



UK COACHING
THE IMPACT AN ONLINE LEARNING PLATFORM HAS ON COACHES'
BEHAVIOUR AND PRACTICE

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EXECUTIVE SUMMARY

It has mostly been suggested that formal coach learning opportunities have had limited success in impacting coaches' acquisition of new knowledge. While there are a number of reasons for this, one that has been highlighted more regularly than most is the extent to which coaches are enabled ownership and autonomy over their learning. The content on formal learning courses are nearly always pre-prepared and not with the consultation of the coaches who attend. This has been suggested to result in content detached from the real world in which coaches operate. Informal learning sources on the other hand have high levels of contextual interference, which means how and what coaches learn is meaningful to them, as they acquire the knowledge required to fulfil their roles.

Learning via online methods is becoming more commonplace, with this type of learning space having the potential to be accessed by many coaches, who have a range of different experiences, and coach a range of sports. In this way, online learning is able to create communities of practice between coaching groups that would otherwise be difficult to achieve. Furthermore, online learning platforms offer coaches a level of flexibility to learn at times most appropriate to them, and because there is not a start and end point, learning does not feel forced. Connected Coaches (CC) is one such learning site that aims to support coaches' learning, and enable them to connect with other coaches. The purpose of this research was to evaluate the impact a specifically designed learning intervention had on coaches' learning, which included coaches' engagement in the CC site and reflective conversations with the author of this research.

Results showed that coaches found the CC site contained information that allowed coaches to learn new ways of coaching, and provided a supportive environment that enabled coaches the opportunity to share knowledge with other coaches. Beyond this, observational data showed positive changes in coaches' behaviour and practices in line with the area of coaching each coach wished to develop. What this study suggests is that when coaches are provided the opportunity to instigate the learning process through them deciding what they want to learn, and being supported by someone to try ideas in practice, learning does occur. This is an important take-a-way message for those involved in coach education.

INTRODUCTION

It is well understood that coaches learn to coach via a number of different learning sources. These include, but are not limited to, learning from experiences (Watts & Cushion, 2016), observing and interacting with other coaches (Lemyre, Trudel & Durand-Bush, 2007), reflecting on coaching practice (Carson, 2008; Partington, Cushion, Cope & Harvey, 2015), engaging in communities of practice (CoP) (Stoszkowski & Collins, 2014), and undertaking formal coach education (Wright, Trudel & Culver, 2007). The extent to which coaches perceive these different learning sources contributing toward how they have learned to coach varies, and can be dependent on their coaching experiences and level of expertise (Nash & Sproule, 2012). For example, it has generally been accepted that coaches tend to place greater value on informal learning sources (Potrac, Nelson & Cushion, 2006) such as learning from experience and observing other coaches compared to formal learning sources, for example, national governing body (NGB) coaching courses (Nelson & Cushion, 2006).

Whilst identifying coaches' learning preferences has been useful in developing an understanding of the type of learning situations coaches perceive they prefer, as Stodter and Cushion (2017) acknowledge, there has been little research that actually investigates how and why learning sources contribute to coaches' acquiring new knowledge, and the impact this has on coaches' behaviour and practice. Therefore, there is a need to move beyond purely descriptive research that only examines coaches' perceptions of learning and their practice towards research that evaluates the impact various learning sources have on coaches' learning, knowledge and practice (Stodter & Cushion, 2017). Furthermore, there has also been an acknowledgement that formal learning sources have failed to have their desired impact because coaching knowledge has tended to be imposed on

coaches, as opposed to developed with coaches. Therefore, the purpose of this research study was to investigate the impact a deliberately designed and delivered formal learning programme, which placed the coach centrally within the learning process had on coaches' learning, and subsequent behaviour and practice.

BACKGROUND

Asking coaches to report the learning sources, or learning experiences they perceive to have contributed most toward their learning to coach, has been, and continues to be, one of the most established and popular research lines in the sports coaching literature. Learning is inherently complex, and is bound by the culture and context in which it takes place (Jones, Armour & Potrac, 2004; Lave & Packer, 2008; Cushion, 2011; Watts & Cushion, 2016). It is therefore unsurprising that research investigating coach learning suggests that coaches place little value on formal coach education, as historically, this has rarely taken account of cultural or contextual issues particular to coaches' practices. Further reasons for the limited value placed on formal learning include: a) coaches having limited or no input to the content that was to be learnt (Nelson, Potrac & Cushion, 2012); b) being exposed to a standardised, one-size-fits-all curriculum, which fails to meet their individual learning requirements (Cushion, 2011; Nelson et al., 2012); c) participating in courses that are too de-contextualized from the realities of actual everyday coaching practice (Nelson & Cushion, 2006; Watts & Cushion, 2016); and d) courses being focused predominantly on the acquisition and assessment of content knowledge, which fails to appreciate the knowledge coaches need to fulfill their everyday, coaching roles (Cushion, Armour & Jones, 2003; Jones & Turner, 2006; Tinning, 1988).

Since much of the UK based work on coach learning has been published, most NGBs have revised the content and structure of their coaching courses, as a consequence of the United Kingdom Coaching Certificate (UKCC) requirements (UKCC Qualifications Submissions Progress, 2016). The UKCC, which was first piloted in 2006 and came into effect in 2008, is an endorsement by UK Coaching of NGB's coach education programmes. Endorsement is gained once NGBs provide evidence that their coaching programmes meet a set of criteria that are deemed best practice from the sports industry. As a result of this process, most NGBs have developed or built upon existing courses. For example, some NGB coaching courses have been transformed with a greater emphasis placed on developing coaches' pedagogical knowledge and a move toward *in situ* assessment of coaches' knowledge and skills. In these cases, there is a certainly a greater appreciation that coach education is better considering the individualities of the coach and the contexts in which they work. However, early evidence suggests that these courses still fall short in challenging coaches' assumptions about learning and practice (Stodter & Cushion, 2014), which are essential if changes to coaches beliefs and actual practices are to be realized (Cushion, 2011; Stodter & Cushion, 2017).

It has been suggested that coaches have individual learning needs that change over time as coaches become more experienced in dealing with contextual and situational issues (Watts & Cushion, 2016). One reason why informal learning sources have been perceived by coaches as having most impact on their learning to coach is possibly because coaches have greater opportunities to make choices about the area of their coaching they feel they need to improve. In other words, coaches actively seek to improve areas of their coaching considered most important to them at any given point in time. In comparison, the structure of formal coach education is more rigid and lacks opportunities for coaches' input into the curriculum to be learned, and

despite some courses offering greater flexibility; coaches are still positioned as recipients or consumers of, rather than co-creators of knowledge.

How learning is structured and the role the learner plays in the learning process forms the basis of the theoretical concepts espoused by Brazilian educationalist, Paulo Freire's. Based on the reporting of formal coach education provision, Freire might consider this to suffer from 'narration sickness', whereby coaches are filled with content that are detached from the reality of their practices (Freire, 1970). In a narrative education, of which most formal coach education could be classed, coaches are treated like 'containers to be filled' (Freire, 1970), as knowledge is imparted on them, which they are expected to memorize and repeat in their own coaching contexts. As coaches become more accustomed to this approach to learning they come to accept it as the norm, and are then less able to critically consider how the ideas they are taught are manifested in practice (Stoszkowski & Collins, 2014). It is therefore unsurprising that of the limited literature that does exist of the impact of formal learning on coaches' knowledge and practice, findings suggest ideas do not transfer from the formal learning setting into coaches' practices, despite coaches often believing they do (Stodter & Cushion, 2014).

For changes in beliefs and practice to occur, Freire (1998) argued that educational setting need to position learners (coaches), as co-contributors of knowledge generation, rather than simply the receivers of knowledge, whereby they are given greater autonomy and choice over what they learn, and when they learn it. This requires a shift in how coaches are taught in the formal educational process in that there is a need to generate knowledge *with* them, as opposed to *on* them, as is currently the case in traditional educational discourse. Further still, Freire (1998) purported that learners (coaches) needed to be 'authentically liberated' by having the opportunity to

reflect on their coaching, rather than coaching content being imposed on them, if they are to transform and develop their coaching practice. In coaching, it has been suggested that educational situations need to consider individuals' learning needs specific to the contexts in which they coach (Côté et al. 2010; Stoszowski & Collins, 2014; Taylor & Garrett, 2010; Thompson & Pascal, 2012). Consequently, for formal learning sources to impact coaches' knowledge and subsequent practice, a re-think away from its current structure is required toward an approach that more centrally locates coaches within the learning process.

In the limited studies where actual changes to coaches' behaviours have been shown, it was suggested that this occurred because coaches were provided a platform to discuss the issues most important to their coaching practice and make sense of their formal coach education experiences, as well as being provided opportunities to reflect on their coaching via video-based feedback and discussion with a critical friend (Partington et al. 2015). It is well acknowledged that learning to coach is a predominantly social process and that drawing upon the support and expertise of respected others appear intuitively beneficial to learning. Indeed, it is through social interaction with other coaches that there is the potential for coaches to more critically examine their coaching beliefs, behaviours and practices (Stoszowski & Collins, 2014) that otherwise would remain untouched and below the level of coaches' consciousness (Cushion, 2013). It would seem then, that providing opportunities for coaches to engage and interact with other coaches is necessary if learning is to occur.

What separates the study of Partington et al. (2015) from many others that have investigated coach learning and its impact on practice is that coaches were able to access a mosaic of formal and informal learning, and consider the impact of these on behaviour change. The main conclusion from this

study was that it was the combination of learning sources that appeared to result in changes to practice, rather than it being one type of source over another, as has been reported in the literature to date. Furthermore, the Partington et al. (2015) study can also be distinguished from other studies in the area of coach learning because of its move beyond cross-sectional or survey-based approaches, which have been suggested provide limited information regarding how and why learning happens (Stodter & Cushion, 2017), and are certainly incapable of tracking changes to learning over time due to a focus on self-report measures.

While other recent work has explored coach learning *in situ* (Griffiths, Armour, & Cushion, 2016), limited attention has been paid to evaluating the impact that learning sources have had on coaches acquiring new knowledge, and subsequent changes in their behaviours and practices, and crucially, why this might be. This study makes an important contribution to the extant literature by starting to address this, and in the process, advancing the fields' knowledge and understanding of how coach learning sources, and specifically an online learning tool supported with reflective conversations can positively contribute toward coach learning and changes in coaches' behaviour and practice. Therefore, the purposes of this study were to develop and deliver an informal learning intervention and evaluate its impact on coaches' development of knowledge and changes to their behaviour and practice.

METHODOLOGY

Participants

Three coaches were purposively selected to take part in this study. Coaches were selected who were not already members of the Connected Coaches (CC) communities coaching children (aged 5-12 years) group, and after outlining

the purpose and commitment to the research project demonstrated a want to be involved. Pseudonyms are provided to protect coaches' identity.

Alice

Alice worked full-time for the community department of a professional football club and coached multi-skills to children aged 9-10 years as part of their primary school physical education lessons. She delivered 1-hour lessons to 25-30 children, with limited support. At the time of the study, she possessed the following qualifications: 1) a BSc degree in Youth Sport and Physical Education, 2) the FA level 2 coaching award, 3) a FA Youth Award module 1, and, 4) an English Cricket Board level 1 coaching award. Alice was also in the process of completing the 1st4sport level 3 Certificate in Supporting the Delivery of Physical Education and School Sport. She coached 10 hours a week in a primary school context, with the rest of her time coaching in after-school clubs, additionally overseeing the coach development of other staff. Alice had two years experience of coaching in her current setting, with an additional four years coaching experience in recreational club-based environments.

Nathan

Nathan coached an under 10's grassroots football team who played in a local recreational league. There were 11 players who formed the team, with the training sessions observed lasting approximately 90 minutes. He had no further or higher education qualifications, but did have a FA level one coaching award. Nathan worked as a warehouseman for a transportation company, and typically coached 3 hours a week. He had three years coaching experience, which had been gained coaching this team.

Elena

Elena coached 5-18 year olds in a recreational gymnastics club, however, for this study data were only collected when she was coaching a 7-9 years old intermediate group. In the coaching sessions observed, she was responsible

for coaching 7-9 gymnasts, with the sessions observed lasting between 70-80 minutes. Elena was still at College full-time completing her A-levels and had a gymnastics level 1 coaching award, and was undertaking a gymnastics level 2 specialising in Women's artistic at the time of the study. She would normally coach 15 hours a week and had 3 years coaching experience, which all had been gained in this setting.

The Learning Intervention

Overview

A learning intervention was specially designed based on the educational concepts espoused by Paulo Freire. In a deliberate move away from imparting knowledge *on* coaches, this learning intervention aimed to understand and respond to coaches' learning needs, and in doing so, made an attempt to deal with the issues raised with formal coach education provision. Freire (1970) suggested that an effective educational programme could not be developed without first knowing who the learners are, and understanding their learning situations. To make clear the process followed to designing this intervention and the reasons why, a step-by-step guide incorporating the data generation methods employed is provided:

Step 1: Informally observe coaches' practices and discuss with them the area of their coaching they considered they needed to develop. This was a conscious move away from deciding for the coaches what they needed to learn and thus assuming the role of knowledge bearer, but at the same time, as 'coach educator' still retaining the role of coordinator of learning.

Alice considered herself to lack knowledge of behaviour management strategies, and therefore spent too much time attempting to control children and not enough time engaging them in active play. Consequently, she wanted

to use the CC site to acquire behaviour management strategies. Nathan, on the other hand, wanted his players to develop their decision-making skills in games, and so wanted to develop his coaching practice in a manner that enabled his players to do this. Elena felt she was potentially controlling the learning environment too much through her provision of augmented feedback and therefore wanted to learn how to provide information to the children but not be so prescriptive, thereby potentially increasing children's autonomy over their own learning.

Step 2: Each coach had three coaching sessions video-recorded prior to the start of the learning intervention, which allowed for the systematic observation of their coaching behaviour and time spent in different practice activities. It has been suggested that recording three sessions provides a representative account of what coaches do (Brewer & Jones, 2002). Given that coaches' perceptions of their behaviours and approaches are poor indicators of their actual behaviours and approaches (Harvey, Cushion, Cope & Muir, 2013; McCallister, Blinde & Weiss, 2000; Partington & Cushion, 2013; Smith & Smoll, 1997), systematic observation, as an objective method of behavioral assessment was considered a necessary data collection method to demonstrate the potential impact of the learning intervention. Relying on interviews alone or other self-report measures, such as surveys, provides a weak indicator of changes in actual behaviour and therefore research that wants to investigate this requires a form of observation to be employed in order to substantiate perceptions.

Step 3: Background interviews were undertaken with each coach to provide a context for all data that followed, and help explain these data. The main purpose of this interview was to gain information related to number of years each coach had spent coaching, the coaching qualifications and any other relevant qualifications (i.e. coaching degree).

Step 4: With the learning support of the author of this study, each coach decided what their specific learning need was, and were then asked to become a member of a the CC site. Through the CC site, coaches were able to access a range of learning resources, which included blogs, discussion boards, sharing photos, and viewing online videos all on a range of different coaching topics in order to assist them in developing their knowledge.

Step 5: In order to evaluate the perceived impact of the CC site, coaches were required to read a minimum of one blog per week. Keeping with the tradition of Freire's philosophical perspective on educational discourses, there was a conscious attempt to remain non-directive or prescriptive in how coaches used the CC site and therefore beyond this, coaches determined what other media they decided to engage with and to what extent. Nonetheless, some 'buy-in' from the coaches were required, as explained and agreed by them prior to the start of the study.

Step 6: Coaches were engaged in reflective conversations, which the author based on the content coaches had been accessing on the CC site, and the learning issue discussed prior to the start of the learning intervention. The purpose of the reflective conversations was to invite coaches to think about their coaching and explain the value they placed on the learning site (Stoszowski & Collins, 2017). Keeping with Freire's philosophical idealism, the author predominantly undertook the role of listener, who prompted and probed for greater levels of coach thinking only when he considered this, was required. The author was mindful here of Freire's (2001) argument that those served with educating demonstrate impatience and thus create the ideas for coaches instead of them being required to think for themselves. The reflective conversations, while synonymous with the CC site and formed part

of the learning intervention was also a separate source from which coaches could learn.

Step 7: A post-observation, semi-structured interview was undertaken with each coach to gain their perceptions of the impact the CC site and reflective conversations had on their learning to coach. The coaches were asked to consider: a) the aspects of the CC site that they found most useful, b) what they would change about the CC site to impact their learning further, c) their perceptions on how their learning was structured, d) how the weekly reflective conversations were perceived to have contributed toward their learning to coach in the area of coaching outlined through initial conversations.

Step 8: In a similar fashion to the pre-intervention, coaches were video-recorded three times after the learning intervention had commenced. The purpose of the post-observation video-recorded sessions was to enable changes in coaches' behaviour and practice to be identified.

Dealing with issues of validity of data

Central to the research methodology was the use of both quantitative and qualitative methods in order to identify changes to coaches' behaviour and practice, and their perceptions of the impact the learning intervention had on their learning to acquire new knowledge. As a consequence, and as is common with this type of research, the number of coaches involved in this study was low, which limits the potential to generalize findings from this study to the general coaching population. However, while such a research approach has received criticism for its inability to generalize, it is as much a strength of this approach as the in-depth nature of the data generated comes from using mixed methods and multiple sources, which can represent the

perspective of the coaches under study (Gilbert & Trudel, 2004), as well as provide actual indications of coaches' practices. Furthermore, given that an individual's coaching practice can only be understood within their context (Côté & Gilbert, 2009), comparing across contexts serves no purpose, and so conversations related to the issue of generalizability could be considered pointless anyway. Nonetheless, data generated with a low number of research participants can be generalized beyond the study, in the sense that the reader can recognize where the findings align with their own experiences. Therefore, while data cannot be externally generalized, it can be internally generalized.

It is the case in any research that a trade-off has to be made between a high sample size and generating a depth of data. Essentially, the choice that is eventually made should be determined by the purpose of the study and what the research is trying to achieve. In instances where the generation of data is quick and relatively easy, as is the case with methods such as surveys, then there would be an expectation that the sample size is large. However, when the focus is on generating depth of data over a longer period of time compared with cross-sectional research, and utilizing methods, which are much more time-consuming in nature, the sample size is inevitably going to be much lower. All of the published research that has employed a similar methodological approach to the one in this study has involved only a small sample of coaches.

Procedure

Engagement in the CC site and reflective conversations commenced following the pre-observation, video recorded sessions, which depending on the coach, lasted between 12-16 weeks including the post-observation, video-recorded sessions. The reason why the period between pre and post-observations varied was because of each coach's schedule. Nathan was the first coach to start at the end of May and had his final observation in early September; Alice

started in early June and had her final observation a late September, and Elena started in early July and had her final observation in early October.

In total, Alice was involved in 201 minutes of interviews (BI = 36, POI = 65, and RC = 100) Nathan 187 minutes (BI = 32, POI = 72, and RC = 83), and Elena 231 minutes (BI = 38, POI = 83, and RC = 110). For the video-recorded observations, Alice was filmed for a total of 316 minutes (Mean = 53 minutes), Nathan for 443 (Mean = 74 minutes), and Elena for 374 minutes (Mean = 62 minutes). Sessions were recorded with a Sony HDR-PJ810E Camcorder and audio captured using Sony ECM-AW4 wireless Bluetooth microphones.

The systematic observation tool used to code coaching behaviour and practice was a modified version of the Coach Analysis Intervention System (CAIS) (Cushion, Harvey, Muir & Nelson, 2012). While coaching researchers have regularly employed modified systematic observation instruments, they have received criticisms for failing to justify why the full and validated version of the instrument was not employed (Cope, Partington & Harvey, 2016). A modified version of the CAIS was used in this study because the areas the coaches wanted to develop did not necessitate including all 23 primary behaviours. Furthermore, the practice activity definitions as stated in the CAIS do not lend themselves to sports that are not games (i.e. swimming, gymnastics, athletics). Therefore, a shortened and adapted version of the CAIS that was used in this study can be seen in Tables 1, 2, 3, and 4.

Reliability

To ensure reliability of the data collected, they were subjected to intra and inter-observer reliability checks. The primary coder was the author, who has been trained in and had undertaken over 250 hours of coding using the CAIS system. The previous coding completed by the author had achieved the

recommended reliability target percentage of 85% (van der Mars, 1989), which was calculated using the equation: $(\text{agreements} / (\text{agreements} + \text{disagreements})) \times 100$ (van der Mars, 1989). The author revisited and followed a coder training protocol as outlined by McKenzie and van der Mars (2015) to help avoid observer drift. The secondary coder, a postgraduate student who prior to this study had not used the CAIS system before was trained to use it by the author. The training protocol suggested by McKenzie and van der Mars (2015) was adhered to. Therefore, prior to the secondary coder doing any coding, he had to demonstrate the reliability of the practice data he was given to code (Above the 80% threshold). Once this had been achieved the secondary coder coded a total of six sessions (one pre observation and one post observation per coach), comfortably exceeding 30% of data (Baumgartner, Jackson, Mahar, and Rowe, 2007). Intra-observer reliability was 90.17% for the primary behaviours and 96.45% for the secondary behaviours (van der Mars, 1989). Inter-observer reliability was 84.67% for the primary behaviours and 87.12% for the secondary behaviours (van der Mars, 1989). Finally, intra-observer reliability scores for the time coaches spent in different states were 98.46%, with inter-observer reliability scores being 96.88% (van der Mars, 1989).

Table 1. Primary Behaviours

Behavioral Classification	Behavioral Description
Positive Modeling	Skill demonstration – with or without verbal instruction that shows learner’s the correct way to perform.
Negative Modeling	Skill demonstration – with or without verbal instruction that shows learner’s the incorrect way to perform.
Specific Feedback (positive or negative)	Specific verbal statements (either positive or supportive OR negative or unsupportive) that specifically aim to provide information about the quality of performance (can be delivered concurrently or post).
General Feedback (positive or negative)	General verbal statements OR non-verbal gestures (either positive or supportive OR negative or unsupportive) that specifically aim to provide information about the quality of performance (can be delivered concurrently or post).
Corrective Feedback	Corrective statements that contain information that specifically aim to improve the learner’s next skill attempt (can be delivered concurrently or post).
Instruction	Verbal cues, reminders or prompts to instruct / direct skill or play related to learner’s performance.
Silence	Coach is silent this can be on- of off- task.
Question	Coach asks a question about skill, strategy, procedure or score, the status of a learner’s injury, about the welfare of a learner, to a match official.
Management Direct	Behavior contributing directly to practice in how to execute a skill, drill or game.
Management Indirect	Coach behavior that is not directly related to practice.

Table 2. Secondary Behaviours

Behavioral Classification	Behavioral Description
Recipient	
Individual	Coach talks or responds non-verbally to a single learner either one to one, by pulling a learner aside during practice, use's a learner's name, etc.
Group	Refers to the coach talking or responding non-verbally to more than one learner up to half of the team.
Team	Refers to the coach talking or responding non-verbally to more than one half of the team or learners.
Other	Coach talks or responds non verbally to an assistant coach, referee, parent, etc.
Timing	
Pre	Information given BEFORE a performance episode
Concurrent	Information given DURING a performance episode
Post	Information given AFTER a performance episode
Content	
Technical	Related to individual techniques such as passing, shooting, dribbling, etc.
Tactical	Related to patterns of play, formations, strategies, etc.
Other	Not fitting either the technical or tactical category.
Questioning	
Convergent	Limited number of correct answers/options – closed responses.
Divergent	Multiple responses/options – open to various responses.

Table 3. Practice states for football

Behavioral Classification	Behavioral Definition
Physiological	Primary goal of the physiological aspects of the game (e.g. warm-up, cool-down, conditioning, stretching).
Technical Practice	Individual or group activity covering isolated technical skills under limited or no pressure.
Skills Practice	Individual or with a group covering technical skills under pressure from opponent(s).
Functional Practice	Re-enacting isolated simulated game incidents with or without a focus on a particular skill. These can be unopposed (i.e. under no pressure from opponents(s) such as shadow play/game simulated patterns of play/ movement) or opposed.
Phase of Play	Attack vs. defence play covering team cognitive strategies used to outsmart opponents which involve ONLY one team of players scoring, or the two teams of players scoring in different ways (i.e. attackers score in a main regulation goal/basket and the other team runs the ball out through some marker cones/over a line, or by out letting the ball to a feeder/coach etc.)
Possession Game	No goals/targets in which retention of possession rather than scoring is the primary objective.
Conditioned Game	Restrictions/variations to rules, goals, or area of play, but with both teams scoring in the same way.
Small Sided Game	Two goals, realistic to regulation rules, with both teams scoring in the same way, but less players than in the full version.
Full Sided Game	Two goals, regulation rules and players, with both teams scoring in the same way.
State 'Other'	Time when coaches are managing/addressing the team of players to explain up-and-coming practices, transition or move players from one practice state (i.e. technical practice) to a NEW or DIFFERENT practice state (i.e. skills practice), and time when players are taking a breaks from practice (i.e. water breaks).

Table 4. Practice states for gymnastics

Behavioral Classification	Behavioral Definition
Physiological	Primary goal of the physiological aspects of the game (e.g. warm-up, cool-down, conditioning, stretching).
Technical Practice	Individual or group activity covering isolated technical skills under limited or no time pressure. Technical skills are broken down into their sub parts (e.g. entry speed before vaulting).
Skills Practice	Individual or with a group covering technical skills practiced in their whole form (e.g. somersault)
State 'Other'	Time when coaches are managing/addressing the team of players to explain up-and-coming practices, transition or move players from one practice state (i.e. technical practice) to a NEW or DIFFERENT practice state (i.e. skills practice), and time when players are taking breaks from practice (i.e. water breaks).

Methodological Limitations

As is the case with any research study, there are always going to be limitations given that no one methodology is all encompassing. It is therefore important to note the limitations of this study from a methodological perspective, as this has implications for the reading of the data and the extent to which claims based on the data can be made.

It cannot be said for certain that coaches' engagement in the learning intervention is what led to changes in coaches' behaviour and practice. The reason for this is that a randomized control trial was not employed, as is the case in experimental research. Because of the studies scope, it was not possible to include a control group alongside an experimental group. However, because this study employed a qualitative method alongside quantitative, inferences could be made based on how useful coaches found the learning intervention and the impact this had on changes to behaviour and practice. Also, given the nature of this research being undertaken in a

real world, as opposed to a laboratory or manipulated setting, it would have been almost impossible to control for the impact of other variables on the coaches' behaviour and practice (i.e. coaches may have a coach mentor who also works with them to improve elements of their practice).

Data Analysis

Systematic observation

Data generated from CAIS related to frequency of coaches' behavior and time spent in different practice activities and forms. As such, data connected to each of these aspects were analyzed descriptively. Descriptive analysis of coaching behavior has been used in a number of studies (e.g. Cushion & Jones, 2001; Potrac, Jones, & Armour, 2002; Stodter & Cushion, 2014; Partington et al. 2015) where the purpose was to find out what coaches do in practice. Coaches' primary and secondary behaviors were coded and quantified based on operational definitions (see tables 1 and 2). Doing this gave the total frequency for individual coaching behaviors used, which then allowed percentages to be calculated. Percentages were calculated by dividing the frequency of individual behaviors by the total number of all behaviors. The time spent in different practice activities were recorded for each session. The overall time spent in different practice activities was calculated by adding together the total number of minutes and presented as a percentage.

Interview data

Interview data were analyzed thematically, with . patterns or 'themes' identified through recursively reviewing the data through a process of 'moving backwards and forwards between the data set' (Braun & Clarke, 2006, p.86). Glaser and Strauss (1967) termed this as a constant comparative approach whereby data analysis informed data collection and vice versa. The analysis process could therefore be considered iterative and started at the same time as data collection. Many researchers who use qualitative methods

tend to state that their process of data analysis is inductive, which results in new theory materializing from the data (Lincoln & Guba, 1985). However, as suggested by Morgan (2007), research is never analyzed from either a purely inductive perspective given that some element of theory always impacts the way data is analysed. Therefore, data analysis followed an abductive process, which starts with an early hypothesis as to what is going on, grounded in initial observations of the context under study. Deductive reasoning is then employed which 'tests' the data against this hypothesis and current theory, which for this study was the work of Freire. Finally, inductive analysis is applied to the data to allow new theory to develop (Morse, 1994). An advantage of the abductive process is that, in the first instance, it offers a general set of guidelines that researchers can adhere to, which is bound by a theoretical framework (Timmermans & Tavory, 2012), whilst still enabling new theory to emerge and develop from the data.

RESULTS

Systematic Observation

Alice

Data analysis from the pre-observations revealed that Alice used large amounts of instruction (22%) and management direct (18%). She also asked a large percentage of questions (16%), as demonstrated in Table 1, although it was revealed from the secondary behaviours that 87% of these were convergent. The secondary behaviours, as seen in Table 6 further showed that there was a relatively equal balance between information directed to individuals (42%) and the team (36%), and that most of the information provided was of a technical nature (59%) and delivered during the learners' skill attempt (59%). Analysis of the activities Alice engaged learners in showed that most time was spent in technical practices (42.86%) followed by practice activity 'other' (29.43%).

Post-observation analysis revealed some considerable changes in her primary and secondary behaviours, and practice activities employed, as can be seen in Figure's 1, 4, and 7. For example, the level of instruction given was found to decrease by 7%, while questioning increased by 7%. Also, general feedback positive increased by 5% and management direct decreased by 4%. Looking more closely at the type of questions asked by Alice, the secondary behavioural analysis showed a 15% increase in divergent questions, with there being a 14% increase in behaviours of a tactical nature. With regard to practice states, there was an 18.08% increase in time spent in skills practices, and an 11.60% reduction in technical practices.

Nathan

Data analysis from the pre-observations showed that Nathan used large amounts of instruction (23%), but the behaviour he employed most was management direct, which was very high (34%) (please see Table 2). Also, like Alice, Nathan asked a comparatively high percentage of questions (18%), although again it was revealed from the secondary behaviours that these were mostly convergent in nature (94%) (please see Table 6). The analysis of the secondary behaviours showed that Nathan directed his content toward either the individual (44%) or team (37%), during the skills (shown as concurrent) attempt (47%), with information mostly being of a technical nature (63%), although content not related to tactical or technical was high (41%). Analysis of the activities Nathan engaged learners in showed that most time was spent in 'other' practice activity (32.43%) followed by technical practices (25.64%) (please see Figure 8).

Unlike Alice and Elena, there was not as great a variance in the time spent in different practice activities, but there was for his primary and secondary behaviors. For example, post observation analysis revealed that silence increased by 6% and corrective feedback by 5%, although pre observation findings indicated these were originally used very little (please see Figure 2). The biggest change in Nathan's primary behaviours was the reduction in direct management by 9%, but again, this was originally very high and so even with this percentage drop it still remained high. In terms of changes to Nathan's secondary behaviours, content delivered to individuals went up, which resulted in a reduction of information directed at the team. Also, there was an increase in tactical information at the expense of technical, and an 8% increase in questions of a divergent nature, although the balance of these was still heavily weighted toward convergent (please see Figure 5). Time spent in different practice activities stayed relatively constant, apart from time spent in full-sided games, which increased by 10.47% (please see Figure 8).

Elena

Comparing the pre-observation data with the post-observation data revealed that the use of each different type of feedback declined, albeit only slightly in some cases, and the level of questioning increased quite significantly (+17%) (please see Table 5 and Figure 3). However, and similar to Alice and Nathan, most questions asked as recorded in the pre observations were convergent (82%) (please see Table 6), but post observation analysis showed a 14% decrease in convergent questions (please see Figure 6). Besides this, other changes were minimal, which likely reflect either the very high or very low behaviours as initially recorded in the pre-observation.

Pre-observation analysis of time spent in different practice activities showed that time spent in skills practice (40.10%) and practice activity ‘other’ (32.69) was highest. Post-observation analysis showed little variance although practice activity ‘other’ did reduce by 5.12% (please see Table 7 and Figure 9).

Table 5. Percentage of primary coaching behaviours used post-learning intervention compared with pre-learning intervention.

Primary behaviours	Alice			Nathan			Elena		
	Pre	Post	Dif.	Pre	Post	Dif.	Pre	Post	Dif.
Specific Feedback Positive	4	7	+3	2	6	+4	7	5	-2
Specific Feedback Negative	0	0	0	0	0	0	5	5	0
General Feedback Positive	13	18	+5	8	9	+1	17	12	-5
General Feedback Negative	1	1	0	2	1	-1	12	9	-3
Corrective feedback	6	7	+1	3	8	+5	24	19	-5
Instruction	22	15	-7	23	19	-4	6	4	-2
Silence	10	9	-1	4	10	+6	5	7	+2
Question	16	23	+7	18	16	-2	14	31	+17
Management Direct	18	14	-4	34	25	-9	8	7	+1
Management Indirect	10	6	-4	6	6	-0	2	1	-1
TOTAL behaviours	100	100	-	100	100	-	100	100	-

Figure 1. Changes in Alice's Primary Behaviours

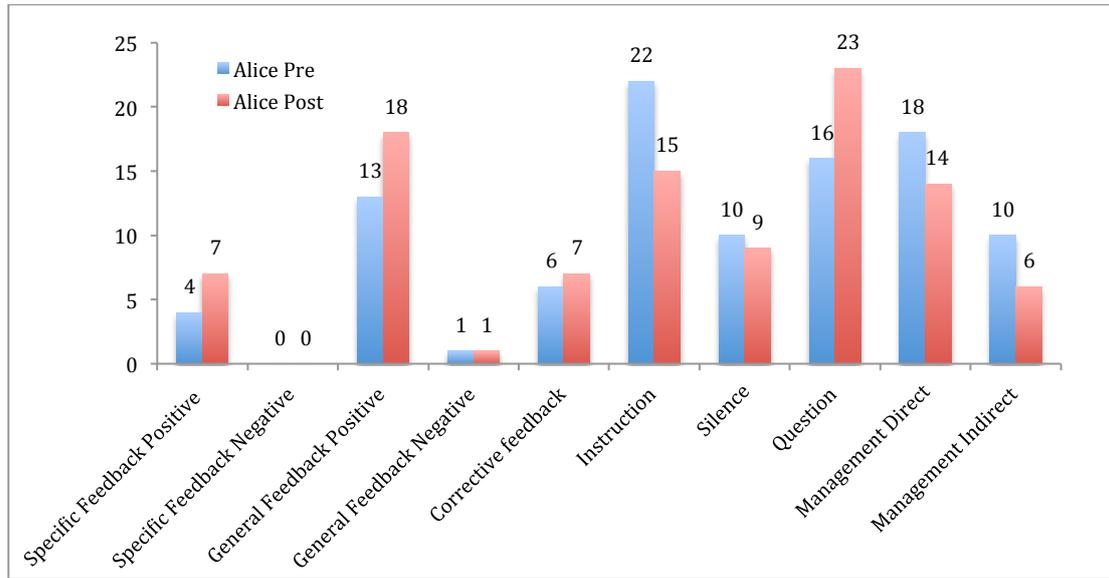


Figure 2. Changes in Nathan's Primary Behaviours

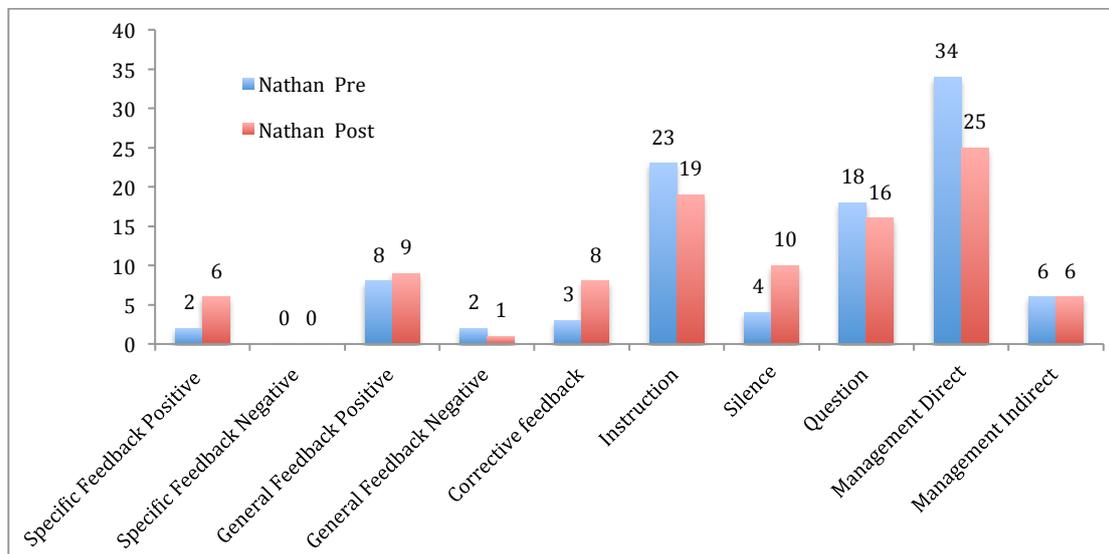


Figure 3. Changes in Elena's Primary Behaviours

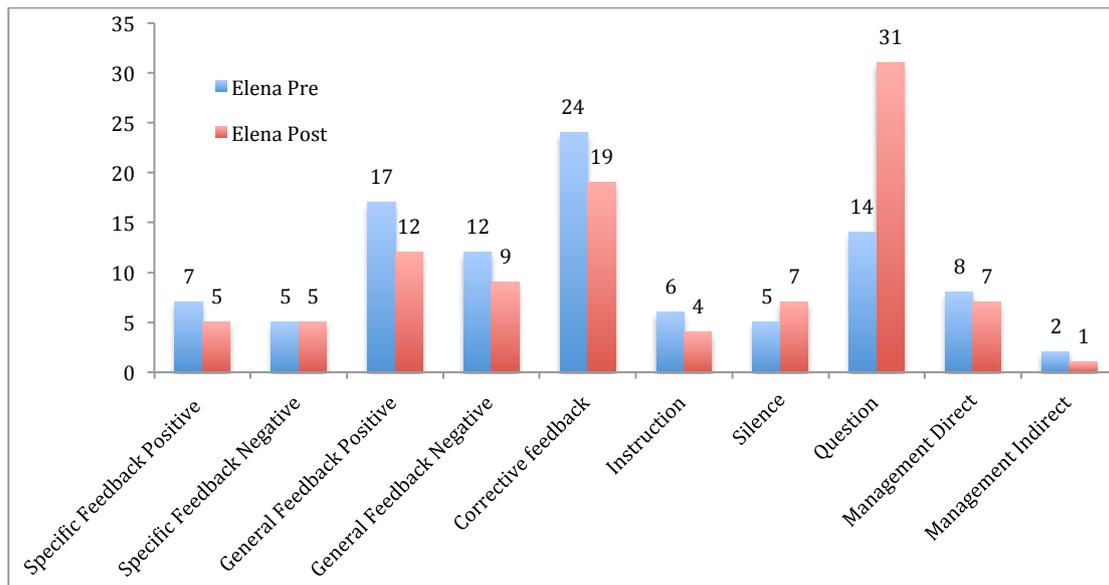


Table 6. Percentage of secondary coaching behaviours used post-learning intervention compared with pre-learning intervention

	Alice			Nathan			Elena		
	Pre	Post	Dif.	Pre	Post	Dif.	Pre	Post	Dif.
Recipient									
Individual	42	49	+7	44	48	+4	76	71	-5
Group	18	22	+4	19	20	+1	8	11	+3
Team	36	27	-9	37	32	-5	16	18	+2
Other	4	2	-2	0	0	0	0	0	0
Timing									
Pre	15	18	+3	30	28	-2	14	17	+3
Concurrent	61	53	-8	47	51	+4	23	18	-5
Post	24	29	+5	23	21	-2	63	65	+2
Content									
Technical	59	50	-9	63	56	-7	95	92	-3
Tactical	29	43	+14	16	24	+8	8	8	+3
Other	12	7	-5	41	20	-1	0	0	0
Questioning									
Convergent	87	72	-15	94	86	-8	82	68	-14
Divergent	13	28	+15	6	14	+8	46	32	+14

Figure 4. Changes in Alice's secondary behaviours

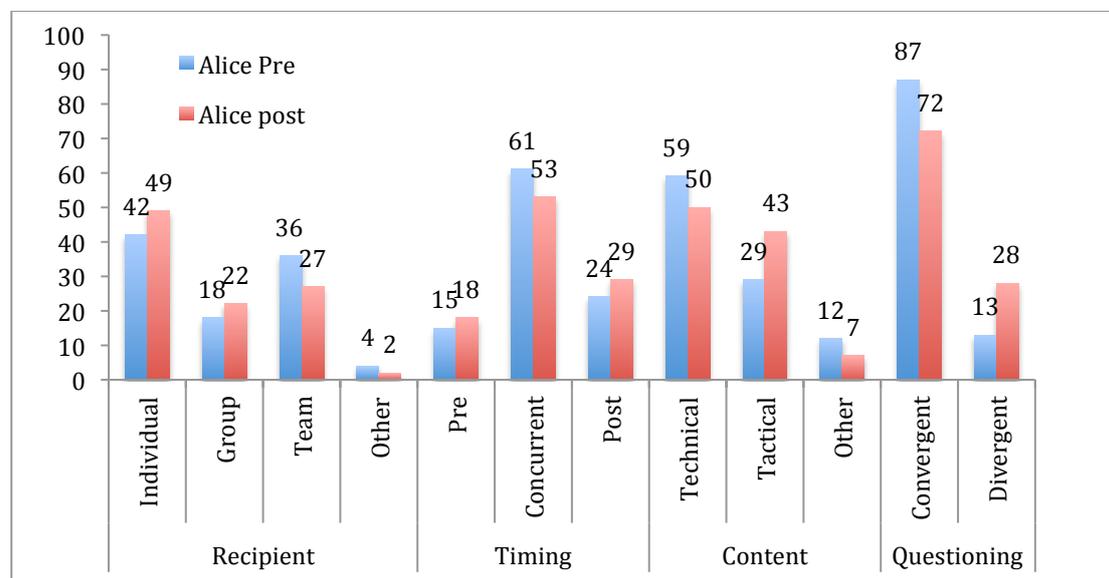


Figure 5. Changes in Nathan’s secondary behaviours

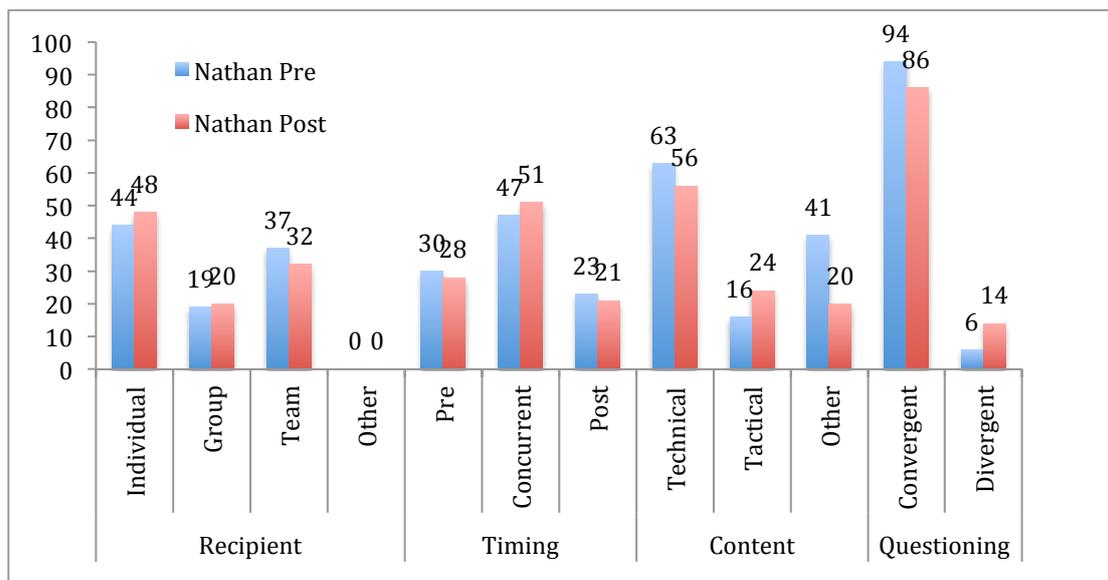


Figure 6. Changes in Elena’s secondary behaviours

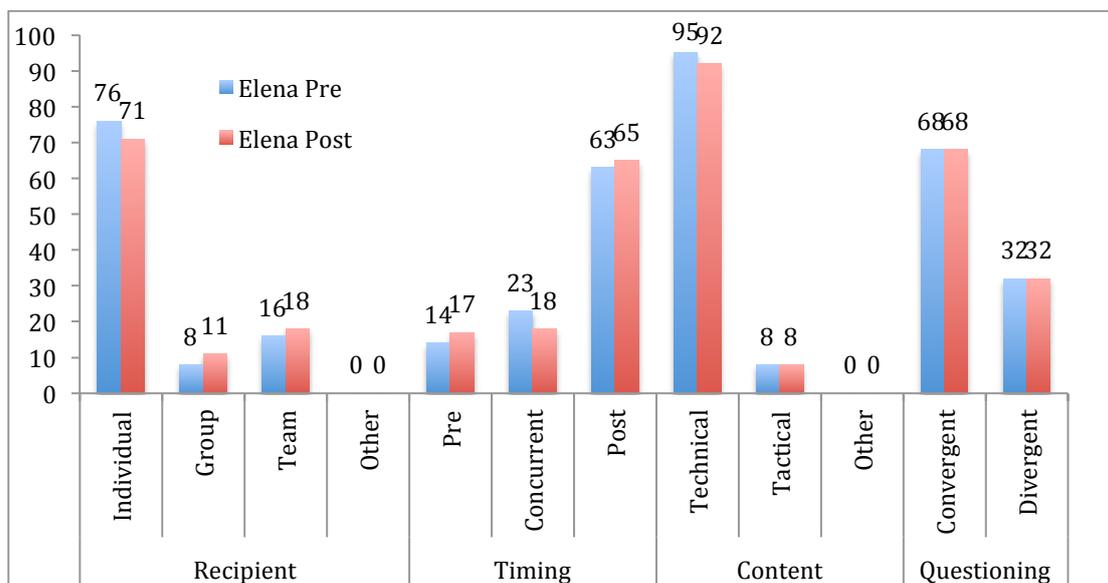


Table 7. Time spent in different practice activities

Practice states	Alice			Nathan			Elena		
	Pre	Post	Dif.	Pre	Post	Dif.	Pre	Post	Dif.
Physiological	11.26	10.08	-1.18	12.40	11.04	-1.36			
Technical Practice	42.86	31.26	-11.60	25.64	22.33	-3.31			
Skills Practice	16.45	34.53	+18.08	15.45	13.18	-2.27			
Functional Practice	0	0	0	0	0	0			
Phase of Play	0	0	0	0	0	0			
Possession Game	0	0	0	0	0	0			
Conditioned Game	0	0	0	0	0	0			
Small-sided Game	0	0	0	0	0	0			
Full-side Game	0	0	0	13.08	23.55	+10.47			
Other	29.43	24.13	-5.30	32.43	29.90	-2.53			
TOTALtime	100	100	-	100	100	-			
Physiological							9.13	10.63	+1.5
Technical Practice							18.08	19.61	+1.53
Skills Practice							40.10	42.19	-2.09
Other							32.69	27.57	-5.12
TOTALtime							100	100	-

Figure 7. Changes in Nathan's practice activities

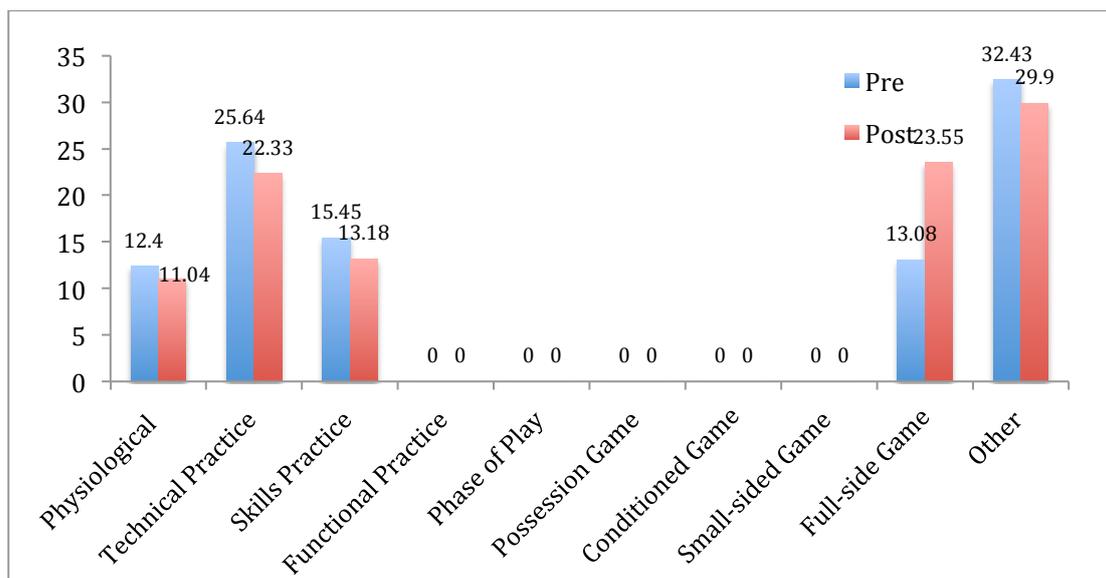


Figure 8. Changes in Nathan’s practice activities

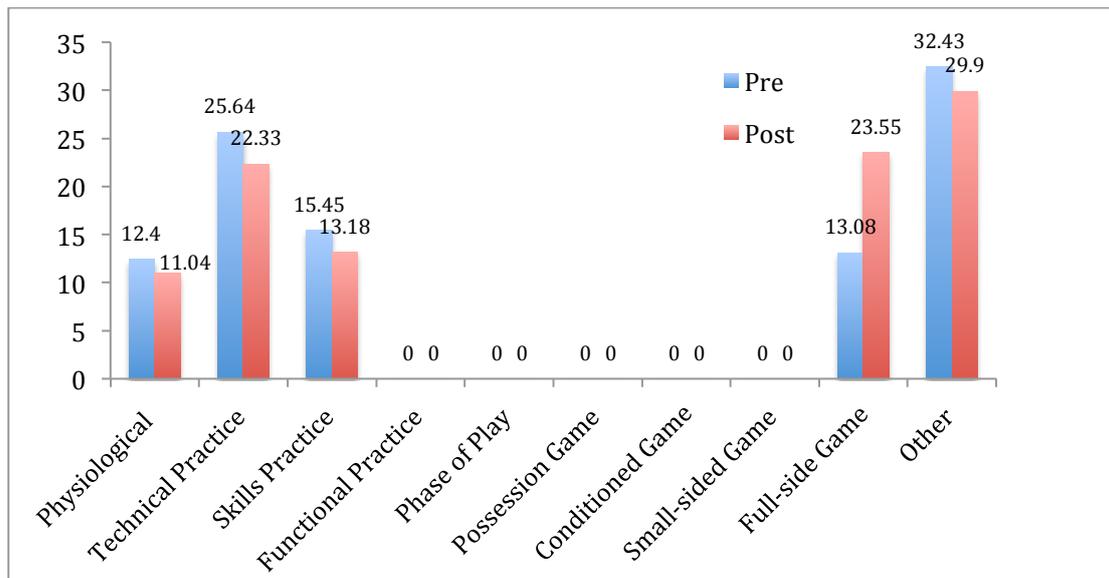
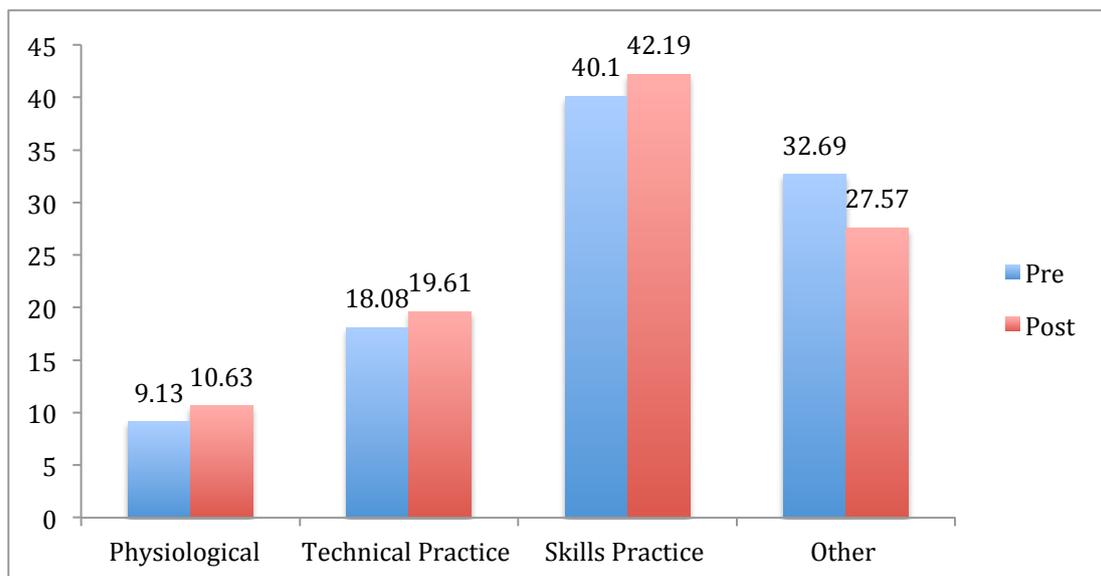


Figure 9. Changes in Elena’s practice activities



Interview data

Results from the abductive analysis are presented in the following analysis and discussion section as exemplar quotations. The themes were: 1) owning the learning experience; 2) Being supported; 3) Accepting new knowledge; 4) Rejecting new knowledge; 5) Barriers to engaging with the CC site.

ANALYSIS AND DISCUSSION

Owning the learning experience

It has been suggested that the educational process should not be seen as one where the leader (coach educator) is the *thinker* and the led (coaches) the *doers* (Freire, 1970), as has often been the case in most formal coach education settings. Instead, the learning process should be one of transformation, where learners are given choice or freedom over their learning (Freire, 1970), with the coaches in this study seeming to support this claim. In the present study, what coaches valued about their learning was the level of autonomy they were provided to decide what part of their coaching they wanted to learn about and develop, as articulated by Elena:

‘I really enjoyed the freedom to go and search and learn about things that I wanted to learn about without being told I had to learn certain things. I am currently doing my Gymnastics level 2 qualification and it is a bit like that on this course. I enjoy it, but everything is planned out for you that you have to follow, whereas this has been much more flexible’ (Elena, POI).

Elena discussed how the learning intervention was based on her needs and she was able to decide on the content she engaged with, which was provided via the CC site. To enable coaches to experience this level of freedom, the author deliberately positioned himself as a co-learner in the learning process, rather than as someone who directed or led the learning process, as has traditionally been the case in formal coach education (Nelson & Cushion, 2006). Indeed, Freire (1970) argued that a fundamental component to providing learners with autonomy over their learning was that teacher (coach educator) and student (coach) worked together in solidarity. There was further evidence based on what Nathan discussed that demonstrated an enjoyment with the learning approach employed, and a recognition that it provided them choice in what they learned:

‘I just felt really motivated to learn because what we have been talking about over the last few months is what I wanted to get better at being able to do in my coaching’ (Nathan, POI).

In a similar way to Elena, Nathan acknowledged that the learning intervention was focused on what was important to him in his coaching. Freire (1998) claimed that to move learners from docile receivers to critical investigators required a ‘deposit-making’ approach to be replaced with a ‘problem-setting’ approach. The emphasis on a ‘problem-setting’ approach was that the relationship between teacher (coach educator) and student (coach) is dialogical, with both responsible for determining the direction of the learning. Reinforcing findings from other research (Stoszkowski & Collins, 2017) coaches considered their involvement in this learning approach to have led them to think about their coaching in greater detail, as Alice noted:

‘After speaking with you last week it really helped focus my thinking and consider what was the most important stuff I had to work on. I haven’t done this before, but it made me think about my coaching in more depth, and I guess gave me a greater sense of direction for my own development’ (Alice, RC 4).

Based on this data, coaches felt a sense of freedom and autonomy over their learning served as a catalyst to changes in their behaviour and practice, as they thought more critically about their coaching than they had required to before.

Being supported

A combination of engagement in the CC site and having someone with whom to discuss this content seemed to lead to coaches feeling supported in their learning in ways they had failed to experience previously. The CC site, where the learning resources were housed provided the introduction to new content

and the ability to connect with other coaches akin to that of a CoP (Stoszkowski & Collins, 2014), with weekly reflective conversations assisting in enabling coaches to make further sense of this content. In some ways then, the learning resources accessed via the CC site served as a conversation starter and provided an initial idea, which the reflective conversations with coaches then later explored in greater depth, as highlighted in this quote:

‘The weekly conversations we had really helped me make sense of what I was reading. I felt I understood it (the blogs) anyway, but I think we were able to move beyond just discussing the blogs and videos to talking about other stuff that linked to my coaching. Like talking through the different type of questions I could ask was something that I found useful and something I now try and think more about’ (Elena, POI).

In this interview extract, Elena discussed her learning about questioning, which she was introduced to through reading a blog on the CC site. Her learning about questioning was extended through the reflective conversations based on ideas suggested by the author. According to Freire (1998), those charged with initially leading learning have the responsibility to coordinate this and offer direction. In coaching, the coach-coach educator relationship is only in danger of preventing this when learners are denied the right to think. This can occur when coaches are told what to coach and how to coach, instead of being given the opportunity to think for them self about their coaching.

Traditionally, formal learning episodes have received criticism for being episodic in nature (Abraham & Collins, 1998). This meant learners received formal learning at a designated time and place, but there was rarely if any follow up learning once the course had finished. This is concerning given some claims that coaches, and particularly those of children in recreational contexts work in isolation, and thus have limited places to turn for support. While some NGBs have made deliberate attempts to move away from such an

approach and the landscape is changing, published work is yet to follow that evidences the support provided to coaches beyond the formal learning setting. The option that was provided by the CC site for coaches to interact with other coaches, as well as the reflective conversation component of this learning intervention was considered by the coaches to have made them feel supported in their learning, as discussed here:

'Being able to talk to someone I guess. There are coaches in my club, but we don't really talk about what we talk about. And then there are other things like the coaching qualifications, which are great when you are doing them, but that support has gone once you, have finished. This is allowing me to just talk about my coaching and get some advice' (Nathan, RC 3).

Nathan referred here to being supported through the reflective conversation process, as well as being supported by other coaches, who had offered advice and encouragement through discussions he had on the CC site. Stoszowski and Collins (2017) found that an online blogging environment offered a supportive learning environment, with findings from this study further confirming this. A fundamental component of Freire's educational philosophy is that the leader (coach educator) did not dictate to the learner (coach) what is to be learned. For this to happen required the leader to be critically conscious of their role in the learning process (Freire, 1970), as to ensure information is not imposed on learners. Freire (1970) suggested that an approach that facilitated and supported learning is one based on dialogue. The result of a dialogic relationship is that power imbalances are reduced, which re-positions learners from objects to co-actors. While the dialogue coaches had via the CC site could not be controlled, it appeared as though these were received in a manner that encouraged thinking, rather than prescribe the 'best ways' to coach. Alice discussed how she felt about being 're-positioned' in the learning process:

'I liked that it wasn't you telling me what I was doing right or wrong, but that you just listened and asked me to think about what I was doing in my

coaching and why, which I found really difficult at times. I feel like the readings were a bit like this, as they weren't saying what was right or wrong, but just gave tips to improve' (Alice, POI).

The limited prescription provided through either the content on the CC site, or through the reflective conversations with the author is evidence that for coaches to feel supported in their coaching, they do not need to be or want to be given high levels of direction of what to learn. Nor is this necessarily useful given that effective coaching is highly context specific (Côté & Gilbert, 2009). It also seemed that receiving support and advice from other coaches is integral to their continued participation and engagement with the CC site (Stoszkowski & Collins, 2017), and therefore should be promoted and encouraged.

Accepting new knowledge

An oversight with literature that has dealt with coach learning is that the descriptive nature of these studies have revealed very little about what learning sources contribute toward coaches' acquiring new knowledge (Griffiths et al. 2016). However, a recent study by Stodter and Cushion (2017) has started to address this issue by constructing a grounded theory model that explains how and why coaches learn in some learning situations, but not others. Stodter and Cushion (2017) suggested that for new knowledge to be acquired the learning experience has to pass through a double-loop filter process, which first constituted an individual level before having to pass through a contextual level. Stodter and Cushion (2017) further argued that the individual level filter could be bypassed if coaches are able to see new knowledge working in their practice.

All of the coaches confirmed that seeing the ideas they had read about and discussed work in their coaching led to new knowledge being acquired:

‘Speaking with you and kind of respecting your opinion and advice I think had an impact on whether I felt an idea was a good one and something that was going to improve my coaching. From our earlier chats I felt it helped me understand things more’ (Alice, POI).

‘The questioning approach seems to be working well. The girls now seem to be enjoying this approach and they seem to be making more progress compared with what I was doing before and maybe for the first few weeks when I was getting used to trying something new. It is reinforcing that I need to stick with this approach and continue to learn more about it’ (Elena, RC 6).

‘I have learned to let the lads do a little more themselves. They make their games up and they make the rules and it has worked because they seem to challenge themselves more, which they enjoy’ (Nathan, POI).

In addition to this, Nathan also spoke about trying ideas in his practice based on recommendations by coaches he considered more experienced and perhaps with a greater level of expertise. So, while new knowledge was being acquired, it seemed as though the concepts being learned fitted with his existing biography and beliefs about what constituted legitimate knowledge (Stodter & Cushion, 2017; Stoszskowski & Collins, 2014) – that which was being advocated by those with perceived higher levels of social capital (Townsend & Cushion, 2016) and were therefore, incorporated into their existing belief system:

‘There were a few coaches who had commented on a discussion I posted last week. I had a look on their profiles and they seemed experienced and knew what they were talking about so I took on board what they said and used some of the ideas this week (Nathan, RC 3).

Indeed, Stephenson and Jowett (2009) claimed that there was a danger that coaches, and novice coaches in particular, simply accepted messages conveyed by more experienced or ‘expert’ coaches. In turn, this led to the regurgitation and reproduction of culturally accepted discourses that failed to represent coaching practice that is most developmentally appropriate (Cushion et al. 2003). Nonetheless, and as evidenced through the systematic

observation data (see Figure 8), Nathan reduced the time he engaged his children in all practice states, other than full-sided games, which had seen an increase in time spent. Research undertaken in motor skill learning suggested increasing the time spent in activities where children are able to develop the skills required to play the real version of the game at the expense of time spent in activities where children were unable to develop the skills most relevant to the game (Ford et al. 2010; Cushion, 2013).

For Alice and Elena, their coaching behaviours increased in the areas of their coaching they stated they wanted to develop before the start of the learning intervention. For example, Alice reduced her level of direct management and instruction, which suggested she had better learned strategies to deal with problematic behaviour in her sessions. Alice specifically commented on a series of videos she had watched that made her think differently about how to manage behaviour in her sessions:

‘There were a series of videos on emotional intelligence that I found really useful and made me think about how I approach the kids and the type of questions I ask to find out a little more about them as people before attempting to coach them. I never did this before, but it certainly made me think more about it and that I need to start changing my approach to sessions’ (Alice, POI).

Elena, whose focus was on reducing the level of prescription she provided in her coaching, significantly increased her level of questioning, and reduced the extent to which she provided feedback. A behavioural profile that has high levels of questioning, and particularly questions which are divergent in nature, has been suggested to develop a range of positive learner outcomes, such as increased levels of critical thinking, a development of problem

solving and decision making skills, and greater autonomy over learning (see Cope, Partington, Cushion & Harvey, 2016).

Rejecting new knowledge

While evidence has been presented that demonstrated coaches' acquiring new knowledge, not all information that coaches engaged with fitted within their double-loop filter process, and were therefore rejected. For example, Nathan said that:

'Because it didn't relate to my sport I couldn't really see the relevance of what was being said. I know we discussed some of the general stuff related to what I had read, but I don't see how it transferred over' (Nathan, RC 6).

Stodter and Cushion (2017) explain that coaches rejected the possibility of acquiring new knowledge when it failed to fit with their existing coaching ideologies, or they did not consider new concepts to be applicable for the contexts in which they worked, which seemed to be the case for Alice:

'There were some ideas I tried, but they didn't work. I was bit skeptical anyway because the blog I read was in a club context and I worked in schools, but I gave it go, but won't be doing again' (Alice, POI).

Elena also rejected ideas espoused through some of the blogs she read in a similar way to why Nathan accepted some of this information. Elena explained that due to previous learning she had experienced at University, where she learned to base her coaching practice on an evidence-base, anything she read that fell short of this was automatically rejected:

'I didn't take much notice of the discussion boards because they just seemed to be people's opinions and I learnt from being at University that everything should be evidence-based' (Elena, POI).

For Elena, even if the content in which she was engaging were relevant to what she wanted to learn, this information would have limited impact on her coaching if these failed to demonstrate they were built on evidence-based information.

Barriers to engagement in the CC site

The realities of coaches' roles and lives meant that it was not always possible for them to engage in the CC site as much as they would have liked. For Nathan, who coached in a volunteering capacity and had a 40+ hour a week job to balance alongside family life, he sometimes found it challenging to make time available to make the most of the content available on the CC site, as he explained here:

'Time is definitely an issue. I would like to spend more time reading through the content and engaging with the discussions, but I get home at 7pm and by the time I have had tea and seen the kids it is nearly time for bed' (Nathan, POI).

Alice also declared that accessing the site was not always easy or at the top of her priorities given that her day job as a coach meant that she spent a lot of time travelling between coaching sites, and thus limited the time she believed she had available to engage in content:

'Some weeks I had a lot going on and so spending time on the site just wasn't possible. I perhaps could have arranged my time better, but my first priority had to be making sure I was doing my job' (Alice, POI)

Alice and Nathan both noted, however, that receiving daily emails served as useful reminders of new content that was being added, and enabled them to feel as though they were keeping up to date with latest developments, even if these were not necessarily being engaged with. Sometimes pressures on time were such that Elena could not always access the site on a weekly basis, as revealed through one of the reflective conversations:

'I have been struggling to get to anything this week and so haven't been able to read anything' (Elena, RC).

Besides time-related constraints other barriers experienced were associated with searching for the most relevant content, and understanding how the content discussed in some of the blogs would be transferred into coaching practice. Alice and Elena both considered it a challenge to always find content that related to their particular coaching issue, and when they did find something, they sometimes had difficulty re-searching for this:

'Sometimes it took a lot of time to find something that interested me, and when I did, I had difficulty in finding it again. I liked to read things a few times through, but because I couldn't find the blog again, this was not always possible' (Elena, POI).

Elena and Alice's perceptions could be explained given the sports or contexts in which they coach. For Nathan, he didn't discuss this as an issue, but did reveal that he felt some of the blogs were difficult to understand and he was not always clear what the takeaway message was:

'Some of the blogs were a little long-winded and it was only really once I got halfway through I felt they were not relevant' (Nathan, POI).

Nathan differed from Elena and Alice in that he coached much less often and did not have the same level of educational attainment.

CONCLUSION

The purpose of this study was to investigate the impact a deliberately designed and delivered formal learning programme had on coaches' learning and subsequent behaviour and practice. The CC learning site undoubtedly has potential to contribute toward coaches' acquisition of new knowledge, and subsequently impact their behaviours and practices. The possibilities for coaches to learn from the practices and experiences of others are powerful for their learning. Freire (1998) considered that most educational programmes do not achieve their aims of impacting students learning because they are

designed according to the educators' views of what needs to be learnt, instead of taking account of the perspectives of those the educational programme was expected to serve. This current study provided some initial evidence that suggested when coaches' are genuinely involved in the learning process they experienced this positively and enjoyed the freedom it affords. Furthermore, actual changes to coaches' behaviour and practice were recorded for each of the coaches in line with the area of their coaching they outlined they wished to develop. However, a fundamental component to realizing this ambition was that a critical friend, who was able to challenge coaches to think critically about their practices and make sense of the learning resources in which they are engaged, supported coaches in their learning.

It has been reported in the research literature that while learning sites, such as CC have the ability to impact coaches' knowledge, they have as much potential in contributing to the reproduction of harmful coaching practices (Stoszkowski & Collins, 2014). Therefore, caution is needed with regard to the nature of the content produced and advocated on these sites, while at the same time allowing coaches a freedom and choice to discuss their beliefs. The employment of a critical friend or something similar could work to challenge coaches' existing beliefs and bring about positive changes to their practice. Therefore, and building upon other studies that have gone beyond descriptions of coach learning (i.e. Partington et al. 2015; Stodter & Cushion, 2017), there is an increasing evidence base that by providing coaches with an opportunity to discuss coaching issues specific to their practice, and supporting them in their learning to think more critically about their coaching, changes can and do occur. So, while NGB formal coach education courses have seen somewhat of a transformation in recent years, it could be argued that these will unlikely achieve their desired aims while coaches are treated as the recipients, rather than co-constructors of knowledge. On a final note, by urging NGBs to continue to reform and transform the structure

of their formal coach education, coaches should be better placed to think critically and taking ownership over their learning. The Connected Coaches site, alongside engaging coaches in critical reflection is able to serve this purpose as demonstrated through the findings of this study.

RECOMMENDATIONS

Based on this research study, there are a number of suggested recommendations, which I consider will further improve the learning experience for those coaches accessing and engaging in the CC site:

1) There is a significant amount of content available to coaches on the CC site. While the sheer wealth of information could be considered a strength, it can sometimes be overwhelming. Therefore, arranging content on certain themes into more specific folders than the ones, which currently exist (i.e. Coaching Children) may make it easier for coaches to identify the type of information they want in order to enhance their learning.

2) The extent to which content on the site could be considered evidence-based is questionable. While this is not necessarily a problem per se, as one purpose of the site is for coaches to connect through the sharing of ideas, better policing of this site should be considered to ensure information is evidence, rather than opinion-based. This site has the potential to impact the practices of a high number of coaches and so opinion-based content should be avoided, as the messages advocated could be harmful to those being coached. This is particularly important as many coaches who access the site may be unaware of the difference between evidence-based and opinion-based sources, and tend to believe the messages that fit with their existing beliefs or are conveyed by so called 'experts' in the field (Stoszowski & Collins, 2014).

This can serve to reinforce and lead to the reproduction of current, ill-informed coaching practices, rather than a transformation of these.

3) While coaches considered the style and length of the blogs to be mostly appropriate, having an abstract/summary at the start of the blog will save coaches time in deciding whether the information will be relevant to them, without having to read the main content.

4) There is a blend of content related to specific sports interspersed with content related to coaching more broadly. While content written from the perspective of one sport can be useful for another, this may not always be the case. Therefore, how this information is organized on the site could be re-considered to allow for increased impact. Creating sport-specific folders should be considered to enable those coaches looking for content only related to their sport to be accessed most efficiently.

5) The reflective conversations employed in this study were invaluable in supporting coaches' learning. A similar concept, such as a reflective area that is facilitated by a member of the UK Coaching team could this function and enable coaches to make links between the resources they are accessing and the impact on their coaching practice.

6) While the number of coaches signed up to CC is high, this does not necessarily mean engagement is regular. One way that UK Coaching should increase engagement is through an incentive, such as some form of certification or UK Coaching accreditation if coaches are able to demonstrate how they are using the resources on the site to impact their coaching.

7) The CC site has significant potential, which will be better realized if it is more explicitly linked to UK Coaching's various coaching workshops. As part

of these workshops, CC should form a central part of the learning support offered.

8) The videos available on the CC site are appealing and professionally shot. If possible, more of these videos should be put together to support the written content. In doing so, it give coaches a greater sense of how to bring some of the ideas they are reading to life.

9) UK Coaching should think carefully about their monitoring of the content added to the CC site. It has been shown in this study that structuring the learning environment with a focus on individual coach's needs, and an opportunity for them to critically reflect on their own coaching is a likely factor in leading to changes in coaches' behaviour and practice. Therefore, UK Coaching need to be mindful of comments on the site from those who 'preach' a universal 'right or wrong' way to coach.

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