

# Developing a unified psychological model of coaching and mentoring in supporting the learning and development of adolescents

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## Abstract

Coaching and mentoring have been studied extensively with specific regard to learning theories; however, there is a lack of coaching and mentoring research that is both grounded in psychological theory and evidence-based in the real world. This paper suggests an innovative framework presenting two distinctive ‘research journeys’, namely, mentoring in informal education settings and coaching in formal education settings. The combined evidence reveals that coaching and mentoring in supporting the learning and development of adolescents involves complex and subtle psychological, social, emotional, cognitive and contextual interactive processes for all participants. The paper proposes a unified psychological model of coaching and mentoring for those involved in supporting the learning and development of adolescents and describes the dynamic processes.

**Key Words:** Coaching, mentoring, education, adolescent, psychological

## Introduction

The process of coaching and mentoring is most associated with learning and it has been increasingly used in the discourse of education (Hargreaves, 2005; Claxton, 2008). More recently the process of coaching and mentoring has moved into schools, youth and community settings working with children and adolescents with a focus on ‘learning mentoring’ to remove barriers to learning, and changing attitudes and behaviours (DfEE, 1999; Cruddas, 2005). For instance, research has been done in the coaching of strategic learning at secondary school level (Hamman *et al.*, 2000), coaching for developing reading skills (Hasbrouck & Denton, 2007), coaching for enhancing academic performance and GCSE grades (Passmore & Brown, 2009). However, there has been a lack of empirical research systematically looking at how coaching and mentoring can facilitate adolescent development and learning, especially from a psychological perspective.

The challenge in this paper is to unify the more recent concepts of coaching and mentoring when used with adolescents, on the basis that they are both committed to learning and development whatever the need, context or duration, to unify the learning and psychological theories that underpin them and to report the process of field testing them in real-world settings. We argue that the empirical approach should be fundamentally different from traditional ‘scientific’, tightly controlled, laboratory-based investigations. Therefore we originated a combined action research methodology. The findings have been combined to construct a visual model of coaching and mentoring with a descriptive account of the dynamic processes involved, in the hope that it is meaningful and transferable to most real world contexts.

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The following section provides a critical review of the contemporary concepts and models relevant to coaching and mentoring in adolescent learning and development. The review concludes with identification of the gaps in the research and a set of basic characteristics, essential to an integrated psychological model of coaching and mentoring, for use with adolescents in the development of positive learning dispositions as a preparation of lifelong learning.

### ***The theoretical basis***

The meta-theories underpinning our understanding of learning and knowledge construction are social-cultural constructionism (Bruner, 1996; Vygotsky, 1978; Wenger, 1999) and a humanistic, person-centered approach (Rogers, 1956, 1963) to facilitating learning and development. Learning and cognitive development is viewed as a complex, dynamic, interdependent and communicative process of social and individual aspects where knowledge and understanding are shared and co-constructed in culturally formed contexts, mediated by language and other symbol systems (John-Steiner & Mahn, 1996). The person-centered perspective sees human beings as their own best experts with an inherent, actualizing tendency toward growth, development and optimal functioning in the right social environment where people feel understood, valued, or accepted for who they are. Joseph (2006) argued that the person-centered approach is congruent with the ethos of coaching and mentoring psychology. In practice, this approach is favoured by more than 70% of coaching sources (Palmer & Whybrow, 2006).

It should be noted that the psychological theories involved in our research focus on the cognitive, affective, social and environmental aspects of learning. These entail a comprehensive, systematic investigation of the overall learning experiences of a whole person situated in specific contexts and circumstances.

Lifelong learning theory (Claxton, 1999) and learning power theory (Deakin-Crick *et al.*, 2004; Deakin-Crick, 2007) provide a radical and erudite account of the psychology of human learning. They argue that learning includes the ingredients of identities, experiences, capacities, attitudes, dispositions and relationships that emphasize the learning process and engagement. These theories suggest a new science of learning that closely relates to everyday life, which is also considered in cognitive field theory (Lewin, 1947a, 1952). The essential feature of cognitive-field psychology is that an individual's perception and reality are defined relativistically and interactively. It also states that a person's motivations and intellectual processes are deeply affected by their personal goals, which can be both short-term and long-term. It is suggested that change can only occur in a context where an individual has a detailed understanding and analysis of the psychological events and factors that currently influence their behaviour. The theory resonates with our understanding of adolescent learning, coaching and mentoring in that it is goal directed, cyclical and progressive; it acknowledges both positive and negative environmental influences on learning, as well as the complexities and subtleties of the coaching and mentoring process.

Flow theory (Csikszentmihalyi, 1997) describes an optimal state of intrinsic motivation, where a person is fully immersed in a challenging activity for its own sake, "when goals are clear, feedback relevant, and challenges and skills are in balance, attention becomes ordered and fully invested" (p. 31). The particular relevance of this theory to this paper is that the 'subjective reality' of individuals provides a unique account of people: what it is to be a learner, what they do and think, and how they feel about themselves and their changing lives. A learning coach or mentor attempts to support the learner to achieve a 'flow' state with a balance between the challenge of the task and the skills of the learner. This notion resonates with Vygotsky's (1978) zone of proximal development (ZPD) where effective scaffolding works within the distance between what a learner can do, with and without help. Moreover, a learning coach or mentor invests time, attention and wisdom to help the learner on their journey in order to develop a "powerful tool for creating order out of chaos" (p. 277). It is related to Claxton's (1999) argument that lifelong learners need to be equipped with positive learning powers for a future of complexity, uncertainty and challenge.

Dweck's (2006) self-theory suggests that people tend to develop one of two contrasting 'meaning systems': fixed mindset and growth mindset. Whilst people with fixed mindset tend to believe that their intelligence, personality and social attributes are fixed and unalterable, people with a growth mindset tend to believe that their intelligence, personality and social attributes to be malleable and can be shaped, cultivated and developed through determined, focused, effective and goal-oriented learning. Dweck argues that adults can facilitate the concept of self-esteem associated with the self-theory when we emphasize "learning, challenges, effort and strategies" (p. 129) rather than outcomes, targets and performance. This theory has significant implications in our understanding of what learning, coaching and mentoring should emphasize on.

### ***Review of coaching and mentoring models in learning***

There are a number of learning coaching and mentoring models available that have a psychological basis that influenced our thinking and directed the focus of our research to developing a more unified psychological model of learning coaching and mentoring.

Rose's Accelerated Learning model (Rose, 1999) claims to be based on neuropsychological theories of how humans learn. It covers six learning stages: a mind-set for success; acquire the facts; searching out the meaning; triggering the memory; exhibit what you know; and reflect on how you learn. However it does not meet the requirement of a 'process' model that could be applied to learning coaching and mentoring.

Rhodes (2005) suggests a youth mentoring model. This model is developed with reference to psychological theories. It assumes that four psychological processes: mutual trust and empathy in relationships; social and emotional development; cognitive development based on social-cultural theory; and identity development. However this model has a number of limitations. It is a two dimensional linear 'input/output' model that does not account for the complex and dynamic nature of learning, coaching and mentoring. It is not accompanied with clear practical guidance of how a coach or a mentor might apply relevant psychological principles in their practice or insights into how coaches or mentors might establish trusting and respectful interpersonal relationships. It does not indicate the 'position' to be adopted by the coach or mentor (i.e. lead or non-directive position) in relation to the learner or acknowledge the learners' experiences of the coaching or mentoring process, and most significantly, it has not been rigorously field-tested.

Cruddas (2005) proposed a theory-based, person-centered, capacity-building learning mentoring model. The model has six basic tenets for a learning mentor to follow:

1. The working alliance is primary in the facilitation of learning and participation.
2. Practice and person-centered, value driven and reflective.
3. Respect is a foundation value.
4. Problems and problem situations are viewed as opportunities.
5. The goal of learning mentoring is empowerment and the continued capacity for growth.
6. Equality and democracy are integral to the learning process.

In this model, learning mentors support a child or young person to focus on improvement, participation, personal development and well-being in their school environment. It concentrates on resources and possibilities rather than on deficits that may reflect a view of positive psychology (Seligman & Csikszentmihalyi, 2000). Though the understanding of 'learning' is contextualized within theories of child development, school management and education equality, the psychology of learning seems to be missing. Therefore the model serves the purpose of emancipation and empowerment (which is obviously important in education) rather than offering insights in investigating the psychological process of learning mentoring.

Cruddas (2005) provides invaluable practice-based evidence for her model in the form of 35 community based case studies. Strictly, these are not intended to critically examine and develop the model or to evaluate their effectiveness; they are intended to be more illustrative of the important tenets and components of the mentoring process and the unique contribution of learning mentors in the transformation of schools. Although Cruddas' contribution to the role and development of learning mentors in education is outstanding, unique and vital, the visual representation of the model remains two-dimensional, linear and does not account for the dynamic, cyclical nature of learning and mentoring.

These limitations have been partly addressed by Jennings' (1997) elite athlete coaching model. This model establishes a number of principles and assumptions to guide a sports coach through the coaching process and methodologically relates to Lewin's (1947b) action research methodology for investigating complex phenomena. Jennings refers to two additional processes essential to a proper understanding of his model: 'mask of competency' and the 'learning loop'. He found that performance often improved in 'quantum leaps' when the athlete was prepared to drop their 'mask of competency' and reflect honestly and openly on the 'obstacles' being encountered both on and off the field. This process is always uncomfortable for the athlete as it usually means facing up to personal limitations, inadequacies and failures. The 'learning loop' is a way of capturing the important ideas and perspectives for change that emanate from the coaching process. At a basic level it requires the athlete and coach to formally write or record the perceptions and ideas that emerge during conversations. It suggests a narrative style of writing that is meaningful to each individual. Formal reflections are shared in a later conversation in order to explore ideas further. It is assumed that this process facilitates a more complex understanding of the athlete's 'personal issue' from which ideas for change can emerge and the athlete can test experimentally. However, the effectiveness of Jennings' model is based more on subjective case reports rather than objective research evaluations. He argues that the 'action research' nature of his approach makes each coach/athlete relationship unique and therefore impossible to replicate (Jennings, 1997); however, he would argue that the high public profile of his practice provides the ultimate test of the model's effectiveness.

Other psychological approaches of coaching and mentoring relevant to learning include cognitive coaching (Costa & Garmston, 2002), solution-focused coaching (Liston-Smith, 2008) and narrative coaching (Drake, 2007; Stelter & Law, 2010). These three approaches have their strengths in informing a unified psychological model of learning coaching and mentoring. Cognitive coaching has been presented as one of the most relevant coaching approaches to educational psychologists. The coach assists the learner to identify critical elements in their thinking, adopt accurate, useful cognitions in order to develop relationships, improve decision making and achieve greater performance (Auerback, 2006). Solution-focused coaching contextualizes solutions in the learner's social contexts as a result of their personal and social resources (Simon & Berg, 1998). This approach emphasizes formulating coaching questions about learning based on the learner's resilience and self-efficacy, the understanding of language and dialogue as creative and collaborative processes without a diagnostic structure. Narrative coaching, highlighting the importance of storytelling, assumes the dynamic, relational and multifaceted nature of identity (Drake, 2008). The coach should help the learner to build an identity from which the desired behavior is a natural response. This process is supported by sensitive questioning to get in touch with the implicit, embodied and reflective dimensions of learner's being.

None of these models adequately account for the complex learning processes involved when coaching or mentoring young people in either formal or informal educational contexts. However, the process of reviewing the literature has identified a number of research questions, the answers to which have the potential to contribute to the construction of a unified psychological model of learning coaching and mentoring in the development and education of adolescents.

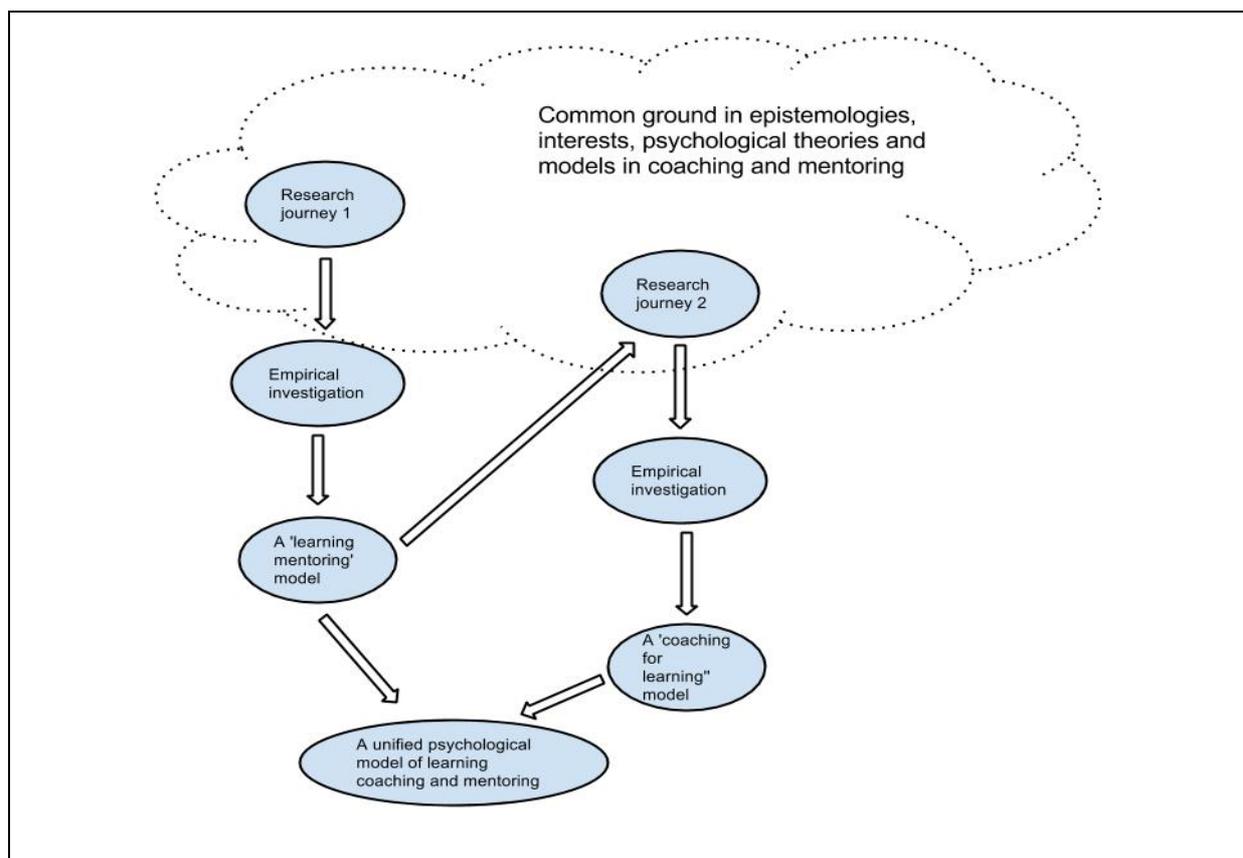
### ***Identification of the research questions***

1. What are the significant psychological factors, principles and processes in coaching and mentoring adolescent learning and development?
2. How can the answers to the above question be used to construct a unified psychological model of learning coaching and mentoring from a systemic perspective and how can these factors, principles and processes be integrated?

The following section sets out the research approach that was adopted to address the above research questions, consistent with the meta-theories.

### **Methodology**

The methodology of our research combines two distinctive ‘research journeys’ conducted by different researchers philosophically positioned in participatory pragmatism (see Figure 1). The first research journey was mentoring adolescents in an informal educational setting for the purpose of improving social, emotional and academic performance. The findings of the study led to the emergence of a ‘learning mentoring model’ that provided a foundation for the second research journey. The second study was undertaken to coach secondary students to develop positive learning dispositions in a formal educational setting. A ‘coaching for learning’ model also emerged from this study (Wang, 2013). We provide a brief description of these two studies and then combine our research findings to propose a unified psychological model of coaching and mentoring for use with adolescents.

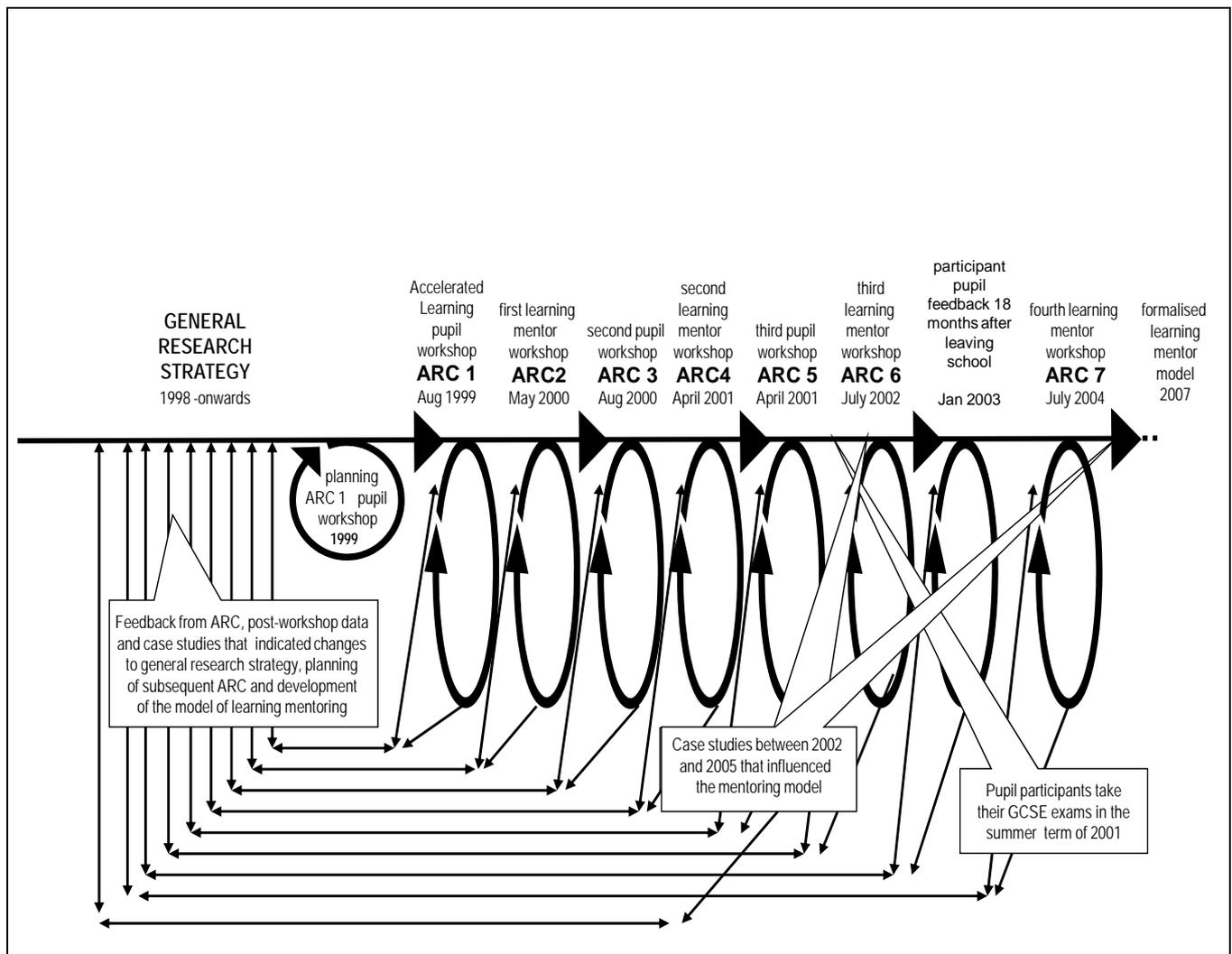


***Figure 1: The two research journeys of our methodology***

**Research journey 1: Mentoring for learning and development in an informal educational setting**  
**Research design**

The first research journey was undertaken between 1999 and 2007 when the author was the Principal Educational Psychologist in the London Borough of Newham. There were three components to the research design. The first was Lewin’s action research approach (Lewin, 1947b). The second was a quasi-experimental method to find out if aspects of the mentoring process impacted on participant pupils’ GCSE exam results. This was done using a combination of multiple regression analysis and analysis of variance. To test the effectiveness of the emergent model a series of case studies were undertaken with adolescent subjects considered to be ‘lost causes’ in Newham’s school system.

In total there were seven successive exploratory workshops referred to as Action Research Cycles (ARCs), (see Figure 2). ARCs 1, 3 and 5 were pupil mentoring workshops followed respectively by ARCs 2, 4, 6 and 7, which were designed for training secondary learning mentors. ARC 1 was the only extensively planned workshop with the objective to introduce secondary pupils to Rose’s (1999) Accelerated Learning Model. Each subsequent workshop was planned from the emergent discoveries and findings of the previous workshop. As a model of learning mentoring emerged, opportunities arose to test it rigorously in a number of case studies between 2000 and 2005.



**Figure 2: Action Research Cycles (ARC) in Research Journey 1 (adapted from Lewin, 1947)**

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### *Participants*

The participants in ARCs 1, 3, and 5 were 14 year-old pupils from a Newham secondary school. The school averaged only 14% '5 As to Cs' in their GCSE exams between 1994 and 2000. Participants were from a population of 174 pupils about to embark on their two year GCSE exam programme. An ethical non-probability sampling method was used to provide a sample of 45 volunteers who expressed a wish to participate in the three mentoring workshops.

The participants in the four learning mentor training workshops were from a population of 30 newly appointed secondary school learning mentors. The participants in the individual case studies were Newham secondary pupils considered to be on the verge of permanent school exclusion as a result of their extremely challenging behaviour.

### *Ethics*

The above mentioned combination of methodologies is consistent with the author's epistemological and ethical positions, namely Cziko's (1995) 'universal selection theory' that is analogous to the process of natural selection in evolutionary biology. Cziko's theory combines the epistemologies of Popper (1963); the notion that knowledge and understanding emerges from the rigorous testing of hypotheses; Kuhn's (1962) proposition that new knowledge emerges from paradigm shifts or quantum leaps and Capra's (2003) view that meaningful research in psychology is unpredictable with complex interaction effects between the factors under investigation.

All elements of the research were approved by the ethics committee for doctoral research at the University of East London.

### *Research process and data analysis*

The first pupil workshop (ARC 1) involved 35 pupils and 12 adult support staff, including the author as lead presenter and mentor. It was designed as a three-day residential programme located at Newham's outdoor training center during the summer break of 1999. All adult participants were trained in the elite athlete coaching model developed by Jennings (1997). The programme included daily challenging classroom and outdoor learning activities based on Rose's (1999) Accelerated Learning model.

There were a number of unique features of ARC 1. First was the employment of specialist staff to run a range of activities during the evenings. These included trainers of 'circus skills'; drama specialists; a performing arts consultant; a nationally acclaimed potter; an art teacher who specialised in making human face masks and an elite athlete coach from the USA. The aim of these sessions was to give pupils the opportunity to apply learning 'the accelerated way' to a range of non-academic challenging activities. Second, to comply with Jennings' coaching model, each Accelerated Learning session was followed by a short reflective conversation of participating adults to plan the changes needed in subsequent sessions. A lengthier reflection session was also included at the end of each day to plan changes in the following day's programme. Third, was the employment of two professional film crews commissioned to record all the Accelerated Learning sessions and evening activity sessions; all adult reflective conversations; scheduled feedback interviews with groups of pupils that focused on their learning experiences; and any spontaneous pupil comments during meal times and social periods. These unique elements were essential to capturing the process of pupils and adults learning together and to comply with Lewin's (1947b) original action research requirements.

The primary source of data from ARC 1 was 27 hours of high quality recorded video tape. An eight-stage qualitative data management strategy was devised to analyze this data following recommendations by Miles and Huberman (1994). The three main findings were:

1. Adolescent pupils seemed to know a surprising amount of factual information about the learning process and were not especially motivated to learn about Accelerated Learning.
2. Pupils' primary needs were to develop and strengthen the emotional and social components of their learning.
3. Pupils asked if they could be mentored when they returned to school to start their GCSE programme as they were not confident that what they had learned would be valued and encouraged by their teachers.

In addition, pre and post workshop self-evaluation data of pupils' confidence levels as learners revealed that average confidence levels improved by 20%. Pupils also wrote reflective comments of their workshop experiences that included a number of suggestions for improving future workshops.

A significant outcome was the positive relationships that built up between pupils and adult participants during the workshop programme. Pupil feedback suggested this was because adults were willing to respect their views and feedback about the workshop and to amend the programme accordingly.

The results from ARC 1 provided insights regarding the important elements of a learning mentoring process for adolescents and its underlying psychological principles. However it was clear that ARC 1 was the beginning of a research process investigating the phenomenon of learning mentoring and more focused investigations would be needed before it could be modeled.

To respect the wishes of participant pupils, arrangements were made to follow-up ARC 1 with school based initiatives. An INSET session was delivered to the participating school's teaching staff about the summer workshop and its findings. The following pupil-led initiatives were approved by the school:

- Project 1: to design and implement a project to obtain pupil and staff perceptions of the current school reward and punishment system and a preferred system for the future;
- Project 2: for pupil participants to be trained in the 'Jennings' Learning Loop' so that they could mentor year 7 pupils.

Both projects were completed successfully and pupils presented the findings of project 1 to the school's senior management team. As a result the local authority and school supported a second pupil workshop that became ARC 3. The local authority also agreed that the Jennings' Learning Loop coaching method could be integrated into the training programme for newly appointed learning mentors. This became ARC 2. To ensure Jennings approach was introduced correctly, arrangements were made for Dr Jennings to join the project to help plan and run both ARC 2 and ARC 3. ARC 2 proved so successful that funding was also arranged for him to contribute to ARC 4, ARC 6 and ARC 7.

The second pupil workshop (ARC 3) took place over two days during the summer break of 2000 at the Borough's staff training center. It was preceded by three days of training for all adult participants provided by Dr Jennings on his approach to coaching elite athletes. The workshop was designed in consultation with participating pupils with a commitment to fulfill all their ARC 1 recommendations for improving workshops.

Validation of the success of ARC 3 became evident after participating pupils returned to school for their final GCSE year. Using their own initiative, a group of pupils applied successfully for a £5,000 grant from the Prince of Wales Trust to design materials and make a video for a school based anti-bullying project. This fulfilled part of their GCSE programme. They used part of the funding to employ the learning mentor who had supported their school projects during the previous year. The project subsequently won a national award for its originality and excellence and was reported on national TV. The anti-bullying materials and video were incorporated into the school's anti-bullying strategy.

In January 2001 a group of pupil participants from ARC 1 requested a third pupil workshop to focus on GCSE exam preparation. This became ARC 5 and took place over a week-end during the Easter break 2001 and involved 25 students. The workshop programme was planned by the pupils and they decided their own workshop goals. They chose two goals: 1) to explore and test the most effective ways of revising exam subject material; and 2) to draft a personal revision programme. Both goals were met for each pupil by the end of the workshop and when the school's GCSE results were published, 35% of students obtained 5 or more A to C grades. This represented a 100% improvement on the previous year's results. However, regression analysis and ANOVA of individual participant pupil SATs and GCSE data could not determine if attending the workshops had contributed to this significant improvement as there were so many other 'exam performance improvement' activities introduced by the school during the same period. However, the analysis did reveal a significant gender difference in GCSE performance, as the boys who attended the workshops obtained better GCSE results than the girls who attended. This finding went against all local and national trends. Follow-up telephone interviews with a sample of pupils revealed that 100% of the boys reported using their revision plans while the percentage for girls was only 57%. This result suggested that the boys might have needed and made more use of their workshop experiences than the girls.

A similar survey of student participants 18 months after leaving school revealed that 73% had continued their education and planned to go to college or university and attributed their workshop learning and mentoring experiences as a significant contributive factor to this decision.

*Summary of findings for Research Journey 1: Mentoring for learning in an informal educational setting*

The first research journey suggested the following key principles and processes from which a psychological model of mentoring adolescents could be constructed:

1. The possibility that mentoring may only be needed when a learner recognises that they have a genuine problem to solve, a 'barrier' to overcome or they are highly motivated to achieve a personal goal.
2. Mentors need training and initial support from a more experienced mentor.
3. Mentoring should focus on the learner's learning process and not on solving problems for them.
4. Mentors should avoid taking on multiple roles and responsibilities (it is difficult to be both a mentor and disciplinarian!) Ideally mentors should adopt a non-judgemental, curious and 'non-expert' position in relation to learners. It is important for mentors to follow the dynamics of the overall mentoring process and not to react to or become involved in the events or 'content' that occur during mentoring. This requires considerable determination and practice.
5. In the mentoring process awareness about people and information often arrive when needed and relevant information and insights can come from unexpected sources.
6. Mentoring has the potential to help learners overcome both academic and personal barriers to their learning and development.
7. The learning process can cause irritation and distress, which should not be avoided as the mentoring process encourages learners to examine and explore such emotions in order to build emotional resilience and an ability to make informed decisions and acknowledge mistakes rather than act on impulse.
8. Listening to learners' stories, respecting and validating what they say and trusting their suggestions for change helps build their confidence, resilience and resourcefulness.
9. Learners who have positive mentoring experiences can become effective mentors to others.
10. Mentors need to recognise when a learner is mature and developed enough to no longer need to be mentored.
11. The mentoring process is cyclical in nature and can be represented visually by linked successive learning loops that look like a 'stretched spring'.
12. The learners' learning process is unlikely to be linear. There will be periods of struggle with little apparent progress followed by surprising and often unpredictable 'quantum leaps' in progress.

13. It is important for mentors to be aware of 'emergent situations' that provide unique and timely opportunities for learning that are relevant and vital to a learners' development.

14. It is important for mentors to identify, acknowledge and explore the internal and external forces that can act as barriers and motivators to learners' learning and development.

Between 2002 and 2005, the emergent model was field-tested in five challenging adolescent pieces of case-work. The successful outcomes of these cases provided sufficient confidence to attempt the construction of a preliminary model of learning mentoring that integrated psychological theory with research-based evidence. This learning mentoring model provided a foundation on which ideas of coaching for learning could be explored in the second research journey.

## ***Research journey 2: Coaching for learning in a formal educational setting***

### *Research design*

The research design was essentially an exploratory case study using a participatory approach. The details of the study have been published in Wang (2013).

### *Participants*

There were 30 Year 7 students and two history teachers in a mainstream secondary school in Southwest England who participated in the study. The teachers were specifically trained by external coaches who hold professional qualifications that have been accredited by the Association for Coaching. The teachers participated in interviews, classroom observations and the collection of teacher plans in each learning cycle. Out of the 30 students who participated in classroom observations and surveys, six students were randomly selected to join focus groups in each learning cycle. Three students joined narrative interviews twice.

### *Ethics*

CRB (Criminal Records Bureau) checks had been obtained for working with children under age 16. Informed consent, which provided sufficient information and allowed the right to withdraw at any stage of the study, had been obtained from each participant, including the gatekeeper of the school, teacher participants, student participants and their parents. Personal information concerning individual participants was protected by confidentiality and anonymity.

### *Research process and data analysis*

The study was conducted in three learning cycles. Each learning cycle began with a staff training day when teachers were specifically coached by external coaching experts and practitioners. After the training, the teachers co-designed the interdisciplinary, enquiry-based curriculum and prepared relevant teaching materials. The teachers conducted an event with students in order to clarify what the enquiry theme would be, to identify a range of enquiry questions that the students would be interested in exploring and to divide students into different groups based on their enquiry questions. This was followed by two weeks' of coaching lessons to support and scaffold students' enquiry-based learning in the classroom. During this period students were assigned tasks and required to do their own research outside school, which was supported by their peers and parents. Towards the end of each learning cycle students presented their enquiry outcomes to their teachers, peers, parents and wider communities in a public assessment event. At the end of each learning cycle, the teachers were debriefed with the findings from observations and interviews, summarized highlights of the current learning cycle and made suggestions for curricular or pedagogical adjustments for the purpose of improving the next learning cycle. The teachers reflected on the research process collectively and future activities were refined and re-designed based on these collective reflections.

The research design required a data system capable of informing ongoing activity (Bryk *et al.*, 2011) therefore data collection was embedded into the cyclical process rather than added to it. Qualitative and

quantitative methods were employed and the study was primarily driven by qualitative investigations. Qualitative methods included:

- Focus groups with students to investigate their experiences of coaching and enquiry-based learning
- Narrative interviews with students to gain information about their learning stories and how well they could talk about themselves as learners
- Semi-structured interviews with teachers to understand their experiences and practices of implementing coaching in enquiry-based learning
- Unstructured classroom observations to see what the coaching would look like in the secondary classroom context and how it would affect the dynamics between teachers and students
- Teachers' plans and students' enquiry outcomes after each learning cycle.

Quantitative methods included the Effective Lifelong Learning Inventory (ELLI) online questionnaire measuring students' positive learning dispositions on the seven dimensions of learning power. ELLI is a research-validated, self-assessed learning questionnaire containing 72 items, measuring what learners say about themselves in a particular dimension of their learning power at a particular point in time (Deakin-Crick *et al.*, 2004; Deakin-Crick & Yu, 2008). Learners rate themselves on each item ranging from 1 ('not like me at all') to 4 ('very much like me'). The teachers and the technician staff in the school were trained how to use and install ELLI. Students were instructed and supported to answer questions as accurate as possible. 25 students completed their ELLI questionnaires *before* the learning cycles and 22 students completed their ELLI questionnaires *after* the learning cycles.

All of the qualitative data was analyzed, both manually on the transcripts and using QSR Nvivo 8 software for a variety of themes using a coding scheme. Braun and Clarke's (2006) thematic analysis framework was adopted for analyzing the data from semi-structured interviews and focus groups. Students' narrative accounts were examined using narrative analysis. The author designed an analytical framework for the observational data, focusing on verbal, non-verbal languages and relationships between teachers-as-coaches and their students. Quantitative data was statistically analyzed. Wilcoxon Signed Test was conducted to see whether coaching had any influence on seven dimensions of learning power before and after three prototypes. A Critical Synthetic Analysis Framework was originated to synthetically analyze different types of data across three learning cycles.

#### *Summary of findings for Research Journey 2: Coaching for learning in a formal educational setting*

The second study revealed the following key results:

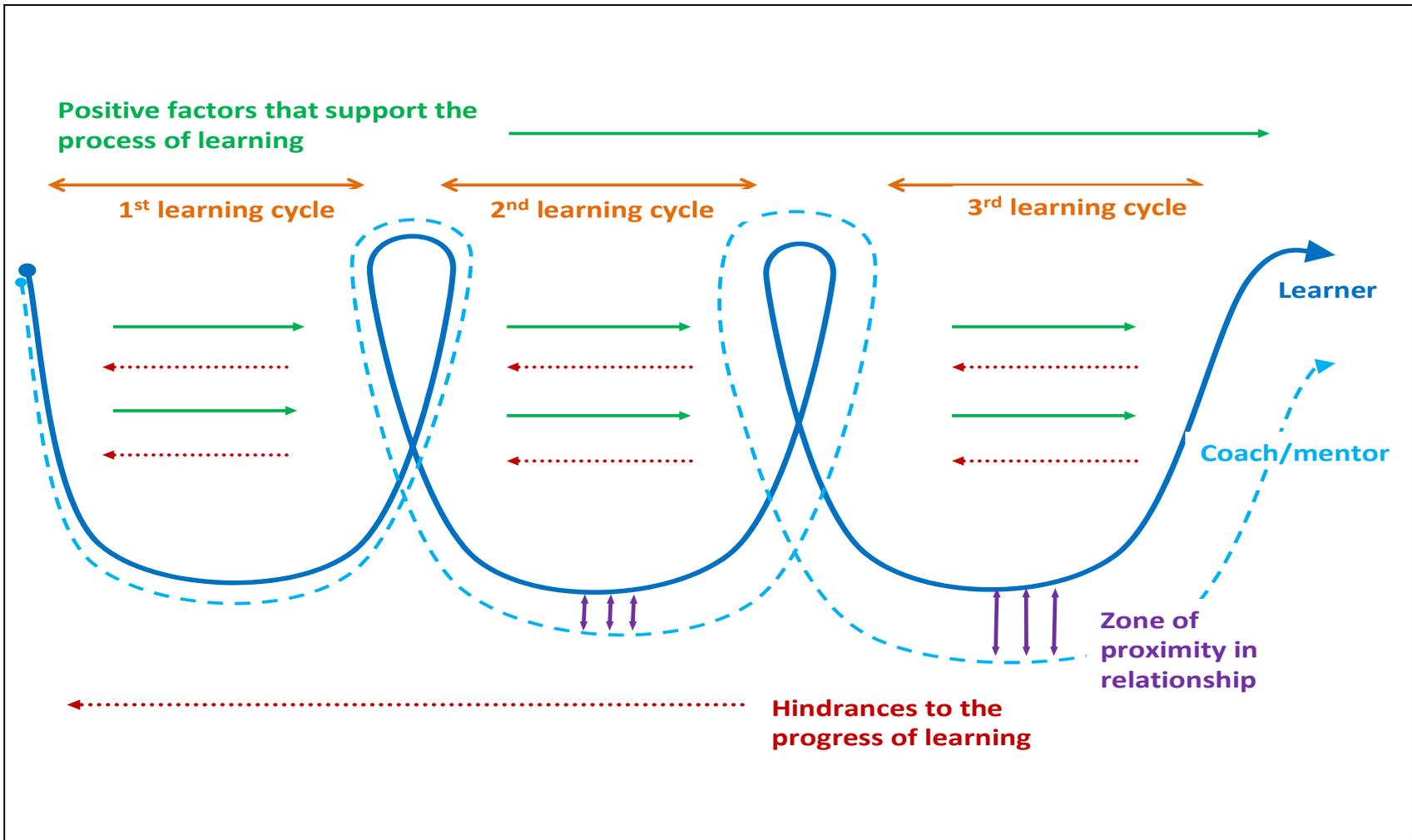
1. The enquiry approaches in the three learning cycles took three organically evolving processes that naturally occurred in the current context. Each enquiry approach differed from each other in terms of focus, goals, strategies, materials, topics, grouping, and coaching interventions.
2. There was a strong relation between the structure of enquiry-based learning and coaching approach: the looser the enquiry structure, the more non-direct the coaching approach became and the more authentic students' learning outcomes appeared to be.
3. During the coaching process, teachers seemed to experience a mixture of different roles in coaching relationship: a knowledge expert, a coach, a mentor and a counsellor. Teachers should be equipped with sensibility to respond to the individual learner's need in particular situations and an ability to make professional judgments regarding when and which role to take in different contexts.
4. Teachers were adopting and adapting different roles more naturally. They gradually obtained an 'ownership of coaching' and deepened their understanding of coaching theories through practice, which indicated that coaching was beneficial for teachers' continuing professional development.
5. There were major differences in instructional styles of conventional teaching from coaching. When teachers were coaching, they did significantly less talking and information transmitting in the classroom in general, instead they offered more freedom, encouraged interdependency and co-construction of knowledge and handed responsibility over to students.

6. The students' engagement level had increased and learning relationships and positive learning dispositions had developed significantly during the academic year. Teachers and students in coaching lessons utilized rich verbal and non-verbal languages to achieve different purposes in coaching conversations. Active listening, open questions, paraphrases, summaries and feedbacks were frequently used by teachers, together with eye contact and other body language that indicated recognition and encouragement.
7. Students were taking an active role in the coaching conversations and there was an increase in collaboration between them. In contrast, non-coaching lessons were characterized by teacher-led communication and content orientation. Students were passively responding to learning and there was less authentic engagement, less dialogue among peers and less on-task behaviour.
8. Coaching optimized students' learning experiences in terms of offering more personal choices in learning and more personal connections to their enquiry topics.
9. Coaching helped to scaffold the enquiry process so that students could gain feedback and guidance when they did research, or mind-mapping.
10. Students had various responses to coaching relationships and they were becoming more critical about the overall experience of 'being coached'. It was discovered that learners expected a balance between 'teaching' elements and 'coaching' elements, which indicated that learning coaching in secondary education could not be the same as life coaching or executive coaching in terms of the knowledge construction approach.
11. Students' learning relationships, autonomy, self-awareness and learning agency were greatly fostered. They were more able to articulate their learning stories and experiences and what they would like to achieve in future learning. The narrative accounts also showed fostered confidence and self-efficacy in learning.
12. Learning power has been developing as a whole, particularly *learning relationships*, *resilience*, and *changing and learning* were mentioned mostly by students. However, Wilcoxon Signed Test of pre and post-ELLI questionnaires did not demonstrate any significant increase or decrease in learning power dimensions due to the small sample size.

The emergent themes, experiences, feedback and analysis of a series of coaching and mentoring activities in the two research journeys, in combination with psychological principles of learning, coaching and mentoring, have led to the construction of a unified psychological model of coaching and mentoring in supporting adolescent learning and development. This is discussed in the next section.

## Discussion

The proposed model combines the findings from the two studies and gives coaches, mentors and learners a common language of description, identification and analysis which makes for greater intellectual clarity and collaboration. This is represented visually in the form of three U-shape helixes (see Figure 3). The psychological model of coaching and mentoring involves a particular discourse orientation that aims at enhancing not only learners' cognitive capabilities but also empowering them with the dispositions, motivation and confidence to exercise and develop these capabilities with increased independence.



**Figure 3: The integrated psychological model of coaching and mentoring for learning and development**

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### ***Learner's process and position***

A learner's learning process and position are represented by a deep blue spiral line that is continuous and always moving forward. It can be assumed that there is no reverse process as all experiences, including negative ones, have the potential for learning and development. Personal goals and directions of an individual's learning journey can change at any time depending on internal and external events and environments. The trend is based on the opening, deepening and evolvment of the learner's mind, heart, and willingness as an inseparable whole during a transformative developmental process (King, 2005; Mezirow, 1997, 2000).

### ***Coach/mentor's process and position***

A coach/mentor's learning process and position are represented by a light blue spiral line that is sometimes continuous and sometimes broken. This represents that fact that a coach/mentor is only present with a learner at key points in the learning process, i.e. when learner and coach/mentor initially meet and begin to build a coaching/mentoring relationship; when they meet subsequently to make learning progress, and when they meet to reflect on experiences and to review goals. These meetings are represented by a continuous light blue line. A learner is encouraged to experiment with their own learning process without the coach/mentor being present, though the 'internalized presence' of the coach/mentor can still be influential. These periods are represented by a broken light blue line. The primary point identified in the psychological model regarding the coach/mentor position is the awareness that coaching and mentoring is a *facilitative* rather than directive process (Bloom et al., 2003; Wilkins, 2000); they are seen as supporting the development of a range of positive learning dispositions (Wang, 2013). The coach/mentor cannot provide answers or solutions for the learner but rather facilitate the learner finding their own answers or solutions. Therefore a coach/mentor is metaphorically always 'behind' a learner who is encouraged to lead and take responsibility for their learning journey.

### ***Supporting factors to learning***

The green arrows represent the internal and external forces and influences that support the progress of learning and development. The internal factors include personal experiences and stories that have potential positive impact on a learner's self-awareness, personal strengths, characteristics, beliefs and motivation in learning. Recognition and development of learning power is one internal supporting factor to learning (Wang, 2013). External supporting factors include: a positive learning environment; well-scaffolded curriculum and learning process; available resource and information; supportive family, friends, schools and communities. The coach/mentor's role is to encourage the learner to unlock and foster these internal factors as well as acknowledge, build and strengthen the external factors.

### ***Hindering factors to learning***

The red arrows represent the internal and external forces that create barriers to the progress of learning and development, or deplete energy, motivation and attention. The internal hindrances and resistance in learners can be: a fixed mind-set of capabilities and intelligence (Dweck, 2006); fear of failure or anxiety about learning; low level of self-esteem and low expectations; lack of resilience and flexibility; negative image of self as a learner; underdeveloped strengths, resources and talents; and physical reasons. For secondary school students, grasping the essence of being coached or mentored is initially exceptionally challenging, and the feeling of unfamiliarity and frustration may make them shy away from engagement in the process. However, a normal level of anxiety is to be expected in coaching and mentoring, especially when a learner's attempts to change venture beyond their comfort zone, or when thinking about the deeper meaning of their learning.

The external hindrances to learning include: a negative learning environment; lack of time and resources and an unsupportive family or community. In order to facilitate the learner's development, a coach/mentor's role is to help the learner to identify these barriers, and work to overcome, weaken or remove them, as well as anticipate, avoid or manage the interference. These 'negative' intra-psychoic or interpersonal hindrances, however, can be considered as natural, potentially adaptive balancing feedback loops (O'Connor & McDermott, 1997) from a systems perspective. They are understandable

and sometimes potentially useful responses for both learner and coach/mentor to reflect on the psychological dynamics of the coaching process.

The aim of coaching and mentoring is to optimize the conditions for learning, so that barriers and resistance to learning are minimized, allowing the learner to progress and ‘go with the flow’ (Csikszentmihalyi, 1990). Also the coach/mentor needs to be aware of and be prepared for resistance and defensiveness by sharing expectations. In such conditions the helix cycles stretch out and transformation in learning and becoming can occur. What we mean by ‘becoming’ here is referring to a process whereby the individual evolves and flourishes as a learner. In this form, it is possible to integrate psychological theory and practice in order to better understand the complex dynamics of the learning/coaching/mentoring process at various stages.

### ***Zone of proximity in relationship***

The distance between the coach/mentor and learner spirals is identified as ‘zone of proximity in relationship’, representing a metaphorical space of the degree of closeness and dependency in their relationship.

This distance changes during the course of the coaching/learning process. As the learner becomes more mature and independent, it is assumed that the coach/mentor should undertake a less direct role when the learning cycles move forward, therefore the zone of proximity in relationship is enlarged throughout the learning cycles. However, the lengthening of distance does not mean that the coach/mentor and the learner are gradually separated from each other. Instead it means that the coach/mentor, as a facilitating agent, should hand over more responsibility to the learner. For instance, in the first learning cycle, a coach/mentor may provide information in the form of instruction or demonstration, informative feedback about what is right or wrong, and what to do instead. In the second learning cycle, the coach/mentor may not give so much informative guidance. The learner may be provided with approachable but challenging tasks, and the coach/mentor would scaffold the learner’s performance as it unfolds with prompts and essential information. In the third learning cycle, the learner may be the leader of learning progress. The coaching/mentoring relationship is still based on mutual affirmation, respect and trust in this joint learning system where the coach/mentor helps the learner to achieve critical conditions of learning, but the dependence on coaching/mentoring is gradually decreased. Meanwhile there is more space for the learner’s self-regulated and self-managed learning. The subtle skill of coaching/mentoring is based as much on the art of not doing things as it is on doing them. It demands the courage to ‘coach or mentor less’ in order to create a gateway to bring out the learners’ own sources and open a space for them to see things differently.

The ideal development of zone of proximity in a relationship is when the learner is progressively able to self-coach or self-mentor without their coach/mentor’s being present. This is often when a learner makes, what Jennings (1997) refers to, as ‘a quantum leap’ in learning, i.e. when no learning loops are required as the learner shifts dramatically to a new and more complex level of learning. Such quantum leaps add to a learner’s confidence, resilience and resourcefulness in preparation for the next learning challenge. This is the time for the coach/mentor to consider withdrawing from the coaching/mentoring process.

Trust and authenticity are highlighted in this move of zone of proximity in relationship. Coaching and mentoring are different from counselling, which tries to stay in a client’s comfort zone and aims primarily to heal. In contrast, coaching and mentoring primarily serve educational purposes by attempts to move a person beyond their comfort zone and stretch their capacities, in order to enhance performance, and support change and growth. Coaching or mentoring involves creating bonds of deep trust between the coach/mentor and learner so that they are willing, able and ready to face challenges, negotiate solutions, address questions, doubts and uncertainty about their learning, without the worries of a relationship being fragile, abusive, or easily jeopardized by open discussions, conflict and confrontation. An existential approach to coaching and mentoring actually sees conflict as “an essential

aspect of authentic relationship, and confrontation is necessary from time to time in order to keep a relationship real and valid” (Peltier, 2001, p. 166). This zone of proximity in relationship is central for both the coach/mentor and for the learner to gain self-knowledge through trusting relationships and learning processes.

## Conclusion

The purpose of coaching and mentoring in educational settings is to facilitate the development of positive learning dispositions, social and emotional well-being, knowledge construction and academic performance. These processes require a solid psychological basis considering the nature of learning in adolescent students. While it is not yet possible to develop fully a model of learning coaching and mentoring, a number of components can be described and synthesized in a visual representation. This paper combines the results from two research journeys that have been mutually influential, and proposes a unified psychological model that has pedagogical values in supporting the learning and development of adolescents. The inconclusive results of the studies offer several implications for further research. Firstly, we might involve a non-adolescent population in future research. Another possibility would be to use assessment tools to measure learners’ autonomy and dispositional development before and after the implementation of this model. Moreover, an in-depth phenomenological study of both learners and coaches’ perceptions of co-learning could be conducted. The model presented is a tentative model, but we are committed to further test its effectiveness, to explore its application beyond a secondary pupil population and to extend its scope to broader real-world learning contexts. The author of the first study has recently explored the model’s use in the coaching of elite adolescent athletes with positive results and has contributed to coaching developments in a number of FA Football Academies. Such initiatives provide opportunities for a plethora of further research.

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