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1 *Original Article*

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10 Exploring the psychological attributes underpinning elite sports coaching

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12 Laura Hodgson, Joanne Butt and Ian Maynard

13 Centre for Sport and Exercise Science, Sheffield Hallam University, United Kingdom

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Corresponding author:

Laura Hodgson, Centre for Sport and Exercise Science, Sheffield Hallam University, Chestnut Court, Collegiate Crescent, Sheffield, S10 2BP, United Kingdom.

Email: l.hodgson@shu.ac.uk

1 **Abstract**

2 The influential role of the coach in athlete performance and development has long been
3 acknowledged, and coaches are now considered ‘performers’, just like their athletes. The
4 purpose of the present study was to explore the psychological attributes elite coaches
5 perceived to underpin their ability to coach most effectively and factors perceived to
6 influence attribute development. Qualitative research methods were implemented where 12
7 elite coaches (eight male, four female) participated in semi-structured interviews. Inductive
8 thematic analysis generated 9 higher-order themes related to psychological attributes: (a)
9 attitude, (b) confidence, (c) resilience, (d) focus, (e) drive for personal development (f)
10 being athlete-centred, (g) emotional awareness, (h) emotional understanding, and (i)
11 emotional management. In addition, 3 higher-order themes were generated related to factors
12 perceived to influence attribute development: (a) education, (b) experience, and (c)
13 conscious self-improvement. Findings indicated that several attributes perceived to be
14 essential to coaching effectiveness related to the emotional nature of coaching, where
15 coaches’ abilities to identify, understand and manage emotions in both themselves and
16 others had many positive effects.

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18 **Keywords**

19 Elite coaches, psychological attributes, development, coaching effectiveness

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1 **Introduction**

2 Research conducted across sport science disciplines has strived towards
3 understanding the unique attributes of elite performers in an attempt to uncover what
4 enables them to perform successfully and reach the pinnacle of their careers [1]. In sport
5 psychology, much attention has been given to exploring and understanding the
6 psychological attributes of elite athletes with the aim of influencing athlete talent and
7 development [2,3]. It is widely acknowledged that coaches have an important role in
8 athletes' lives and can influence athletes' performance, behaviour, and psychological well-
9 being [4]. In comparison to athletes, much less consideration has been directed towards
10 identifying and supporting the psychological needs of coaches. Since Giges et al. [5] argued
11 that as much attention should be given to coaches' preparation and performance as has been
12 given to athletes, research has increasingly recognised that coaches are indeed 'performers
13 in their own right' [6,7]. Coaches, like athletes, are often required to coach in highly
14 pressurised environments, make critical decisions, deal with adversity and are held to
15 incredibly high expectations [5]. To this end research conducted with coaches has increased
16 and provided insights into key performance areas such as coaches' stress and coping [7],
17 coaches' efficacy [8], and coaches' leadership [9]. However, little attention has been
18 directed towards exploring the psychological attributes that underpin coaches' abilities to
19 perform effectively.

20 Current understandings of the coaching process [10] advocate that coaching is not
21 merely delivered, but rather a complex social system that involves both coach and athlete(s).
22 With each coaching situation argued to involve some degree of novelty, coaching practice
23 has been suggested to hold limited roots in generic rules and structured planning [11].

1 Accordingly, the term ‘structured improvisation’ has been coined in an attempt to
2 characterise coaching practice [12]. Coaching effectiveness is therefore ‘not dependent upon
3 the efficient application of a sequential process but on the quality of interactions between
4 coach, athlete(s) and the context’ (p.88) [13]. In the most simplistic terms, the coaching
5 process involves a coach’s attempt, in various ways, to positively influence the learning and
6 development of their athletes [14] and therefore should be understood and studied in a
7 manner that accounts for this.

8 Traditional coaching research has predominately focused on studying the observable
9 behavioural elements of coaching and the coaching process. Describing a coach’s behaviour
10 through quantitative methods has dominated the research [14]. Although such methods
11 conform to assumptions of traditional scientific methods (e.g. phenomena must be
12 observable, measurable and replicable) it fails to address aspects of the coaching process
13 that are unobservable [15]. Consequently, with such an emphasis placed on behavioural
14 observation there is little understanding regarding the reasoning behind the action. For
15 example, research reveals that expert coaches can, in the main, say the right thing at the
16 right time, yet our understanding into *how* they know *what* to say and *when* is limited [16].

17 A series of studies conducted by Gould et al. [17,18] examined factors affecting
18 Olympic performance from the perspective of both athletes and coaches. Findings from this
19 research have demonstrated both the positive and negative influences coaches can have on
20 athlete performance at major competitions. In particular, athletes’ perceptions of how
21 coaches can negatively influence performance included the coach’s inability to handle
22 pressure and avoid distractions, poor coach-athlete communication, coaches changing
23 behaviour, over-coaching, and setting unrealistic expectations. Athletes’ perceptions of how

Psychological attributes underpinning coaching

1 coaches can positively influence performance included coach trust and friendship, coach
2 planning, making fair decisions, and receiving coach feedback [3]. Gould et al. [17] also
3 reported coaches' perceptions of factors that influenced their own coaching performance at
4 the Olympic Games. Specifically, coaches indicated that having the ability to remain calm
5 under pressure and make decisive decisions positively influenced their coaching
6 effectiveness, whereas the inability to deal with crisis situations, and manage stress between
7 athletes and coaching staff were perceived as ineffective. More recently, research has
8 identified several key factors that Olympic coaches attributed to their success at the
9 Olympic Games [19, 20]. For example, Olusoga et al. [20] explored the factors that enabled
10 coaches to perform under pressure (i.e. Olympic environment). A variety of factors emerged
11 such as lifestyle choices, strategic planning, team and athlete preparation, taking time out,
12 and team support. Coaches also identified a number of psychological attributes (e.g.
13 communication, passion, emotional control, perception) and skills (e.g. rationalisation,
14 routines) highlighting the notion that psychological attributes are important for coach
15 performance. Indeed the authors pointed towards the need to enhance coaches' own
16 psychological skills to develop these attributes.

17 Athlete talent development literature has consistently demonstrated that athletes'
18 psychological attributes are malleable and capable of being trained and developed over time
19 [e.g. 21-23]. Such research has informed intervention-based studies concerning the
20 application of psychological skills training to enhance athlete development and performance
21 [e.g. 23]. To date, scant research has attempted to understand how the psychological
22 attributes of coaches are developed, which is not surprising considering the current lack of
23 research concerning coaches' psychological attributes. Based on athlete talent development

1 research, investigating factors perceived to influence the development of psychological
2 attributes in coaches could hold important implications for the design and implementation of
3 intervention studies aimed to enhance coach development and effectiveness.

4 Collectively, existing literature provides insight into a broad range of factors
5 perceived to influence coach effectiveness and success. This research highlights the
6 importance of understanding the psychological attributes of coaches and how such attributes
7 are developed. Taking into account the paucity of research regarding the factors expert
8 coaches attribute to their own success [19], a detailed investigation into the psychological
9 attributes of elite coaches and related developmental factors will broaden the breadth and
10 depth of existing literature. This form of investigation has the potential to expose and
11 explain some of the unobservable cognitive contexts that drive coaches' behaviours and
12 positively influence coaching effectiveness. Thus, the purpose of the present study was to
13 explore the psychological attributes elite coaches perceived to underpin their ability to coach
14 most effectively, and how such attributes were perceived to have developed.

15 **Method**

16 *Participants*

17 The sample for this study comprised of 12 elite coaches (eight male, four
18 female). In line with previous research, the definition of elite athletes was used to define
19 coaches as 'those who work with performers on a regular basis who are current national
20 squad members and perform at the highest level in their sport' [6, 24]. A purposive
21 criterion sampling method [25] was employed in line with previous research using an
22 elite coach sample [6, 26]. The criteria for inclusion required coaches to have at least 10
23 years coaching experience, and to have coached athletes to medal success at major

1 sporting competitions (i.e. Olympic Games, World Championships). Participants
2 represented a variety of sports including gymnastics, disability table tennis, canoe
3 slalom, judo, lacrosse, field hockey, track and field, rowing, and trampolining.

4 *Procedure*

5 Following institutional ethics approval, all participants were initially contacted
6 via e-mail outlining the aims of the research and the procedure for data collection.
7 Informed consent was gained from all participants before data collection. Given the
8 exploratory nature of the study, in-depth interviews were considered the most
9 appropriate method of data collection [25]. A semi-structured interview approach was
10 applied where all participants were asked the same major open-ended questions, but
11 with further elaboration questions that varied according to the participant's initial
12 responses to opening questions. The interview guide contained three sections, Section
13 one comprised of demographic and coaching background information. Section two
14 focused on psychological attributes where participants were encouraged to discuss their
15 own psychological attributes (e.g. What do you think are your psychological strengths
16 when coaching? How do you display these in your behaviour?), and related
17 developmental factors (e.g. Have you always had these attributes, or have they been
18 developed? How do you think they have been developed?). Section three focused on
19 coaching strategies (e.g. Is there anything in particular you do to manage your thoughts,
20 feelings and behaviours?). The majority of interviews were conducted face-to-face, with
21 one phone interview. The principle investigator who had previous experience in
22 qualitative research procedures conducted all interviews. All interviews were digitally
23 audio recorded in their entirety and transcribed verbatim.

1 *Data analysis*

2 The primary purpose of the study was to understand the psychological attributes
3 of coaches through their own experiences and perspectives; thus, an inductive thematic
4 analysis [27] was adopted to analyse the data. In phase one of the analysis all data
5 underwent a process of initial open coding where data were analysed on a line-by-line
6 basis. Raw data responses (quotes or paraphrased quotes) were organised into patterns of
7 like ideas representing lower-order themes. Lower-order themes were grouped together
8 based on similarities to form higher-order themes.

9 The second phase of analysis involved several measures to enhance the
10 authenticity and trustworthiness of data analysis including analyst triangulation, use of a
11 critical friend and the presentation of thick descriptive quotes [cf. 28]. Analyst
12 triangulation involved three researchers independently reading transcripts and making
13 suggestions for the placement and removal of raw data extracts into themes.
14 Categorisation of the data continued until consensus was reached between all three
15 researchers. Following researcher agreement, an additional colleague with experience in
16 sport psychology research but independent to the research study was used to confirm, or
17 otherwise, the placement of raw data extracts into lower and higher-order themes. The
18 presentation of results includes descriptive quotes, to share the views of the participants
19 and provide context for the reader.

20 **Results**

21 The data analysis procedures resulted in the generation of 122 raw data extracts
22 that were categorised into 29 lower-order themes, 12 higher-order themes and 2 general
23 dimensions (see Figure 1). Results are presented in two sections to demonstrate firstly

1 the psychological attributes identified and secondly, factors relating to attribute
2 development.

3 *Psychological attributes*

4 The higher-order themes characterising specific psychological attributes
5 included: (a) attitude, (b) confidence, (c) resilience, (d) focus, (e), drive for personal
6 development (f) being athlete-centred, (g) emotional awareness, (h) emotional
7 understanding, and (i) emotional management.

8 *Attitude.* Within this higher-order theme two lower-order themes captured the attitudes
9 displayed by coaches: (a) tough attitude, and (b) focus on the positives. Having a tough
10 attitude was described as being able to ‘make tough decisions’ and being ‘directive’.
11 Several coaches also demonstrated their tough demeanour towards others, as one coach
12 stated ‘I’ve always followed the definition of a coach that coaches someone to achieve
13 what they want to achieve by making them do what they don’t always want to do’.
14 Several coaches also referred to how they ‘always focus on the positives’, which applied
15 to their own personal performance and that of their athletes. The ability to maintain a
16 positive attitude in imperfect situations was demonstrated by not dwelling on mistakes
17 and refocusing attention, as one coach discussed,

18 The athletes will make mistakes, usually there will be a reason why they have
19 made that mistake. You could say ‘you didn’t do that very well’ when they
20 [athlete] know it already, so there’s no point. We reinforce the bits they’ve done
21 well and then you address it with your angle... So really keeping things positive
22 and not looking too much at massive mistakes.

1 *Confidence*. Coaches were also characterised by their high level of confidence which
2 was categorised into three lower-order themes: (a) confident communication, (b) acting
3 confident, and (c) confidence in ability and knowledge. Being able to communicate with
4 confidence was regarded as a critical attribute affecting coach effectiveness. For
5 example, ‘clear and confident communication with athletes’ and ‘not being afraid to
6 make decisions’ were perceived to positively influence athlete behaviour and
7 performance, as illustrated by the following quote:

8 In the World Championships there was a lot of choices on the course and it was
9 just being clear with the athlete why they should take on this particular choice.
10 I’ve got a good idea it might be the fastest but I couldn’t tell you it would be. So
11 I was very clear... You’ve just got to be clear and confident in what you are
12 saying to them, and it was good to see them [athlete] committing to the moves.

13 Another aspect of confidence found to influence coaching effectiveness was a
14 coach’s ability to act confidently both in practice and competitive environments. This
15 lower-order theme demonstrated how coaches felt the need to display confidence in their
16 behaviour by ‘exuding as much confidence as possible’. Coaches were mindful that their
17 behaviour could influence athletes both positively and negatively. Acting confidently
18 was perceived to have a positive effect therefore coaches consciously attempted to
19 appear confident for the benefit of others. Several coaches also referred to how their
20 ‘skills and abilities gave them confidence’, which gave coaches self-belief, ‘you believe
21 that you can do it’. Such confidence in one’s skills was demonstrated by one coach
22 being very self-assured regarding his ability to positively affect athlete development, ‘I
23 could take anybody [athlete] on and adapt to meet their needs’.

1 *Resilience*. Several coaches identified resilience as a personal psychological attribute,
2 being categorised into two lower-order themes: (a) handling setbacks and (b) dealing
3 with criticism. Encapsulating a coach's ability to handle setbacks, coaches described
4 being able to 'come out the other side'. In particular, when discussing their ability to
5 come back from setbacks, one coach said 'I just have that song in my head, you get
6 knocked down but you get up again'. The following quote illustrates one coach's ability
7 to persist despite setbacks by continuing to search for solutions:

8 Because of either my nationality or my gender I've not actually been able to
9 access some environments, and I would never access them because I wouldn't
10 be allowed to. But that doesn't stop me [from] working hard and applying for
11 things... I'm given information back that I'm lacking because I haven't got 'x'
12 for example, then I will work harder and I'll learn 'x' because that makes me a
13 better coach.

14 The lower-order theme 'dealing with criticism' demonstrated how several
15 coaches emphasised their ability to deal with negative comments directed towards them
16 by others involved in their sport (e.g. other coaches, parents, governing body members).
17 It was made apparent that having 'broad shoulders', 'thick skin' and 'trying not to take
18 things personally' enabled coaches to handle such comments in a positive manner
19 without having detrimental effects on their coaching effectiveness or psychological well-
20 being.

21 *Focus*. Several coaches discussed how their ability to remain focused influenced their
22 coaching effectiveness. In this higher-order theme coaches highlighted the importance of
23 being both process focused and future-focused. Having the ability to apply oneself to the

1 task at hand and keeping things simple and process focused was perceived integral, as
2 demonstrated by the following quote:

3 It's just getting on with the job at hand and focusing on what I need to do, I try
4 and think about it logically and identify all the steps I need to take. If I'm
5 distracted I'm not athlete centric anymore, and if I'm not athlete centric then I'm
6 not doing the best job by my [team].

7 Being able to stay focused on future events and focusing on what needed to be done to
8 achieve intended goals was also considered important by several coaches, as
9 demonstrated by the following quotes: 'I'm very goal focused, so there's always three or
10 four things I want to improve on', and 'The times I've coached well is when I'm really
11 focused on the job... I'm only thinking about preparing the athlete for competition'.

12 *Drive for personal development.* A clear desire to utilise learning opportunities and
13 continue to strive for personal development was evident. This higher-order theme was
14 categorised into two lower-order themes: (a) open-minded, and (b) appetite for learning.

15 Being open-minded was characterised by embracing learning experiences and
16 opportunities such as having the perspective of 'I'm not a finished article' as oppose to
17 being 'stuck in their ways'. Having an appetite for learning was also identified and
18 several coaches highlighted their constant need for self-improvement by 'trying to
19 improve all the time' and 'having a hunger for knowledge'. Coaches discussed using a
20 range of resources to enhance their professional development, as illustrated in the
21 following quote:

22 I've learnt a lot from talking to other coaches from other sports. In terms of
23 learning and seeing what's out there it's about looking at business, looking at

1 other sports, looking at other team managers, performance directors...trying to
2 put in what then relates to my sport.

3 *Being athlete-centred.* Being athlete-centred comprised of three lower-order themes: (a)
4 encouraging independence, (b) understanding individual differences, and (c)
5 adaptability. Several coaches in their attitudes toward developing ‘self-sufficient’
6 athletes illustrated how they encourage independence:

7 The times when I have coached well I don’t coach a lot, which in fairness
8 means you have coached well. So everything has been done before and the
9 athlete is self-sufficient...it’s not about you, what you are trying to do is build
10 independence...you’re trying to make yourself redundant.

11 To promote athlete independence, coaches reported, ‘asking open questions’ and
12 encouraging ‘athlete directed discussions’ to assist athletes in taking ownership over
13 their training and development. One coach referred to using what he termed ‘the nudge
14 principle’ to assist athletes in their decision-making, by guiding rather than directing
15 them towards intended outcomes. Several coaches highlighted the importance of being
16 able to understand the individual needs of their athletes, acknowledging that athlete
17 development and performance is largely influenced by being able to ‘understand an
18 athlete's personality’, ‘taking the time to understand their moods, their habits’ and ‘using
19 that in a way that gets the best out of them’. Having an individualised understanding of
20 athletes needs influenced some coaches’ ability to adapt. More specifically, coaches
21 described being able to change coaching behaviours and coaching styles to suit the
22 needs of the athletes. Being aware that certain coaching styles may not be beneficial for
23 all athletes enabled coaches to change their approach to what was considered most

1 facilitative, as one coach stated, 'I'm a chameleon... I really try and adapt my colour so
2 to speak to mold myself to the personality traits of the performers that I'm working
3 with'.

4 *Emotional awareness*. This higher-order theme was governed by coaches' abilities to not
5 only demonstrate emotional awareness within themselves but also an awareness of
6 others' emotions, thus the lower-order themes included: (a) emotional awareness of self
7 and (b) emotional awareness of others. Having an awareness of one's own emotions was
8 illustrated in the ability to accurately appraise different emotions and also recognise
9 physiological and behavioural changes related to specific emotions, as one coach
10 demonstrated:

11 It's being able to say what are you feeling right now, because the feeling
12 ultimately will control how you think. To describe your emotion, and it's
13 not I feel great or I feel [profanity] it's to actually go into what it is that you
14 are actually feeling... My feelings are that I normally get sweaty palms, I
15 get this feeling in my stomach and I know that I'm going to explode.

16 The acknowledgement and recognition of others' emotions provided key
17 information that coaches utilised to inform their decisions and behaviours, to be most
18 effective. Emotional recognition was demonstrated in various ways, such as paying
19 attention to body language, communication style, and behaviours. This recognition
20 allowed coaches to assess an athlete's emotions without gaining explicit information.
21 One coach demonstrated the ability to evaluate an athlete's emotional state through
22 means of communication:

1 Depending on when you debrief depends on what they will get out of it... more
2 than the distance from competing to the debrief it was more around when I felt
3 they [athlete] were in the right state to actually be reflective. So we would watch
4 other people and I would say 'they are good at this' and if they are able to
5 critically analyse somebody else without reflecting back on themselves or
6 whatever it shows that they are starting to think logically and not emotionally. So
7 it's almost how emotional are they? How raw is it?

8 *Emotional understanding.* The higher-order theme of emotional understanding captured
9 how coaches were able to comprehend how emotions related to one another, how they
10 progress and change over time, and foreseeing the potential implications of various
11 emotions. Lower-order themes included: (a) influence of emotions, (b) athletes'
12 emotions, and (c) consequence of negative emotions. The lower-order theme 'influence
13 of emotions' was characterised by coaches' abilities to understand how their own
14 emotions can change over time and influence not only themselves but also others around
15 them, both positively and negatively. Such an understanding informed coaches'
16 decisions on how and when to act (or perhaps not to act) depending on what was
17 perceived to be most facilitative within a given context:

18 It's just understanding how I am feeling...what value can that add to the
19 situation, can it help, will it add to the situation? Do I show it, do I not show it?
20 It's that kind of thing, knowing what you will do in the moment... If somebody's
21 had a poor performance [identifies sport] do you debrief straight away or do you
22 wait? What influence am I going to have when both people are potentially
23 disappointed?

Psychological attributes underpinning coaching

1 Being able to understand the emotions of others, particularly athletes' emotions,
2 and how such emotions can affect an athlete's performance, was also considered an
3 integral part of coaching effectively by the majority of coaches, as demonstrated by the
4 following quote:

5 When I've coached the best it's again linked to me understanding what's going
6 on, so I'm not just being too focused on tactics and trying to see where the
7 opponent is making mistakes. Because you can give the player, your player, all
8 the tactical advice in the world but if they're not in control of what they are
9 doing, their emotional control, they're not going to take any notice of it anyway.

10 In addition, understanding how certain emotions could affect an athlete's
11 performance allowed coaches to behave in certain ways to purposely trigger an
12 anticipated emotional response from their athletes, as one coach stated 'I can be quite
13 matter of fact or I can ball them out, it's whatever has an impact'. Several coaches also
14 demonstrated the ability to reason about the consequences of negative emotions.
15 Preempting how specific emotions would have a negative impact on a given situation
16 allowed coaches to engage in specific behaviours to purposely avoid triggering such
17 emotions in either themselves or others. In particular, one coach highlighted how this
18 was important to avoid unwanted emotions at competitive events:

19 One [athlete] that went to the Olympic Games...he'd developed his own sort of
20 style for doing his warm up and I knew very clearly that this particular [athlete]
21 didn't want any involvement from me...during the competition I'd leave him to
22 do his stuff because I knew interfering would be detrimental...It's an
23 understanding on the coaches part that every [athlete] is different and will all

1 want different behaviours and responses in competition...so I think recognising
2 that is an important quality to have.

3 *Emotional management.* The higher order theme of emotional management was
4 discussed by all coaches, which exemplified how coaches perceived the ability to
5 manage their own emotions and those of their athletes to be integral aspects of their
6 coaching. The lower-order themes included: (a) emotional control, (b) emotional control
7 in others, (c) emotional expression, and (d) encouraging emotional expression. All
8 coaches demonstrated their ability to remain 'in control of their emotions', particularly
9 in situations governed by pressure and ambiguity. Having the ability to remain calm and
10 address the situation logically rather than emotionally was perceived to have positive
11 effects on coaching effectiveness in terms of athlete performance:

12 I remember talking to my assistant coach on the radio and he just said 'I've got
13 nothing to say' and considering the intensity of the game and it being extra time I
14 felt very isolated... I wasn't getting any external information and I remember
15 then asking someone for some stats...I had some good instincts with what I
16 needed to do but I knew it was a bit of a risk and a gamble, so I asked for the
17 stats to confirm. And in the second half of extra time I had changed the tactical
18 play and we had scored a goal, and we won. So that was a time where I kept
19 calm, I didn't get stressed and I knew I could solve it... In the heat of the moment
20 and decision-making under pressure I coped well with that.

21 The majority of coaches reported the ability to aid athletes in their emotional
22 control by knowing 'how to help someone emotionally'. Strategies such as situational
23 reappraisal, refocusing, positive reinforcement and open communication were frequently

1 used to help athletes manage their emotions most effectively. The following quote
2 demonstrates how one coach intentionally removed an athlete from an emotionally laden
3 situation to avoid triggering a host of emotions that were deemed debilitating to
4 performance.

5 When she got to the final she was mobbed by 100 people backstage... it was not
6 won at all but all these people were celebrating like it was a carnival, and you're
7 [athlete] just about to [compete] and try and win the biggest [competition] of
8 your life. I went in and I pulled her out, took her to the other side 'forget about all
9 these people' and I talked her through it 'it's just exactly the same as
10 practice'...and by the time she went on she did a good job in getting her head
11 back in the right place, so it worked.

12 Emotional expression was found to be an effective management technique utilised
13 by the majority of coaches. Being able to express both positive and negative emotions
14 were perceived to have a positive impact on coaching effectiveness as it allowed coaches
15 to handle situations coherently without being overly emotional. On most occasions this
16 involved coaches physically removing themselves from an emotional situation, as one
17 coach stated, 'I think coaching is emotional and sometimes it can override logical
18 thoughts. Sometimes you need to take the emotion out of it, and you can't take the
19 emotion out of it while you are still in the environment'. The following quote illustrates
20 how one coach expressed their emotions away from their athlete to be able to handle the
21 given situation most effectively:

22 I try not to get particularly angry with athletes, I go and do my anger
23 management in the corner somewhere...If you've got frustration, fair enough

1 'I'm just going to the toilet' which is usually a complete fabrication. I take the
2 long walk round... I'll go round the whole loop going '[profanity], argh', 'Okay,
3 I feel better so lets try and have a sensible conversation'. So I try and take the
4 emotion out of myself.

5 Social support systems were also identified as key resources used to express
6 emotions; such support networks were evident both within and outside of the sporting
7 environment 'It's just using the people around you, don't keep it bottled up, don't let it
8 get worse, be open with someone'. This expression of emotion and being open and
9 honest to others appeared to help coaches manage the evidently stressful nature of
10 coaching by preventing the accumulation or prolongation of negative emotions. Several
11 coaches also referred to the importance of being able to encourage emotional expression
12 within their athletes, which was depicted as an important aspect of being able to aid
13 athletes in their emotional management. Telling athletes 'not to fight their anxieties' and
14 'getting their [athlete] view on what's happening if it is something emotional' were
15 described as useful strategies to help athletes express their emotions. In particular, one
16 coach referred to the Chimp Paradox analogy [cf. 29] when discussing the importance of
17 letting athletes express negative emotions

18 It's just their chimp bouncing around, fair enough let their chimp bounce around a
19 bit... go and just vent your frustration. I suppose it's a tactical thing in knowing, is
20 there something that I need to do today that means when we come back tomorrow
21 we are going to be cleansed of this.

22 *Attribute development*

1 In addition to the nine psychological attributes identified, coaches also identified
2 factors they believed had influenced the development of their attributes throughout their
3 professional coaching careers. The three higher-order themes representing
4 developmental factors included: (a) education, (b) experience, and (c) conscious self-
5 improvement. These higher-order themes were coalesced under the general dimension of
6 *attribute development* (see Figure 2).

7 *Education.* Several coaches discussed how coach education had positively influenced
8 the development of their psychological attributes in two discrete manners: (a)
9 professional coach development courses, and (b) mentors. Many coaches discussed the
10 importance of professional coach development courses where greater emphasis was
11 placed on courses that coaches were either currently involved in or had more recently
12 completed in terms of the length of their professional career. Such courses were
13 discussed in relation to addressing coaching needs and helping coaches to identify areas
14 of personal development, as noted by one coach ‘It was the UK Sport elite coach
15 programme... a lot of the focus was also looking at ourselves. So what do we need? How
16 do we see ourselves? What are our strengths and weaknesses? What should professional
17 coaches look like?’ These courses were regarded as highly beneficial considering the
18 main focus was directed towards assisting coaches in their own personal development:

19 We did some psychology courses and I thought it was going to be mental
20 imagery and that kind of stuff but it was actually quite a lot of self-reflection
21 stuff and mindfulness. So I think I try and use that on myself... what can I do to
22 improve myself?

1 Having a mentor to direct, advise, and provide support was also considered a key
2 factor in developing psychological attributes by several coaches. In particular, it was
3 apparent that having regular meetings with mentors provided coaches with opportunities
4 to discuss coaching issues and formulate potential solutions. This form of discussion
5 provided confidence in the coaches' ability to effectively deal with such issues.

6 *Experience.* The higher-order theme of experience revealed ways in which coaches
7 believed that their psychological attributes had developed over time through a multitude
8 of experiences throughout their career. Such experiences were categorised into two
9 lower-order themes: (a) competition, and (b) critical incidents. Many coaches believed
10 that their psychological attributes had developed through experiences within competition
11 environments. In one respect, gaining repeated experience at high profile competitions
12 caused a 'desensitisation' to the status associated with the event, which in turn affected
13 how coaches' appraised and behaved in competitive environments, 'I've learnt very well
14 that when I'm standing there there's actually absolutely nothing that I can do, it really is
15 down to the athlete'. In another respect coaches felt that they learned a lot about
16 themselves when in highly pressurised environments in terms of their psychological
17 strengths and areas of development. This then provided the foundations for actively
18 developing specific areas such as emotional control, confidence, and focus.

19 Several coaches discussed the importance of critical incidents that instigated a
20 change in coaching practice and caused a 'catalyst' for personal development. Such
21 incidents tended to be eye-opening experiences that resulted in the conscious
22 development of specific psychological attributes that developed over a prolonged period
23 of time. For example, one coach described how one situation in a competitive

1 environment resonated with him for causing him to learn how to effectively manage and
2 display his own emotions in front of his athletes:

3 In terms of being on the competition floor I'm completely calm, your heart
4 does race a little but you learn to mask it. I remember he [athlete] looked
5 scared and I looked scared and I think I learnt from that. It was a bit of a
6 catalyst of change really because I thought 'actually he's completely read me'.
7 My mentor coach said 'you look terrified out there, your athlete will pick up on
8 that' and that was the best piece of information I was given.

9 *Conscious self-improvement.* The majority of coaches emphasised the importance of
10 conscious self-improvement when discussing how they had developed their
11 psychological attributes over the course of their coaching careers. This higher-order
12 theme was categorised into three lower-order themes: (a) reflective practice, (b)
13 identifying and improving areas of development, and (c) observation.

14 Nearly all coaches identified regularly utilising reflective practice within their
15 coaching which was perceived to have a positive effect on the development of
16 psychological attributes. Having 'self-reflection moments', 'being really receptive to
17 thoughts' and 'being critical of yourself' allowed coaches to accurately and honestly
18 identify and appraise both their strengths and areas of development. Being able to
19 identify areas of development and put in place action plans was considered highly
20 important as it allowed coaches to engage in constant self-progression and, over time,
21 gain increased self-understanding. Three coaches referred to using video analysis to
22 observe their own coaching performance to identify what was perceived as effective

1 coaching behaviour and potential areas of improvement that could enhance coaching
2 effectiveness if addressed:

3 I watched a video back and I thought that I was not really showing that I was
4 nervous but when I watched the video back and the camera kept on going to
5 me... I can see that I'm trying not to look nervous... I'm not a serious person
6 whereas my face was so serious and that's a sign that I'm nervous because I
7 wasn't my normal self. So that was an issue I wanted to address.

8 Regularly observing other coaches' behaviours particularly in competition
9 environments, enabled coaches to distinguish between what was considered effective
10 coaching and that considered detrimental to athlete performance and wellbeing. Such
11 observations enabled coaches to assess their own coaching practice and evaluate ways in
12 which they felt they could be most facilitative to athlete performance and development.

13 I will watch them [other coaches] and I'll think 'that's really poor coaching
14 behaviour'... So I think by watching other coaches' behaviour that enabled me
15 to see, to step away and think 'actually what is good coaching behaviour and
16 what is going to help people succeed?' And by watching what didn't succeed
17 and what I perceived as poor coaching helped me sort of learn that's how I
18 need to approach it on the competition floor.

19 **Discussion**

20 The purpose of the present study was to provide a comprehensive insight into the
21 psychological attributes elite coaches perceived to underpin their ability to coach
22 effectively and how such attributes were considered to have developed. Overall, findings

1 from the data presented nine key psychological attributes and three primary factors
2 related to the development of the identified attributes.

3 While knowledge on coaches' own psychological attributes for performance and
4 effectiveness are still relatively thin compared to athletes, research is now starting to
5 build a body of knowledge in this area. To date, previous findings have indicated that
6 psychological attributes such as confidence, focus, communication and emotional
7 control [17, 20] are important for coaches to perform in pressured situations (e.g.
8 Olympic Games). Findings from the present study identified psychological attributes
9 such as confidence, resilience, focus, emotional awareness, and emotional management
10 demonstrating some consistency and contribution to existing research. These findings
11 also support the notion that coaching is more than the simple transmission of knowledge
12 and extends beyond the teaching of skills and tactics [30].

13 Coaches in the present study advocated the importance of being resilient, and
14 thus, possessing the ability to handle setbacks and deal with negative criticism. The
15 construct of psychological resilience in sport has received increasing investigation in
16 recent years [e.g. 31-33] but has primarily focused on athletes. Research to date is yet to
17 investigate the construct of psychological resilience in relation to sports coaching. As
18 highlighted by Galli and Gonzalez [34] sport is a particularly unique domain to study
19 resilience given the fact that athletes (and coaches) often willingly subject themselves to
20 highly evaluative situations where the consequences of winning and losing (being
21 successful and unsuccessful) are clear. Findings of the present study support the need for
22 further research in this area.

1 Unique to the findings of the present study, a large proportion of psychological
2 attributes identified by coaches (i.e. 9 lower-order themes) related to the emotional
3 nature of coaching. More specifically, having the ability to recognise, understand and
4 manage emotions in oneself and others, influenced how coaches both perceived and
5 responded to various situations in training and competition environments. Such findings
6 provide an insight into the emotion related cognitive mechanisms coaches utilise, to
7 consciously act in a manner perceived to be most effective. The emotional abilities
8 identified (i.e. emotional awareness, emotional understanding, and emotional
9 management) demonstrate similarities and overlap with Mayer and Salovey's [35]
10 ability model of emotional intelligence (EI). Salovey and Mayer [36] proposed a
11 definition of EI as 'the ability to monitor one's own and others feelings, to discriminate
12 among them, and to use this information to guide one's thinking and action' (p.189).
13 This definition was later refined to a hierarchy of four distinct yet related abilities,
14 including the ability to (a) accurately perceive emotions in one-self and others, (b) use
15 emotions to facilitate thinking, (c) understand emotions, and (d) manage emotions as to
16 attain specific goals [37]. It has been argued, 'the challenges, tensions, and dilemmas
17 faced by coaches are not just cognitive or social in nature, but are emotional phenomena
18 and need to be understood as such' (p. 66) [38]. Yet emotionality research within the
19 coaching domain is scarce, with recent calls for research investigating emotions in sports
20 coaching [39].

21 To gain a comprehensive understanding of the role of emotions in sporting
22 performance, the construct of EI has received increasing research interest. To date, this
23 limited existing literature has primarily focused on the relationship between EI and

1 athlete performance [e.g. 40, 41]. In relation to coaching, Thelwell et al. [42]
2 investigated the relationships between EI and coaching efficacy. Collectively, results
3 demonstrated significant relationships between the two constructs and provided insight
4 into how EI relates to coaching efficacy, reinforcing the need for EI in coaches. Taking
5 into account the findings of the present study, it is apparent that coaches at the elite level
6 are very much attuned to the emotional nature of coaching and it is with a distinct set of
7 emotional abilities that a coach is able to comprehend and effectively manage the
8 emotional aspects of the sporting environment.

9 In this study, coaches identified three primary factors (i.e. experience, education
10 and conscious self-improvement) perceived to have contributed to the development of
11 their psychological attributes. Such attributes were reported to have developed over
12 time, and were not considered to be present (or as refined) within the earlier stages of
13 their careers. The present findings are consistent with previous literature demonstrating
14 the significant role psychological attributes play in talent development within sport (e.g.
15 21, 22, 43). In relation to the development of emotional abilities, several coaches
16 specifically noted that their ability to attune to the emotional side of coaching had
17 developed throughout the later stages of their careers. Only in recollection could
18 coaches' recognise and understand the importance of such abilities in relation to
19 coaching effectiveness. In retrospect, coaches believed that educational and
20 developmental opportunities addressing the emotional side of coaching in the earlier
21 stages of their careers would have been highly beneficial. This finding further aligns
22 with Mayer and Saloveys' [35] conceptualisation of EI, which states that EI is a
23 dynamic and malleable capacity (i.e. state) that people can learn and develop over time.

1 More specifically, findings lend support to Olusoga et al. [20] identifying
2 developmental factors (e.g. coach interaction, structured career professional
3 development, personal coaching experience) Olympic coaches perceived to influence
4 their ability to perform within the Olympic environment. Coaches in the present study
5 specifically highlighted that experience within competitive environments, using video
6 feedback to observe coaching performance, and being reflective on a regular basis all
7 contributed to the development of their psychological attributes. Research [e.g. 44] has
8 consistently demonstrated that the competitive sporting environment can be just as
9 pressurised and demanding for the coach as it is for the athlete. Thus, combining
10 planned pressurised situations with opportunities to incorporate video feedback into
11 debriefing sessions could provide a safe environment to expose coaches to relevant
12 pressurised environments and positively influence psychological attribute development.

13 Regarding the findings on reflective practice, the majority of coaches in this
14 study referred to using cognitive processes of self-reflection (e.g. self-talk, memory
15 recall, self-appraisal) and reflective conversations with others. Despite the fact that
16 coach education programmes typically utilise structured forms of reflective practice (e.g.
17 reflective journals) [45], findings of the present study offer support for Dixon et al. [46]
18 in their call for a more expansive view of reflective practice that moves beyond
19 traditional techniques. Accordingly, it has been advocated that there is a need for
20 innovative approaches (e.g. critical analysis, shared reflection, emotional reflection) that
21 can better equip coaches to deal with the problematic and dynamic nature of their role
22 [47].

23 *Future research and applied implications*

1 Based on the findings of the present study, future research is warranted to
2 explore the emotional abilities of coaches. Specifically, gaining an in-depth
3 understanding of how and when coaches use these emotional abilities within their
4 coaching practice will further enhance knowledge in this area. Another avenue for future
5 research would be to explore the role of psychological resilience in coaching
6 effectiveness. Exploring positive adaptation to adversity and protective factors of
7 psychological resilience could enhance current understandings of how coaches are able
8 to positively handle both the day-to-day and acute stressors they encounter.

9 The present study has provided useful information for researchers and
10 practitioners on how they can work with coaches to impact their own performance and
11 development. Sport psychology practitioners designing effective coach development
12 programmes should consider the development of specific psychological attributes (e.g.
13 confidence, resilience, focus, emotional awareness, emotional management). Providing
14 development for coaches' psychological attributes in the earlier stages of their
15 professional career, particularly the development of emotional abilities, is encouraged.

16 The present findings demonstrate that being aware of, and utilising emotional
17 information within coaching environments is perceived to influence coaching
18 effectiveness. From a practical perspective, coaches of all levels are encouraged to
19 consider how emotions influence their coaching practice. Addressing personal abilities
20 to recognise, understand and manage emotions through self-assessment could provide
21 coaches with information regarding personal strengths and outline potential areas of
22 development, which, if addressed, could enhance coaching effectiveness.

23 *Strengths and limitations*

1 A strength of this study was the sample of elite coaches investigated. In
2 particular, 10 of the participants were actively coaching at the elite level, and thus,
3 reducing potential memory bias limitations often associated with retrospective studies
4 [48]. The sample in this study included coaches from a variety of different sports to
5 enhance the generalizability of findings. However, future research may wish to examine
6 the psychological attributes of coaches from individual sports to gain more detailed
7 evaluation of the psychological attributes required in particular sports. Further, while the
8 sample consisted of 4 female coaches, it is important to note that an equal representation
9 of male and female coaches was unable to be obtained. It is well recognised that elite
10 coaching networks tend to be male dominated with higher representation of females
11 coaches found at grass roots, club and regional levels. Reports from the International
12 Olympic Committee (IOC) database [49] demonstrated that only 11% of the 3225
13 coaches at the 2012 London Olympic Games were female. This provides some
14 explanation to the difficulties presented when recruiting the sample for the present
15 study.

16 *Conclusion*

17 This study has both supported and extended existing literature by providing a
18 detailed understanding into the key psychological attributes perceived to underpin
19 coaches abilities to coach effectively at the elite level. These attributes were found to
20 have developed throughout coaches' professional careers through education, previous
21 experience and conscious self-improvement. Findings suggest that coaches would
22 benefit from coach education and development programmes specifically tailored toward
23 their own development of psychological attributes in the earlier stages of their

1 professional careers. Existing literature in sport psychology offers limited understanding
2 on the role of coaches' emotional abilities, yet clearly, based on the findings in this
3 study, they are important for coaches to develop.

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Psychological attributes underpinning coaching

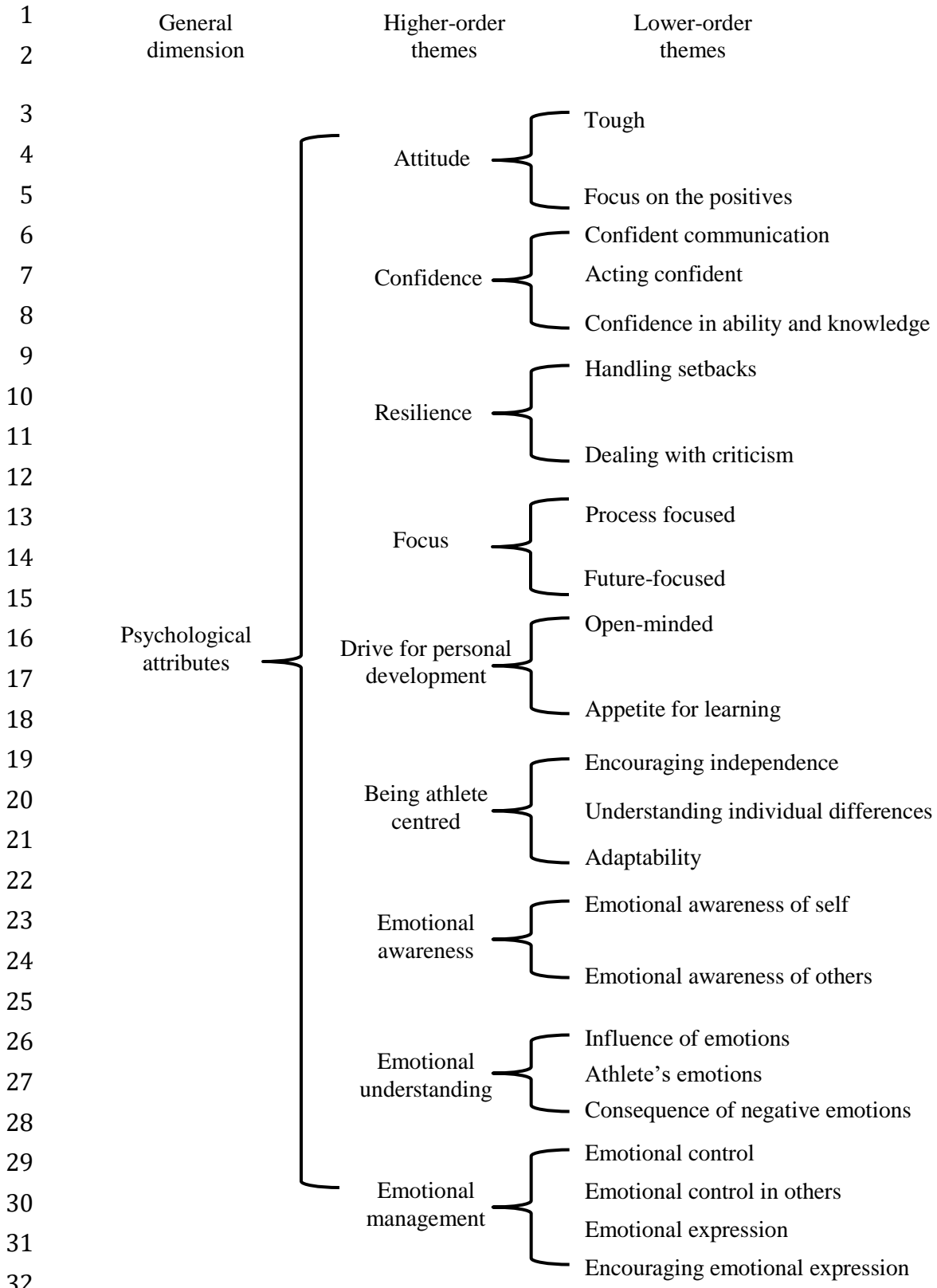


Figure 1. Psychological attributes perceived to underpin coaching effectiveness at the elite level

Psychological attributes underpinning coaching

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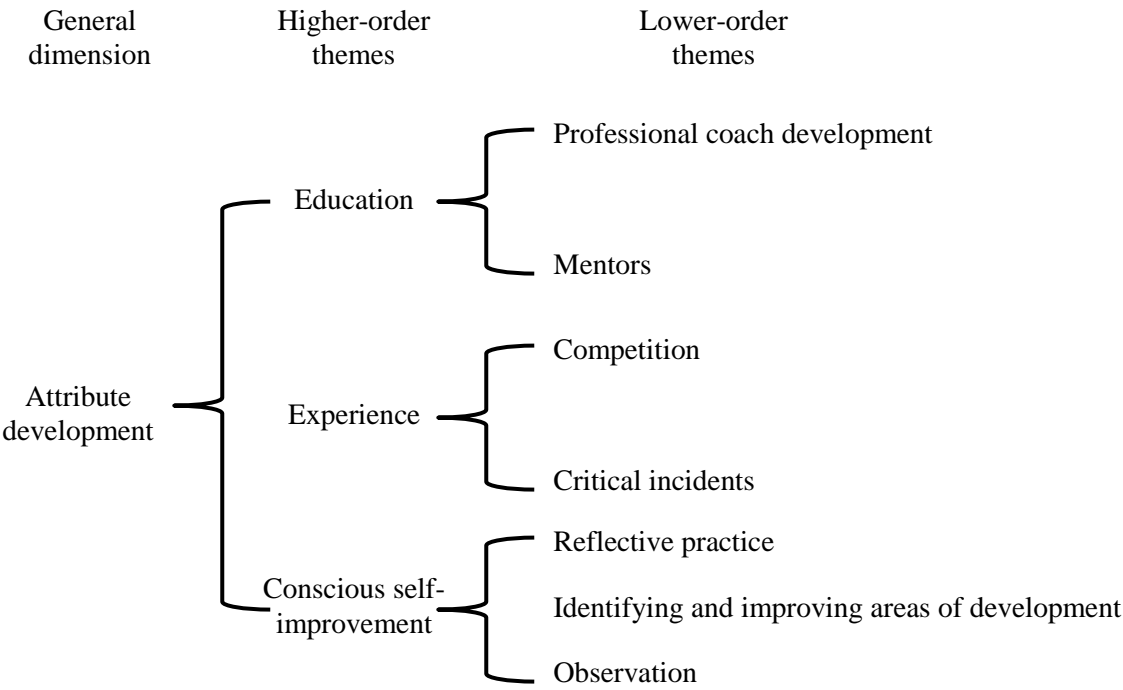


Figure 2. Factors perceived to influence psychological attribute development