Relationship Between Short- and Long-Term Planning in Sports: A 12-Week Case Study of a Spanish Canoeing Coach

COSTA, Jardel <http://orcid.org/0009-0005-4489-2826>, NEVES, Gonçalo <http://orcid.org/0000-0002-8535-3600>, NAKAMURA, Fábio Yuzo <http://orcid.org/0000-0002-5336-3652>, RIBEIRO, João <http://orcid.org/0000-0002-9559-378X>, RAMOS, Ana <http://orcid.org/0000-0001-9876-3994>, BELL, Lee <http://orcid.org/0000-0003-0583-3522>, LOUREIRO, Manuel <http://orcid.org/0000-0003-4499-8418>, CLEMENTE, Filipe Manuel <http://orcid.org/0000-0001-9813-2842>, MESQUITA, Isabel, COUTINHO, Patrícia <http://orcid.org/0000-0002-9182-4448> and AFONSO, José <http://orcid.org/0000-0002-2038-393X>

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Relationship between short and long-term planning in sports: a 12 Week Case Study of a Spanish Canoeing Coach

This study aimed to bridge the gap in the literature on real-world analyses of coaches' approaches to planning. A 12-week qualitative case study of a Spanish canoeing coach was carried out to examine the relationship between long- and short-term planning, analyse adaptations made to the original designs, and thus enhance current understanding of this dialogue in a specific real-life context. To achieve this purpose, the first author followed the participant during training sessions in an unobtrusive manner, recording any relevant topic related to the research goal in the form of field observation notes. Weekly semi-structured interviews were also carried out. Data were examined through thematic analysis, and two main themes were identified: 1) Interplay and tension management between short and long-term planning; 2) The dynamic tension between club and national team planning. Findings observed that the coach's application of concepts related to planning usually had to be adapted. Indeed, external factors and demands obligated the coach to attribute more emphasis to short-term planning, despite the existence of a long-term plan. Moreover, findings established the need to understand sports planning as a micropolitical process, influenced by external pressures, organizational demands, and the constraints generated by sports practitioners.

Keywords: Sports Planning, Qualitative Analysis, Interplay, Constraints, Adaptability

Introduction

In the field of sports training methodology, planning is often seen as a predictive process that relies on experience and scientific knowledge (Bompa & Buzzichelli, 1999). Its purpose is to align training and recovery processes systematically, to reach performance goals at specific times, according to the athlete's profile and context (Kataoka et al., 2021). This reflects the usual current literature's description of any form of planned training, regardless of the structure, as being periodized. The concept of periodization has been proposed to serve as the macro-management of the training process concerning the annual plan (Afonso & Mesquita, 2018). Conversely, the concept of programming refers to more micro-scale aspects (Afonso et al., 2020). This includes the management of more detailed short-term applications such as the definition of specific training units (Kataoka et al., 2021). Periodization's shortcomings have been extensively discussed (Afonso et al., 2017; Kiely, 2018), mainly due to the implicit assumption that the magnitude and time course of physiological adaptation can be predicted (Sands & McNeal, 2000). However, despite the non-linear nature of athletes' response to a training program (Afonso et al., 2020), many still consider it as the best framework for long-term planning (Plisk & Stone, 2003).

Sports planning is therefore a continuum that ranges from general guidelines to detailed plans, where long-term planning provides generic guidelines, which frame the short-term planning (Loureiro et al., 2022). The latter is more sensitive to training status and therefore provides temporally closer information, while simultaneously implying a clash with reality and its constraints (Afonso & Mesquita, 2018). The management of situational-specific constraints of any coaching context (*e.g.* resources, logistics, competitive schedules) is a paramount part of this activity (Kiely, 2018), usually resulting

in a tension that forces the coach to continuously reconfigure the working dynamics (Kiely, 2012).

Coaches face the challenge of planning their athletes' training, a complex practice involving several variables, and as such, the logic of how they all fit together to produce a peak performance is often unclear (Denison, 2010). Moreover, athletes are adaptive systems, and their organisms' neurobiological behaviours are a complex and nonlinear phenomenon, whose training-induced responses vary considerably depending on multiple factors, such as age, sex, genetics, and training experiences (Denison, 2010; Sands & McNeal, 2000). Sport teams are complex, making them susceptible to unforeseen events that coaches cannot fully control (Jones & Wallace, 2010). This complexity extends beyond training load dynamics, encompassing for instance injuries, emotional fluctuations, and unexpected disappointments (Aicinena, 2013; Sands & McNeal, 2000). In essence, coaching involves navigating through uncertainty and adjusting short-term plans in response to multiple unpredictable influences.

Whilst there are several theorized concepts on training planning in sports (Afonso et al., 2020; Bompa & Buzzichelli, 1999; Kataoka et al., 2021), the same is not true for real-world analyses of coaches' approaches to planning. Indeed, a substantial gap exists between theory and practice. One of the few attempts to bridge this gap was published by Afonso and Mesquita (2018), who interviewed five coaches from four different individual sports, concluding the temporal order approached by coaches was broad – with vague long-term planning and very detailed short-term planning. Moreover, coaches operated frequent changes in their planning, from small amplitude modifications to complete programme redesigns. It must be acknowledged, however, that this was an isolated study,

and there is currently a need to explore this gap with more in-depth analysis, within a broad range of sporting contexts.

Previous studies investigating planning approaches, namely periodization models, have typically relied on quantitative assessments (Afonso et al., 2017; Afonso et al., 2019). However, since these investigations have mainly occurred in highly controlled laboratorial settings (Loturco & Nakamura, 2016), these theoretical frameworks may not fully capture the complexities of real-world training scenarios. Indeed, relevant gaps between the theory and practice of periodization as implemented by high-level coaches have been previously identified (Afonso & Mesquita, 2018). Understanding and addressing this possible disconnection is crucial for a better understanding of the training planning process.

Transitioning to the identified gap between theoretical models of periodization and their practical implementation by coaches, a qualitative approach becomes particularly valuable, since it allows for a nuanced exploration of how coaches navigate and adapt these theoretical frameworks in the complex, dynamic reality of their coaching environments. While recognising that a single approach will not access all the particularities of each context, an in-depth, qualitative-driven case study offers insights that might not be attained with other approaches (Yin, 2012). Such an approach might facilitate a deeply contextualized understanding of the coach's perceptions, the social interactions (e.g., team dynamics) and human behaviours (e.g., coach-athlete dynamics) underlying the planning process (Kiely, 2018), as well as analyse broader socio-cultural influences. By fostering a dynamic and reflexive analysis between the research team and the participants, this approach is likely to produce profound insights into their planning approaches, generating an important link to understand the overall training process

(Afonso & Mesquita, 2018). Finally, it would allow to understand in a real-life coaching context, how the ongoing interplay and dialogue between short- and long-term planning perspectives is managed (Afonso & Mesquita, 2018).

In the context of the gap between theory and practice, it can be argued that canoeing presents unique challenges, such as unpredictable weather conditions that may influence river navigability and thereby causing significant alterations to the planned training (Afonso & Mesquita, 2018). This high degree of variability, particularly impactful during the winter, can significantly affect the planning process. Although unexpected and disruptive events occur in different individual and team sports (Aicinena, 2013), understanding the impact of these external factors is paramount for coaches create effective and adaptable training plans. Moreover, the nature of canoeing, containing both individual and crew races, across different disciplines (e.g., sprint, marathon, and slalom), obligates coaches to manage athlete's goals with the overall goals of the coach's club.

Thus, through a qualitative case study conducted over 12-weeks in a Portuguese amateur canoeing club, this study aimed to comprehend the perspectives of a coach on interconnecting long- and short-term planning, in both sprint and marathon athletes. Specifically, this study aimed to investigate the nature, magnitude, timing, and reasons for the adaptations performed, emphasizing the exploration of the potential gap between theory and practice/implementation, regarding a real-life examination of how planning and training processes dialogue in practice.

Methods

Philosophical Perspectives and Design

A qualitative-driven case study approach was used in this study (Yin, 2012). Qualitative

case studies afford an in-depth analysis of the complexity and uniqueness of a particular person, programme, or system in a real-life context (Yin, 2012).

Aligned with the study's purpose, the research utilized a qualitative approach (Guba & Lincoln, 1994; Nelson et al., 2014). This study is situated within the interpretative paradigm, underpinned by ontological relativism and epistemological constructionism (Guba & Lincoln, 1994; Nelson et al., 2014). This suggests that social phenomena are not solely produced through social interaction but remain in a constant state of revision (Bryman, 2016). Qualitative research provides unique information on the reasons behind planning and programming adaptations, and how the coach performed such adjustments. Using the interpretative paradigm, we assumed that programming and planning must be ongoingly understood and explored as the context evolves. Ontological relativism contributes the understanding that there is no singular, objective reality (Creswell, 2012). Instead, reality is subjective, shaped by the coach’s unique context, beliefs, and interactions. Epistemological constructionism asserts that knowledge is actively constructed through social interactions and interpretations (Bryman, 2016). Applied to this study, these philosophical perspectives emphasize a holistic and contextualized interpretation of the coach’s lived experiences and perceptions regarding planning approaches and the momentary constraints that shaped them.

Context and Participant

The participant was a 37-year-old male coach, who possessed a degree in sports training and level III coaching qualifications in canoeing. At the time of the study conduction, he had 14 years of professional experience, being a former high-performance athlete for his country’s sprint national team, with various participations in international competitions.

He was at the time, coaching at an amateur-level Portuguese canoeing club. The focus of this club was on the formation and development of young athletes. However, over the last few years, several adult athletes from this club have competed at international events such as the European and World Championships, or the Olympic Games. The club focuses on two canoeing disciplines: canoe sprint and canoe marathon. The relevant results accomplished by this club over the years, across the different canoeing disciplines, allowed them to be one of the best five clubs in the Portuguese Canoe Federation club's ranking since 2004.

The participant was recruited based on convenience and purposive criteria (Creswell, 2012). Firstly, the coach's background of being both a former international athlete, his academic and coaching qualifications, and finally his professional experience were considered as being potentially enriching for this study. Moreover, the sporting group that he was aligned with was considered 'information-rich' because: 1) it was composed of athletes ranging between 15 and 47 years old, engaging in a competitive and structured practice at the national level, usually carrying out 11 training units – understood as the single training session with pauses within the session shorter than 45 minutes (Bompa & Buzzichelli, 1999) – per week; 2) some of the athletes of the club were international athletes, representing the sprint and marathon national teams. Finally, the principal researcher's existing relationship with the club was also considered an important factor (Cagney, 2015; Loureiro et al., 2023). The advantage of this approach includes the knowledge about the club's culture, dynamics and informal structures, as well as the researcher's lived experiences (Cagney, 2015). The main disadvantage of such an approach is related to the reported findings, which should be viewed as illustrative, thus avoiding generalizations (Cagney, 2015).

Prior to data collection, the first author's institutional Ethical Committee granted ethical approval to the project (CEFADE 15 2022). All benefits and risks were explained to the participant prior to data collection, informed consent was obtained, and the study was conducted according to the principles of the Declaration of Helsinki. To protect the anonymity of the participant, the pseudonym Rodrigo has been used within the main report of this research. When presenting interview extracts containing athletes' names, pseudonyms were used.

Data Collection

The data for this research study were collected over 12 weeks, from May to August 2022, as it was considered sufficient duration to collect rich and informed data (Afonso et al., 2017). During this period, the first author followed the coach during training sessions in an unobtrusive manner, recording any relevant topic related to the research goal in the form of field observation notes. Interviews were also audio-recorded using communication software (Zoom, USA). Of note, prior to data collection, two simulated pilot interviews were completed, to align details, gain familiarity with the proposed protocol, and ensure the clarity and relevance of the questions elaborated. The recorded audio was then exported to a password-protected hard drive. The careful attention to the form, meaning, use and construction of field notes enables the research team to clarify their particular theoretical stance (Coghlan, 2007), regarding registered topics such as adjustments to the original training plan. In addition, all training cycles were provided to the researchers, as well as any adaptations made.

The timing of data collection corresponded to the competitive period of the Portuguese Canoeing Federation season, during which two national championships took

place. This period also preceded a marathon national team selective competition and, as such, was considered an important part of the competitive training schedule by the participant. Furthermore, the participant was interviewed on a weekly basis by the principal investigator, using semi-structured interviews (Bryman, 2016). This type of interview approach is flexible in nature, allowing for an open dialogue that can extend beyond the parameters set by the interview schedule (Bryman, 2016). Accordingly, using a semi-structured interview approach the conversation was guided rather than producing answers to a series of restrictive questions.

The interviews occurred weekly, on Mondays, and the initial questions concerned the previous week of training to allow for the participant and the principal investigator to reflect on the previous week's events, allowing a richer reflective exercise between the two. Interviews were undertaken in a face-to-face, mutually agreed, unobtrusive environment. The audio was captured using a digital voice recording device and then transcribed verbatim by the first author, resulting in a total of 115 minutes of audio recordings, across the 12 interviews conducted. A total of 21 pages resulted from the interview's transcription.

Semi-structured interviews began with an introductory question, aiming to understand the rationale behind the changes undertaken by the participant (*e.g., Have there been any changes made to the training plan scheduled at the start of this week? If so, why?).* Then, a second group of questions aimed to understand their impact on both short- and long-term planning, as well as to clarify the impact of external factors (*e.g.*: upcoming competitions) on the changes made (*e.g.: What is the influence of the next competition on the changes made both at the start and throughout the week? Do you expect that the idealized planning for the period that follows the next competition may*

change according to the results achieved by the athletes?). Probing and follow-up questions (Patton, 2014) were used to encourage the participant to expand his answers and clarify the given responses (Braun & Clarke, 2019).

Data Analysis

Data obtained from the field observation notes and the already carried out semi-structured interviews were continuously analysed throughout the study since they provided important information to explore with the coach in the subsequent interviews (Nowell et al., 2017).

Subsequently, a thematic analysis process was employed to identify and report the patterns found in the obtained data (i.e., planned training cycles and units, field observations, and interviews). Thematic analysis was chosen because it enabled the researcher to identify, analyse, and report patterns (themes) within the data set (Braun & Clarke, 2023). Thus, this approach was deemed appropriate to understand the coach's perceptions of how long- and short-term planning were interconnected. The six phases of the thematic analysis process were completed. As recommended by Braun and Clarke (2019), initially, the data from the field observation notes and interview transcripts were extensively read to ensure an appropriate familiarization. Furthermore, inductive line-by-line open coding was undertaken to search for main categories and retrieve critical thoughts and ideas. The next step involved analysing the defined codes and testing possible combinations that guided the construction of themes and subthemes. The following phase involved the creation of themes by addressing concepts and sorting codes into themes. This process developed with pre-existing research aims in mind (deductive), alongside openness to new segments (inductive), and was completed manually by-hand

– no software was used during the data analysis process. The ongoing dialogue between deductive and inductive reasoning in this study was facilitated by its iterative nature. The deductive aspect of the process included structured frameworks on programming and planning (Afonso et al., 2020; Kiely, 2012; Loureiro et al., 2022), as well as the purpose of the study. Concurrently, the inductive reasoning was used to build new explanations that could more thoroughly fulfil the unique singularities derived from the data gathering (Patton, 2014). By continuously interplaying deductive and inductive reasoning, it was possible a comprehensive and in-depth understanding of the interplay between short- and long-term planning.

Once themes were reviewed and defined by the research team, the last phase involved going back through the data to name the identified themes in a more representative demise. The systemization and organization of all obtained data were considered crucial to understanding the specific rationale of adaptations promoted by the coach to his programming, as well as their main determinants, thus complying with the proposed objectives of our study.

Frameworks on the idiosyncrasies of the coaching process (Aicinena, 2013; Bowes & Jones, 2006; Jones & Wallace, 2005; Potrac & Jones, 2009), provided a nuanced understanding of the unique elements and complexities involved in coaching (*e.g.*, context micropolitics). This lens allowed the research team to delve into the details of the coach's experiences, perceptions, and the specific challenges and dynamics inherent to sports coaching. On the other hand, frameworks on the planning and organization of athletic training (Afonso et al., 2020; Kiely, 2012; Loureiro et al., 2022) helped to identify patterns, themes, and potential determinants in the coach's programming, shedding light on the organizational aspects of training planning in the context of the study. Namely,

these frameworks provided a critical analysis of periodization in sports training and planning (Kiely, 2012), emphasizing the nonlinearity of this process (Afonso et al., 2020), advocating for flexible and context-dependent approaches in sports planning (Loureiro et al., 2022). These ideas were used to examine data in a contextualised and sensitive manner. The data were not forced to fit theory, rather new insights were sought that could corroborate or contradict the current theoretical perspectives. By incorporating these frameworks, the researchers aimed to enrich the analysis with a theoretical foundation while allowing the data to shape, refine, and create renewed understandings.

Trustworthiness

Four trustworthiness procedures were used (Johnson, 1997). Firstly, the data triangulation involved the cyclical and iterative collection of data from different sources (i.e., training plans, field observation notes and interview transcripts) (Nowell et al., 2017). Secondly, to establish role boundaries (Cagney, 2015) between the principal investigator's two positions in the organization – as an athlete and as an investigator – the principal investigator decided to separate their own training from that of the athletes used for the purpose of data collection, so he could be present in his role as an investigator during the team's sessions. Moreover, the first author maintained a reflective journal, documenting personal biases, thoughts, and emotions throughout the research process (Yin, 2012). This practice allowed for continuous self-reflection, enabling the researcher to recognize and acknowledge any biases that might influence data interpretation. Thirdly, the interview transcripts (*ad verbatim*) were presented to the participant, for him to check the accuracy of the interpretation of meanings and intentions implicit in their words after each of them was concluded (McNiff, 2001). Last, regular peer debriefings with the research team (first author and co-authors) were held to minimize individual research bias in the

interpretational analysis (Nowell et al., 2017). These sessions involved discussing interpretations, biases, and preconceptions held by the first author. Peer debriefing encouraged open dialogue and critical examination of biases, leading to a more nuanced understanding of the data. The research team comprised individuals with diverse backgrounds and expertise (e.g., individual and team sports coaches and researchers). This diversity fostered discussions from multiple viewpoints, challenging biases collectively. Diverse research team members cross-checked each other's interpretations, minimizing the impact of individual biases. This allowed to further enhance the credibility of the analysis, since all members of the research team worked systematically through entire data sets, giving full and equal attention to each data item (Bryman, 2016).

To ensure themes and subthemes' trustworthiness, they were continuously reviewed and refined by the research team throughout the data analysis process, being updated, amended, deleted, or merged regularly (Braun & Clarke, 2019). In the final stage of analysis, themes were confirmed by all members of the research team once it was determined that they were sufficiently clear, comprehensive, and fully captured the overall content of the data (Braun & Clarke, 2023; Johnson, 1997). This process contributed to the trustworthiness of the data, ensuring the interpretative validity while minimizing the risk of individual research bias (Patton, 2014).

Results

Data analysis portrayed two main themes: 1) Interplay and tension management between short and long-term planning and 2) The dynamic tension between club and national team planning. While reporting the themes, the external load measure of stroke rate, i.e. strokes per minute (spm), usually used to classify on-water intensity and mark generic, non-specific training zones (Hogan et al., 2020) were presented in the supporting quotes. Themes and subthemes organization and relationship are shown in *Figure 1*.

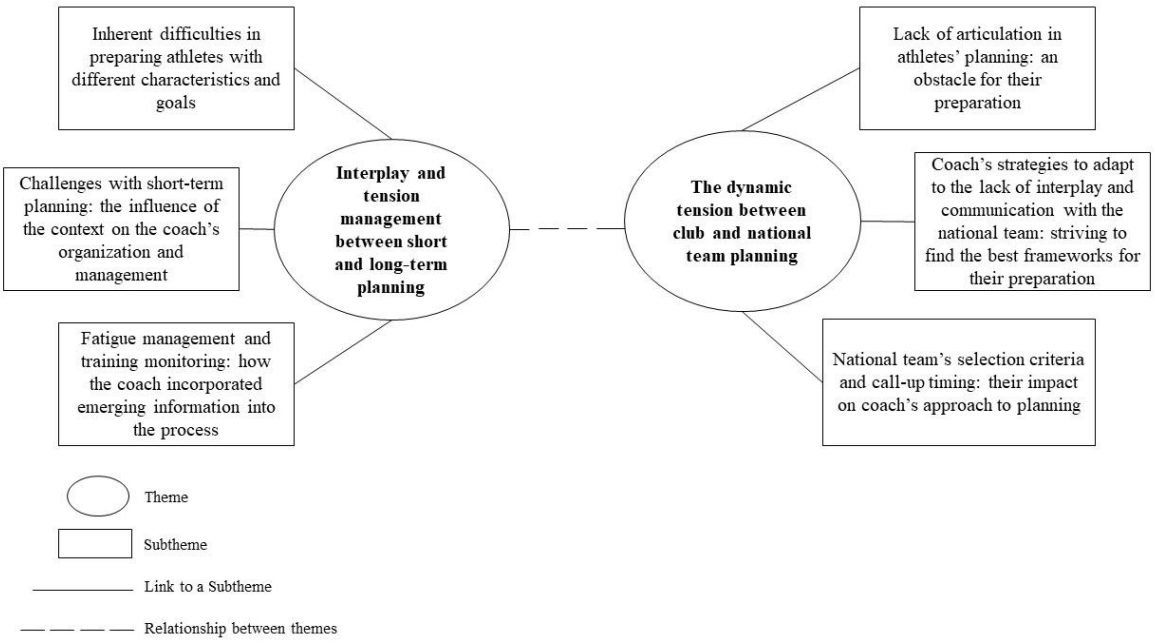

Figure 1: Schematic representation of themes and subthemes

Interplay and tension management between short and long-term planning

A major point observed across the study was the interplay and tension management between short and long-term planning. In this theme, we described how Rodrigo managed the difficulties in preparing athletes with different characteristics and goals; how he organized the programming variables and the short-term planning

management; and how he incorporated emerging information into the process.

Inherent difficulties in preparing athletes with different characteristics and goals

Rodrigo was responsible for preparing athletes for both national and international competitions, as well as managing the interplay between the athletes and the club's goals. Regarding the individualization and specificities required for different athletes, Rodrigo stated:

> June 13th *(referring to the club's female Canoe (C1) athletes)*: "For example, I put a little less training on female canoes. Just because the position of the canoe is much harder, the paddling has more coup and is less fluid than in the kayak, so the wear is greater." – Interview Transcript
>
> August 8th *(concerning an international male junior athlete, for the marathon national team)*: "When I arrived, I saw that Miguel would have no problems. He was fit, paddled well, and liked to run. But I realized that this intermediate speed was what he needed to train." – Interview Transcript

Across the study, Rodrigo was preparing athletes for both long-distance and sprint races, often simultaneously. Regarding the interplay between short- and long-term planning, the main competitions were used as the referential, as the coach planned the long-term with them in mind. Since different athletes targeted different competitions, this meant that, from the start, Rodrigo defined the planning taking this into account.

> June 20th: "The athletes that we think, accordingly to what their performance in the (marathon) national championship was, may be able to go to the European Championship, will keep training with a plan focused on this modality. The rest of the team will start this week the preparation for the national sprint championship, which will be the last competition of the season for those who do not have international aspirations." – Interview Transcript

Moreover, as some athletes were preparing for specific international competitions, the tension between the short- and long-term plans would arise, since there were other competitions in-between, often with different demands.

> July 11th *(concerning an international male junior athlete, for the marathon national team)*: "Basically, the national sprint championship mattered a little less, in the case of Miguel, because 2 weeks later there was the (Marathon) European, (…) and I knew that for him, the goals were the marathon. The sprint championship was just to help the club, and for that was enough (…). Indeed, he arrived a little more tired, in the national (sprint) championship he couldn't repeat the place he had at the cup (…) but I went with the premise that he would lose places, (…) so I decided to put the load because the main objective was the marathon and I had to." – Interview Transcript

July 6th	
Prescribed Training Unit	**Adapted Training United for Miguel**
4x3'30"/7' (intensity, K1: 90spm; C1: 50 spm); 2Km (intensity, K1: 65 spm; C1: 32 spm)	18 Km, with 3 portages (intensity, K1: 70spm)

Table 1: Comparison between the prescribed training unit and the training unit prescribed for Miguel. Data extracted from the provided training plans. The full prescribed microcycle is available in the appended work.

Challenges with short-term planning: the influence of the context on the coach's organization and management

Short-term planning had a clearer prevalence since the idiosyncrasies of the context would not even make it feasible and realistic for a highly complex long-term planning. Regarding the latter, it was not very specific, with a great emphasis on the competitive calendar and with a plan thought out for the successive races that would follow, even if they had different characteristics altogether. For athletes with higher levels of performance and with aspirations to be called up to the national teams, this long-term plan had to be adapted, often creating tension between the designed long- and short-term planning, as will be shown in the following sections.

> June 13th *(referring to the overall team)*: "Here, from February until (..) we prepared the 5000m. Then, we had three weeks, we prepared for the 1000m (referring to the sprint national cup, which not only had the K1 1000m but also the K1200m and K1 500m races). Then, we prepared for the Marathon". – Interview Transcript

Regarding short-term planning, even though Rodrigo had a preferred scheme to organize the programming variables, this revealed to be adaptable to the day-to-day constraints.

> July 4th *(referring to the overall team)*: "I put the harder workouts or that interest me more during the weekend, on Sunday because I'm not there on Saturday. And since on Monday I'm here at the club all day, I prefer to work on other things, to have longer recovery training units". – Interview Transcript

For instance, the microcycle was often reorganized by Rodrigo to respond to different types of situations that would emerge as time got by. As an example, an athlete asked Rodrigo to train with an international athlete who was at the time preparing for the same international competitions. In two days of that week, Rodrigo's athlete did the two

training units programmed by the latter, so Rodrigo accordingly to his knowledge of the athlete, decided to adapt his planned microcycle, reflecting:

> August 15th *(concerning an international male junior athlete, for the marathon national team)*: "Well, the training units were just a little different, but…normally I work with 2/3 longer days, with more volume. I don't put on more, because I don't think it's necessary (…) Miguel warned me with time (that he wanted to train with that athlete in those days), (…) and for example, on Thursday I switched over here, which was a longer training session, and there was no problem! It's adapting! I can't be closed to a paradigm because I knew he would adapt well. Then the next day I knew he was going to be tired, so that day I did the training unit selected to allow him to have a better recovery." – Interview Transcript

Fatigue management and training monitoring: how the coach incorporated emerging information into the process

Across the study, short-term planning was often adapted to manage athletes' fatigue or prevent undesired fatigue onsets at specific times.

> June 12th *(referring to the overall team present that day)*: "The team performed this workout at a considerably higher intensity than what was programmed (planned: 75 spm; performed: 87-91 spm). This was because on this day (Sunday), a large part of the team's adult athletes trained together, which is not usual during the week due to the different working schedules between its elements. The competitive spirit among the team ended up creating these discrepancies between performed and planned pace. At the end of this training unit, the coach confessed that 'Monday's training would have to be a more continuous endurance to allow for greater regeneration because the athletes would be entering a week of volume cutting', which will precede the National Marathon Championship." – Retrieved from field observation notes
>
> June 13th *(referring to the overall team)*: "The change really took place because the athletes were very tired every day, so I decided to lower the number of kilometres, increase the intensity, but always looking for the athletes to be at their best possible performance." – Interview Transcript

Rodrigo often tried to understand how his athletes were reacting and adapting to the undertaken training units. The feedback between the coach and the athletes was an important feature since this dialogue was key for Rodrigo to examine their fatigue status. Moreover, added importance was given to in-session monitoring, where the coach preferred to use data such as boat speed and stroke rate, and in some cases heart rate control.

> August 1st: "First, if I have the GPS, I use it to track them and see their speed. (…) I also use the stroke rate, especially if I have a large group. With a small group, I also like to see the heart rate, but if you have 20/30 athletes in the water it's impossible (…) And then I ask them, how tired they are. But then you must be the one to decide. Because what is going to say someone who does twenty kilometres each day? That's tired! And I know that!" – Interview Transcript
>
> August 1st: "I work a lot with stroke rate and (boat) speed. If you had a smaller training group or if you were a national team coach, where they have all the software with them on the boat, and then you download the session data, and you can see if you can improve the boat's glide, if the heart can hold on here a little longer… a thousand things!" – Interview Transcript

The dynamic tension between club and national team planning

Lack of articulation in athletes' planning: an obstacle for their preparation

The existing dynamic between the Club and the National Teams in the preparation of athletes was not cooperative. There was a notable lack of articulation between the work carried out at the club and the one carried out during the national teams' training camps.

> May 13th *(concerning an international male junior athlete for the sprint national team)*: "…Only Rafael came back (from the national team training camp) without a training plan…. Without a plan and without loads. With four weeks to go (to the next

> international competition), he (national team coach) sends him back and he doesn't send anything, he doesn't even know if he's been called up..." – Interview Transcript

This tension between the club and national team planning disrupted the long-term plan established by the first for some of the athletes, namely those who were involved in national team training camps, or those who were following the national team coach planning altogether during the examined period, despite of having followed the club's coach plan during a major part of the season.

> June 6th *(concerning an international female junior athlete for the sprint national team)*:
> Interviewee: "Because if they spend 9 months with the club's planning and then they (national team coaches) remember 'let's take them here'. For what?"
> Interviewer: "So, basically, she spent half a year following a plan, but it reached a point more than half of the season, when the long-term plan defined by the club, ended there at that moment? "
> Interviewee: "Yes, yes!" – Interview Transcript

Coach's strategies to adapt to the lack of interplay and communication with the national team: striving to find the best frameworks for their preparation

The inexistent communication and unreachable dialogue with some national team coaches was also a major point highlighted by the coach.

> June 6th *(concerning the junior international athletes for the sprint national team)*:
> "I wanted to talk with the (national team) coach, but I never got an answer."
> "The problem is that he didn´t even answer what I was asking. I wanted to talk with him personally to ask three/ four things and know what he wanted (to achieve with his prescribed training plans), but until today I am waiting for him to call back."
> "Even if they speak what they think…and we can disagree, it's natural…but the minimum…What's the goal, what do you want to achieve?" – Interview Transcripts

Moreover, Rodrigo's role changed, becoming more of a counsellor for his athletes and helping to manage the inherent conflicts that emerged with this lack of articulation between the club and national team (*e.g.*: there were national team athletes who wanted to pursue their preparation with the club's coaching staff). About this, Rodrigo reflected:

> July 18th *(concerning the junior international athletes for the sprint national team)*: "You (as the coach) must "drop" the theme. Firstly, you don't have to go up against them (athletes). You have to say that this must be the way, and that the training units are different, but they are not better or worse, and that a different stimulus will help you! Let it be clear (for the athletes), don't worry, and keep working." – Interview Transcript

Furthermore, when his athletes were in the national team's training camps, Rodrigo tried to help them and remain as present as possible.

> July 18th *(concerning the junior international athletes for the sprint national team)*: "I showed myself available for whatever was needed. Rafael at the time he was in the training camp, sent me videos of him paddling and I gave him a technical comment." – Interview Transcript
>
> July 18th *(concerning the junior international athletes for the sprint national team)*: "If the athletes need to talk to me because they don't have the confidence to talk to other coaches… because they don't know what they're going through or what you've been through, the injuries... then you're there, and you support them." – Interview Transcript

To manage this lack of articulation with the national teams, Rodrigo tried to talk to the athletes usually selected, to gain a better understanding of the national coach training methodologies and approaches, so he could prepare *a priori* the athletes with what he conceived were the necessary stimulus for an overall optimal preparation.

> June 6th *(concerning the junior international athletes for the sprint national team)*: "I tried to search, tried to talk with them (the athletes) (…) the training method they

had. So, I knew they worked with low volume. Whereby, before they went (to the national teams' training camps), (...) I gave them more (training) volume so that when the important competitions arrived, they would achieve the best possible results." – Interview Transcript

National team's selection criteria and call-up timing: their impact on coach's approach to planning

During the 12 analysed weeks, four international competitions with the participation of the club's athletes took place. On average, national team call-ups were announced with an antecedence of 17 days (ranging between 9 and 22 days). The proximity to which the call was announced made it debatable whether there would be a structured planning for them. For instance, an athlete was called to an international long-distance competition with an antecedence of nine days. She was at the time preparing for the national sprint championships.

> July 11th *(concerning an international female athlete for the marathon national team)*: "Well, this race made her arrive very tired the following week, she missed four speed workouts, and the following week, until Thursday, she couldn't train properly. She arrived undone! Because after all, it was a K4 race that wasn't even planned, so we couldn't prepare! (…) She wasn't able to train, because that week I had 2 or 3 high-intensity workouts, very short, because what I was looking for was the race pace…and she couldn't even finish… she was preparing for the K1 200m and K2 500m, and she couldn't…" – Interview Transcript

Moreover, the selection criteria weren't perceived as being clear by Rodrigo, a circumstance that created an obstacle to follow or even adapt the established long-term plan designed for some of the athletes.

> July 11th: "At the marathon national championship, the national team coach said that there was a reference time (a time that athletes couldn't surpass to be selected to the

> European Marathon Championships), but no one was able to comply with it, because here the river is not a swimming pool or an athletics track!" – Interview Transcript

This became a barrier that was difficult for the coach to manage, adding another distress for him to prepare athletes for the various competitions – national and international – of the sport's calendar.

> July 11th: "I believe that the selection criteria need to be clearer, they are ambiguous! If you win the selective competition, the club must know if you go or not. (…) All of this about preparation and planning changes if the selections have more concise and clear criteria!" – Interview transcript

Thus, Rodrigo felt the need to start planning the international competitions without receiving the final list of called athletes. This was a risk the coach felt he needed to take to effectively prepare for these competitions since he could not be sure of whom would be called, as he stated himself:

> July 11th *(concerning some of the club's marathon athletes)*: "I was already clear that he was going to the European Championship. But for example, it was not clear that Bernardo would go!" – Interview transcript

Even though, to a large extent, the strategy carried out by Rodrigo was successful, and that most of the athletes that he thought could be called to the national teams ended up on the list of selected athletes, there were exceptions. The last athlete mentioned, after the marathon national championship, started preparing for the sprint national championship but ended up being called for the European Marathon Championship. On the opposite pole, an athlete who made a specific preparation for the European Marathon Championships after becoming the national champion in this distance ended up being left out of the selected squad.

> July 11th *(concerning a female marathon athlete from this club):* "For example, Sara, who did not go to the European Championship by decision of the national team coach, but with whom we were doing all the preparation as if she were (...), and until then I continued to work with her without giving her a break to the case that if selected, she would be ready. So, obviously, work must be carried out and this work must have some bases, there must be specific and well-defined criteria." – Interview transcript

Discussion

The main purpose of this study was to explore how a coach at a Portuguese club managed the interplay between short- and long-term planning in a real-life context. Findings from this research study observed emphasized how coach's application of concepts related to planning usually had to be adapted. In this qualitative case study, the context external factors and demands notoriously obligated the coach to attribute more emphasis to the short-term planning, despite the existence of a long-term plan.

How was the long-term plan managed with the day-to-day idiosyncrasies?

The coach, during the investigation, attempted to predict how the process would evolve over the long-term. However, when faced with the practical limitations and demands of everyday situations, the focus shifted towards the short-term planning domain. Consequently, even though he had a defined long-term plan, the emerging constraints dictated a more adaptable approach, requiring frequent adjustments to be made to manage them effectively (Afonso & Mesquita, 2018; Jones & Wallace, 2010; Loureiro et al., 2023).

Long-term planning can be decisive in establishing the vision and course to follow (Loureiro et al., 2022), but among the idiosyncrasies that this coach's task revealed, the

weekly and daily temporal units took control over the process, as Afonso and Mesquita (2018) previously reported. Indeed, the unpredictable, contingent nature of the short-term events creates a force that is vowed to disrupt the more predictable, less constrained, long-term predictions (Afonso et al., 2020; Kiely, 2012). In response to this challenge, the coach made frequent adjustments, usually to his micro-scale programming, allowing him to adapt to changing circumstances.

The interplay between long- and short-term planning for athletes with greater levels of performance represented a particular challenge for the participant coach. Particularly, the need to prepare these athletes for the national teams' selective competitions, the poor interplay between club and national team in their preparation, and the close call-up timing to the international competitions, all played a major role, representing the main challenges for this coach.

The literature regarding this interplay between club and national team in athletes' preparation is scarce. Nevertheless, a Delphi survey applied to football national team practitioners reported that communication, willingness to share and quality/completeness of information were the main challenges in the interplay between club and national team practitioners (McCall et al., 2022), similarly to what this coach faced. Thus, these authors highlighted the importance of this exchange, pointing out that it should be cooperative, symbiotic and a two-way process to help improve player health. Since this was not observed in our study, once again, the way the coach reacted and managed this tension, establishing decision-making processes, revealed to be paramount to his activity (Jones & Wallace, 2010).

The coach's strategies align with a form of unmediated learning, as proposed by the International Sport Coaching Framework (ISCF) (Excellence et al., 2018). This is

evidenced by the adaptation made due to the arising constraints, frequent micro-scale adjustments, and his acknowledgment of the challenges in the interplay between long- and short-term planning. The scarcity of literature on specific challenges highlights the coach's navigation of uncharted territory based on real-world experiences. For instance, decisions such as asking his international athletes a description of the training plan usually carried out at the national team training camps, so he could adapt his own planning approach before they went there, was a strategy perceived to be necessary by the coach to effectively prepare his athletes. This allowed him to manage the existing lack of communication with the national team coach.

On the other hand, similarly to what was reported by Pass et al. (2022), the implementation of this coach's training plans and associated loads was facilitated and constrained by the goals, objectives, and preferred practices of his athletes, thus highlighting the coach's role in managing his context micropolitics (Potrac & Jones, 2009). This was particularly evident in our study since the coach had to prepare a very heterogeneous group, a challenging constraint since he had to harmonize the interplay between training individualization, and the team's overall preparation for the various national competitions. This ambiguity in the coaching process is well described by Jones and Wallace (2010) and Kiely (2018), who highlighted the need for an interplay between goal-directed coherence and simultaneously facilitating apparent consistent course corrections in response to dynamically emerging information.

The coach's challenges in harmonizing individualization with team preparation and navigating the lack of communication with the national team coach align with criticisms of traditional periodization models (Afonso et al., 2017; Afonso et al., 2019). The rigid structure of periodization may struggle to adapt to the dynamic and

unpredictable nature of contemporary sports environments (Kiely, 2018). In this context, our study highlighted how the coach's adaptive approach (e.g., he decided to increase training volume before sprint national team’s training camps, providing his athletes with what he believed they required for an optimal preparation), resonates with the dynamic nature of sports, challenging the inflexibility of traditional periodization models.

The coach's shift towards short-term planning, driven by practical limitations, denotes a departure from the conventional long-term focus of traditional periodization, and is coherent with the practices of other high-level coaches (Afonso & Mesquita, 2018). The need for continuous adjustments contradicts the linear and predetermined nature of traditional periodization models (Afonso et al., 2020; Loturco & Nakamura, 2016). For instance, the study underscores the coach's challenge in managing a diverse group of athletes, each with unique goals and preferences. Furthermore, the interplay between the club and national team highlights the need to ongoingly address communication gaps. Research on periodization models often assume a controlled and isolated training environment (Loturco & Nakamura, 2016), while reality involves multiple stakeholders and external influences (Silva et al., 2023). This complexity necessitates a more interconnected and adaptive planning approach, challenging the conventional view of periodization (Kiely, 2012).

On the other hand, flexible approaches to training planning allow coaches to adapt accordingly to unexpected events, thus balancing long-term planning and short-term flexibility (Loureiro et al., 2022). While coaches can set overarching goals and strategies, the flexibility inherent in the framework allows for adjustments based on the day-to-day realities of training (Loureiro et al., 2023). Furthermore, we suggest that this approach may facilitate communication and collaboration between coaches, athletes, and other

stakeholders. For instance, by being open to adjustments, coaches can better respond to feedback from athletes and foster a more cooperative and adaptive training environment.

This perspective acknowledges that coaching strategies extend beyond the parameters typically examined in scientific studies on periodization. Unlike controlled experiments in laboratory settings that concentrate on specific aspects (e.g.: strength training) for short time periods, the intricacies of coaching practices unfold in the multifaceted and dynamic ecology of sports. It is not that the framework is fundamentally flawed; instead, the complexity arises from its application within the diverse and ever-changing landscape of sports.

Optimizing training monitoring: how the coach integrated subjective feedback and in-session data

In this study, the coach the coach regularly interacted with his athletes to understand their training responses, thereby obtaining subjective verbal feedback about their fatigue status, although no specific subjective monitoring tool was applied. Perceptions on training monitoring methods in a context such as high-level football teams (Scott et al., 2013), competitive swimming (Barry et al., 2022), amateur rugby (Griffin et al., 2021), and rhythmic gymnastics coaches (Debien et al., 2022) all highlight the importance given to athletes' feedback, converging with our observations.

Despite the value of these sources of information, it could be argued that the process can be further optimized. The implementation of specific subjective tools to monitor the readiness and recovery of athletes for daily training sessions (e.g., Recovery-Stress questionnaire for athletes, Session rating of perceived exertion), could allow the coach to capture a more concise perspective regarding his athletes' training responses

(Borges et al., 2014). These measures are usually used in amateur settings like the observed club, given their accessibility (Debien et al., 2022; Griffin et al., 2021). This can help to control the undesired effects of excessive loading and other added stressors (Neupert et al., 2022). Moreover, effective communication, as promoted by the coach, is crucial, as it enhances athlete buy-in and adherence to subjective monitoring tools and the overall training plan (Griffin et al., 2021; Scott et al., 2013).

Moreover, with data from in-session monitoring (stroke rate and boat speed), the coach received real-time information from the training process, allowing him to verify his athletes' compliance with the prescribed training loads. This was particularly important, since considering the non-linear and multifactorial nature of training responses (Afonso et al., 2020), relying exclusively on coaches' perceptions would be a limited and inaccurate choice, given that research shows they tend to overestimate athletes' recovery in some situations (Debien et al., 2022). Indeed, accordingly to what was carried out by the coach, training monitoring should be performed in a multi-level approach (Hogan et al., 2020), allowing to receive important real-time information from the process and adapt to respond correctly to actual practitioners' needs (Coutinho et al., 2022; Loureiro et al., 2023).

Finally, the coach's subjective perceptions from his interactions with the athletes, along with his in-session training monitoring, usually triggered subsequent adaptations to the programmed training sessions (for instance, to prevent or manage athletes' fatigue status). Indeed, the planning and monitoring processes should work together as an interconnected and dynamic system that responds to the nonlinear nature of the training process (Afonso et al., 2020), allowing a constant and bidirectional feedback between the training process and its assessment and monitoring (Loureiro et al., 2022). Such an

approach enables coaches to adopt the previously mentioned flexible approaches to training planning (Loureiro et al., 2023). To achieve this, we propose that the coach conducts an initial diagnostic assessment to identify and prioritize key challenges. Detailed short-term planning follows, addressing the identified priorities, with ongoing assessments dictating the closure of training cycles and influencing subsequent periods (Loureiro et al., 2022). The philosophy here is one of constant auscultation, allowing for emergent information to shape the plan (Loureiro et al, 2023). This way, ongoing monitoring becomes crucial, extending beyond punctual assessments to encompass every aspect of the training process, thus allowing to tailoring planning to the athletes' specific needs.

This ongoing bidirectional feedback between assessment/monitoring and implementation, coupled with flexible planning approaches, may be applicable across various sports and skill levels. In the early learning stages, whether with young practitioners in individual or team sports, coaches can customize planning by using ongoing assessments to inform pedagogical progressions. This may assist coaches in adopting a pedagogical approach that respects the unique learning timelines of both athletes and teams, preventing premature advancement of these progressions. On the other end, in the diverse landscape of competitive sports, ongoing monitoring remains crucial, allowing adjustments in planning to address athletes' specific needs, while respecting their inter-individual variability. This dynamic approach is a common thread, ensuring adaptability from the developmental stages to competitive contexts in various sports.

Practical Implications and Future Directions

This study is the first, to our knowledge, to explore the interplay between short- and long-term planning in a concrete real-life context. Our findings highlighted: 1) the great emphasis attributed to short-term planning despite the existence of a long-term plan, in part because of the constraints denoted in this context; 2) the need to understand sports planning as a micropolitical process that is influenced by external pressures, organizational demands, and the constraints generated by the practitioners; 3) the importance of generating a bidirectional feedback between planning and assessment/ monitoring practices in a multi-level approach to optimize the training process, thus responding to athletes' needs. Although the findings of our study are specific to this context, we suggest that the potentialities of this research design should be explored in future investigations, in other competitive settings – *i.e.*, different individual sports and team sports – but also on different performance levels.

We further suggest that future investigations should replicate this research design, in a multitude of different context (i.e., different individual and team sports, amateur and professional settings, youth and adult teams), to observe how coaches' considerations regarding the interplay between short- and long-term evolve with the contexts in which they find themselves. We also suggest that future research should verge into the decision-making processes employed by coaches to manage tensions between club and national team training planning. To achieve this, we suggest a qualitative approach in which both club and national team coaches are interviewed concerning topics such as: 1) strategies used by coaches to adapt and prepare athletes for national team competitions; 2) how coaches navigate in the absence of effective communication; 3) how national team coaches monitor athletes progress outside of the national team scope.

Limitations

The major limitations of the study were related to the data collection, which took place exclusively during the spring/summer seasons. These seasons were characterized by consistently favourable weather conditions, thus preventing the observation of how the coach would handle the challenge of adapting training schedules over extended periods. This limitation restricted the study's ability to capture the coach's strategies in managing weeks or even months of scheduled training adjustments due to adverse weather conditions and unsuitable river conditions for sports practice, a common occurrence during the winter in this context.

Final Considerations

This study offers new insights into real-world approaches to planning in an individual sport such as canoeing. Overall, themes highlight the challenges faced by the coach in balancing short and long-term planning, and to navigate the tension between the club and national team planning. The lack of coordination between the club and national teams and the selection criteria uncertainties further difficult the athletes' preparation process. Due to context-specific constraints and the need to adapt to day-to-day situations, more emphasis was attributed to short-term planning by the coach. His strategies to adapt to the lack of interplay with the national team included adjusting the training volume based on his understanding of the training methodologies adopted by the national team staff. Overall, the study highlighted the complexities of managing planning’s different temporal orders and adapting to emerging information, contributing to a better understanding of this process in a real-life sports context.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

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Appendices

Appendix A

Semi-Structured Interview Guide

(1) Have there been any changes made to the training plan scheduled at the start of this week? If so, why?

(2) Will you change the originally planned training schedule for the next week? If so, why?

(3) Do you currently intend to make any changes to the long-term planning that you had originally established? If so, why?

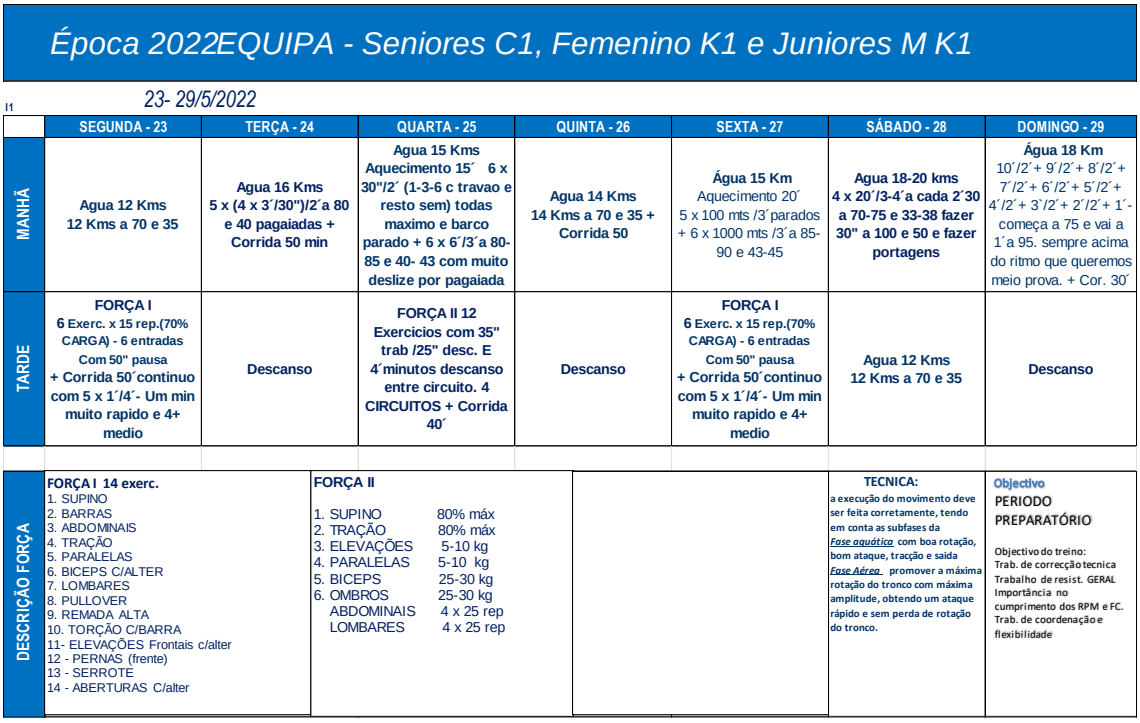
(4) During the week the following changes were verified. What were the main catalysts for them?

(5) How will the changes made to the training plan scheduled for this week, affect the planning for the coming weeks? And the long-term planning, will it be affected?

(6) What is the influence of the next competition on the changes made both at the start and throughout the week? Do you expect that the idealized planning for the period that follows the next competition may change according to the results achieved by the athletes?

Appendix B

Example of the coach's specific training adaptation of a microcycle, according to athletes' age group and specificities:



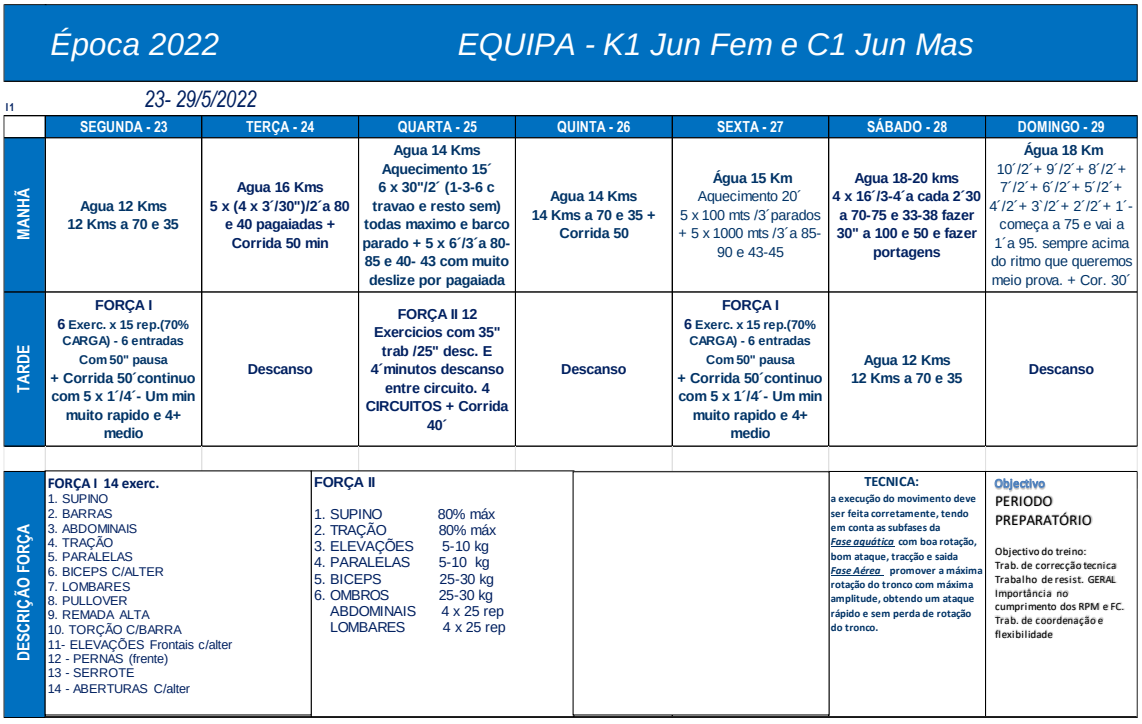
Época 2022EQUIPA - Seniores C1, Femenino K1 e Juniores M K1

23- 29/5/2022

	SEGUNDA - 23	TERÇA - 24	QUARTA - 25	QUINTA - 26	SEXTA - 27	SÁBADO - 28	DOMINGO - 29
MANHÃ	Agua 12 Kms 12 Kms a 70 e 35	Agua 16 Kms 5 x (4 x 3´/30")/2´a 80 e 40 pagaiadas + Corrida 50 min	Agua 15 Kms Aquecimento 15´ 6 x 30"/2´ (1-3-6 c travao e resto sem) todas maximo e barco parado + 6 x 6´/3´a 80-85 e 40- 43 com muito deslize por pagaiada	Agua 14 Kms 14 Kms a 70 e 35 + Corrida 50	Água 15 Km Aquecimento 20´ 5 x 100 mts /3´parados + 6 x 1000 mts /3´a 85-90 e 43-45	Agua 18-20 kms 4 x 20´/3-4´a cada 2´30 a 70-75 e 33-38 fazer 30" a 100 e 50 e fazer portagens	Água 18 Km 10´/2´+ 9´/2´+ 8´/2´+ 7´/2´+ 6´/2´+ 5´/2´+ 4´/2´+ 3`/2´+ 2´/2´+ 1´- começa a 75 e vai a 1´a 95. sempre acima do ritmo que queremos meio prova. + Cor. 30´
TARDE	FORÇA I 6 Exerc. x 15 rep.(70% CARGA) - 6 entradas Com 50" pausa + Corrida 50´continuo com 5 x 1´/4´- Um min muito rapido e 4+ medio	Descanso	FORÇA II 12 Exercicios com 35" trab /25" desc. E 4´minutos descanso entre circuito. 4 CIRCUITOS + Corrida 40´	Descanso	FORÇA I 6 Exerc. x 15 rep.(70% CARGA) - 6 entradas Com 50" pausa + Corrida 50´continuo com 5 x 1´/4´- Um min muito rapido e 4+ medio	Agua 12 Kms 12 Kms a 70 e 35	Descanso

DESCRIÇÃO FORÇA				
FORÇA I 14 exerc. 1. SUPINO 2. BARRAS 3. ABDOMINAIS 4. TRAÇÃO 5. PARALELAS 6. BICEPS C/ALTER 7. LOMBARES 8. PULLOVER 9. REMADA ALTA 10. TORÇÃO C/BARRA 11- ELEVAÇÕES Frontais c/alter 12 - PERNAS (frente) 13 - SERROTE 14 - ABERTURAS C/alter	FORÇA II 1. SUPINO 80% máx 2. TRAÇÃO 80% máx 3. ELEVAÇÕES 5-10 kg 4. PARALELAS 5-10 kg 5. BICEPS 25-30 kg 6. OMBROS 25-30 kg ABDOMINAIS 4 x 25 rep LOMBARES 4 x 25 rep		TECNICA: a execução do movimento deve ser feita corretamente, tendo em conta as subfases da *Fase aquática* com boa rotação, bom ataque, tracção e saida *Fase Aérea* promover a máxima rotação do tronco com máxima amplitude, obtendo um ataque rápido e sem perda de rotação do tronco.	Objectivo PERIODO PREPARATÓRIO Objectivo do treino: Trab. de correcção tecnica Trabalho de resist. GERAL Importância no cumprimento dos RPM e FC. Trab. de coordenação e flexibilidade

Table 2: Prescribed microcycle for junior male kayak athletes, senior male canoe athletes and senior female kayak athletes



Época 2022 EQUIPA - K1 Jun Fem e C1 Jun Mas

23- 29/5/2022

	SEGUNDA - 23	TERÇA - 24	QUARTA - 25	QUINTA - 26	SEXTA - 27	SÁBADO - 28	DOMINGO - 29
MANHÃ	Agua 12 Kms 12 Kms a 70 e 35	Agua 16 Kms 5 x (4 x 3´/30")/2´a 80 e 40 pagaiadas + Corrida 50 min	Agua 14 Kms Aquecimento 15´ 6 x 30"/2´ (1-3-6 c travao e resto sem) todas maximo e barco parado + 5 x 6´/3´a 80-85 e 40- 43 com muito deslize por pagaiada	Agua 14 Kms 14 Kms a 70 e 35 + Corrida 50	Água 15 Km Aquecimento 20´ 5 x 100 mts /3´parados + 5 x 1000 mts /3´a 85-90 e 43-45	Agua 18-20 kms 4 x 16´/3-4´a cada 2´30 a 70-75 e 33-38 fazer 30" a 100 e 50 e fazer portagens	Água 18 Km 10´/2´+ 9´/2´+ 8´/2´+ 7´/2´+ 6´/2´+ 5´/2´+ 4´/2´+ 3`/2´+ 2´/2´+ 1´- começa a 75 e vai a 1´a 95. sempre acima do ritmo que queremos meio prova. + Cor. 30´
TARDE	FORÇA I 6 Exerc. x 15 rep.(70% CARGA) - 6 entradas Com 50" pausa + Corrida 50´continuo com 5 x 1´/4´- Um min muito rapido e 4+ medio	Descanso	FORÇA II 12 Exercicios com 35" trab /25" desc. E 4´minutos descanso entre circuito. 4 CIRCUITOS + Corrida 40´	Descanso	FORÇA I 6 Exerc. x 15 rep.(70% CARGA) - 6 entradas Com 50" pausa + Corrida 50´continuo com 5 x 1´/4´- Um min muito rapido e 4+ medio	Agua 12 Kms 12 Kms a 70 e 35	Descanso

DESCRIÇÃO FORÇA				
FORÇA I 14 exerc. 1. SUPINO 2. BARRAS 3. ABDOMINAIS 4. TRAÇÃO 5. PARALELAS 6. BICEPS C/ALTER 7. LOMBARES 8. PULLOVER 9. REMADA ALTA 10. TORÇÃO C/BARRA 11- ELEVAÇÕES Frontais c/alter 12 - PERNAS (frente) 13 - SERROTE 14 - ABERTURAS C/alter	FORÇA II 1. SUPINO 80% máx 2. TRAÇÃO 80% máx 3. ELEVAÇÕES 5-10 kg 4. PARALELAS 5-10 kg 5. BICEPS 25-30 kg 6. OMBROS 25-30 kg ABDOMINAIS 4 x 25 rep LOMBARES 4 x 25 rep		TECNICA: a execução do movimento deve ser feita corretamente, tendo em conta as subfases da *Fase aquática* com boa rotação, bom ataque, tracção e saida *Fase Aérea* promover a máxima rotação do tronco com máxima amplitude, obtendo um ataque rápido e sem perda de rotação do tronco.	Objectivo PERIODO PREPARATÓRIO Objectivo do treino: Trab. de correcção tecnica Trabalho de resist. GERAL Importância no cumprimento dos RPM e FC. Trab. de coordenação e flexibilidade

Table 3: Prescribed microcycle for female kayak junior athletes and male junior canoe athletes

1

Época 2022	EQUIPA - C1 Senior e Junior Fem					
11	23- 29/5/2022					
	SEGUNDA - 23	TERÇA - 24	QUARTA - 25	QUINTA - 26	SEXTA - 27	SÁBADO - 28	DOMINGO - 29
MANHÃ	Agua 12 Kms 12 Kms a 70 e 35	Agua 16 Kms 5 x (4 x 3´/30")/2´a 80 e 40 pagaiadas + Corrida 50 min	Agua 14 Kms Aquecimento 15´ 6 x 30"/2´ (1-3-6 c travao e resto sem) todas maximo e barco parado + 5 x 6´/3´a 80-85 e 40- 43 com muito deslize por pagaiada	Agua 12 Kms 12 Kms a 70 e 35 + Corrida 50	Água 15 Km Aquecimento 20´ 5 x 100 mts /3´parados + 5 x 1000 mts /3´a 85-90 e 43-45	Agua 18-20 kms 3 x 20´/3-4´a cada 2´30 a 70-75 e 33-38 fazer 30" a 100 e 50 e fazer portagens	Água 18 Km 10´/2´+ 9´/2´+ 8´/2´+ 7´/2´+ 6´/2´+ 5´/2´+ 4´/2´+ 3`/2´+ 2´/2´+ 1´- começa a 75 e vai a 1´a 95. sempre acima do ritmo que queremos meio prova. + Cor. 30´
TARDE	FORÇA I 6 Exerc. x 15 rep.(70% CARGA) - 6 entradas Com 50" pausa + Corrida 50´continuo com 5 x 1´/4´- Um min muito rapido e 4+ medio	Descanso	FORÇA II 12 Exercicios com 35" trab /25" desc. E 4´minutos descanso entre circuito. 4 CIRCUITOS + Corrida 40´	Descanso	FORÇA I 6 Exerc. x 15 rep.(70% CARGA) - 6 entradas Com 50" pausa + Corrida 50´continuo com 5 x 1´/4´- Um min muito rapido e 4+ medio	Agua 10 Kms 10 Kms a 70 e 35	Descanso
DESCRIÇÃO FORÇA	FORÇA I 14 exerc. 1. SUPINO 2. BARRAS 3. ABDOMINAIS 4. TRAÇÃO 5. PARALELAS 6. BICEPS C/ALTER 7. LOMBARES 8. PULLOVER 9. REMADA ALTA 10. TORÇÃO C/BARRA 11- ELEVAÇÕES Frontais c/alter 12 - PERNAS (frente) 13 - SERROTE 14 - ABERTURAS C/alter	FORÇA II 1. SUPINO 80% máx 2. TRAÇÃO 80% máx 3. ELEVAÇÕES 5-10 kg 4. PARALELAS 5-10 kg 5. BICEPS 25-30 kg 6. OMBROS 25-30 kg ABDOMINAIS 4 x 25 rep LOMBARES 4 x 25 rep			TECNICA: a execução do movimento deve ser feita corretamente, tendo em conta as subfases da *Fase aquática* com boa rotação, bom ataque, tracção e saida *Fase Aérea* promover a máxima rotação do tronco com máxima amplitude, obtendo um ataque rápido e sem perda de rotação do tronco.	Objectivo PERIODO PREPARATÓRIO Objectivo do treino: Trab. de correcção tecnica Trabalho de resist. GERAL Importância no cumprimento dos RPM e FC. Trab. de coordenação e flexibilidade

Table 3: Prescribed microcycle for female canoe athletes (junior and senior)

Appendix C

Example of a microcycle, preceding a national competition (sprint national championship):

Época 2022				EQUIPA ABSOLUTA			
	03- 09/7/2022						
	SEGUNDA - 03	TERÇA - 04	QUARTA - 05	QUINTA - 06	SEXTA - 07	SÁBADO - 08	DOMINGO - 09
MANHÃ	Água: Aquecimento 15' 5x 2'/1' (90/50); 2Km (70/33). Força Hipertrofia: 3 entradas, 6 exercícios	Água: Aquecimento 15'; 1x300m/5'; 2x250m/5'; 3x100m/5'; 2Km (75//37). Corrida 30'	Agua: Aquecimento 15', 10Km (70/33). Ginásio: 6 exercícios, 3 entradas. Água: 3x15''/6'	Água: Aquecimento 15'; 4x 3'30''/8' (90/50); 2Km (70/33). Corrida 30'	Água: Aquecimento 15'; 8Km (70/33) com 3x15''/6'	Campeonato Nacional de Velocidade	Campeonato Nacional de Velocidade
TARDE	Descanso	Descanso	Descanso	Descanso	Descanso	Campeonato Nacional de Velocidade	Campeonato Nacional de Velocidade
DESCRIÇÃO FORÇA	**FORÇA I 14 exerc.** 1. SUPINO 2. BARRAS 3. ABDOMINAIS 4. TRAÇÃO 5. PARALELAS 6. BICEPS C/ALTER 7. LOMBARES 8. PULLOVER 9. REMADA ALTA 10. TORÇÃO C/BARRA 11- ELEVAÇÕES Frontais c/alter 12 - PERNAS (frente) 13 - SERROTE 14 - ABERTURAS C/alter	**FORÇA II** 1. SUPINO 80% máx 2. TRAÇÃO 80% máx 3. ELEVAÇÕES 5-10 kg 4. PARALELAS 5-10 kg 5. BICEPS 25-30 kg 6. OMBROS 25-30 kg ABDOMINAIS 4 x 25 rep LOMBARES 4 x 25 rep				**TECNICA:** a execução do movimento deve ser feita corretamente, tendo em conta as subfases da ***Fase aquática*** com boa rotação, bom ataque, tracção e saida ***Fase Aérea*** promover a máxima rotação do tronco com máxima amplitude, obtendo um ataque rápido e sem perda de rotação do tronco.	**Objectivo** PERIODO PREPARATÓRIO Objectivo do treino: Trab. de correcção tecnica Trabalho de resist. GERAL Importância no cumprimento dos RPM e FC. Trab. de coordenação e flexibilidade

Table 4: Last prescribed microcycle before the sprint national championship

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