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**University-based coach education: the e-portfolio as a formative assessment tool of
student-coaches' learning**

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Abstract

Current research highlights the need for more studies focused on how high-quality assessment strategies can contribute to coach learning in coach education. The use of e-portfolios, as formative assessment tools, has shown to contribute to student-coaches' learning in university-based programs, but studies on this topic are still scarce. The aim of this action research project is to investigate the potentialities and challenges of the e-portfolio as a formative learning-oriented assessment tool in an undergraduate sport coach course in Brazil. By sharing this, from the perspective of student-coaches and the assistant-professors of the course, we reflect on the evidence with the intention to both inform colleagues doing similar work and contribute to an emerging body of assessment in coach education literature.

Keywords: coach development; higher education; learner-centered teaching.

Common assessment approaches, in a variety of educational settings, typically include the use of standardized, sometimes written, tests where learners are compelled to recall a certain amount of previously taught information (Blumberg, 2009). Generally, this type of assessment is used to make judgements about how much knowledge learners have gained at a specific moment in time as part of a measurement exercise (Earl, 2012); for instance, they might be used as a summation of one or more “topics” or

“themes”, at the end of a particular stage, level, or period. The ideas underpinning such approaches are mainly rooted in behaviorist theories of learning, which suggest that shaping and modifying learners’ behavior to meet a particular prescribed standard, at a future point in time, is desirable (Maclellan, 2005).

Due to levels of linearity between coach education and education more broadly, these ideas, or similar, can be reflected in coach assessment strategies. For instance, to complete a coach education program (CEP), the coach may be required to demonstrate that they conform to a series of prescribed behaviors (McCarthy et al., 2022). The coach would usually evidence this behavioral shift at the end of a program, in a simulated environment, during a singular coaching episode (Chapman et al., 2020). Thus, judgements are made against what is seen and the subsequent certification, qualification, award, or license to practice is offered as an outcome, or not. We argue that these approaches to assessment fall short in several ways, not least because they fail to promote learning as they might, or provide enough high-quality, practicable, information about how learning occurred (Blumberg, 2009; Pereira et al., 2016). Further, there is much more to quality coaching than that which can be observed. It follows, therefore, that since assessment has not been prioritized in this research (see McCarthy, 2022; McCarthy et al., 2021, and McCarthy, 2022), there is a strong case for examining the ways in which well-considered assessment can contribute to coach learning.

In the work of Boud (2002) it is suggested that assessment has ‘double duty’; assessment can serve to *both* appreciate the current quality/standards of practice *and* make a significant contribution to coach learning. This represents a departure from the *either-or* dichotomy which can be presented when formative assessment is set against summative assessment. Carless (2007) defines this type of practice as ‘learning-

oriented', arguing that "when assessment is functioning efficiently, there should be substantial overlap between these two functions" (p. 59). Underpinning this view of assessment are a variety of principles that could offer significant benefit if adopted within CEPs, yet are not currently common (McCarthy et al., 2021; McCarthy et al., 2022). These include (a) authentic and contextualized assessment (i.e., assessment activities based on actual professional practice) (Baeten et al., 2008), (b) embedded/integrated assessment (i.e., frequent and sustained opportunity to showcase growth against CEP outcomes) (Adams, 2006), (c) self- and peer-assessment (i.e., evaluating one's own strengths and challenges, and providing constructive feedback to others) (Boud, 2000), (d) assessment for metacognitive skill development (i.e., reflection, reasoning, and strategising with regard to learning processes) (Papanikolaou & Boubouka, 2010), and (e) student engagement with feedback (i.e., peer feedback) (Carless, 2007). Given the major emphasis placed on learning, learning-oriented assessment seems to address some of the criticism directed at current practice within some CEPs. Inspired by the work of Carless (2007) and colleagues above, McCarthy et al. (2021) and McCarthy et al. (2022) offer a view on what this might look like for CEPs. Although some good examples are beginning to emerge (e.g., The Premier League, <https://www.premierleague.com/news/2200308>), we intend to further demonstrate how these principles can be adopted in CEPs, continuing to integrate the broader education research within the coach education domain.

Learner centered teaching (LCT), as a concept which can underpin the design and delivery of CEP, is suggested to play a role in promoting learner engagement (Trudel et al., 2020). This is argued on the basis that it has the potential to provide opportunities for active learning (Nelson et al., 2013), through the use of strategies such as problem-based learning (Driska & Gould, 2014), group discussions (Jones et al.,

2012), and micro-coaching (Roberts & Ryrie, 2014), valuing the knowledge and experience of coaches acquired throughout life (Trudel et al., 2013; Werthner & Trudel, 2006). As a result, it is proposed, a greater number of positive outcomes can be achieved with coaches (i.e., more effective programs) (Morgan et al., 2013; Paquette et al., 2014; Paquette & Trudel, 2018a). In terms of assessment, according to Weimer (2013), the LCT aims to “maximize the learning potential inherently a part of any experience where students produce a product, perform a skill, or demonstrate their knowledge” (p. 11); this is aligned with ideas associated with the concept of formative assessment, specifically the notion of the learner as a producer (Blumberg, 2009; McCarthy & Stoszowski, 2018; Stoszowski & McCarthy, 2019). Indeed Earl (2012) argues that formative assessment is most concerned with “...how, when, and whether students use what they know” (p. 27). As part of learner-centered teaching, formative assessment can help students to become more conscious of their learning and development by working with the educator to generate feedback, while reflecting on the practical application of new ideas from a program of study (Black & Wiliam, 2009; Pereira et al., 2016).

To extend this partial definition, formative assessment is an approach that seeks to promote learning, particularly through useful and specific feedback, enabling learners to understand where they are on their learning journey relative to where they are heading (Blumberg, 2009). Feedback should be used intentionally to close the gap between the actual level of performance and the desired level (Hattie & Timperley, 2007; Sadler, 1989). In this sense, pedagogy is a central feature in formative assessment, as educator’s practices and the quality of feedback determines whether the assessment is learning-oriented or not (Black & William, 2009). By using principles of formative assessment in both activity and program design, educators can become more

informed about their learners and can make more effective decisions on what to do next and why. For example, in CEPs, portfolios can be used to understand the development of coaches' knowledge, understanding, skills, and attitudes, over time (Galatti et al., 2019; Milistetd et al., 2019; Paquette et al., 2018a).

In a LCT approach, the role of the coach developer is to facilitate the teaching and learning process, fostering a balance of power between learners and facilitators, and stimulating learners to take responsibility for their learning process (Paquette & Trudel, 2018b). McCarthy et al. (2022) advocate the notion that assessment tasks should be distributed evenly throughout the duration of the course and not concentrated at any one point (e.g., at the end), as summative assessment normally is. By doing this, multiple low or no risk opportunities exist to appreciate where the learner currently is in their journey, against where they need to be, and offer appropriate support to make continued progress.

As a formative assessment strategy, within LCT, portfolios and e-portfolios (i.e., electronic portfolio) are mechanisms which encourage students to produce an output that both *promotes* learning (e.g., the skill of curation) and *evidences* learning (e.g., demonstrates the development of knowledge, attitudes, and skills, over time). They also afford learners the opportunity to represent this autonomously and creatively, in a way which is most meaningful and authentic to them, since there is no fixed model that must be followed and each individual can be stimulated to create their own portfolio based on their own experiences (Carl & Strydom, 2017; Klenowski et al., 2006). The use of e-portfolios that is used in virtual participation, aligned with contextualized and individual feedback throughout the assessment process, can guide learners to being more self-determined in their studies (McCombs & Vakili, 2005).

Research in coach education has shown that (e-)portfolios can offer an opportunity for coaches to plan and reflect, with the intention of enabling coaches to better understand themselves and increase their effectiveness (Dray & Howells, 2019; Paquette et al., 2019). Usually, coaches are required to document coaching sessions based on specific concepts (e.g., game-based approach), show evidence of season planning for teams/athletes, and explore their coaching philosophy. They also have the opportunity to continually interact with leaders and peers modifying those ‘items’ along the program as they learn (Dray & Howells, 201; Galatti et al., 2019; Paquette et al., 2014). However, as recent reviews have highlighted, there are still too few studies that have explored, in detail, the use of portfolios and e-portfolios in CEPs (Cushion & Townsend, 2018; Trudel et al., 2020). Given the increase in online learning courses since the COVID-19 pandemic, there is a pressing need to understand the ways in which coaches reason with, and respond to, e-portfolios in a CEP context. Specifically, the aim of this study is to investigate the potentialities and challenges of the e-portfolio as a formative learning-oriented assessment tool, as a feature of the “Sport Coach” course within the undergraduate Sport Sciences program at the University (information omitted for anonymity of authors).

Method

Study Design

This qualitative study is rooted within the participatory research paradigm (Lincoln et al., 2018) and adopts an action research methodology (Stringer, 2007; Tripp, 2005). It is, therefore, a cooperative investigation process, in which research subjects and researchers are all participants. We followed the actions of planning, implementing, and evaluating (Tripp, 2005) the use of the e-portfolio by student-coaches in the Sport

Coach course. This work culminated in a series of findings, which are described in the results section.

Context and Participants

This study was carried out in a Sport Coach course that is a prerequisite for obtaining a degree in Sport Science at (omitted for anonymity of authors). Sport coaching is a regulated profession in Brazil (Law N° 9.696 from September 1st 1998, 1998). Therefore, undergraduate Physical Education courses represent the beginning of coaches' professional journey in the country. In this scenario, the availability of andragogical tools that contribute to the teaching and learning process and assist coach developers, professors, and educational institutions in planning CEP is essential.

The purpose of the Sport Coach course was to assist in the final process of formal education for sports coaches. It lasted for 15 weeks, with a workload of four hours per week; two hours in the classroom and two hours dedicated to activities outside the classroom, managed by the students themselves. The first eight weeks constituted the first module, which had the main objective of developing sport coaches' knowledge base. The final seven weeks constituted the second module, which included workshops intended to develop knowledge and competences perceived by the student-coaches as requiring improvement. This course was rooted in a learner-centered teaching approach (see Galatti et al., 2019) and a congruent assessment approach was identified (Weimer, 2013). In sum, based on the adult learning and coach education research (Dray & Howells, 2019; Klenowski et al., 2006), we identified the portfolio as a learning orientated formative assessment tool for use within a program underpinned by a learner centered teaching strategy. This responds to a call from McCarthy and colleagues (2022) which argues for greater consideration in choosing complimentary teaching and assessment approaches as part of the design process.

In 2020, the year this study was carried out, it was necessary to change the teaching plan due to enforced social isolation, a result of the COVID-19 pandemic. Emergency remote teaching conditioned the use of the virtual environment to continue the course. Face-to-face classes were replaced by synchronous meetings online, starting in the third week of class; this meant that the course lasted 18 weeks, instead of 15 as usual. Despite the unexpected situation, we continued the study, after all, action research seeks solutions to real problems (Thiollent, 1986). In this context, the portfolio initially planned to be the assessment tool was turned into an e-portfolio to attend to the new demands.

The sample consisted of 32 student-coaches, 22 men ($M = 23.88$, $SD = 1.30$ years-old), 10 women ($M = 23.30$, $SD = 6.34$ years-old). The high standard deviation for women can be explained by one 41 years-old student-coach. All student-coaches were enrolled in the course in 2020, between the 5th and the 9th semester and had sports experiences as athletes/practitioners in at least one sport. Among them, 16 participated in focus groups sessions (see procedures section), being three women ($M = 28.33$, $SD = 11.02$) and six men ($M = 28.33$, $SD = 1.03$) in group 1 (seven with coaching experience as interns), and three women ($M = 21.00$, $SD = 1.00$) and four men ($M = 21.00$, $SD = 0.82$) in group 2 (all with coaching experience as interns). All participants received pseudonyms to ensure confidentiality.

The course was conducted by a PhD professor with 15 years of experience in higher education and an international coach developer certification. She worked together with the main researcher of this investigation, a former student of the Sport Science program and, at that time, a PhD candidate. They will both be referred to as professors from now on. There were also six assistant professors (four women and three men), one was part of the teaching internship program at the (omitted for

confidentiality), one was a former student of the Sport Coach course, and four were former students and part of the internship program. Considering the learner-centered teaching approach, the set of professors and assistants will be referred to as facilitators.

The E-portfolio

The e-portfolio was an online document that student-coaches were required to develop, against a broad and inclusive task brief and set of success criteria. Student-coaches delivered the first part of the e-portfolio throughout module one, and it was composed of a professional curriculum, a cover letter, a description of their coaching philosophy, the characteristics of the context for which they were going to plan three training sessions, and the planning of the training sessions. In this phase, the student-coaches received a report with formative feedback from one facilitator and an external consultant, specialist in sport pedagogy and/or an experienced sport coach. The specialists were chosen by the professors, considering their practical experience and specific knowledge of the sport. As they were not necessarily trained on formative assessment, their main role was to provide feedback regarding the professional content of the e-portfolio, while the facilitators had the role of assess the coherence between all the elements, complementing the work done by the specialist. Within the second module, the student-coaches were encouraged to review their e-portfolio, consider the feedback, and to exchange it between peers – through an informal process (i.e., they could exchange the e-portfolio with whoever they wanted and there were no obligation to register what they discussed or observed from other's).

The second part of the e-portfolio would be delivered at the end of module two, containing a description of their responsibility as coaches, the profile of the athletes they chose to coach, and a description of the sport program in which they chose to coach. These were basic requirements the student-coaches needed to meet, they could

add information that they thought would be important, and they could deliver this document in the format they saw fit. After the second delivery, they received another formative feedback report from the same people. As the items corresponded to activities of the course, the student-coaches also received feedback from the facilitators, including the professors, throughout the entire semester. For example, in the fourth week, the student-coaches reflected about their coaching philosophy and tried to make a model to represent it. Then, they were invited to explain it to peers, with the intention of refining it further. This activity helped the student-coaches to describe, rethink, their coaching philosophy. Another strategy was the opportunity for student-coaches to self-assess their effort in developing the e-portfolio, based on the criteria shared with them (i.e., on a scale from 0 to 10), as a way to stimulate them thinking about the responsibility for their own learning, a key dimension of learner-centered teaching. The items, requirements, and criteria for feedback of the e-portfolio, in consonance with the course' modules, are described in Table 1.

The professors intended the e-portfolio to be a vehicle for creating an integrated learning and assessment experience throughout the course. In this sense, student-coaches were encouraged to capture their essence as coaches, while learning in and through the process. The requirements of the e-portfolio were aligned to the course content, which was derived from the coach development literature. We focused on integrating professional, interpersonal, and intrapersonal knowledge, valuing the ideas of Côté and Gilbert (2009) in relation to coaching effectiveness and expertise.

[Table 1 near here]

To complete the portfolio, the facilitators suggested a variety of tools, such as an asynchronous platform office package, personal device office package, and free websites for e-portfolios creation. When the course pivoted to an online environment,

the facilitators checked that the student-coaches had internet access, although some difficulties in using digital technologies, such as managing the asynchronous platform used in the course. Facilitators' efforts were directed towards supporting the student-coaches in this area and encouraging them to choose the application that best suited the development of their e-portfolio. Moreover, the university support was key for the facilitators to proceed the course in the virtual environment.

Procedures

At the end of the first module of the course, the researcher invited the student-coaches to voluntarily participate in focus groups through synchronous meetings, with the aim of obtaining information regarding the development of the first part of the e-portfolio and, if needed, developing strategies to provide support - this is consistent with formative learning-oriented assessment. Considering the number of student-coaches enrolled in the course, the focus group was chosen to gain a broad range of views, through discussion and exchange of experiences, allowing the topic addressed to be more problematized than in an individual interview situation (Hennink, 2014). As it was an opportunity for student-coaches to express their opinions, feelings, and suggestions, everyone who showed an interest was recruited. In the following week, the researcher contacted the student-coaches via a synchronous platform, and the 16 who showed interest and availability were divided into two groups, group 1 with 7 people (G1 = 66 minutes) and group 2 with 9 (G2 = 100 minutes). This was considered an appropriate number of participants for focus groups, and the heterogeneity of gender and experiences in coaching practices, in order to capture the diversity in the context and conditions of the issues examined (Hennink, 2014). Both groups also participated in a second focus group carried at the end of the semester (G1 = 67 minutes; G2 = 80 minutes). Lastly, one focus group was conducted with the six assistant-professors (AP =

108 minutes) at the end of the semester, with the objective of understanding their perspectives on the e-portfolio construction, considering their role as facilitator of a learner-centered teaching course. All focus groups were recorded in audio and video.

Data Analysis

We conducted the thematic analysis in an inductive-deductive way, using the Nvivo 11 software, following the six phases proposed by Braun et al. (2016). In the first phase, the primary researcher transcribed the five focus groups verbatim, resulting in 120 pages (A4 sheet, Times New Roman font, size 12, single-spaced). The second phase involved the primary researcher, and the fourth and fifth authors of this research, all former students of the Sport Coach course with experience in qualitative study. Each familiarized themselves with the data, in order to develop the initial codes, with a semantic focus. The third phase consisted of identifying, by the fourth and fifth authors, the major themes emerging from the initial coding inductively with a latent focus on the content that is, in search of patterns and their meanings. The fourth phase involved the revision the themes by the primary researcher, along with fourth and fifth authors, in which some themes were grouped, excluded and/or renamed. In the fifth phase, the themes were deductively defined and grouped at a latent level, based on the potentialities and challenges of the e-portfolio identified. The final phase involved an iterative process between the elaboration of the themes and the selection of citations for the explanation of results.

Research Quality

From a relativistic approach, we followed the ideas described by Burke (2016) of (a) internal coherence, supported by different sources of information; (b) credibility, supported by the participants' checking the transcript of the focus groups, as well as the researchers' experience in the research context; and (c) transparency, considering that

the establishment of themes and sub-themes took place firstly through the researchers' analysis and, later, through a discussion with the professor responsible for the final interpretations.

Results

Development of the E-portfolio

The e-portfolios were developed individually by the student-coaches, based on the weekly activities throughout the course, and it contributed to the final course grade, which was calculated from the average grades of self-assessment and e-portfolio (facilitator's assessment).

The learning-oriented' principles and the subsequent practices implemented for the development of the e-portfolio are presented in Table 2.

[Table 2 near here]

One important mechanism for the development of the e-portfolio was the feedback provided by the professors, because it helped the student-coaches to reflect on the content produced.

You are seeing your task being answered in a provocative way. Like, the professor asked me like this: 'I understood your philosophy and how this will affect the athletes, but how will this affect you?' (Alexandre, group 1, focus group 2).

Really, when you receive these feedbacks and try to give new meaning to each one [...] you end up generating more value to knowledge. It adds something more than just understanding. Understand, apply, modify, according to your context. (Wesley, group 1, focus group 2).

The strategy of exchanging the e-portfolios between peers stimulated interpersonal relationships and student-coaches' learning. Gabriela and Ricardo (Group

2, focus group 2) explained how they learned with other students: “I saw the e-portfolio of many people, from different sports and I think it added a lot, like, seeing what the other one did, what was good, seeing the suggestions and feedback made by other consultants” (Gabriela).

I exchange with a lot of people too [...]. After we saw the review and feedback, looking at our first version of the portfolio, we had another vision and managed to make it better and... really reflect on what we think and always improve.

(Ricardo).

Evaluation of the E-portfolio

Potentialities

Professional, Interpersonal, and Intrapersonal Knowledge Development.

The e-portfolio was perceived as a tool for the development of professional, interpersonal, and intrapersonal knowledge. In terms of professional aspects, the e-portfolio stimulated the student-coaches to think in “the way we’re going to plan the season, training sessions, periodization” (Ricardo, group 1, focus group 1).

Concerning interpersonal knowledge, the e-portfolio demanded that attention was paid to the skill of communication. For example, Tássia elaborates on how she realized the need to change the way she communicates what she thinks in a visual way:

I think that communication appeared a lot in my portfolio [...], when I reviewed it [in response to feedback], I looked to a lot of the feedback and said: ‘but I don't think that's what I meant!’ [...] So, there is this need of a visual aspect, drawing... in short, this diversity of communication. (Group 1, focus group 2)

In relation to the intrapersonal knowledge, student-coaches cited aspects such as self-knowledge, reflection, and attitudes toward learning. According to Gabriela (group

2, focus group 2), “I think the portfolio generates a great moment of self-reflection”.

Renan took a deeper look at what his learning meant:

The portfolio does not necessarily represent ‘me in ten years’, our philosophy and everything we wrote there in the future. Certainly, many things will change, we will learn a lot too. For example, in my [philosophy] drawing I draw a tree. I basically put the bottom parts until I get to the top, but things that I put up there that I think are priorities, may not become such priorities. So, beyond the question of self-reflection, I see like...that we leave it as if it was the basis for our learning [...]. But I think from relationships, interpersonal relationships, everything else... it can change with experience. (Renan, group 2, focus group 2).

Moreover, the e-portfolio was perceived as tool capable of stimulate the integration of professional, interpersonal, and intrapersonal knowledge, as Murilo said:

I think that all the contents that we saw are all integrated. I realized, like... there wasn't a class applying all of them together, but in the e-portfolio I was able to notice in several moments that I was integrating [...]. I think that in the letter to the parents... there is a lot of our own philosophy, the athlete's training and how we want to work with them. (Group 1, focus group 2).

Relationship with Coaching Practice. The contents of the e-portfolio were perceived as applicable in coaching practice, as Ruan and Murilo expressed:

All contents are fully applicable. It’s the way you think about how you’re going to organize your season [...], the way you’re going to lead, your values... the way you’re going to treat the group [...]. From the moment you define your philosophy, it is a direction for you to work [...]. (Ruan, Group 1, focus group 1).

I think that too, everything is very useful. I think it's really nice the way that each one will get this information, this knowledge that we've acquired, and use it for our daily lives [...]. It can almost serve as a guide or a manual for us as coaches. (Murilo, Group 1, focus group 1)

The task presented optionality, and student-coaches had autonomy; for instance, they would situate this work in their own coaching context and determine what to explore, how, and why. As a result, the opportunity to develop metacognitive skills such as self-regulation was promoted.

Engagement with feedback. Student-coaches perceived the facilitators' support, in terms of opening dialogue and providing continuous feedback, as key in developing their e-portfolio, as demonstrated by Ricardo (group 1, focus group 1): "You are always supporting us, sending us feedback and I think this is..., this motivates us a lot". For Renan: "The feedback makes us reflect a lot about what we did in the classes [...]. I looked at my portfolio and changed even the layout [...]." (Group 2, focus group 2).

I even suggest it, like, to other people. I'm close to [a classmate], so we talk a lot about the course and then I said: "look, I think this here could be better, because you don't do it that way". Jennifer [facilitator] said: "look, and if you did it like this, wouldn't it get better? Why are you doing it this way and not some other way? (Gabriela, group 2, focus group 2).

For the facilitator Jennifer (AP focus group), providing continuous feedback was "very interesting [...], because providing the feedback just at the end [of the course] seems somewhat distant, you know? And then they wouldn't even remember what they did or didn't do."

Formative Assessment. The participants perceived the e-portfolio as a learning tool. Accordingly, there was a sense that it was viewed as a mechanism *for* learning, and as such, through the e-portfolio they could make progress toward their planned goals, showing to be an authentic assessment. For example, one of the student-coaches explained: “We were developing knowledge until we delivered the final version of the e-portfolio [...]” (Faby, group 1, focus group 2). For the facilitator Greg (AP focus group), “the e-portfolio is this node, which made the students articulate everything they had in the course and externalize it into a practical context. Even to propose, for example, a training session.”

Challenges

Unfamiliarity with the E-portfolio. The lack of familiarity with the e-portfolio made its development difficult, especially before the first submission. Furthermore, the student-coaches felt confused about the assessment itself until the module one, and they had not clearly understood or appreciated how several activities contributed to the e-portfolio. This is evident in Vanessa’s speech (AP focus group): “Actually I wanted to ask how... what the grades are. All activities? Or are there some that will be accounted more... like, for participation grade?” The facilitator Jessica said, “the students felt [confused]. I remember our first focus group [...]. They didn't know how they were being evaluated” (AP focus group).

Responding to this emerging insight, the professor provided an exclusive synchronous meeting three weeks before the last submission, so that facilitators could clear up students' doubts and support the development of the e-portfolio.

Lack of Specific Feedback Regarding the Course’s Content. One challenge that emerged regarding the feedback on the e-portfolio was the lack of alignment

against course content, in particular the intrapersonal ideas within the curriculum.

Gabriela said:

I felt a lack of feedback regarding the course' issues. Like, I had good feedback regarding the contents of the training sessions, curriculum, and such [...], I talked to Jane [assistant-professor], and she was giving me more perspectives about the fact that the values that I talk about in my philosophy were not included in my training sessions, and I hadn't had this feedback before. So, if I hadn't talked to Jane, maybe I wouldn't even have noticed it, you know?" [...]

The point is that an external consultant did it [...]. Maybe someone from the course (i.e., facilitators) could also give more attention to these issues. (Gabriela, Group 2, focus group 2)

The student-coaches received feedback on the e-portfolio from an external consultant and one facilitator. Most of the external consultants focused on the professional knowledge in the feedback, as this was their area of expertise. Thus, the facilitators were instructed to focus the feedback on interpersonal and intrapersonal issues, but without disregarding the professional content. Jane, a novice assistant professor, commented:

It was the first time I participated in the course. And I even said that I would be there learning from them [...] and my expectation was, actually, to help in discussions with experiences I've already had, with what I study, and also to learn a lot, especially with the discussions mediated by those who already study coach development. (Jane, AP focus group).

There was an effort in this study to provide training for assistant professors, which started on the second week of classes. They were introduced to the concepts of learner-centered teaching and facilitation and received support materials. All the

facilitators maintained and contributed to a *WhatsApp* group throughout the course, in order to exchange information, share opinions, feelings, perceptions, and experiences.

Discussion

We identified ways in which e-portfolios, used as a formative, learning-oriented, assessment tool, might be congruent with a broader LCT strategy *and*, most importantly, contribute to student-coach learning. Nevertheless, those responsible for the implementation of these, or similar, ideas should be aware of the difficulty and complexity in their application. In the present section we offer a detailed discussion of our results and outline the implications of this work.

Development of the E-portfolio

The activities deliberately planned and delivered throughout the course, and student-coaches' interactions with the professors through feedback, proved to be important mechanisms for developing the content of the e-portfolio in an ongoing manner. Learner-centered facilitators incorporated questioning and continuous feedback into their pedagogical practice to stimulate reflection, motivate students to learn, and contribute to the development of self-directed learning skills (Carless, 2007; McCombs & Vakili, 2005; Weimer, 2013). Frequent and sustained reflection can result in a more meaningful experience, thus becoming a key process in the education of future coaches who are deeply thoughtful about their professional practice (Kuklick et al., 2015; Milistetd et al., 2017; Vangrunderbeek et al., 2022). Reflection is essential not only in coaches' initial education, but for professional development throughout life (Nash et al., 2018; Trudel et al., 2016).

The student-coaches reported positive learning experiences when they shared their e-portfolio with their colleagues. This is consistent with the concept of 'on display' assessment, used by Carless (2015). It is already noted how collaboration is an integral

feature of learning-oriented assessment (McCarthy, Vangrunderbeek, et al., 2021). Learning is influenced by social interactions, interpersonal relations, and communication with others (American Psychological Association APA, 1997). In addition, discussions and peer review can stimulate the exchange of experiences, knowledge development, and reflection on one's own coaching style (Ciampolini et al., 2019; Milistetd et al., 2019). This is also a way for learners to develop their intellectual maturity (Weimer, 2013) and metacognitive skills (Papanikolaou & Boubouka, 2010). Managing e-portfolio-based assessment (from the perspective of the learner) inclusive of curating and presenting ideas, working with others to do so, requires a relatively sophisticated set of metacognitive skills (Bell, 2010; English & Kitsantas, 2013). Therefore, peer-assessment should also be considered for the purpose of developing these skills (Boud, 2000; Papanikolaou & Boubouka, 2010).

Evaluation of the E-portfolio

Potentialities

Professional, Interpersonal, and Intrapersonal Knowledge Development.

The use of the e-portfolio as a formative, learning-oriented, assessment tool seemed to be effective in integrating professional, interpersonal, and intrapersonal knowledge. It provided repeated opportunities for students-coaches to practice, reflect, engage with feedback (see next section), and discuss with facilitators and peers, in their unique coaching context. They also had the opportunity of demonstrating their understanding of these three knowledge, as the e-portfolios required coherence between their training plan, coaching philosophy, and interventions (for example see Table 1). We believe this was enabled by equally distributing the importance and the weight given to the three types of knowledge in the course program. To intentionally emphasize what is valued

by the CEP in assessment activities is perceived to be positive (McCarthy, Allanson, et al., 2021).

Relationship with Coaching Practice. The student-coaches' perceptions on the applicable content of the e-portfolio, informed us about how the e-portfolio was authentic and contextualized, important principles of learning-oriented assessment (Baeten et al., 2008). Considering meaningful content that represents real situations or problems when designing learning-oriented assessment, is key for supporting the development of *ways of thinking and practicing* (Carless, 2015). When the content is practically relevant, it becomes useful and meaningful for the student-coaches, and contribute to the development of knowledge, competences, and expertise; as well as motivates learners to continue learning beyond the specific program of study (Harris & Cullen, 2010). It confronts the lack of relationship between theory and coaching practice, one of the complaints of student-coaches about the activities in university-based coach education programs (Milistetd et al., 2018).

Engagement with feedback. The support offered by the facilitators helped the student-coaches' with the e-portfolio development and their learning. When instructors in CEP provide support and make themselves available and accessible, inspiring coaches to refine and improve their knowledge and skills continuously, they can motivate coaches to become lifelong learners (Dohme et al., 2019). In this process, ongoing and meaningful feedback (i.e., feedback which is used to reduce the gap between present and desired levels of performance) is essential, and the e-portfolio can facilitate teachers/instructors in monitoring learners' development progressively, which is aligned with leaning-oriented assessment (Boud, 2002; Carless, 2007). As Adams argued (2006, p.252), "by providing assistance during teaching episodes which are themselves viewed as assessment opportunities, teachers not only teach, they gain

insights into what has been constructed and how this might be extended and modified”. Moreover, according to Dray and Howells (2019), one of the advantages of the use of e-portfolio in a university-based CEP is the ability of the professor to provide contextualized and individualized feedback, throughout the entire assessment for learning process. The authors comment that this facilitates self-regulation and encourages student-coaches to take responsibility for learning, helping them to understand their strengths and weaknesses.

Formative Assessment. There is a lot to be gained when facilitators use authentic and embedded assessments (Adams, 2006; Baeten, 2008; McCombs & Vakili, 2005), such as an e-portfolio, enabling the students to demonstrate understanding and shifts in meta-learning processes (Klenowski et al., 2006) and metacognitive skills (Papanikolaou & Boubouka, 2010). According to McCarthy (2022), the degree to which assessment activities are congruent with, and aligned to, broader program principles is an important factor in their efficacy and how coaches experience them. The e-portfolio can be considered both a strategy for the learner to present their understanding of the content and to engage in a more meaningful way in the learning process itself (Carl & Strydom, 2017; Klenowski et al., 2006). This dual purpose is consistent with arguments from Hargreaves (1997) who posits that assessment cannot simply measure learning, without influencing it.

The development of the e-portfolio was an ongoing process throughout the course, allowing the student-coaches to monitor their own progress, aligned with facilitator’s feedback, and therefore, continuously learn and reflect. This is consistent with embedded assessment, which view the assessment as an integral aspect of learning and teaching (Adams, 2006). Those results corroborate the study by Paquette et al., (2014), in which the portfolio was perceived as an opportunity for coaches to reflect and

develop a greater understanding of their respective beliefs and behaviors. The capacity for reflection and lifelong learning are key for coaching excellence and expertise (Côté & Gilbert, 2009).

Metacognitive skills are the basis for coaches to integrate experiences into their biography autonomously and continuously (Trudel et al., 2016). Each coach, embedded in their beliefs and values, develops the concept of their own philosophy (Van Mullem & Brunner, 2013), which sometimes it is unclear or conscious (Cushion & Partington, 2016). Thus, encouraging coaches to reflect and recognize their trajectory, values, and beliefs in CEP is important (Van Mullem & Brunner, 2013).

Challenges

Unfamiliarity with the E-portfolio. The student-coaches believed that the lack of familiarity with the e-portfolio made engaging with the task difficult. As a relatively open-ended activity, which promotes learner autonomy, the e-portfolio represented a challenge for those student-coaches who had little prior experience of this type of opportunity (Paquette et al., 2014; McCarthy, 2022). As the e-portfolio is uncommon in CEPs in Brazil, it is understandable that student-coaches felt challenged and confused about the way they were being assessed. More common conceptions of assessment (e.g., written tests) are perhaps quite different from the opportunity that student-coaches were invited to engage in this instance (Stoszkowski & McCarthy, 2018, 2019). The student-coaches expressed concern about what would be counted as grades. This can be challenging, because instead of seeking learning, students can become ‘strategic learners’ and ‘instrumental’ in their approach (Bearman & Ajjawi, 2021). In coach education, this has been termed ‘studentship’ (Chesterfield et al., 2010) and is an issue that professors and facilitators wishing to implement formative assessment should consider.

Although teachers cannot guarantee learning outcomes are met because learners do the learning, they can positively influence motivation to learn, when they offer students with opportunities to be active agents in the process (Weimer, 2013). Focusing on intrinsic motivation rather than extrinsic (e.g., test metrics and impression management) can encourage students to take responsibility for their learning (Hanewicz et al., 2017; Weimer, 2013). Intrinsic motivation “is stimulated by tasks of optimal novelty and difficulty, relevant to personal interests, and providing for personal choice and control” (APA, 1997, p. 5). Furthermore, self-assessment can be fundamental in this process, as it can develop students’ awareness about their own learning needs (Blumberg, 2009).

Lack of Specific Feedback Regarding the Course’s Content. The student-coaches reported that there should be more focus on intrapersonal and interpersonal skills, especially those from the external consultant. Ciampolini et al. (2019) highlighted the importance of having coach developers in university-based CEP who are engaged with the scientific literature because it facilitates the alignment between teaching strategies and contemporary trends discussed in the scientific community about coaching practice and coach development. According to McCarthy (2022), sophisticated approaches to learning and assessment requires sophisticated facilitators. Moreover, among the recommendations for CEP is providing training for instructors/professors in terms of learning facilitation (Paquette & Trudel, 2018b), as some facilitators can struggle with the learner-centered approach view of learning when they are more acquainted with traditional teaching (Culver et al., 2019).

The novice facilitators, which was the case of this study, struggled to gain the confidence necessary to carry out their role. Culver et al. (2019) observed that the facilitators in training felt the lack of opportunity to observe a master facilitator

demonstrating effective facilitation. Similarly, Galatti et al. (2019) showed that the observation of a more experienced facilitator and practical experiences helped a newcomer to gain confidence and better facilitate student-coaches' learning. Thus, similar to the development of sport coaches (Nash et al., 2018; Trudel et al., 2013), facilitators development is a lifelong journey.

Final considerations

Although we need to be careful when comparing effective online learning and emergency remote learning, this study offers some insight into coach education, assessment, and a learner-centered approach in a virtual environment. About the latter, the virtual environment seems to indicate that more of the other LCT strategies involved with the course were also explored, for example, the technological tools facilitated the collaboration between peers and facilitators. This study contributes to the understanding of the e-portfolio as an online formative learning-oriented assessment tool that can help professors and student-coaches working on learner-centered courses, be it online or not. This is relevant, not just during the COVID-19 pandemic, because the demand for online education exponentially increased during the XXI century (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira, 2022).

The e-portfolio is shown to be a tool that facilitates the integration of professional, interpersonal, and intrapersonal knowledge associated with coaching practice. The even distribution (i.e., smoothing out) of activities throughout the semester took out the pressure of a one-time/singular assessment moment and gave student-coaches time to consider their work, receive and respond to feedback, and refine the e-portfolio's tasks as they developed knowledge, skills, attitudes, and behaviours. The frequent and sustained communication with facilitators and peers was perceived as an

advantage by student-coaches because it engendered collaboration and peer learning. Ultimately, the e-portfolio showed to be a useful formative learning-oriented assessment tool, capable of promoting *learning* by involving the *learner*, and better addressing the assessment needs in coach education.

We believe the e-portfolio can be implemented in online and face-to-face education courses, underpinned by a learner-centered approach, with benefit to student-coaches' learning. However, those responsible for the implementation should be aware of the difficulty and complexity in design and delivery, as outlined in the earlier discussion.

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