Having a goal up your sleeve

Promoting a mastery climate in a youth football academy team

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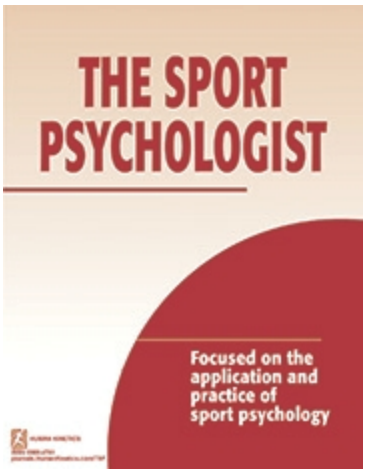
Published in:
The Sport Psychologist

DOI (link to publication from Publisher):
10.1123/tsp.2021-0207

Publication date:
2024

Document Version
Accepted author manuscript, peer reviewed version



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Journal:	*The Sport Psychologist*
Manuscript ID	TSP.2021-0207.R4
Manuscript Type:	Applied Research
Keywords:	motivational climate, goal setting, intervention, pragmatism, soccer

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Date of Submission: 15-08-2022

Word Count: 9610

Abstract

Within sport, there is extensive evidence that supports the benefits associated with a mastery climate. However, limited studies have explored how physical tools could be used to promote mastery climates in youth sport contexts. Using an action research approach, we sought to understand the benefits and drawbacks of applying tools grounded in goal setting to promote a mastery environment: (1) an 'arm-sleeve' to be worn by athletes during training and matches and (2) a 'reflection-sheet' for use pre- and post-training/matches. These tools were implemented for a three-week period with a U13 academy team (18 players and two coaches). Based on observation notes, focus groups, and one-on-one interviews, the analysis showed that the arm-sleeves were helpful reminders for process goals, wheras the coaches had abandoned the use of 'reflection-sheets' due to lack of time. The benefits and drawbacks of the tools are discussed while pedagogical and practical implications are considered.

Keywords: Motivational climate, goal setting, intervention, pragmatism, soccer

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The global professionalization of youth sport has contributed to a ubiquitous emphasis on early specialization and performance (e.g., DiSanti & Erickson, 2020; Gould, 2019). For instance, youth football players (~ aged 6-12 years) are increasingly reported as being engaged in organized football with high amounts of both deliberate play and practice (Hornig et al., 2017). Moreover, these children are often confronted with early talent identification practices (Wrang et al., 2022). One of the resounding byproducts of engaging in early specialization and talent identification practices is the inevitable emphasis placed on performance. The systemic changes in youth sport have created climates that emphasize performance, where reference points for success and failure (i.e., perceptions of competence) are derived by social comparison and superiority (Erdal, 2018). Such conceptions of competence constitute two achievement goal states (e.g., task vs. ego-involvement), which establish how individuals define success in achievement settings (Roberts & Neerstad, 2020).

There is extensive sport literature that highlights the maladaptive outcomes associated with performance climates and supports the benefits of mastery climates (Harwood et al., 2015). For instance, mastery climates—those that emphasize self-actualization and development—have been associated with enhanced enjoyment, positive affect, well-being, intrinsic motivation, and better performance (see Roberts & Neerstad, 2020). Thus, researchers and practitioners alike have sought to counteract the shift to performance climates by working with managers/coaches and sport psychology consultants (SPCs) to acquire knowledge and tools that enable the nurturing of mastery climates that emphasize self-referenced evaluations (Harwood & Thrower, 2020; Maitland & Gervis, 2010). In this regard, the primary approach to establishing mastery climates has involved training and interventions directed at coaches. This tendency reflects the considerable influence that coaches have on the sport environment (Smith et al., 2007), with the primary approach to

establishing mastery climates involving coach training/interventions. For example, the Mastery Approach to Coaching (MAC) that aims to develop a mastery motivational climate, is based on five principles and specific guidelines to nurture the behavior of the coach (Smoll et al., 2007). In this regard, coaches should: (1) emphasize effort and enjoyment when appraising performance; (2) take a positive approach towards instructions (e.g., positive reinforcement, technical instruction); (3) establish norms that emphasize athletes' mutual obligations to support one another; (4) create shared decisional responsibility within the team; and (5) cultivate their own self-awareness and self-monitoring. Studies guided by such MAC-principles have shown to constitute concrete positive differences both in coaching behaviors and in athletes' evaluative responses to the coach and other aspects such as decreases in performance anxiety (Smith et al., 2007; McLaren et al., 2015). For instance, using the MAC-principles, McLaren et al. (2015) found athlete perceptions of task and social cohesion to be improved considerably across a season when recreational youth soccer coaches were trained to use behaviors that emphasized mastery versus performance orientations. Clearly, efforts to train coaches are a potential avenue for manipulating sport environments (Lefebvre et al., 2016). However, such interventions require trained personnel for delivery, club resources, and assume the coach as the main conduit for change. Alternative cost-effective strategies could also influence sport climates through the coach, parents, *and* the athletes in simple and practical ways. For instance, the use of 'self-help' books can reduce perfectionistic attitudes among high-level football players (Donachie & Hill, 2020). Further, the use of pre-match (e.g., checklists) and post-match tools such as goal review sheets and logbooks can aid with optimal psychological states (Harwood & Swain, 2002). Even though psychologically-oriented tools have been developed before with various aims, none seem to have been designed for use at the actual sport facility (i.e., on the pitch). Thus, exploring simple and practical avenues that youth clubs can adopt to facilitate mastery climates seems to be a worthwhile endeavor.

One of the most prominent features of a mastery climate involves the use of self-referenced orientations and goals (Ames, 1992). Indeed, the cultivation of self-referenced orientations and the use of goal setting aligns with core principles of MAC, such as emphasizing effort, a positive approach to instruction, shared decisional responsibility, and self-awareness. It is perhaps not surprising then, that goal setting has been, and still is, one of the most widely used applied psychological strategies across a range of sports and participants (Burton & Weiss, 2008; Jeong et al., 2021; Kyllo & Landers, 1995). Despite the widespread use, however, a recent systematic review highlighted inconsistent results in terms of using goal setting as a tool to enhance athletic performance (Jeong et al., 2021). Further, due to an overemphasis on determining the effect of goal setting on athletic performance, researchers have noted the lack of clarity in relation to *how* coaches, athletes, and practitioners view and employ goal setting (Jeong et al., 2021; Maitland & Gervis, 2010).

In their general sense, goals have been defined as something that "an individual is trying to accomplish; it is the object or aim of an action" (Locke et al., 1981, p. 126). Setting goals is an effective tool for influencing task orientation, motivation, and action across the age spectrum and for various domains (e.g., rehabilitation, sport, and business). Goals are often distinguished in the degree to which they involve interpersonal comparison (e.g., winning or losing; i.e., outcome goals), are self-referenced (e.g., number of scored goals during a season; i.e., performance goals), or are defined by the execution of skills or strategies (i.e., process goals). Further, although goal setting is often thought of as an individual pursuit, goals can be derived from contextual cues and through instructions given by coaches. Thus, goals can be guided and internalised from the surrounding culture, and each culture varies in the kinds of goals transmitted (Ryan et al. 1996).

Research has shown a range of issues regarding the overall purpose (e.g., performance, wellbeing), focus (e.g., outcome, performance, process), and procedure (e.g., supportive tools or

continuous feedback) of goal setting practices. For instance, Forsblom et al. (2019) examined goal-setting practices among teams and athletes in women's ice hockey, ringette, and floorball across a season at the highest competition level in Finland. Although all teams had set collective goals, their evaluations were largely restricted to outcomes while overlooking their process and performance goals. Similarly, Burton et al. (1998) found elite athletes to infrequently use goal implementation strategies such as writing and publicly posting them. Conversely, Larsen and Engell (2013) showed that systematic and continuous goal-setting consultations between four elite footballers and two SPCs enabled the players to focus on their learning process (i.e., process goals). Such studies involving goal setting relate to findings from current reviews in several important ways. Notably, process goals have been found to have a larger effect on performance in comparison to performance and outcome goals (Williamson et al., 2021), suggesting the need to be present and focused on the task at hand. Similarly, Jeong and colleagues (2021) found that incorporating feedback within goal setting interventions was effective as it aided athletes to promote autonomy and ownership over the process. As such, an emerging practical implication relating to the effect of goal setting for supporting mastery climates is associated with the importance of using triggers (e.g., asking questions that direct behavior change) to instigate awareness of goals in the moment and to dedicate time prior to and after training for reflection.

Generally, it appears that scholars and practitioners have an understanding of *what we want* for a training environment (i.e., mastery climates for athletes) and *why we want it* (i.e., positive outcomes for athletes). However, the recent review by Jeong and colleagues (2021) demonstrated that although researchers have been measuring the effects of goals, there is less clarity pertaining to the mechanisms that explain how goals impact sport development and performance and other notable processes and outcomes. Thus, within goal-setting practices, we should strive to uncover more about *how we get what we want*. As most researchers have relied on creating awareness of

goal orientations or mastery climates through coach training or goal setting with athletes, we may be underestimating the importance of the non-conscious processes that can influence the mastery climate of a group. Accordingly, behaviors are likely determined by a combination of conscious and non-conscious processes (e.g., Levesque et al., 2008). Thus, a coach may have promoted a mastery climate and emphasized task-orientations for athletes through their behaviors and discussions, but then the training environment and sport culture could reward ability and superiority compared to others, reflecting a more ego-oriented climate. Consequently, despite coaches verbally and actively attempting to promote a mastery-approach, their behaviors and the emphasis of performance in youth sport could be activated or triggered without intention or conscious decision (Roberts & Nerstad, 2020). There is, then, a need to embed approaches that overturn the non-conscious aspects driven by the professionalization of youth sport described previously.

Embedding practical and simple tools into existing systems represents one way to target and impact a complex mastery climate (Kellmann & Beckmann, 2003). Considering the propensity to emphasize early specialization and performance, we must explore new ways to promote self-referenced task orientations within a mastery climate for participating athletes and coaches. In addition to coach-based interventions, complementary mastery-tools, such as observable goal setting practices, could be systematically embedded into preparatory, on-field activities within teams. Accordingly, through this study, we aimed to describe and evaluate the design and application of physical goal setting tools into the daily training activities of a youth football academy team to support the development of a mastery climate. Specifically, the research team, working in collaboration with a head coach and a SPC, sought to understand the benefits and drawbacks of applying arm-sleeves and reflection-sheets that functioned as mastery climate promoting tools among academy youth football players.

Methods

Research Design

We took the pragmatist perspective that as researchers, we should challenge limiting structures while offering novel purposes and activities (Cornish & Gillespie, 2009). Our idea to create and embed tools was inspired by the anthropologist Tim Ingold who championed Charles S. Peirce's idea that things *are* their effects (Ingold, 2011). In this regard, we must consider what things we develop and use in certain situations. From an ontological perspective, pragmatism finds that science is not a means to uncover reality, but rather, to explore habits of action for coping with reality (Rorty, 1989). Accordingly, as pragmatic researchers, we generate novel descriptions of a particular topic or context to best position others—practitioners in particular—to benefit from that information (Rorty, 1989). From an epistemological perspective, we find that knowledge construction is highly contextual and influenced by cultural, political, and historical conditions. This position requires us to provide a rich description of how the study was situated within a broader context. As pragmatists, we acknowledge that our subjective world is contingent and changeable (Biesta & Burbules, 2003). However, the world is not just a collection of things in motion but consists of both lines and associations of events and effects (Ingold, 2011). Consequently, we recognize that participants may perceive and experience similar events in different ways. Thus, the identified benefits and drawbacks of the mastery-involving tools implemented within the current study ought to be recognized as a function of the perceived lines and associations of events and effects.

With its focus on contextualized actions and challenging limiting structures to improve practice, pragmatism serves the aims of action research (AR). Specifically, AR originates from Kurt Lewin (1946) who advocated for the production of knowledge that was relevant for finding solutions to social problems (Kellmann & Beckmann, 2003). According to Kellmann and Beckmann (2003), Lewin proposed that relevant knowledge needed to be produced *through*

involvement with practitioners, by collaborative investigation to create intentional change. Thus, any attempt to change a praxis, will entail 'action learning,' which occurs in 'communities of practice' and functions in a 'learning spiral' comprised of five stages: (1) usual praxis, (2) reflection, investigation, and agreement on new praxis, (3) testing (or *implementation*) of new praxis, (4) analysis and reflection of the impact of new praxis, and (5) new approaches to understand and act upon (Rasmussen & Hansen, 2018). After situating our AR and participants during the following sections, we describe the change initiatives involved in the first three stages of the AR process. Due to the short intervention period (i.e., three weeks), we only had the opportunity to provide minor modifications during stages four and five. Further analysis and reflection on the impact of the new tools (i.e., stage 4) as well as suggestions for further development of their use (i.e., stage 5) are presented in the analysis and discussion.

Context and Case

Access and Participant Selection

The youth football team for the current study was recruited from a Danish Superliga football club. This choice was guided by opportunity (i.e., access provided through succesfull collaboration in previous projects) as well as information- and action-oriented case selection criteria (Smith & Caddick, 2012). Specifically, the youth academy was selected due to its openminded leaders and coaches, with an interest in hands-on tools to aid player development. During an initial meeting with the talent director, he said: "We are not interested in projects that result in a pile of paper that collects dust. We want tools that can be directly translated into practice and that promote learning and development." Given our AR approach, we engaged with key stakeholders from the club to design and apply tools that would facilitate their overall developmental objective of enabling players to successfully transition to the professional team (e.g., Kellmann & Beckmann, 2003).

The talent director suggested the club's U13 team would be ideally suited to participate in the study, as they consisted of fairly new youth players (recently assembled from local clubs). This provided an excellent opportunity to impact the athletes and the context, as Harwood and Thrower (2020) recently suggested that interventions ought to occur in the early stages of group development, as they are often characterized by social comparisons and competition for positions at this stage. Further, Roberts and Neerstad (2020) claimed that children at age 12 begin to adopt a more adult perception, which makes them more prone to develop an ego-orientation (e.g., that the demonstration of competence involves outperforming others). Hence, this age group was well positioned to be introduced to process goals and the cultivation of mastery-involved behaviors.

We contacted the U13 head coach and the in-club SPC to discuss the potential collaboration. It was determined that the actionable tools would be created together and that the coach and SPC would determine how and when they would be used. Before the AR process took place, ethical approval was obtained from the lead author's institution and informed consent was obtained from the talent director, head coach, SPC, players, and their parents/guardians. The talent director, coach, and SPC have all read and endorsed this manuscript, while the names of the players are presented as pseudonyms to protect their identities.

The Club, Coach, and SPC

Like most elite clubs in Denmark, the club positions itself as the regional elite club, which is best shown by their recruitment of athletes from the whole region to their youth academy. The U13 team consisted of a head coach, a SPC, and 18 U13 players who had been recruited from local clubs six months previously. At the time of the study, the head coach was 28 years of age and had been with the club for two years. The SPC was 26 years of age and had been the club's part-time SPC for two years. All players had been playing organized football from the age of 3-5 years in local clubs, practiced four times a week, and lived between 3-62 km from the academy. The head coach and

SPC characterized most players as highly motivated, but predominantly focused on outcome goals (e.g., winning in training and matches, becoming a professional football player). As the SPC only fulfilled a part-time job for the whole academy, his role was mostly to facilitate sport psychology sessions with coaches and parents within the club.

The Action Researchers

At the beginning of the AR process, three researchers, Marie-Louise, Marcus and Michael, were part of the research team. All three had followed and completed several general psychology and applied sport psychology courses at Aalborg University, which were taught by the first and fourth author. This education emphasizes problem-based learning and theory-practice coupling, which are vital aspects in AR (Greenwood & Levin, 2007). In addition, the connection to the elite club by the first and fourth author helped to build rapport (Krane & Baird, 2005) and contextual understanding (Smith & Caddick, 2012) for the researchers.

Understanding of the elite club's ethos, normative practices, and procedures were key to aligning the AR process to the context (Greenwood & Levin, 2007). For example, it allowed the researchers to use local terminology, discuss how the project could support desired objectives, and be aware of cultural assumptions and routines. In this regard, not being football experts helped the researchers to position themselves as experts in motivation, while acknowledging the head coach and SPC for their roles and expertise pertaining to football. This was important for challenging local beliefs and traditions that may have hindered the discovery of important ways for change (Greenwood & Levin, 2007).

The Action Research Process: Procedure and Data Collection

The AR process is depicted in Figure 1 and aligned with the stages advanced by Rasmussen and Hansen (2018). To better understand usual praxis, the researchers engaged as 'participant observers' for a three-week period prior to the design phase (involving three training sessions and

one competition; e.g., Sparkes & Smith, 2014). From this stage, the researchers documented general observations and noted their reflections from informal interviews with club staff in a document. Three design meetings took place that involved the researchers and the SPC and/or the coach to discuss the usual praxis in the club and to discuss potential tools. In accordance with Reason and Bradbury's (2001) definition of AR as "a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes" (p. 1), the first meeting sought to clarify roles for the coaches and researchers; the coaches were the primary facilitator of using the tools, whereas the researchers facilitated reflections on the benefits and drawbacks of the tools.

During the first meeting, motivation was identified as a salient topic of interest that the club wanted to support in a practical manner. The SPC and head coach were not concerned with general levels of motivation, but admitted that many players had transitioned from performance-dominant environments. To support an applied focus on process goals in this club, the coach and SPC had initiated weekly individual player development meetings. Despite best intentions, the SPC did not feel that these meetings changed the way athletes approached daily training. Importantly, it was apparent that the players were familiar with traditional goal setting (i.e., setting process and performance goals every three months). In preparation for the second meeting, the researchers held several mind mapping sessions to discuss potential tools to influence day-to-day practices within the team. The aim of this second meeting was to present the proposed tools for implementation. Here, a preliminary version of the reflection-sheets (Figure 2) were proposed. The SPC discussed the need for more task-involving *on-field* applications. Inspired by the use of quarterback playbook wristbands in American football, the idea of arm-sleeves with written process goals was put forward. The suggestion was that such a tool could serve as reminders during training, while not changing current practice nor adding additional components to daily training. These tools were

designed, produced, and presented to the SPC and coach in a third meeting. Although they instantly approved the arm-sleeves, the coach requested that the reflection-sheets be simplified (it originally consisted of four categories) and suggested the use of specific questions.

The Tools

The main objective when creating the tools was to ensure that self-reference and task-involvement were at the forefront for the players. This was done to create salient mastery criteria cues within the sport environment (e.g., Ames, 1992). The reflection-sheets for each player were on laminated A4 paper with written questions and blank spaces created for answers. The main function of this tool was to stimulate reflection with regard to the players' task-involvement, and it consisted of two sections: (1) a pre-training/match section; and (2) a post-training/match section. In each section, four questions targeted self-reference and task-involvement. Pre-questions emphasized process over outcome and the players considered these prior to all training sessions (e.g., "What tasks did you focus on in your last training/match?", "What tasks are important for you today?", "How would you like to practice these tasks?"). Each players' reflection-sheet was hung on the wall in the dressing room before training and brought home after training. Responses to these questions informed what players would write on their arm-sleeves. Here, process goals (e.g., behavior-specific cues) would be written on a small piece of paper, which was inserted into a plastic pocket on the arm-sleeve to serve as a reminder during training (e.g., "active first touch"; "takeoff"; "orientation"). After training or matches, players completed the post-questions which focused on a player's process of working on the task (e.g., "How did you succeed with your process goal?", "What can you do to improve your skills in relation to your process goal?", "How can you do it better the next time?"). Once the evaluation questions were answered, the players were asked to present their reflection-sheets to their teammates to promote an emphasis on the task, but also to

make them inspire each other. The arm-sleeves were hand-sewn by a red fabric that comprised of both cotton and polyester, which made it weather-proof and stretchable.

Implementation

Together with the coach, the three researchers, Marie-Louise, Marcus and Michael, introduced the tools to the players before a training session, while the researchers subsequently engaged in their roles as participant observers in six observations across training and matches. The participant observations primarily had three functions. First, they supported the implementation of the tools by exchanging ideas with the coach for including the tools in consistent dialogue with players. To facilitate continuous use of the arm-sleeves, the coach made players (individually or in pairs) reflect on their process goals before and after training sessions (e.g., how they worked with their goals). Second, observations also provided the opportunity to investigate *how* interactions and procedures among the athletes, coach, and SPC changed within the team as they took place. Third, observations enabled the second author to establish rapport and facilitate recruitment for the follow-up interviews. After each observation, the second author noted specific incidents or potential follow-up questions for the interviews and engaged when possible, with the coaches to discuss the implementation. This led to several adjustments with the arm-sleeves. During a training session with heavy rain, the process goals were washed away, which led to the subsequent use of waterproof markers. During implementation, some players wanted to set more goals on the sleeves to help focus on different skills during the various drills within a practice. Though most players engaged with the reflection-sheets pre and post training, between two and four different players did not complete them for training, but all players did for matches. The quality of the process goals set by players varied across individuals, as some players at times set avoidance goals (e.g., 'avoid the blind side') and unspecific goals (e.g., 'set pieces') that did not seem to aid them on field or with reflecting and evaluating on their practice. In most instances, the coaches helped the players refine

their goals (e.g., turning avoidance goals into achievement goals) between training sessions, as we as researchers had agreed to be in the background during observation. While most of the players did not report any discomfort in wearing the sleeves, a couple of the players told us that the sleeves were itching during the first training sessions. These specific players did not report any itching further during implementation and therefore seemed to grow accustomed to the sleeves. After the implementation period, the coaches informed us they were not permitted to use the sleeves in official matches due to worries that the sleeves could conflict with their jersey sponsorship.

Evaluation

As shown in Figure 1, six training sessions were observed during the implementation. After every two observations, the three researchers, Marie-Louise, Marcus and Michael, met with the first author as a means of creating collaborative critical reflection. During these evaluation meetings, it was discussed how the coaches could emphasize the process goals more explicitly during training sessions, without adding tasks to their already busy schedule. This led to minor adjustments (e.g., the coach began to ask questions regarding the process goals in-between drills). Overall, it was noted that the coaches enthusiastically supported the sleeves and were eager to engage with the new tools. However, although they used and emphasized the reflection-sheets, they did not appear to be the priority.

Shortly after the implementation phase, we explored athlete perspectives (stage 4: analysis and reflection of the impact of the tools). Based on Patton's (2015) principles of heterogeneity sampling, the researchers asked all players if they wanted to take part in focus groups. Five players agreed and this sample was considered a convenience sample (Patton, 2015). The focus group was an appealing approach given its suitability for generating rich perspectives and contextual information (Brinkmann & Kvale, 2015). The focus group was conducted in a meeting room at the club and lasted 54 minutes. The focus group followed guidelines put forth in the literature and

therefore contained both an interview guide, but also the concrete tools which were put forth during the discussion to stimulate the player's ability to recall their experiences (Gibson, 2016).

As we were interested in exploring potential changes induced by the tools, follow-up interviews were conducted one year after implementation. One semi-structured interview was conducted with the coach and the SPC, and individual semi-structured interviews were conducted with four players. Due to the circumstances caused by the ongoing global pandemic (i.e., CoVid-19), player interviews were conducted remotely via Skype. Only players who participated in the original focus groups were recruited for these follow-up interviews. The main rationale for this decision was for because of the importance of familiarity with the interviewer for remote interviews (Deakin & Wakefield, 2014). The interview with the coach and SPC lasted approximately 1 hour and 6 minutes, whereas the interviews with each of the players lasted 23 minutes on average (*SD* = 8:01). Despite the apparent brevity of some of the player interviews, their aptitude with technology and relation to the researcher meant that little time was needed to establish rapport and comfort. All interviews were recorded and subsequently transcribed verbatim.

Focus Group and Interview Guides. All interview guides consisted of four general sections with similar questions, modified to suit the participants in each setting. The sections involved: (1) a general introduction (e.g., question for athletes: "How did you experience the last few weeks?"); (2) content specific to the reflection-sheets (e.g., question for the coach: "How did you experience the reflection-sheets in the daily practice?"); (3) content specific to the sleeves (e.g., question for athletes: "How did you use the sleeves in your daily practice?"); and (4) the general outcomes (e.g., question for all participants: "What do you think you got out of the tools?"). Throughout these sections, questions were also informed by the observations made by the researchers during the implementation phase. In this regard, the semi-structured nature of the

interviews allowed a flexible approach with the possibility to ask curious follow-up questions and the use of prompting within an open conversational environment.

For the initial focus group, the interview guide focused on experiences during the implementation process and which elements of the tools were most important to players. For the individual follow-up interviews with the coach/SPC and the players, the questions revolved around the participants' experiences from the implementation (e.g., "How did you experience the tools when we started?", "How would you describe how you worked with the tools back then?") as well as their current use of the tools (e.g., "How do you use the sleeve now?, "What happens when you use it?", "What challenges do you experience when you use it?").

Across all interviews, participants were encouraged to respond as freely as possible and for the focus group, the players were supported to discuss alternative perspectives. To gain deeper insight into the experiences with the tools, the interviewer helped the participants to recall experiences from the implementation by means of providing examples of observations and statements from the initial interviews.

Data Analysis

The analysis was inspired by Peirce's pragmatist notion of abduction as a spontaneous and imaginative search for possible explanations and exploring the past and imagining possible futures (Rasmussen & Glăveanu, 2020). Rather than exploring relations between data and theory by means of inductive and/or deductive processes, abductive reasoning is concerned with the relationship between *situation* and *inquiry* (Brinkmann, 2014). Hence, an abductive analysis is neither a data-driven induction nor a theoretically based deduction, but rather, an attempt to breakdown *understanding* by engaging with the data while engendering and entertaining novel hunches and ideas (Alvesson & Karreman, 2011; Rasmussen & Glăveanu, 2020). This approach aligned with our aims, as we desired to gain an in-depth understanding *of* the potentials and drawbacks in the design

and application of mastery-involving tools. Further, this choice aligned with our pragmatist position, where research is seen as part of the continuity of the situation: "there is . . . no hard and fast line between life, research, theory, and methods" (Brinkmann, 2014; p. 722). Peirce's pragmatic maxim implies that things are their effects, and thereby abduction can be described as a form of imaginative reasoning employed in situations of uncertainty, "when we need an understanding or explanation of some effect" (Tanggaard & Brinkmann, 2018, p. 91).

The analytical process was inspired by three suggestions advanced by Rinehart (2020) pertaining to abductive analysis, namely: (1) taking your time, (2) 'off-task' influences, and (3) backward mapping. Guided by the first principle, the first author initially familiarized himself with the data by reading the transcriptions and reviewing the observation notes. The principle of taking your time also stresses the importance of questioning one's own assumptions, resisting quick judgments and premature closure of interpretations, and staying open to new ideas. Based on the second principle, the first author adopted a to-and-fro approach during a one-month period, where the author varied between intense analysis (i.e., being immersed in the data, generating codes and themes) and other scholarly tasks or daily chores. This allowed for informal prompts and ideas to emerge from what was seen or heard in other contexts and not just from the repeated inspection of data transcripts. During this to-and-fro process, he made notes on aspects that caused confusion or uncertainty or engaged him during the reading. For instance, it puzzled him that the coaches completely abandoned the reflection-sheets after the implementation period. Hence, he engaged in abductive thinking to come up with several possible explanations to such uncertanties. This imaginative process enabled the author to *stumble* onto unexpected analytical directions that may not have been discovered otherwise (Tanggaard & Brinkmann, 2018).

Finally, inspired by Rinehart's (2020) principle of backward mapping, and to enhance validity, the first author recurrently reread transcripts and observation notes while generating sub-

themes to trace data extracts that supported the logics of the hunches, ideas, and uncertainties that emerged during off-task activities and thereby confirmed the plausibility of his interpretation. Throughout this process, the three other authors served as critical friends to further explore the evolving themes and ensure their coherence with the data material (Smith & McGannon, 2018). Finally, the three themes that stood out as novel opportunities or drawbacks were defined, described in detail, and shared and discussed among the research team. The analysis initially led to the creation of four higher-order themes, which were collapsed to three during the shared discussion by the research team (i.e., puzzle of circumstance). The first theme was primarily based on the observation notes, focus group and interview with the coach, while the second and third were based on the follow-up interviews.

Qualitative Rigour

We undertook several procedures across study development, data collection and analysis, and reporting to ensure qualitative rigor. Specifically, we encourage readers to judge the quality of our work based on the AR approach that we undertook. As a beginning point, it is worth noting that this research was immediately relevant and worthwhile for the club and its members. The research question and proposed tools were cocreated and subsequently implemented by the research participants. In order to enhance the *transparency* of our process, we provide the most accurate and concrete descriptions in both the context of the study and the methodological actions herin for the data collected (Tanggaard & Brinkmann, 2015). In addition, rather than triangulation, which primarily aims to improve accuracy, we sought to embrace various viewpoints from several participants, which draws on the notion of *crystallization.* This notion appreciates the complex and unstable world by exposing different perspectives and different aspects of problems and solutions (Richardson & St. Pierre, 2005). Finally, we aimed for *practical utility* by including tools within everyday practice and exploring the potentials and drawbacks to uptake, all with the hope of

understanding whether the tools were easily adopted and made an impact on those involved. Since a pragmatic AR approach encompasses stimulating future actions and potentially the creation of artefacts that can be contextually adjusted, the study ought to be deemed as a worthy topic, which is viewed as a marker of high quality (e.g., Smith & McGannon, 2018; Tracy, 2010).

Results

The following three higher-order themes represent benefits, drawbacks, or both, that were identified from the analysis. The first higher-order theme describes the apparent benefits experienced from the mastery sleeves: *Sleeves as day-to-day, drill-to-drill reification of task-orientation*. The second theme pertained to the reflection-sheets, and encompassed a range of perspectives describing both benefits and drawbacks: *Coach killed the reflection-sheets, but some players missed it*. Lastly, the third theme described an unforeseen benefit that both tools seemed to facilitate: *Teammates as goal buddies*. Each theme also includes several lower-order sub-themes that will be shown in italics and described in detail in the following sections (see Table 1).

[Insert Table 1 near here]

Sleeves as Day-To-Day, Drill-To-Drill Reification of Task-Orientation

During observations of the implementation, the focus group and the 1-year follow-up interviews, the arm-sleeves were characterized as highly useful in players' day-to-day practices. The coach, the SPC, and players stated that the sleeves had been used a lot throughout the year. Indeed, as we will describe in this theme, the sleeves were seen as a useful *constant reminder,* they were deemed to *enhance focus,* and were *easily implemented due to their simplicity.* During implementation, the sleeves instantly changed the coaches' and players' focus and their conversations during training. They were observed chatting about the process goals on the sleeves in every training and the coaches often asked the players to reflect in pairs about their goals on their sleeves from one drill to another. The extensive use of the sleeves, as well as the perceived effectiveness from all

participants, was somewhat unforeseen for the research team. All the interviewed players described how the sleeves were constantly reminding them on their process goals on the field. When asked how the sleeve helped, one athlete said:

> Well, I think more on the goal, focus a little more on it during practice and talk about it, like being constantly reminded of it, that it just pops up in my head, I remember it, and it helps to quicken the development toward your goal. (Allan, U13 player)

As the quote displays, the sleeve functioned as a *constant reminder* in the player's focus of their process goals. Interestingly, this player also supposed that this reminder had quickened his development in this matter. During implementation, one player had written the process goal "one touch", as he aimed to lessen the number of dribbles and releasing the ball quicker. In a practice, he received the ball and started dribbling as he usually did. Then an assistant coach yelled "look at your sleeve", which made him do so. The next three possessions he received, he had a maximum of two touches. Surprisingly, the sleeves were not only able to remind the players of their process goal in technical drills but proved *useful to enhance focus in different game formats*; as the players particularly expressed how the sleeves helped them in more complex, tactical games where it can be difficult to focus on process goals given the many distractions.

> Well, yes, I had one thing I wrote, "fast return run," when we had just had an attack at the end of the match. When we were attacking and the goalie had the ball, I looked at it (the sleeve), and remembered that I had to do my best in this. So, when we were attacking, it gave me some food for thought, and then I just stepped on it and had more focus and felt that I could handle it. (Allan, U13 player)

While the players had learnt to use the sleeve with one process goal during the implementation phase, they were now using one or two process goals for each practice. From the focus group participants, we also learned how most of the players checked the actual plans and drills for the

daily training session beforehand to decide which process goal was the most appropriate to wear on their arm. After the implementation phase, one of the interviewed players had experienced being moved to a team that did not use the sleeve, and then returned to a day-to-day practice with the sleeve again.

> When we started using it, we had a small break in which we did not use it that much, and then I moved up to another year group and we started playing with it again, and you could just instantly feel that it helped, and you got better, and were more focused in training and so on. (Mark, U13 player)

The coach felt the players had increased their focus on process goals dramatically during the implementation phase and continued to do so one year later, and he attributed it to the sleeves.

> Last year with my last team, I never experienced, or at least it was very rare players walked up to me and said "hey, this is what I want to develop further" and so on. While this team, there are so many that actually think about their process goals "okay, now I have actually obtained my goal, I would like a new one, how do I get it?." I think it's a giant step and a giant acknowledgement to the sleeves. (Head Coach, U13 coach)

The coach also explained how the arm-sleeves *easily fit into the everyday practice because of their simplicity*: "Then I think that the sleeves required minimum work (SPC, was nodding in agreement), and therefore it seemed to somehow be favorable, both for us as coaches, but also for the players" (Head Coach, U13 coach). When asked how the tool helped with the process-orientation, the SPC said: "it's a relatively simple tool, but it is a reification and seems to prompt some different or draw the attention to something important, that one needs to practice" (SPC). Later in the interview, both the coach and SPC agreed that the sleeves somehow turned out to be a reification of the players process goals that made the focus on mastery from abstract to concrete.

Somehow, the sleeves turned an abstract construction (process goals), and separate from the actual practices, to something very concrete and always at hand.

Coach Killed the Reflection-Sheets—But Most Players Miss It

In contrast to the participants' compelling agreement regarding the usefulness of the sleeves in their day-to-day practice, the analysis focusing on the reflection-sheets revealed a disagreement among the youth players and the coach and SPC. As a general overview of the two sub-themes, the sheets were seen as *too demanding* and as a potentially *beneficial addition to the sleeves.* Nevertheless, in the follow-up interview, the Head Coach stated that "The boards [reflection-sheets] are more or less dead."

Whereas the arm-sleeves were still in use at an everyday level, the coach and SPC had stopped using the reflection-sheets shortly after the implementation phase. The Head Coach described the decision process: "I think that there is too much work in the reflection-sheet in a stressful working day life." The Head Coach and SPC agreed that the reflection-sheet demanded *too much time and effort* from the players and their parents and how the players' efficiency in using the reflection-sheet was heavily dependent on parental support: "You could tell a difference on the reflection-sheets that hung in the hallway. That is, who got help from home, and who did not" (SPC). The feeling of increased time and effort was also reinforced by percetions that the sheets were more adacemic than practical: "The reflection-sheet was somehow *too academic* (the Head Coach nodded) and made too many demands, both in time to the sort of other support they needed" (SPC).

Although the Head Coach and SPC agreed that the reflection-sheet was not as useful as the sleeves in the long-term and required time and effort, most players said that the combination of the tools had been most helpful in making them focus on their process goals, and that they still preferred the reflection-sheets as being part of the day-to-day practices. In this regard, athletes saw

them as a *benefical addition to the sleeves*. For example, Mark stated how the commute to the club meant he had time to reflect on the questions:

> Before training (in the car) I wrote what could be better and what I wanted to do in specific situations and so on. It helped me quite a bit to understand what the process goals are about […] when you look at the sleeve, and so on, you think shortly on what you wrote before training, and what you specifically wanted to do. (Mark, U13 player)

Another player agreed that the sleeves were more efficient in combination with the reflection-sheet.

> I still get something out of it (the sleeve), but I don't think it was as good as back then (during the implementation phase). I still get better in my process goals, but I think it was better when we could write on the cards (reflection-sheets) […] it made you think more about what you had to do and so on. (Martin, U13 player)

This was also highlighted by Nolan (U13 player), who pointed out that while the sleeve functioned as a reminder of the process goals on the field, the reflection-sheet made him reflect on the goals before and after training. That being said, some athletes acknowledged that they had not always used the reflection-sheet, because they simply forgot or were unsure of how to use them.

Whereas the SPC thought that the reflection-sheet as a tool was "in a way something that is left in the bag" (i.e., more theoretical/conceptual and not ideally transferred in practice), the coach saw it as "something that needs to be placed on the pitch, I think, before it has an impact." This seemed to align with Mark's thoughts:

> I think in some way or another that bringing these sheets (reflection-sheet), or how you would do it, on the field, so you could go and watch, for instance, how should I do this now? Did I do what was written on the sheet? So you get the more specified goals to the field instead of just being reminded of it. (Mark, U13 player)

555 The coach and the SPC agreed about the obstacles of the reflection-sheet as they found that they
556 were perceived to be overly academic in nature and too time and energy consuming. Paradoxically,
557 most of the players experienced that the tool not only was helpful in cultivating their awareness on
558 process goals before and after practice, but also in inspiring them to set goals (e.g., being able to see
559 each other's goals during the implementation phase). Even though the observation notes showed a
560 difference in the coaches' motivation to utilize the tools, it was found that they abandoned them the
561 following season (post-implementation) even though they appeared crucial in supporting the
562 athletes' ability to reflect on their goals before and after training.

563 **Teammates as Goal Buddies**

564 The implementation of the tools seemed to spark a mastery goal-orientation within the team and had
565 a positive influence on the relationships among the players and coaches. Even though the tools were
566 implemented to promote individual goal-involvement, the observations and interviews revealed
567 how the tools seemed to facilitate a mastery-involving orientation in conversations and behaviors
568 between the players, coaches, parents, and the SPC. In the three-week implementation phase,
569 process goals suddenly became a vital part of the participants' daily lives. From observations during
570 the implementation phase, the second author noticed how the players talked about their goals during
571 the breaks between drills, in the dressing room, and when going back and forth to the training
572 ground. They also noted how coaches were integrating the process goals into training and
573 conversations with players wherever possible. As this change occurred quickly and became a
574 normative behaviour, the tools manifested a focus on process-goals very concretely in the players'
575 and coaches' daily actions. This was still the case for most of the interviewed players and the coach
576 after a year. Interestingly, players also expressed how they supported each other in their process
577 goals before, during and after practice:

> The left back and me, I'm a right back, we talk about our goals. We have similar goals, so we talk with each other, then focus, and look at each other during practice so after practice we can tell each other what went good and less good. (Allan, U13 player)

Martin, Mark, and Nolan also stated that the idea of sharing the reflection-sheet on a wall during the implementation phase supported them in setting process goals: "Looking at the reflection-sheet, I saw what others wanted to be better at and how they wanted to do it, and how some had the same as me. You could get inspired by them, how to carry it out" (Martin, U13 player). Most of the players also deliberately expressed that the process goals had become a part of the conversations before and after practice. This seemed to mostly appear among what could be called *goal buddies* with which they discussed their process goals and how well they were executed on the field.

> After training when you go to the dressing room, you go two and two and talk about how it went with your process goal. Then I could, for instance, say to the one I talked to, that he could do better at some point (during practice). You could say to him that it was a good time in which he did this, and so on, and the same when it was opposite. (Martin, U13 player)

Several of the players had also noticed how the coach reminded the players of focusing on process goals after the implementation phase, which was new to them. The SPC also said: "I think that the biggest difference is that we are all more aware about it, and able to articulate it". Thus, it seemed that goal awareness characterized the team as a whole.

Discussion

We explored the benefits and drawbacks of designing and implementing two mastery-involving tools into daily activities with a U13 football team. In the following sections, we discuss how the tools, particularly the arm-sleeves, were perceived as primers of task-orientations and became a part of the socialization process within the youth team. Throughout, we also discuss

implications of our study in relation to the established literature and from applied sport psychology perspectives.

Sleeves as Primers of Task-Orientation

The players, the SPC, and coach spoke positively about how the arm-sleeves' promoted a day-to-day focus on process goals. In fact, it seemed that the sleeves functioned as *primers* for both coaches and players, which means they stimulated the processing system (Baddeley, 1997). Indeed, the stimuli in such priming models are often implicit in nature, meaning that the participants are not aware of the nature of the prime or its presentation (Bargh et al., 1996; Hull et al., 2002). Nevertheless, the sleeves seemed to function as both explicit (i.e., before and after the training and in-between training activities) and implicit stimulus (i.e., during the training activities). Locke and Latham (1985) acknowledged that, whereas goals often are portrayed as the driver of goal-directed behavior, they do not necessarily always function at a conscious level. This is also underlined by a range of experiments by Van Yperen and Leander (2014) who explored the so-called misalignment phenomenon named the overpowering effect of social comparison information (TOESCI). The phenomenon positions social comparison as the main driver of individuals' self-evaluations, even among individuals who explicitly endorse a mastery-orientation. Because of the widespread emphasis on performance (or at least the athletes' future performance in youth sport), this overpowering effect may be accentuated by stakeholders and athletes' perceptions and actions like those demonstrated within the current study (Wrang et al., 2022). Notably, our findings suggest that practitioners can explore opportunities to introduce simple procedural tools to counteract the unconscious desire to engage in social comparison and emphasize mastery orientations.

There is interest in understanding the impact of purposeful attention that individuals place on activities during sport performance (e.g., Liao & Masters, 2002). However, it seems that interventions that draw on achievement goal theory aiming at cultivating process goal or mastery

approaches among athletes have mostly targeted explicit attentional processes by articulating and creating mastery goals or educating coaches, parents, and athletes in the importance of a mastery approach (e.g., . Smith et al., 2007; McLaren et al., 2015). Although some of these studies have shown signficant results in terms of improved enjoyment and self-esteem (e.g., Appleton & Duda, 2016), small effects sizes may mean that the impact of future interventions may be even more powerful if they aimed at educating coaches, assisting athletes, *and* providing them with simple tools such as the arm-sleeves that draw on participants' explicit and implicit attentional processes. Notably, the results from the current study showed how players began to discuss and evaluate the goals among each other. Consistent with findings from McLaren and colleagues (2015), this may indicate that the sleeves could help promote greater task cohesion amongst academy players because of the awareness of how individual objectives align with those of the total team. As the implementation of the tools was done during the early stages of group development when social comparisons and competition for positions are often emphasized, the tools may have had a greater impact within this age group than with more mature athletes. Nevertheless, the early implementation also aligned with the suggestions from Harwood and Thrower (2020) pertaining to establishing interventions early in group development. While we mostly focused on the player's involvement in setting and focusing on the process goals during the design and implementation phase, the results also showed how the sleeves particularly also directed the attention of the head coach and the SPC towards the players' specific goals in each practice. This may be of particular value as in a recent systematic review in goal setting interventions, Jeong and colleagues (2021) pointed out that the provision of effective feedback seem to be a key moderator in the effectiveness of goal setting interventions. Thus, the implementation of the tools may not only have served as a goal-reminder to the players, but also provided a reminder for the coach to provide consistent process-oriented feedback and even teammates.

Adults (and time) as the primary drawbacks of the reflection-sheet

While the analysis showed that the athletes and coaches willingly and rather effectively used the tools during implementation, the analysis also revealed that the athletes' were left to use the reflection-sheets by themselves. As the tools were discarded as overly time consuming and too academic by the coach and SPC, it seems critical that for improved uptake, the proposed tools be easily implemented into coaches' everyday practice. Extending the above considerations, coaches are entangled in a series of pedagogical (e.g., lack of expertise), conceptual (e.g., traditional ideologies and lacking understanding of key terms), cultural (e.g., values, norms, and social expectations), and political (e.g., power distribution in the coaching environment) dilemmas that may limit their application of new approaches (Cushion, 2013). These four levels of dilemmas were recently discussed in relation to designing and implementing creativity-enhancing training activities in a Danish elite youth football setting (Rasmussen et al., 2021). For example, this study outlined conceptual barriers in terms of the purpose of operationalizing creativity. Similarly, such dilemmas could explain why the coaches in the present AR process chose not to continue using the reflection-sheets and to emphasize the impact of the sleeves. Hence, more focus on explaining the importance of the reflection-sheets might have been beneficial. Importantly, although the sheets were seen as overly onerous, academic, and requiring support from parents, it is also possible that the lack of use could be due to the coaches' lack of knowledge in facilitating a mastery-involving climate. Whereas both the researchers and coaches in the design and implementation phase were focused on how the athletes responded to the new goal-setting practices, we as researchers should have more intentionally supported the coaches prior to, during and after the implementation phase. While the more traditional interventions most often have targeted the education of coaches' behaviors, the tools facilitated a more task-inolved approach among both athletes and coaches. While the tools seemingly served to constitute a focus on most of the five principles from MAC that aim to develop

a mastery motivational climate, they may have failed to cultivate the coaches' own self awareness and self-monitoring (Smoll et al., 2007). Such a focus could have increased the coaches' interest in changing and supplementing their behavior more directly and intentionally as motivational climates highly depend on the behaviors and attitudes of the coaches (Smith et al., 2007). Sport coaching has generally been criticized as being guided by a reproductive and coach-led approach (Piggot, 2015). Hence, a more supportive approach to the continued implementation of the tools could certainly have been useful. Even though we shortly introduced the concept of goal theory and achievement goal theory during meetings, we could have been more explicit in the possible behaviors that the coaches needed to refine (e.g., positive instructions and attitudes to the tools) as previous studies have shown to incorporate that in their coach education (Appleton & Duda, 2016; McLarent et al., 2015). It seems that we as researchers coincidentally initiated so-called 'penny-drop' moments with the arm-sleeves in training sessions (Stone et al., 2021), which ensured that coaches and players realized that the armbands could increase their task-orientation considerably and be meaningful in their daily practices. However, as the reflection-sheets constituted these processes in a more abstract, but important way, the coaches' experiences with the tool did not reflect such 'penny-drop' moments. Thus, we as researchers ought to have initiated such moments more intentionally by instigating conversations with coaches prior to, during implementation or even interviewing players in the presence of coaches to show them the connectedness of the concrete and more abstract tools. As the outcome of the reflection-sheets was reported to be highly dependent on the parental support, these ought to have been made even simpler or facilitated more on-goingly during implementation. Even though athletes at this age can distinguish between effort and performance and be self-monitoring, they probably needed more on-goingly facilitation due to their age and limited experience with reflective evaluation, which was too time consuming for the coach and the SPC (Roberts & Nerstad, 2020).

Intriguingly, Kolbotn (2004) described the demanding nature of consistently and actively reiterating desired environments, which again, reinforces the potential benefits of having coaches or practitioners include tools that consistently reiterate the message by simply being present. Such a process would aliviate some of the demand currently experienced or felt by coaches (e.g., Olusoga et al., 2019), as their messages could be conveyed without consistent and active attention required. As youth environments by nature ought to be preoccupied with providing quality learning environments for athletes, it seems paradoxical that most environments (i.e., at least that we have observed in a Danish context) do not have exposure to psychological and pedagogial *tools*, besides the coach themselves, that directly constitute the primary purpose of the environment, namely learning. Clearly, the inclusion of simple tools could be an opening for athletes and coaches to introduce and discuss more complex sport psychological concepts, which is ideally aligned with our pragmatic orientation in the current study.

Conclusion

This study provided a novel exploration of designing and implementing procedural tools to cultivate a mastery-involving climate in academy youth football. Whereas the reflection-sheets were perceived as too time consuming and academic by coaches, and athletes had mixed responses, and the arm-sleeves were highly praised and functioned as reminders of process-orientated goals that helped to facilitate mastery-orientated behaviors. Likewise, the tools were also perceived to have impacted a more process goal orientation within the team that was shown by players exchanging, discussing and evaluating process goals before, during, and after practice. As insights about potentials and challenges in AR are crucial for informing future practice, this study may help SPCs and coaches when designing similar tools to those we initiated, that have the potential to introduce, remind, and promote reflection for mastery-involving principles in sport environments.

721 Indeed, the use of simple tools may have the potential to educate the coaches on site, while also
722 introducing sport psychology to athletes on and off site.

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Themes	Sub-themes
Sleeves as day-to-day, drill-to-drill reification of task-orientation	*Constant reminder* *Useful to enhance focus in different game formats* *Low work effort was required* *Mastery from abstract to concrete*
Coach killed the reflection-sheets, but most players miss it	*Too much time and effort* *Too academic* *Dependent on parental support* *The combination of the tools had been most helpful* *Reflect on the goals*
Teammates as goal buddies	*Spark a mastery-orientation within the environment* *Supported them in setting goals* *Goal buddies* *Goal awareness characterized the teams*

Table 1: Overview of the themes and sub-themes

Example Reflection-sheet

Name:

Date:

REFLECT ON TODAY'S PRACTICE OR GAME

What tasks did you focus on in your last training session/match?

Push first, Put off, Get back to close 6'er

What tasks are important for you today?

Push first

How would you like to practice these tasks?

To push first, so I can win more close duels, so I can put off the ball or turn with it.

I want to practice it by offering myself in the channels, and by trying to push the man behind me away.

The defensive players, myself and my sleeve can help me do this.

To	
Cc	

REFLECT ON TODAY'S PRACTICE OR GAME

How did you succeed with your process goal?

I think I won most of my close duels.

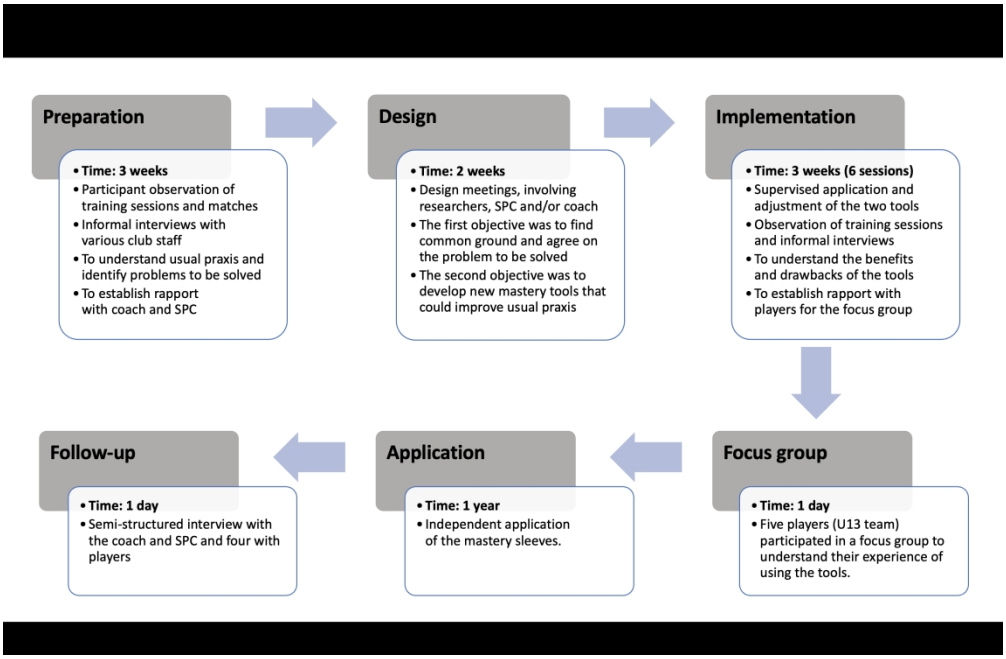
What can you do to improve your skills in relation to your process goal?

To help myself improve I can rely on opponents, my coach, myself, my sleeve and people around me.

How can you do it better next time?

I need to keep going into close duels to become better.

To improve I can next time focus on finding a low center of gravity to have a better balance.



Timeline of the research process

533x346mm (144 x 144 DPI)