and other modes of thinking (e.g., evaluation; Huntley et al., 2019). Consequently, it is likely that practitioners believe that they are engaging in RP when they are actually not,

affecting the influence of their approach on service delivery effectiveness. Second, it has been argued that RP can occur at different levels of insight, ranging from technical (i.e. performance reviews) to critical (i.e. challenging habitual practice; Legare & Armstrong, 2017). Whilst, all levels of RP are thought to be beneficial to practitioners, authors are in agreement that critical reflection, which is considered to be a more thoughtful and profound level of RP, facilitates the transformational adaptations to thoughts and behaviors required to enhance service delivery effectiveness (Knowles, Katz, & Gilbourne, 2012; Picknell, Cropley, Mellalieu, & Hanton, 2016). Critical RP is, however, a complex, highly skilled, meta-cognitive process that needs to be developed and nurtured (Knowles et al., 2014). Whilst trainee SPCs are encouraged to engage in RP during professional qualification programs, with those training through BASES also required to attend a RP workshop, the impact of these activities on an individual's ability to engage in critical RP is yet to be studied (Huntley et al., 2019). Finally, explicit links between RP and the development of service delivery effectiveness in ASP support have not been investigated directly, with available support being generally implicit in nature (Picknell et al., 2016). Given the limited evidence detailing the impact of RP on service-delivery, the largely undisputed inclusion of RP within ASP practitioner training programs could be questioned. For example, some practitioners may find the lack of rigorously designed empirical research that demonstrates improvements in practice through RP difficult to align with the current pressure for engagement in evidence-based practice (Huntley et al., 2019). Indeed, it is noted that whilst SPCs are encouraged to take ownership of their self-evaluations, the act of reflection is still often neglected (Picknell et al., 2016). The resistance to buy-in to RP may stem from a lack of confidence regarding the significance of its impact, triggering a need to be convinced that the benefits of RP outweigh the commitment required to engage in the process (Picknell, Cropley, Hanton, & Mellalieu, 2014).

The purpose of the current study was to address a number of existing issues associated with understanding the potential influence of RP on service delivery effectiveness in ASP.

Specifically, we aimed to: (a) examine the efficacy of a multimodal training program designed to develop SPCs' ability to reflect at more critical levels; and (b) investigate whether improvements in SPCs' RP influenced the effectiveness of their practice. In order to achieve these aims, we adopted a longitudinal, staggered, single-subject multiple-baseline design, sampling both trainee and professionally qualified SPCs across a five-year period. In doing so, we aimed to make a novel and significant contribution to current knowledge by gaining a better understanding of how we might address the effectiveness of ASP services through the development of the attitudes and skills required by SPCs for critical RP.

Methods

Experimental Design

Single-subject research designs, rooted in radical behaviorism, provide an experimental structure to explore causal or functional relationships between independent and dependent variables (cf. Haegele & Hodge, 2015). In light of this, and in accord with the strengths (e.g., control over participants' intervention experiences) of single-subject designs, we adopted a staggered, single-subject multiple-baseline design to achieve the aims of the current study. With this design, the treatment variable (i.e. the RP training program intervention) is applied to different participants sequentially after longer and longer baseline phases. If a change in the dependent variable(s) (i.e. level of RP; effective service delivery) is observed immediately after treatment, it is implied with confidence that the independent variable and not the passage of time, or other extraneous factors, caused the observed change (Slack, Maynard, Butt, & Olusoga, 2015). Further, each participant constitutes a complete basis for legitimate conclusions, meaning that participants also act as their own control, eliminating potential ethical issues relating to the withholding of potentially performance enhancing interventions (Haegele & Hodge, 2015).

Participants

Utilizing criterion-based purposive sampling techniques (Patton, 2015), participants were selected based on the following criteria: (a) trainee practitioners registered with BASES or the

BPS, or fully qualified UK-based SPCs; (b) providing (or about to commence) support to a client that would continue over the duration of the study; (c) willingness of the participants' client(s) to provide confidential feedback on the effectiveness of service delivery; and (d) exposure to, but a basic understanding of, RP. Consequently, only those practitioners who had not completed formal training in RP (e.g., BASES core RP workshop), and would not engage in such activities during the study, were included in the sample. Sampling, took place over a five-year period for two reasons. First, we aimed to provide systematic evidence of the value of training practitioners' abilities to engage in higher levels of RP for enhancing ASP effectiveness. It was thought that if similar improvements were experienced by all participants post-intervention (irrespective of their stage of professional development), who had been sampled over a number of years, we could try and control for a range of potential organizational and experiential developments in the field of ASP (e.g., training routes; nature of professional practice). Second, given the specificity of the sampling criteria, suitable participants were difficult to locate. In an attempt to offer a significant contribution to understanding in the areas of RP and effective ASP practice, we wanted to gain what might be considered a large sample for single-subject designs (cf. Haegele & Hodge, 2015), which consequently took time. Potential participants were screened via a selection survey and a follow-up telephone interview. Those meeting the criteria were informed of the nature of the study, as well as their responsibilities before being asked to volunteer. Details of the final sample, constituting six females and males, are presented in Table 1.

Dependent Variables

Levels of RP. In order to establish the necessary criteria for assessing the level at which participants were able to reflect, a hierarchical reflective rubric was developed (see Table 2). This rubric was based on the hierarchical models of reflection proposed by Mezirow (1981) and Powell (1989). Specifically, these authors suggested that RP is a developmental process in which different levels of reflection exist. As the level of reflection progresses up the hierarchy, it is

thought to increase in complexity, require more meaningful engagement and, thus, become more beneficial for addressing professional practice. The rubric utilized in our study contained six different levels ranging from *reflectivity* (e.g., descriptive accounts of events) to *critical reflection* (e.g., reflection on issues associated with emancipation and justice) and was used to score participants' reflections. To standardize the product of participants' RP, foster their engagement, and allow their level of reflection to be systematically analyzed via the rubric, participants were asked to engage in a structured, written approach to RP (cf. Knowles, Gilbourne, Borrie, & Neville, 2001; Kuklick, Gearity, & Thompson, 2015).

Service delivery effectiveness: Consultant performance profile (self-report). The knowledge, delivery style, and characteristics of the SPC are suggested to have a central influence on the overall effectiveness of practice (Anderson, Miles, Robinson, & Mahoney, 2002). Consequently, to examine potential developments in a range of personal (e.g., trustworthiness) and professional (e.g., knowledge about how sport psychology relates to sport) factors thought to facilitate SPCs engagement in the process of effective service delivery (cf. Cropley et al., 2010), a performance profile assessment was adopted. Although performance profiles are usually constructed by examining a person's self-perception of aspects constituting performance excellence, the profiles completed by participants in this study were constructed through the extant literature focusing on the characteristics of effective consultants in order to ensure consistency in data collection (e.g., Anderson et al., 2004; Chandler et al., 2014; Sharp & Hodge, 2014). The performance profile consisted of 25 characteristics, grouped into seven categories: *personable* (3-items); *good communicator* (3-items); *provider of a good practical service* (5-items); *knowledge* (3-items); *trustworthiness* (3-items); *professional skills* (5-items); and *attitude* (3-items). Using a Likert scale, participants were asked to rate their perceived current self-score on each characteristic (1 = low; 10 = high).

Service delivery effectiveness: Client assessment of consultant effectiveness. The ability to meet client needs has widely been associated with effective service delivery in ASP

(cf. Fortin-Guichard et al., 2018). We asked participants' clients, therefore, to complete a standardized feedback form. This tool was based on the Consultant Evaluation Form (CEF; Partington & Orlick, 1987), however, in an attempt make it more representative of modern practices, some items were removed or re-worded and other items included based on more recent literature (e.g., Cropley et al., 2010; Haberl & McCann, 2012). The standardized feedback form consisted of ten-statements (e.g., "The sport psychologist's personal characteristics have a positive impact on my experience of the support"; and "A good rapport was developed that led to a positive working relationship") covering a range of factors thought to influence service delivery effectiveness (e.g., attitude of the practitioner; meeting client needs). Each statement was ranked on a scale of 0 (not at all) to 10 (yes, definitely). Clients were also asked to rate the overall effectiveness of the support received on a scale of -5 (hindered/interfered) to +5 (helped a lot). Finally, for the post-intervention measure, an open-ended feedback section was included, asking the participants to "comment on noticeable changes in the quality of the support provided since last completing this assessment."

Social validation. Social validation in single-subject designs is considered to be a crucial element in assessing the participants' experience of the intervention, verifying results, and providing accurate assessment of the internal validity of the findings (Page & Thelwell, 2013). Consequently, we adopted a semi-structured interview approach to social validation to examine the perceived mechanisms of the intervention that could help to explain observed behavioral and cognitive effects (e.g., engagement in higher levels of RP; improved effectiveness). An interview guide was developed that was split into a number of sections (e.g., pre-intervention RP; post-intervention RP; influence of RP on effectiveness). It consisted of a set of standardized questions (e.g., "How did your reflective practices change as a direct result of the training and support you received?"; "What influence, if any, has the development of your reflective skills had on the effectiveness of your applied practice?") and neutral, non-directional probes (e.g., "Can you provide a specific example?"; "How do you know that this changed?"). This approach

provided the interviewer with opportunities to explore participants' experiences and perceptions of the influence of the intervention on their practice in rich detail (cf. Patton, 2015).

Experimental Procedure and Intervention

Institutional ethical approval was awarded for each successive year of the study. The experimental procedure was divided into four phases: (1) baseline; (2) intervention; (3) post-intervention; (4) social validation; and (5) retention. Phases one to three lasted for a total of 14 weeks, with phases four and five occurring 48 hours and eight weeks following completion of the post-intervention phase respectively (see Table 3 for full experimental procedure). Participants were taken through the experimental procedure independently and at different times of the year in which they took part in the study.

At the start of the *baseline phase* participants attended a one-to-one meeting with the first author to discuss the nature and format of the investigation and to introduce them to the reflective approach to be adopted. Participants were asked to reflect on one critical consulting experience per week using a basic RP framework to guide their written reflections (e.g., *identification*, *description*, *significance*, and *implications*; Cropley, Miles, Hanton, & Niven, 2007; Ghaye, 2011). Participants were instructed to email their completed reflection on a weekly basis to the first author for consideration and analysis by the research team. Given the nature of the effectiveness measures (i.e. participant self-report and client feedback), participants and their clients were asked to complete the measures immediately prior to moving into the intervention phase. Participants were provided with electronic links to both assessments and instructed to complete the self-report performance profile, whilst passing the link to the client assessment tool onto their clients, who could then complete the assessment confidentially and in their own time. Using baseline logic (cf. Cooper, Heron, & Heward, 2007), and in accord with the *staggered* design adopted in our research, the duration of the baseline phase varied across participants. Further, the phase was deemed completed when the dependent variable (i.e. level of RP) either

formed a predictive pattern, was relatively stable, or demonstrated a trend in the opposite direction of the change anticipated when introducing the treatment (Cooper et al., 2007).

The *intervention phase* took place over an intensive two-week period and was designed based on the understanding that RP is a meta-cognitive strategy that requires a multi-faceted process of explicit and thoughtful teaching (Ghaye, 2011). Accordingly, the intervention consisted of: (a) individual tutorials (2 x 120 minute sessions delivered by the first author); (b) feedback on written reflections; and (c) individualized mentoring. Based on the extant literature (e.g., Anderson, Knowles, & Gilbourne, 2004; Cropley et al., 2010), tutorial one focused on improving the participants' knowledge and understanding of RP, its links to experiential learning, and appreciative approaches to RP. Following this, participants were asked to complete a number of tasks relating to the information shared during the tutorial, which were discussed at the start of tutorial two. The second tutorial focused on developing participants' engagement in RP by considering: (1) reflective questioning; (2) how to make RP more meaningful; and (3) how to create better links between practice, learning, and future action. Under the premise that structured reflective writing promotes the qualities (e.g., open mindedness) and skills (e.g., critical analysis) required for higher levels of RP, participants were also introduced to an adapted version of Anderson et al.'s (2004) structured framework for RP. The application of this approach was discussed in relation to information presented in both tutorials, with participants being asked to construct their reflections through the more structured framework for the remainder of the study.

In addition to the tutorials, participants were asked to submit one reflection per week during the intervention phase. These reflections were not included in formal data collection; instead, they allowed us to provide feedback to the participant regarding the quality of the reflection (i.e. reflective level). Our feedback focused on assisting participants in the use of the specific structured process (e.g., adapted version of Anderson et al.'s RP framework), as well as encouraging them to consider aspects of their reflections in greater critical detail (e.g., "How

does this challenge the tradition?"). Participants were then given the opportunity to discuss the feedback to ensure clarity and ask any additional questions. Further, in light of the potential importance of guidance and supervision for the development of an individual's RP (cf. Knowles et al., 2014), mentoring was provided by the first author to encourage participants' ongoing engagement in the study and to continue to develop their abilities to reflect at more critical levels. The mentoring process consisted of one-to-one conversations every two weeks during the intervention and post-intervention phases either via telephone or face-to-face. A set of questions were devised to structure the mentoring conversation (e.g., "What has been a real success for you regarding your RP?"; "What can you do to ensure that this keeps happening?") before giving participants the opportunity to discuss any particular issues concerning their RP.

The *post-intervention phase* lasted between four and nine weeks depending on the duration of each participant's baseline phase. During this time, participants were instructed to reflect on one critical consultancy incident per week using the more structured reflective framework introduced during the intervention. Reflections were emailed to the first author on a weekly basis for collation and analysis. In addition, participants engaged in the bi-weekly mentoring process, whereby they received between two and five mentoring sessions depending on the duration of their engagement in this phase. During the last week of the post-intervention phase, participants were again instructed to complete the self-report performance profile and pass an electronic link on to their clients so that they could confidentially complete the client assessment tool. Finally, participants took part in a social validation interview 48 hours after the completion of the post-intervention phase. All interviews were conducted face-to-face by the lead researcher in a neutral setting to aid the flow of conversation and avoid environmental bias. The interviews lasted between 50 and 82 minutes (M = 64.2; SD = 10.8), were audio recorded in their entirety, and subsequently transcribed verbatim yielding 298 pages of transcript.

The final phase, *retention*, lasted for two weeks and aimed to explore whether the impact of the intervention program had a lasting effect on the levels at which participants were

reflecting. Participants were asked to submit one written reflection, using a structure of their choice, on a critical consulting experience during each week of the phase.

Treatment of the Data and Procedural Reliability

For the benefit of understanding researcher effectiveness, treatment integrity was assessed through procedural reliability. Following methods adopted by Neil, Hanton, and Mellalieu (2013), manipulation checks in the form of a behavioral checklist were employed to ensure equitable application of the intervention across participants. Here, a list of agreed procedural steps in the form of a standardized protocol was constructed for the first author to follow. During the intervention phase, the first author also reflected on the delivery of the treatment, following which, discussions with the research team took place regarding procedural reliability to challenge the first author and ensure that consistency was maintained.

Assessment of the data occurred in four phases. First, following procedures adopted by Knowles et al. (2001), authors one, three, and four independently scored participant reflections (baseline and post-intervention phase) using the hierarchical rubric (Table 2). The entire research team then met to discuss the independent scores until a consensus on the final score for each written reflection was achieved. Second, baseline and post-intervention *levels of reflection*, *participant performance profile* (mean scores were calculated for each category of characteristics), and *client assessment of effectiveness* scores were tabulated. Third, in agreement with the procedures adopted by Neil et al. (2013) and due to practical significance being deemed more important than statistical significance in the current study, data were visually inspected to determine whether an experimental effect had occurred (cf. Cooper et al., 2007). Accordingly, the effect of a treatment can be established through visual inspection when the following conditions are satisfied: (a) a stable baseline; (b) consistency of effect across participants; (c) few overlapping data points between baseline and intervention phases; (d) how soon the effect occurred after the intervention; and (e) the magnitude of the effect following the intervention (Haegele & Hodge, 2015). Finally, reflexive thematic analysis (cf. Braun & Clarke,

2019) was used to content analyze the social validation interviews. Initial coding, comparative analysis, and the creation of descriptive and overarching interpretive themes were completed independently by authors one, three, and four. Critical discussion then took place between these authors to establish consensus over the themes relating to: (a) participants' experiences of the intervention; and (b) their perceptions of the impact of RP on service delivery effectiveness. The final themes were presented to the entire research team, who, acting in the role of critical friends, encouraged reflection on the data, the actively created themes and their definitions. This process allowed the researchers to improve confidence in the process and outcomes of the analysis (Smith & McGannon, 2018).

Results

Intervention Effects on Levels of Reflection

The level at which all participants were able to reflect increased from the baseline to post-intervention phase immediately after the administration of the intervention (see Figure 1). Few overlapping data points were also recorded, with only scores from participants 7 and 10 demonstrating one overlapping data point each, signifying a very high experimental effect (cf. Slack et al., 2015). Further, whilst varied across participants, baseline scores for RP were typically characterized by lower levels of reflection, resulting in descriptive accounts of practice, awareness of the feelings associated with the outcomes of the support sessions being reflected on, and in some instances, assessment of decision making processes, learning and the consequences for practice. Post-intervention, levels of RP appeared to increase considerably, as demonstrated through the trend lines plotted on Figure 1. Only five participants (3, 6, 9, 10 and 11) demonstrated the ability to reflect at the most critical level of RP, although other participants demonstrated substantial improvements. Post-intervention reflections were typically categorized by clear assessments of learning, implications for future action, and the questioning of habitual practices. Thus, confidence can be established in the experimental effect, indicating that the intervention had a direct impact on participants' ability to engage in higher levels of RP.

Levels of Reflection Follow-up Retention

Eight participants (1, 2, 3, 4, 5, 8, 9 and 10) maintained levels of RP two months post-intervention, signifying a retention effect for those SPCs. Scores for the remaining participants (6, 7, 11 and 12) indicated overlapping data points with the baseline phase, which signifies a decrease in the level of RP reported between the post-intervention and retention phases.

Assessments of Service Delivery Effectiveness

Consultant performance profile (self-report). The mean scores for the categories of consultant effectiveness characteristics are presented (see Table 4; findings for individual characteristics available upon request). All participants demonstrated at least some positive developments in mean category scores from the baseline to the post-intervention phase, with participants 2, 5, 9, 11 and 12 reporting perceived increases across all categories. Fewer developments were generally experienced within the categories of *trustworthiness* and *attitude*, with greater increases perceived by the majority of participants in *exhibits professional skills*, *good communicator*, and *knowledgeable*. Mean scores for the collective categories indicated improvements from the baseline to post-intervention phase for all participants, suggesting some development in participants' characteristics associated with effective service delivery.

Client assessment of consultant effectiveness. Consultant effectiveness factor scores as rated by the participants' clients are presented in Table 5. All participants experienced increases in some individual factor scores from the baseline to the post-intervention phase. No participants received increased scores post-intervention in all individual factors. However, mean scores for the collective factors did increase in the post-intervention phase for all participants, signifying that participants were generally perceived by their clients as demonstrating higher levels of factors associated with effective service delivery following the intervention. Further, the clients of nine participants reported increases in the *overall effectiveness* item score post-intervention, with the remaining three participants (7, 10 and 12) being awarded the same score for both baseline and post-intervention measures. In the post-intervention measure, clients were also

asked to comment on any noticeable changes in the quality of the support provided since last completing the assessment of consultant effectiveness. Seven out of the twelve clients responded. Four clients commented on changes to the participants' attitudes towards the support. For example, "More recently, xxx (name) seems to be far more positive about things than when we started the support. He seems more open to my feedback and to working with me in the way I want", and, "xxx (name) is far more flexible now than before. Because of my training schedule things are difficult to plan, but now xxx (name) seems more accepting of that and works around me far more." Two clients commented on the participants' developing ability to meet their particular needs. For example, "The support is more bespoke now. To start I felt like I was getting a standard package, but now everything seems more focused on me and my strengths." Finally, one participant referred to developments in the participant's communication, "At the start some of the things xxx (name) said were difficult to follow, the technical terms. We talked about this and she's far better now in terms of explaining everything so that I can understand."

Social Validation

In support of the experimental effects of the intervention, social validation data are presented in two sub-sections: (a) value of the intervention on levels of RP; and (b) impact of higher levels of RP on effective service delivery. A selection of representative participant quotes are provided to offer insights into the raw data and the participants' experiences (Patton, 2015).

Value of the intervention on levels of RP. All participants reported the value of the intervention in helping them to: (a) better understand the concept of RP; (b) enhance their knowledge of and skills in RP; (c) engage in more in-depth meta-cognitive processes; and (d) augment reflective learning outcomes. For example, "If I had reflected the way I was reflecting at the end (post-intervention) at the beginning it would have been a better consultancy process throughout because I would have learnt more from each experience" (participant 3); and, "I wasn't getting as much from reflection in the early stages as what I've got from it following the

intervention" (participant 8). Further, when asked to comment on their experiences of the training they received, all participants acknowledged their satisfaction with the intervention and the overall benefit it had on their reflective and professional practices. Indeed, participants widely considered that as a result of the intervention their ability to engage in RP improved. For example, "I thought that (intervention) made the difference in terms of changing my perceptions of reflection and in terms of me actually getting benefits from it (reflecting)" (participant 9); and, "Had there not been an intervention I wouldn't have gotten the same gain both in terms of my ability to reflect and how I've used it (reflection) to improve my practice and myself" (participant 1); and, "I found the intervention really rewarding in that it enthused my appetite for better reflection and in getting better at critically examining my consultancy I feel as though I've learnt a lot about me and my practice" (participant 8).

Participants acknowledged the value of the tutorials in helping them to gain a better understanding of RP and the processes involved with the concept. Specifically, participants reported, "They (tutorials) added clarity and provided the opportunity to ask questions and gave me the opportunity to get more information (about reflection) … without them I wouldn't have improved as much" (participant 11); and, "What I wanted to know was 'how was I going to be most effective at reflecting?' The tutorials helped to enhance my understanding of that process and made me see reflection completely differently" (participant 9). Participants also reported that the tutorials helped to "reinforce" what was already known about RP and emphasized what they were already doing well, "The tutorials certainly helped … I started to understand the links better between critical analysis and better practice. But they also helped to reinforce what I was already doing and what I need to do to make it more consistent" (participant 10). Nine participants also highlighted that the introduction of a framework of reflective questions was of particular benefit to them as it helped to guide their reflections and encouraged the consideration of their experiences in greater depth. One participant highlighted, "I think the structured questions definitely gave clearer outcomes, so it became clear that these were my options and

previously I wasn't able to get that far in my reflection" (participant 4). In support, participant 11 added, "They (questions) encouraged you to dig deeper and after being prompted I think I almost continued to do that (question) myself." Other participants reported that the more structured RP framework helped them to be more consistent with the level they reflected at, and altered the focus of their reflections. For example, "(Using the structured framework) I approached reflecting a lot more deeply and it almost helped me in consultations as well because by reflecting on the previous experience I was able to use that in future consultations" (participant 6); and, "I think I got more consistency using the framework introduced during the tutorials. It helped to focus my thoughts and be more purposeful" (participant 2); and, "I started reflecting more widely on issues I'd not considered before. This helped me to explore critical aspects of practice and question my work, which prepared me to improve" (participant 3).

The feedback participants received on their reflections during the intervention was deemed to be beneficial for the development of their RP, as well as for helping participants to engage more critically in the reflective processes. For example, participant 8 suggested that the feedback they received helped them to "get the bigger picture" with regards to understanding and learning from their experiences. Further, participant 4 stated, "I think the feedback you gave on one of my reflections … the fact that you just kept asking more probing questions made me ask myself more positive questions and I was able to then reflect more profoundly." Importantly, the participants accepted that the feedback did not coerce them into certain behaviors or ways of thinking but rather "acted as a guide" to help them consider their experiences in greater critical depth. For example, participant 1 outlined, "When you gave the information back you were guiding by saying 'think about this' and I found that made the process a lot easier for the next reflection … it's guidance as opposed to forcing." Finally, participants acknowledged the value of the mentoring resource in helping them to reach higher levels of reflection, leading to more meaningful learning from their RP. For example, participants detailed, "Having our (participant and researcher) conversations about my

reflections helped to reassure me that I was on the right lines, and encouraged me to dig a little deeper, to ask further questions about certain areas" (participant 3); and, "Having that contact with you (researcher) definitely improved the quality of my reflections, because I had that safety net of being prompted to consider things in different ways" (participant 1); and "The mentoring resource was really powerful for me because it reinforced my approaches and allowed us (participant and researcher) to talk about my reflection more widely" (participant 12).

Impact of higher levels of RP on effective service delivery.

A range of specific benefits associated with improved service delivery effectiveness were reported as a consequence of participants' enhanced ability to engage in RP. Generally, participants stated, "Becoming more adept at reflection definitely helped to improve my practice because I engaged in a higher level of thinking that encouraged me to consider the situation and how I could improve the effectiveness of what I was doing" (participant 2); and, "My practice has become more effective in my opinion and I think that's largely down to changes in the way I reflect and learn from what I've done" (participant 12); and "When you question what you've always done and what the field prescribes you realize that there's better ways and that's been key for me and the effectiveness of what I do" (participant 3). Finally, the impact of improvements in the level RP on the effectiveness of ASP practice was clearly summarized in the following statement:

> After the training I really started to think about reflection in a different way, beginning to question some of the things that I've valued and some of the applied literature and this developed my practice more so than ever before. I think that's helped me to become a far better practitioner as a result (participant 3).

In relation to these comments, participants indicated that the ability to reflect at higher levels resulted in improvements to: (a) self-awareness; (b) professional judgement and decision making; (c) approaches to practice that meet client needs; and (d) a range of consultant characteristics associated with effective practice.

In consideration of the impact of higher levels of RP on burgeoning self-awareness, participants reported, “I became more aware of how my emotions fluctuated by being more knowledgeable and deep in my later reflections” (participant 7); and, “After the intervention my reflections really developed and I think I’ve become more self-aware as a result. That awareness of my strengths particularly has had a huge impact on how I operate” (participant 8). Other participants explicitly acknowledged how improved levels of self-awareness influenced service delivery effectiveness, “I became more aware of how I was feeling and how that influenced my reaction to the client. This allowed me to use coping strategies to remain neutral, which helped my effectiveness more than if I hadn’t become more reflective” (participant 11); and “Through my later reflections I started to learn more about myself and how I could facilitate deeper discussions and interactions with my client. Until we went through the reflective training I didn’t realize how important self-awareness is.”

Eight participants also specifically discussed how improving their abilities to reflect at higher levels resulted in a better understanding of their professional judgement and decision making. This related to participants becoming more aware of their *in vivo* decision making and the underlying principles on which they were being made, as well as considering the way in which they reacted and coped during practice. Participants stated, “It (improved ability to reflect) made me understand the reason why I made certain decisions, not just whether the decision was the right one. That made me more aware of how I was during a session” (participant 1); and, “After the training I felt more satisfied with reflecting, I felt I got more out of it in terms of helping me put into perspective what I was choosing to do and how I was choosing to do it” (participant 4); and, “Getting better at reflecting on the choices I made before and during my consultancy sessions really helped me to plan better and be more evidence-based … I suppose that made me feel more effective (participant 5).

Participants widely reported that they were in a better position to comprehend, develop, and implement new approaches to service delivery that helped to enhance the effectiveness of

their practice as a result of reflecting at higher levels. For example, participants reported, "Reflection between sessions equipped me better to handle some quite difficult information and implement a new approach more effectively than if I hadn't reflected at that level because I became aware of my feelings and more comfortable with them" (participant 7); and, "I stopped automatically thinking that what I was doing was right and considered alternatives, which made me become more client-centered and able to respond better to the client with different approaches" (participant 5). A range of participants also acknowledged that developments to their abilities to engage in RP facilitated both greater goal achievement in relation to meeting the needs of the client and the ability to (re)formulate goals in response to changing client needs. Specifically, "I'm gaining more information as a result of the reflective training, which means I'm getting more from the athlete in order to give more rounded options and achieve the goal of improving their performance" (participant 1); and, "I started to reflect quite critically on whether my interventions and approach was really what was needed. They (reflections) helped me to become goal and client focused, which I think has been useful" (participant 2); and, "I think she (client) would've been happy stopping after she gained control over her behavior, but reflecting more critically I realized that we needed to spend time understanding the reasons why she behaved in that way to prevent future issues (participant 10).

Finally, participants discussed how engaging in higher levels of RP helped them to develop their personable characteristics (e.g., ability to develop a rapport), communication skills, knowledge and understanding of sport psychology, professional skills (e.g., decision making skills), and practical skills (e.g., ability to apply theory to practice). For example, concerning developing personable characteristics, participants commented, "Because its (reflecting) encouraged me to be more open in my questioning it's been helpful for gaining information and developing that rapport. I think the ability to do that has come through the reflective training" (participant 6); and, "Improving my reflections has made me more aware of my feelings so I know not to let nerves impact the information that I give and that will help my

effectiveness in that first meeting and creating a rapport" (participant 8). Further, in relation to communication, participants outlined, "It (effective questioning) helps me tease more information out of the client which gives me a better understanding of the situation or the issue, which means I can provide a better service" (participant 5); and, "(As a result of improved RP) I think I've learnt to use more colloquial language and the sporting terms that the client really understands and I think this has helped her engagement in the process." In relation to professional skills participants commented, "I'm learning now when to guide them (client) and when to say 'try to work it out for yourself' and that's come from reflecting more deeply because of the process we've (participant and researcher) been through" (participant 2); and "Through reflecting in the more structured way I think I've started to develop the knowledge and insight required to be really perceptive to the client's feelings and expressions" (participant 4). Participants also suggested that developing their practical skills enabled them to adopt more innovative approaches to problem solving during practice. For example, "There's only so many times you can do the same thing so that's made me want to understand how I can provide something different to my athletes, and if I wasn't reflecting on that I would never make those changes" (participant 11). Participants were in agreement that such developments to characteristics associated with effectiveness were a direct result of being able to reflect more critically on their experiences. Although participants mentioned that such changes may have occurred as a natural consequence of practicing, they suggested that the improvements would not have happened as quickly or to the extent that they did without developments to their RP.

Discussion

Researchers have suggested that despite the intuitive appeal of RP as a mechanism to facilitate personal and professional development, little empirical evidence exists to support the potential links between RP and improved service delivery effectiveness (Cropley, Miles, & Knowles, 2018; Picknell et al., 2014). To address this gap, we explored the treatment effect of an evidence-based, multimodal RP training program on participating SPCs' (trainee and

professionally qualified) abilities to engage in higher levels of RP and the subsequent impact of this on the effectiveness of their practice. By satisfying the five visual inspection criteria that guided our staggered, single-subject multiple-baseline experiment (cf. Haegele & Hodge, 2015), our findings demonstrated that all participants were able to engage in higher levels of RP post-intervention. Linked to these developments, participants also experienced improved service delivery effectiveness, indicated through a range of self-report and client assessment factors, which was corroborated with qualitative client feedback and in-depth social validation responses. Specifically, participants reported that reflecting at higher levels enabled the development of self-awareness, professional judgment and decision making, and a range of personal and/or professional characteristics required to better address client needs. Consequently, we have provided novel support for the value of SPCs receiving systematic RP training, the impact of reflecting at higher levels of insight, and the efficacy of RP for facilitating service delivery effectiveness in ASP.

Sly, Mellalieu, and Wagstaff (2020) suggested that SPCs must continue to develop theoretical and tacit knowledge, as well as functional competencies, to be able to practice effectively across the diversifying ASP consultancy landscape. In accord with this, the findings or our study have demonstrated that RP offers a valuable meta-cognitive strategy targeting the personal and professional development required to be able to better meet client needs. Indeed, meeting client needs is thought to be fundamentally linked to the concept of effective service delivery (Cropley et al., 2010; Fortin-Guichard, 2018). Through our research, we have highlighted the importance of SPCs being able to reflect at higher levels of insight to facilitate this process. There has been considerable debate in the RP literature concerning the nature and importance of critical levels of reflection, with some authors indicating that the use of hierarchical RP frameworks potentially devalue lower levels of reflection (cf. Huntley et al., 2019; Knowles et al., 2014). Nevertheless, critical reflection is proposed to be both emancipatory (e.g., frees individuals from constraining influences) and transformational (e.g.,

enlightens and empowers individuals to address and improve thoughts and behaviors), whereas lower levels of reflection are more concerned with issues of efficiency and accountability (e.g., evaluating whether certain actions achieved the desired outcome; Cropley et al., 2018). More critical levels of reflection that alter the focus, content, and quality of reflections from trivial to potentially profound may be required, therefore, to achieve the cognitive and behavioral adaptations necessary to enhance service delivery effectiveness (Picknell et al., 2016). Our findings support this contention as participants reported significant alterations to the focus of their reflections when starting to engage in higher levels of RP post-intervention, ultimately resulting in augmented reflective learning outcomes.

Although our findings indicated a large experimental effect for levels of reflection for all participants, only five were able to achieve the highest level of reflection sporadically (*Level 6: Critical reflection*), with an additional participant engaging in critical reflection during the retention phase. It has been suggested that being critically self-aware is an acquired skill that comes with experience and great intellect and, this being the case, not every individual is necessarily capable of engaging in critical reflection (Cropley et al., 2018). Other authors have suggested that individuals may be discouraged from reflecting at a critical level as it can lead to feelings of discomfort and vulnerability due to an individual's deeply held values and beliefs being brought into question (Anderson et al., 2004). Nevertheless, higher levels of reflection, including critical reflection, appear more beneficial for facilitating improvements to practice. As a result, SPCs and those responsible for the training and supervision of practitioners must commit to the developmental strategies required to improve the attitudes and skills necessary for an individual to be able to engage in higher levels of RP (Huntley et al., 2019). Indeed, our findings support the need for evidence-based, multimodal training programs to facilitate better engagement in RP. What appeared particularly beneficial in the current study was the structured approach to RP adopted post-intervention, and the mentoring support provided to participants. Specifically, participants reported that the structured approach provided them with the necessary

prompts to consider their experiences in critical detail, rather than simply pondering over descriptive information. Further, participants valued the opportunity to discuss their RP with a mentor (first author), which enhanced their understanding of RP and encouraged deeper insights into their practice. In support of these findings, Marshall (2019) argued that RP is an integrative and active process that is facilitated through writing and discussion. These mechanisms are thought to surface internally represented ideas, allowing an individual to make sense of their experiences in a way that encourages learning, which, when integrated into future action, improves practice (Knowles et al., 2001). It is therefore permissible to argue that participants in our study could have potentially achieved critical levels of reflection more consistently during the post-intervention and retention phases, if additional data collection time, and thus more time to engage with the structured RP framework and mentoring opportunities, was provided.

The findings of our research have shown that improving SPCs' abilities to engage in RP can facilitate development along two dimensions: *attitudinal* (e.g., modification of practitioners' attitudes towards their work) and *functional* (e.g., improvements in the processes of ASP practice). For instance, from an attitudinal perspective, participants reported that they were able to gain better access to and make greater sense of their thoughts, feelings, and behaviors in the specific environments in which they worked. Such benefits support those that have been outlined in personal accounts of SPCs engaging in RP (e.g., Anderson et al., 2004; Cropley et al., 2007). Attitudinal developments experienced by the participants in this study were linked to developing a greater self-awareness, which is considered as an influential psychological process that can facilitate positive personal adaptations (e.g., development of characteristics associated with effectiveness), support professional outcomes (e.g., meeting client needs), and develop practitioner expertise (Mellalieu, 2017). From a functional perspective, participants commonly reported that reflective learning outcomes focused on gaining knowledge and understanding of what actually works in practice, which supported improvements to their professional judgement and decision making. Accordingly, this supports the notion that RP allows individuals to make

sense of and learn relevant knowledge-in-action contributing to developing personal theories about the most effective methods of practicing in a specific context (e.g., Anderson et al., 2004; Knowles et al., 2012). Collectively it appears that these attitudinal and functional developments encouraged our participants to consider the professional framework they employed as SPCs. For example, the majority of clients rated participants higher on their ability to *adopt a client-centered approach* and *meeting client needs* after the intervention. Further, during the social validation, a number of participants revealed that they felt better able, and more inclined, to adopt client-centered approaches to practice following the intervention as a result of increases in their self-awareness triggered by higher levels of RP. Such developments echo the idea that RP can offer a path towards a humanizing, person-centered approach to care, which has become almost synonymous with commentaries on effective ASP service delivery (e.g., Anderson et al., 2004; Marshall, 2019; Sly, 2020).

Summary and Future Research

This study supports the notion that RP offers a genuine approach for fostering change in SPCs' professional action. Specifically, the intervention administered in this study across a number of years, had a positive experimental effect on the levels participants were able to reflect at and this consequently had a positive influence on the effectiveness of participants' practice (as perceived by the participant and their client). These findings, substantiated through quantitative measures of service delivery effectiveness and social validation procedures, provide substantial, rigorous, and novel support for the notion that RP can function as a mechanism for improving service delivery effectiveness in ASP. Support was also offered for the importance of systematically educating practitioners about RP, as well as explicitly developing the attitudes and skills required for higher levels of RP. In agreement with Sly et al. (2020), who recommended ongoing learning for all practitioners to constantly address the competence and effectiveness of their practice, we extended this support to practitioners at all stages of development. Indeed, few differences were observed in the current study between trainee and

professionally qualified practitioners, suggesting a need for ongoing facilitation of RP in all SPCs and not just those neophyte practitioners undergoing formal training (cf. Huntley et al., 2019). Organizations responsible for professional qualifications in the field (e.g., BASES, BPS, AASP) should, therefore, consider the value of multimodal interventions to provide a range of strategies for engaging individuals in the reflective process, rather than relying on a one-size fits all approach. Thus, endorsers of RP should communicate an array of methods that can encourage enhanced critical engagement in RP. Researchers should consider conducting systematic evaluations of organizational interventions to explore practitioners' experiences and perceptions regarding the utility of the intervention for developing their ability to reflect at higher levels of insight. The impact of developing the attitudes and skills required for critical RP on professional practice should also be examined in an attempt to grow what is at present a limited evidence-base (Picknell et al., 2016).

Finally, the landscape of ASP service provision is rapidly changing (cf. Sly et al., 2020). Consequently, the ways in which effective ASP practice is defined, understood and measured is also likely to evolve. Addressing service delivery effectiveness is, nevertheless, an ongoing and pressing need to ensure that practitioners can be held accountable to the multitude of stakeholders they work with and for (Fortin-Guichard et al., 2018). Informed by the extant literature, we adopted self-report and client measures of effectiveness in this study. In doing so, we potentially overlooked a number of influencing factors such as *client performance* and the *organizational fit* of the practitioner. Researchers may therefore wish to explore both the concept of effective service delivery and the potential impact of RP on these wider effectiveness factors. Given the findings of the current study, RP certainly appears to offer an efficacious approach to improving SPCs' effectiveness, and so ongoing investigations are warranted.

References

Anderson, A. G., Knowles, Z., & Gilbourne, D. (2004). Reflective practice for sport psychologists: Concepts, models, practical implications, and thoughts on dissemination. *The Sport Psychologist, 18,* 188-203. doi: 10.1123/tsp.18.2.188

Anderson, A., Miles, A., Mahoney, C., & Robinson, P. (2002). Evaluating the effectiveness of applied sport psychology practice: Making the case for a case study approach. *The Sport Psychologist*, *16*, 432-453. doi: 10.1123/tsp.16.4.432

Anderson, A., Miles, A., Robinson, P., & Mahoney, C. (2004). Evaluating the athlete's perception of the sport psychologist's effectiveness: What should we be assessing? *Psychology of Sport and Exercise, 5,* 255-277. doi: 10.1016/S1469-0292(03)00005-0

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11, 589-597. doi: 10.1080/2159676X.2019.1628806

Chandler, C., Eubank, M., Nesti, M., & Cable, T. (2014). Personal qualities of effective sport psychologists: A sports physician perspective. *Physical Culture and Sport Studies and Research*, *11*, 28-37. doi: 10.2478/pcssr-2014-0003

Cooper, J., Heron, T., & Heward, W. (2007). *Applied behavior analysis* (2nd ed.). Upper Saddle River, NJ: Pearson Education.

Cropley, B., Baldock, L., Neil, R., Mellalieu, S., Wagstaff, C., & Wadey, R. (2016). Coping with the demands of professional practice: Sport psychology consultants' perspectives. *The Sport Psychologist, 30,* 290-302. doi: 10.1123/tsp.2015-0125

Cropley, B., Hanton, S., Miles, A., & Niven, A. (2010). Exploring the relationship between effective and reflective practice in applied sport psychology. *The Sport Psychologist, 24*(4), 521-541. doi: 10.1123/tsp.24.4.521

Cropley, B., Miles, A., Hanton, S., & Niven, A. (2007). Improving the delivery of applied sport psychology support through reflective practice. *The Sport Psychologist, 21*, 475-494.

738 Cropley, B., Miles, A., & Knowles, Z. (2018). Making reflective practice beneficial. In R.
739 Thelwell & M. Dicks (Eds.), *Professional advances in sports coaching: Research and*
740 *practice* (pp. 377-396). Abingdon: Routledge.
741 Fortin-Guichard, D., Boudreault, V., Gagnon, S., & Trottier, C. (2018). Experience,
742 effectiveness, and perceptions toward sport psychology consultants: A critical review of peer-
743 reviewed articles. *Journal of Applied Sport Psychology*, *30*, 13-22. doi:
744 10.1080/10413200.2017.1318416
745 Friesen, A., & Orlick, T. (2010). A qualitative analysis of holistic sport psychology consultants'
746 professional philosophies. *The Sport Psychologist*, *24*, 227-244.
747 Ghaye, T. (2011). *Teaching and learning through reflective practice: A practical guide for*
748 *positive action.* Abingdon: David Fulton Publishers.
749 Haberl, P., & McCann, S. (2012). Evaluating USOC sport psychology consultant effectiveness:
750 A philosophical and practical imperative at the Olympic Games. *Journal of Sport Psychology*
751 *in Action*, *3*, 65-76. doi: 10.1080/21520704.2012.683095
752 Haegele, J., & Hodge, S. (2015). The applied behavior analysis research paradigm and single-
753 subject designs in adapted physical activity research. *Adapted Physical Activity Quarterly*, *32*,
754 285-301. doi: 10.1123/APAQ.2014-0211
755 Huntley, E., Cropley, B., Gilbourne, D., Knowles, Z., & Sparkes, A. (2014). Reflecting back and
756 forwards: The ebb and flow of reflective practice peer-reviewed research in sport. *Reflective*
757 *Practice*, *15*, 863-876. doi: 10.1080/14623943.2014.969695
758 Huntley, E., Cropley, B., Knowles, Z., & Miles, A. (2019). The BASES expert statement on
759 reflective practice. *The Sport & Exercise Scientist*, *60*, 6-7.
760 Keegan, R. (2016). *Being a sport psychologist*. London: Palgrave.
761 Knowles, Z., Gilbourne, D., Borrie, A. & Neville, A. (2001). Developing the reflective sports
762 coach: A study exploring the processes of reflection within a higher education coaching
763 programme. *Reflective Practice*, *2*, 185-207.

764 Knowles, Z., Gilbourne, D., Cropley, B., & Dugdill, L. (2014). Reflecting on reflection. In Z.
765 Knowles, D. Gilbourne, B. Cropley, & L. Dugdill (Eds.), *Reflective practice in the sport and*
766 *exercise sciences: Contemporary issues* (pp. 3-15). London: Routledge.
767 Knowles, Z., Katz, J., & Gilbourne, D. (2012). Reflective practice within elite consultancy:
768 Diary extracts and further discussion on a personal and elusive process. *The Sport*
769 *Psychologist*, *26*, 454-469. doi: 10.1123/tsp.26.3.454
770 Kuklick, C., Gearity, B., & Thompson, M. (2015). The efficacy of reflective practice and coach
771 education on intrapersonal knowledge in the HE setting. *International Journal of Coaching*
772 *Science*, *9*, 23-42.
773 Legare, T., & Armstrong, D. (2017). Critical reflective teaching practice for novice nurse
774 educators. *Teaching & Learning in Nursing*, *12*, 312-315. doi: 10.1016/j.teln.2017.05.004
775 1557-3087
776 Marshall, T. (2019). The concept of reflection: A systematic review and thematic synthesis
777 across professional contexts. *Reflective Practice*, *20*, 396-415. doi: 10.1080/14623943.2019
778 Mellalieu, S. D. (2017). Sport psychology consulting in professional rugby union in the United
779 Kingdom. *Journal of Sport Psychology in Action*, *8*, 109-120. doi: 10.1080/21520704
780 Mezirow, J. (1981). A critical theory of adult learning and education. *Adult Education*, *32*, 3-24.
781 Neil, R., Hanton, S., & Mellalieu, S. (2013). Seeing things in a different light: Assessing the
782 effects of a cognitive-behavioral intervention upon the appraisals and performance of golfers.
783 *Journal of Applied Sport Psychology*, *25*, 106-130. doi: 10.1080/10413200.2012.658901
784 Page, J., & Thelwell, R. (2013). The value of social validation in single-case methods in sport
785 and exercise psychology. *Journal of Applied Sport Psychology*, *25*, 61-71. doi:10.
786 1080/10413200.2012.663859
787 Partington, J., & Orlick, T. (1987). The sport psychology consultant evaluation form. *The Sport*
788 *Psychologist*, *1*, 309-317.

789 Patton, M. (2015). *Qualitative research and evaluation methods. Integrating theory and*
790 *practice*. Los Angeles, CA: Sage.
791 Picknell, G., Cropley, B., Mellalieu, S. D., & Hanton, S. (2016). Investigating the benefits of
792 enhancing reflective skills on the practice behaviours of health practitioners. *The Sport &*
793 *Exercise Scientist*, *50*, 22-23.
794 Picknell, G., Cropley, B., Hanton, S., & Mellalieu, S. D. (2014). Where's the evidence?
795 Empirical reflective practice interventions with different populations in sport. In Z. Knowles,
796 D. Gilbourne, B. Cropley, & L. Dugdill (Eds.), *Reflective practice in the sport and exercise*
797 *sciences: Contemporary issues* (pp. 28-38). London: Routledge.
798 Powell, J. (1989). Reflective practitioner in nursing. *Journal of Advanced Nursing*, *14*, 824-832.
799 Schinke, R. J., et al. (2006). The adaptation to the mainstream in elite sport: A Canadian
800 Aboriginal perspective. *The Sport Psychologist*, *20*, 435-448.
801 Sharp, L-A., & Hodge, K. (2014). Sport psychology consulting effectiveness: The athlete's
802 perspective. *International Journal of Sport and Exercise Psychology*, *12*, 91-105. doi:
803 10.1080/1612197X.2013.804285
804 Slack, L., Maynard, I., Butt, J., & Olusoga, P. (2015). An evaluation of a mental toughness
805 education and training program for early-career English football league referees. *The Sport*
806 *Psychologist*, *29*, 237-257. doi: 10.1123/tsp.2014-0015
807 Sly, D., Mellalieu, S., & Wagstaff, C. (2020). "It's psychology Jim, but not as we know it!": The
808 changing face of applied sport psychology. *Sport, Exercise, and Performance Psychology*, *9*,
809 87-101. doi: 10.1037/spy0000163
810 Smith, B., & McGannon, K. (2018). Developing rigor in qualitative research: Problems and
811 opportunities within sport and exercise psychology. *International Review of Sport & Exercise*
812 *Psychology*, *11*, 101-121. doi: 10.1080/1750984X.2017.1317357
813 Winter, S., & Collins, D. (2016). Applied sport psychology: A profession? *The Sport*
814 *Psychologist*, *30*, 89-96. doi: 10.1123/tsp.2014-0132

Table 1. Participant information

Year of Participation	Participant	Gender	Age	Affiliate Organization	Status	Experience / Year of Training
1	1	Male	22	BPS	Trainee	2
	2	Female	22	BASES	Trainee	1
	3	Female	30	BPS	Chartered	3
	4	Male	28	BPS	Chartered	3
2	5	Female	21	BASES	Trainee	1
	6	Female	24	BASES	Trainee	1
3	7	Female	35	BPS	Chartered	8
	8	Male	22	BASES	Trainee	1
4	9	Male	25	BASES	Trainee	1
	10	Female	23	BASES	Trainee	2
5	11	Male	23	BPS	Trainee	1
	12	Male	29	BPS	Chartered	3
		M_{age} (*SD*)	25.7 (4.09)		Chartered M_{exp} (*SD*)	4.25 (2.5)

818 **Table 2**. Hierarchical levels of reflection rubric
819

Level	State Description	Criteria
1	Reflectivity	Awareness, observation, description *Description of the nature of the session*
2	Affective reflectivity – Consultant / Client	Awareness of the consultants own feelings and/or the client's feelings *1 followed by analysis of feelings, e.g. consultant feeling happy/disappointed about session outcome, client feeling anxious about what is being asked of them*
3	Discriminant reflectivity - Reflection on relationships between principles and practice	There is an assessment of decision making processes, the implications and consequences of actions, and self-beliefs/values as well as the underlying rationale for practice *1, 2, and understanding of the influence of approach/framework adopted on the outcome of the situation – recognition of alternative approaches*
4	Conceptual reflectivity	Assessment of learning has taken place and/or identification that further learning is required to assist in decision making *1, 2, 3 and recognition of the learning emerging from the process and/or recognition of the need for further learning to address the issues in question.*
5	Theoretical critical reflectivity	Awareness that routine or taken-for-granted practice may not be the complete answer, obvious learning from experience or change in perspective *1, 2, 3, 4 and consideration of the experience in the context of what has been learnt and how this may influence future practice, as well as the actions required to use knowledge from reflection in order to influence future behavior / attitudes / perceptions*
6	Critical reflection	Issues of justice and emancipation enter deliberations over the value of professional goals and practice. The practitioner makes links between the setting of everyday practice and broader social structure and forces and may contribute to ethical decision making in practice *All above and examination of the constraints that social, political, and economic factors have on action as well as questioning values and actions that may hither to have been taken for granted*

820

821

822 **Table 3**. Experimental procedure
823

Study Phase	Actions	Data Collection	Period
Baseline	1. Participants completed one written reflection per week on a subjectively determined critical incident (cf. Cropley et al., 2007). Reflection submitted to first author each week for scoring and analysis by the research team. 2. Participants' completed the performance profile and their clients completed the consultant assessment tool during the last week of the individual baseline phase - both submitted to the research team for collation.	1. Written reflections (1 per week). 2. Participant performance profile. 3. Client assessment of participant effectiveness.	Staggered between 3 and 8 weeks.
Intervention	1. Individual tutorials (n = 2), 1 per week of the intervention phase. 2. Feedback provided on tutorial tasks and written reflections completed during the intervention period. 3. Mentoring procedure consisting of formal conversations between participant and first author every two weeks stated at week 1 of the intervention.	No formal data collection during the intervention.	2 weeks.
Post-intervention	1. Participants completed one written reflection per week on a subjectively determined critical incident (cf. Cropley et al., 2007). Reflection submitted to first author each week for scoring and analysis by the research team. 2. Ongoing participant mentoring every two weeks post-intervention. 3. Participants' completed the performance profile and their clients completed the consultant assessment tool during the last week of the post-intervention phase (week 14) – both submitted to the research team for analysis.	1. Written reflections (1 per week). 2. Participant performance profile. 3. Client assessment of participant effectiveness.	Staggered between 4 and 9 weeks.
Social validation	1. Social validation interviews conducted individually with participants 48 hours following the completion of the post-intervention phase.	1. Semi-structured, social validation interviews.	-
Retention	1. Two months following completion of the post-intervention phase, participants completed one written reflection per week on a subjectively determined critical incident (cf. Cropley et al., 2007). Reflection submitted to first author each week for scoring and analysis by the research team.	1. Written reflections (1 per week).	2 weeks (2 months following end of post-intervention phase).

824

Table 4. Characteristics of effectiveness assessment: Performance profile (mean category scores) pre- to post-intervention

	Participant																							
	1		2		3		4		5		6		7		8		9		10		11		12	
Category	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Personable	6.3	**7.7**	6.7	**7.7**	7.3	**7.7**	7.3	**8.0**	6.0	**6.3**	6.3	**7.0**	7.7	**8.0**	5.7	**6.3**	6.7	**7.3**	6.7	**7.0**	5.7	**6.0**	8.0	**8.3**
Good communicator	5.3	**6.3**	6.7	**7.7**	6.7	**7.3**	7.3	**7.7**	4.3	**5.7**	5.3	**6.7**	8.0	8.0	4.7	**5.7**	5.0	**6.7**	5.3	**6.3**	4.7	**5.3**	6.7	**8.0**
Provider of a good practical service	6.2	**6.8**	6.2	**7.2**	7.8	**8.4**	8.0	8.0	6.0	**6.4**	6.0	**7.0**	8.6	8.6	5.4	**6.4**	6.4	**7.0**	6.6	**7.2**	5.4	**6.4**	7.4	**7.6**
Knowledgeable	6.7	**7.3**	6.7	**7.3**	7.3	**7.7**	8.0	**8.3**	5.3	**6.0**	6.0	**7.0**	8.0	**8.3**	5.7	**6.3**	6.3	**7.3**	5.3	**6.7**	5.3	**6.0**	7.0	**7.7**
Trustworthiness	10.0	10.0	9.0	**9.3**	8.7	8.7	10.0	10.0	9.0	**9.3**	10.0	10.0	10.0	10.0	9.0	**9.3**	9.0	**9.3**	7.7	**8.7**	8.0	**8.3**	7.3	**8.3**
Exhibits professional skills	5.8	**7.0**	6.0	**7.0**	7.2	**7.8**	7.0	**8.2**	5.6	**6.8**	5.6	**7.0**	7.0	**8.2**	5.0	**6.2**	5.4	**7.2**	5.2	**6.8**	5.0	**6.4**	6.2	**7.4**
Attitude	7.7	7.7	7.0	**7.7**	8.7	8.7	8.3	**9.0**	6.7	**7.0**	7.3	**7.7**	9.0	9.0	7.3	7.3	8.3	**8.7**	8.3	8.3	6.3	**7.7**	8.0	**8.7**
Mean	6.9	**7.5**	6.9	**7.7**	7.7	**8.0**	8.0	**8.5**	6.1	**6.8**	6.7	**7.5**	8.3	**8.6**	6.1	**6.8**	6.7	**7.6**	6.4	**7.3**	5.8	**6.6**	7.2	**8.0**
SD	1.6	1.2	1	1	1	1	1	0.8	1	1	1.6	1.2	1	0.7	2	1	1	1	1	1	1	1	1	0

Note: **Bold** scores represent criteria that improved during the post-intervention assessment

Table 5. Assessment of consultant effectiveness (client scores) pre- to post-intervention

	Participant																							
	1		2		3		4		5		6		7		8		9		10		11		12	
Criteria	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Practitioner personal characteristics	8	8	6	**8**	10	10	8	8	8	8	8	**9**	7	**8**	6	**7**	8	8	8	8	7	7	8	8
Practitioner attitude	7	**8**	6	**8**	9	**10**	6	**10**	8	8	7	**10**	8	**10**	7	**8**	8	8	9	**10**	7	**8**	9	**10**
Trustworthiness of practitioner	6	**9**	9	9	10	10	10	10	8	**10**	9	9	10	10	10	10	9	9	10	10	7	**9**	10	10
Development of professional consulting relationship	6	**8**	5	**8**	10	10	9	9	8	8	7	**9**	9	**10**	6	**8**	6	**8**	8	8	7	**9**	8	8
Good communicator	4	**7**	5	**7**	10	10	7	**10**	7	7	8	8	10	10	6	**7**	4	**7**	9	9	7	**9**	9	**10**
Practitioner knowledge: Sport	7	**8**	6	**8**	7	**9**	10	10	4	**6**	6	**8**	10	10	5	**6**	5	**7**	10	10	10	10	10	10
Practitioner knowledge: Psychology	8	8	7	**8**	9	**10**	7	**8**	9	9	9	9	9	**10**	7	**9**	8	8	9	9	7	**9**	7	**9**
Adoption of a client-centred approach	8	8	5	**8**	9	**10**	5	**8**	8	**9**	9	9	8	**10**	7	**9**	9	9	9	**10**	5	**7**	8	8
Ability to meet client needs	6	**7**	5	**7**	7	**10**	8	**9**	6	**8**	7	**8**	9	9	7	**8**	7	**9**	9	**10**	5	**7**	9	9
Structure of the support	6	**8**	7	**9**	9	9	10	10	6	**8**	6	**8**	10	10	7	**8**	7	**9**	6	**9**	8	8	10	10
Overall effectiveness*	2	**3**	3	**4**	4	**5**	3	**4**	2	**3**	2	**4**	4	4	2	**3**	3	**5**	4	4	2	**3**	4	4
Mean**	6.6	**7.9**	6.1	**8**	9	**9.8**	8	**9.2**	7.2	**8.1**	7.6	**8.7**	9	**9.7**	6.8	**8**	7.1	**8.2**	8.7	**9.3**	7	**8.3**	8.8	**9.2**
SD	1.3	0.6	1.3	0.7	1.2	0.4	1.8	0.9	1.5	1.1	1.2	0.7	1.1	0.7	1.3	1.2	1.7	0.8	1.2	0.8	1.4	1.1	1.0	0.9

Note: **Bold** scores represent criteria that improved during the post-intervention assessment
*Scores for overall effectiveness ranked on a scale of -5 (hindered) to +5 (helped a lot)
**Mean scores exclude the *overall effectiveness* item due to the different scales of measurement

Figure 1. Participants' levels of reflection: Baseline, post-intervention and retention phases

P = Participant number
A = Baseline; B = Intervention period; C = Post-intervention; D = Retention
---- = Trend lines

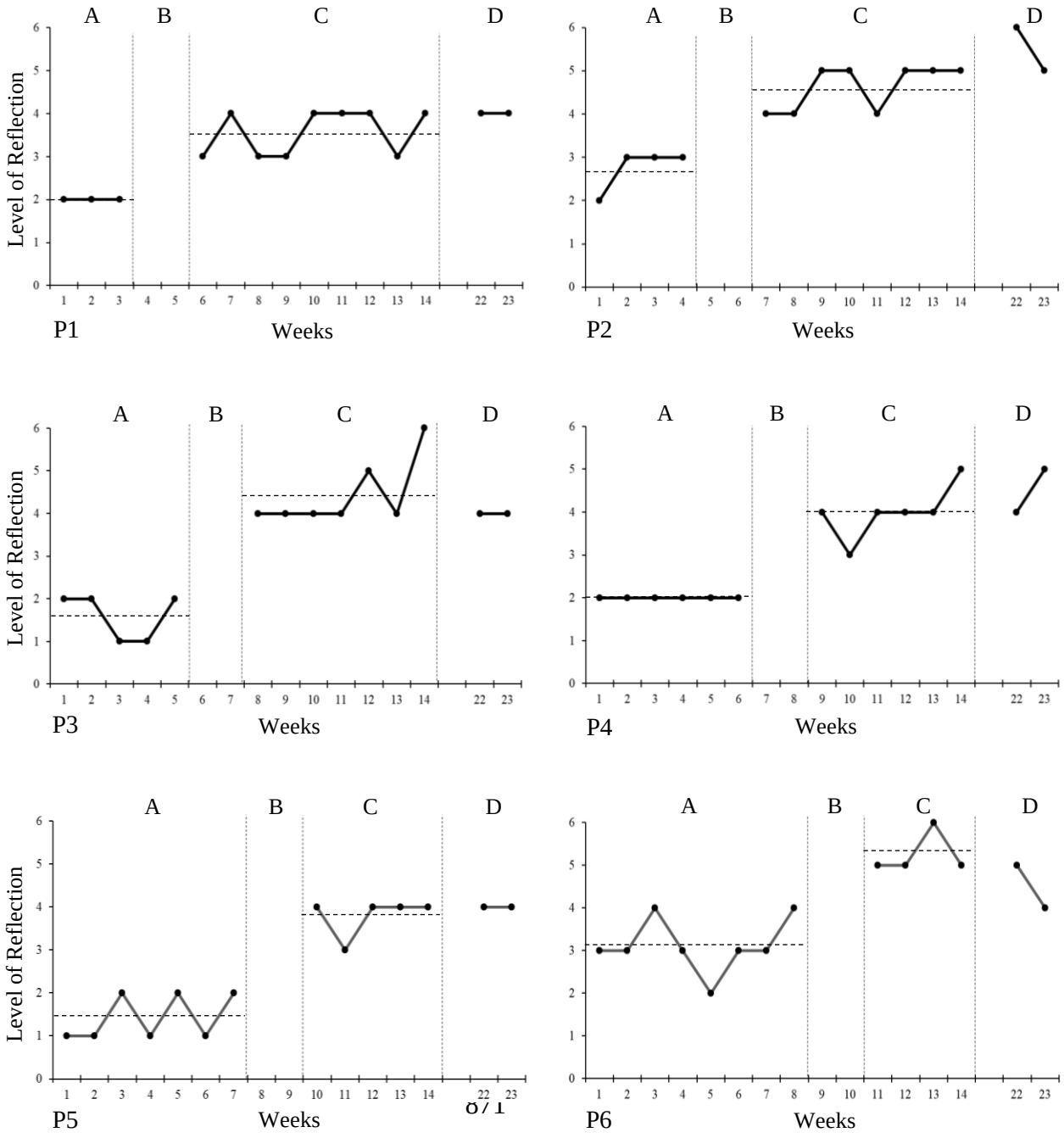

Figure 1 cont. Participants' levels of reflection: Baseline, post-intervention and retention phases

P = Participant number
A = Baseline; B = Intervention period; C = Post-intervention; D = Retention
---- = Trend lines