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Coaching doctoral students – a means to enhance progress and support self-organisation in doctoral education

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ABSTRACT

In this paper we focus on individual coaching carried out by an external coach as a new pedagogical element that can impact doctoral students' sense of progress in doctoral education. The study used a mixed-methods approach in that we draw on quantitative and qualitative data from the evaluation of a project on coaching doctoral students. We explore how coaching can contribute to the doctoral students' development of a broad set of personal competences and suggest that coaching could work as a means to engender self-management and improve relational competences. The analysis of the participants' self-reported gains from coaching show that doctoral students experience coaching as an effective method to support the doctoral study process. This study also provides preliminary empirical evidence that coaching of doctoral students can facilitate the doctoral study process so that the doctoral students experience an enhanced feeling of progress and that they can change their study behaviour in a positive direction. The study discusses the difference between coaching and supervision, for instance power imbalances and contrary to earlier research into coaching of doctoral students this study indicates that coaching can impact the supervisor–student relationship in a positive way.

Introduction

This paper reports on a study exploring coaching as a method to support doctoral students in their study process by developing personal and general competences in addition to their scientific competences. The idea behind coaching doctoral students is that it can help them identify and overcome ill-defined problems that may hinder progress in their doctoral study process. The study draws on data from a large, externally funded project on coaching doctoral students, where altogether 88 doctoral students took part in coaching and evaluated the project.

As outlined by for instance Manathunga (2005) two distinct approaches to doctoral education coexist. The increase in numbers and diversity of doctoral students through the last two decades has created a need for a new approach to the organisation of doctoral education. The response from educational institutions and politicians has been to create

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more structure through streamlining doctoral education with the rise of graduate schools and support centres, training of supervisors and in some countries coursework for doctoral students (Kehm 2007; Pearson, Evans, and Macauley 2008; Lee and Green 2009). This approach to doctoral education can be characterised as a pedagogy of support and provision.

Concurrently an alternative approach to doctoral education has emerged taking a sociocultural view of the doctoral students (Boud and Lee 2005; Cumming 2010; Hopwood 2010b). Here doctoral students are seen as self-organising agents creating their own learning contexts, taking up opportunities of learning in a broader environment and drawing on a wide range of relationships including peers, co-workers, co-researchers, friends & family and collaborators within and outside university (Golde et al. 2006). This approach can be characterised as self-organisation in a distributed learning environment.

The two approaches to doctoral education should not be seen as mutually exclusive in our view; doctoral students need supportive learning structures as well as encouragement and space to develop agentive competences in the academic environment. Opponents to the pedagogy of support and provision view this approach as problematic because it reflects a view of the doctoral students as in deficit and needy, and as counter-productive in facilitating their development into independent, self-reliant researchers. However, the pedagogy of self-organisation in a distributed learning environment requires a high degree of self-direction, and often the situation is that doctoral students may not possess this degree of self-management and agency from the outset. Thus, some support mechanism is required for this to work.

Supporting the doctoral student development process

According to Lovitts (2005) the transition from 'course-taker' to 'independent researcher' is central to doctoral education. Lovitts sees the strong general competences as the foundation for doctoral students to make this transition and she states that these competences can be developed during the doctoral study with appropriate support from the supervisor and others (Lovitts 2005, 151). There are several examples from doctoral education research that show how the development of these general competences can be supported in the relationship with the supervisor, in the research group and in the broader network.

Differences in supervision were studied by Overall, Deane, and Peterson (2011) and they found that doctoral students with supervisors who encourage them to think and act autonomously while still guiding them on research tasks reported higher research self-efficacy. McAlpine and Amundsen (2009) found that supervisors could explicitly model students' agency through text feedback and discussion of thesis work with affirmations like 'That's really your contribution' (115). They also found that doctoral students engaged in activities to bring about change in their faculty developed important collective identity and agency that facilitated their identity building within the discipline. Similarly, building confidence and identity through academic activities was evidenced by Dunlap (2006) through online journal editing, which supported doctoral students in identifying themselves as contributing members of the scholarly community. Boud and Lee (2005) specifically suggest 'peer learning' as a core element in what they call a new pedagogic discourse for doctoral education. Research undertaken by Wright (2003) shows that postgraduate students who successfully completed their Ph.D. within four years in spite of

personal or supervisory difficulties often mentioned support from their broader network; they used the network to negotiate the difficulties they faced. In contrast, postgraduate students who had not completed their Ph.D. within four years seemed to have lower capability in negotiating their difficulties with the help of others. Hopwood (2010a) refers to the term *relational agency*, which he defines as the ability to act on or interpret the world with the help of others. He emphasises the importance of relationships in doctoral research and learning for example in making a difference to students' conceptual understanding and to their affective response to the challenges they face.

This extensive research points to a pedagogy where the development of general competences is addressed and supported, with self-direction and relational agency as central competences. When doctoral students have problems with progress, motivation or self-confidence, the problems are very often ill-defined and these can be a serious obstacle that hinders both self-direction and the ability to share their challenges with people who can help them (Kearns, Gardiner, and Marshall 2008). The idea behind the coaching project was that this vicious circle lies behind a significant share of instances of poor progress, and that coaching might facilitate progress in these situations. Coaching takes a starting point in the individual's problem and their urge to change and develop, and hereby contributes to define the problem.

In this study we explore coaching as a new element in the pedagogy of doctoral education. Coaching exists in many forms but in this study it is defined as individual coaching of doctoral students carried out by an external coach with a focus on the coachee's professional life, hereafter named *doctoral coaching*. In the first part of the article we analyse the participants' quantitative evaluation of their benefits from participating in coaching in relation to their doctoral study process. In the second part of the article we investigate how coaching helped the doctoral students define and confront their challenges based on qualitative data and finally we discuss the relevance of coaching as an integrated element of doctoral education and how this activity can contribute to build general competences and support the transition from course-taker to independent researcher.

Coaching as a method to support doctoral education

Emerging use of coaching is still not reflected in research

Compared to the widespread use of coaching in other settings the presence of coaching in educational contexts is minimal, although new research emphasises the potential of coaching as a valuable approach to support learning processes both in educational contexts in general (Griffiths 2005) and in doctoral education in particular (Kearns, Gardiner, and Marshall 2008; McCarthy 2012).

Research on coaching of doctoral students is virtually absent: McCarthy (2012) conducted a literature search combining 'doctoral supervision' with 'coaching' and found very little research reported, concluding that a coaching approach to doctoral supervision is a novelty in higher education research. To investigate the present state of research on coaching of doctoral students in general we conducted a systematic literature search comprising both coaching by supervisors and coaching as a supportive activity. The following databases were used: Scopus, JSTOR, Web of Science and Academic Search Premiere using the search terms 'PhD student'/'doctoral student'/'PhD candidate' and 'coaching'/

'counsel*'. Only three relevant papers were retrieved (Griffiths 2005; Kearns, Gardiner, and Marshall 2008; McCarthy 2012). The search terms were broadened to comprise 'mentoring' but no further relevant papers were found.

Through a Google search we found several support centres offering coaching for doctoral students at universities all over the world and this investigation showed that coaching to some extent is taken up as a practice to support doctoral students. This observation is supported by a study carried out in Australia in 2003 (Borthwick and Wissler 2003, as quoted in Kearns, Gardiner, and Marshall 2008) showing that General Competence Programs existed in the majority of the universities surveyed and here coaching was sometimes one of the support services provided. We hereby conclude that research on coaching of doctoral students is scarce, but coaching of doctoral students as an activity is beginning to emerge both inside universities and as an external offer.

Benefits from coaching

According to McCarthy (2012) and Griffiths (2005) the evidence-base for the effectiveness of coaching in general has increased immensely in recent years. Based on a broad literature study, Griffiths (2005) lists the general outcomes of coaching that clients consistently derive from a coaching experience. The list includes the following outcomes that are related to coaching of professionals rather than life-coaching (Griffiths 2005, 57):

- Heightened self-awareness and self-acceptance
- Improved goal-setting and goal attainment
- Increased self-discovery, self-confidence and self-expression
- Better communication and problem-solving skills
- Better reception and use of feedback; more effective thinking strategies
- Changes in behaviour
- Increased awareness of wants
- The ability to identify challenges and blocks.

Few studies specifically address coaching of doctoral students but that of Kearns, Gardiner, and Marshall (2008) is an exception. In an empirically based study where doctoral students participated in a coaching programme with external coaches Kearns, Gardiner, and Marshall (2008) show that the participants improved their abilities to manage their time, set specific times for writing, be realistic in their expectations of self, show work to their supervisor regularly and ask for help. These behaviours were associated with lower stress and improved ability to complete.

When studying coaching of doctoral students it is necessary to distinguish between coaching carried out by the supervisor and coaching carried out by an external coach. To our knowledge no empirical studies are reported on supervisors' use of coaching techniques in doctoral education, but the idea of taking a coaching approach to supervision has been developed theoretically by McCarthy (2012) and Molly and Kobayashi (2014). McCarthy's work gives convincing arguments for using coaching techniques in connection with specific challenges in doctoral supervision such as encouraging a focus on goals, developing the doctoral students' autonomy and challenging the doctoral students' thinking in a positive way. She suggests that coaching can support completion, autonomy and 'quality of thinking' in the doctoral process. Molly and Kobayashi (2014) suggest that doctoral supervisors can adopt a coaching approach inspired by coaching in leadership

relations. This can help them become more aware of their supervision style and apply a more flexible supervision approach.

Defining and contextualising our understanding of coaching

In order to explain how we understand coaching in the context of this project it can be useful to start with the boundaries to other forms of helping dialogues. Coaching differs profoundly from both supervision and most types of mentoring where the supervisor or mentor has varying degrees of interest in the outcome. It also differs from life-coaching where any topic can be brought up by the coachee, while in this project the boundary for the coaching is the doctoral study process in a broad sense – the professional life of the coachee and issues relevant for this to work, for example, work-life balance. Coaching can be distinguished from therapy, which focuses on personal and emotional healing, and from consulting and teaching focused on building knowledge. Griffiths (2005, 56) distinguishes coaching from other 'helping roles' including both teaching and therapy by stating that a key characteristic of coaching is the expectation of the achievement of specific goals and a commitment to planned action.

Coaching exists in many forms ranging from goal-oriented and solution-focused coaching on one end of the scale (Grant 2003; McCarthy 2012) to a more reflective approach with focus on narratives and identity work in the other end of the scale (Stelter and Law 2010). Stelter and Law argue that there has been a development through three 'generations of coaching'; first-generation coaching developed from sports coaching and can be characterised as cognitive-behavioural coaching with strong emphasis on goals and how to achieve them. Second-generation coaching draws attention to relations and contexts and includes systemic coaching, appreciative inquiry and positive psychology. Third-generation coaching is concerned with creating space for reflection on for instance meaning and values and these approaches include social-constructivist, narrative coaching, and protreptic or philosophic coaching. In practice coaching often combines elements from different generations and integrates reflective and action-oriented components (Stelter and Law 2010). Our approach to coaching is somewhat different from for example Griffiths (2005) and Grant (2003) in that we are less based on solution- and behavioural-oriented coaching, and we put more focus on relations (systemic aspects), the reflective space and meaning making in line with second- and third-generation coaching described in Stelter and Law (2010).

The coaching relationship and how it differs from supervision

In most academic relations for instance supervision, conferences and academic meetings the doctoral student normally has a 'novice role' in being the less experienced part in the relationship. This creates an unequal relationship where the experienced part is expected to assess the performance of the inexperienced and guide them towards the goal. Contrary to this, the coach has no expertise, interest nor intent to judge the work of the doctoral student, and this enables the creation of a room for reflection where the doctoral student can share otherwise sensitive matters, reveal doubts and show weaknesses. The relationship between the coach and the doctoral student differs profoundly from other working relations and can be characterised as an equal partnership (Griffiths 2005).

In our understanding this equal partnership between coach and coachee is defined by neither having *formal* power over the other. We do not consider it equal in the sense that power is not exercised. Inspired by Foucault (Heede 2002) we understand power as being exercised in all relations and in the coaching relationship the coach will typically exercise power when steering the process and suggesting tools and methods that could be helpful in handling the challenges, while the coachee has the power to define the topic of interest, be knowledgeable about the issue, to make decisions and draw conclusions – the coachee is acknowledged as the expert in his own life world.

In most coaching approaches a professional coach is expected to refrain from giving the answers, but instead to focus on posing questions and to help coachees reflect, develop ideas and find their own solutions. Listening and asking questions are also considered essential competences in the supervisory dialogue (Wisker et al. 2003; Godskesen and Wichmann-Hansen 2013), but as Manathunga (2007) points out in her study of supervisors as mentors, supervisors cannot escape the asymmetries of power inherent in the relationship by posing questions rather than giving answers. If supervisors are not aware of this limitation it may create tensions under the surface that contradict the purpose of mentoring (or coaching) and put a trustful relationship at risk.

To create an atmosphere of trust it is very important that the coach does not have specific interests in the outcome of the coaching. This is most easily secured by choosing a coach who is independent of the context the doctoral student is affiliated with. This is one of the dimensions where the role of the coach and the role of the supervisor differ profoundly; the supervisor will always have an interest in the doctoral study being finalised and often also a deep interest in the results that are produced.

Methods

The study uses a mixed-methods approach, combining quantitative and qualitative data and analyses. In each way the two methods shed light on the question: how and why do doctoral students' experience that participation in coaching affects their research process? We will return to the concrete research designs after a brief introduction to the doctoral coaching project and the applied coaching approach.

Context: the doctoral coaching development project

The doctoral coaching development project was based at the Technical University of Denmark (DTU) from 2008 to 2012 and consisted of two sequential projects. The main activity in both projects was individual coaching of doctoral students carried out by external coaches. The first project (2008–2010) comprised individual coaching of doctoral students at three Danish universities and explored whether doctoral candidates found coaching supportive during their doctoral process. According to the evaluation the 30 participants found the coaching sessions very beneficial (Bergenholtz 2010, in Danish).

The positive evaluation of coaching as a beneficial method in doctoral education led to the second project (2010–2012). Here the aim was to expand the project to more universities in order to gain further experiences with doctoral coaching and eventually, if successful, promote coaching as a permanent offer for doctoral students. This second project included five Danish universities and altogether 58 doctoral students took part in a

coaching course. At all five universities the doctoral students showed immense interest in participating and it was therefore easy to find voluntary participants. The doctoral students were offered up to eight individual coaching sessions of approximately one hour over the course of a year. The participants utilised this offer to a varying degree as 3% had more than 8 sessions, 63% had 6–8 session, 22% had 3–5 sessions and 12% had only 1–2 sessions. The main reasons for not utilising the full offer were that their problem was solved within few sessions (43%) or they could not allocate the time for more sessions (30%).

Of the 55 doctoral students who responded to the final, quantitative evaluation 33% were male and 76% female. Their age ranged from 23 years to 59 years, but the majority (54%) was between 30 and 39 years. Most were in a relationship or married. Furthermore, around half of the doctoral students had one or more children. A large share of the students were Danish, but 22% were from other countries around the world, such as Canada, Indonesia and Poland. The students varied within academic fields: The majority (44%) worked within the field of 'natural and technical sciences', 30% were from social sciences including commercial subjects such as economy, management and organisation and 26% were from arts and humanities.

Details about the project are described in the project report (Godskesen et al. 2013, in Danish) and the detailed results of the evaluation can be found in the evaluation report (Skårhøj and Godskesen 2013).

Coaching approach in the project

The doctoral coaching project was not initially based on a certain model or approach to coaching. The philosophy behind this design was underpinned by the common-factors theory, which states that all therapies are equally effective because of the common factors they share. The opposite standpoint is that each model of therapy has distinctive effects on the clients and these two competing views constitute a long-standing debate, which goes back to 1936 (Tracey 2003). We are well aware that the debate concerns models of therapy and not coaching, but we find it reasonable to presume that common-factors theory can also be applied to coaching as also argued by Molly-Søholm, Stegeager, and Willert (2012, 198, in Danish).

A corps of six coaches was recruited to run the second doctoral coaching project and the criteria for selecting them was a mix between specific insight into the university context and general competences that refer to the common factors mentioned above and a willingness to participate in reflection on the coaching process in the coach corps. The criteria were:

- Former experience of doctoral coaching.
- Experience from the university context: either by being a student, working at a university or that they had a doctoral degree themselves.
- Empathy.
- A coaching approach that was broader than cognitive coaching, for instance systemic or philosophical coaching or the use of multiple approaches.
- Interest in reflecting on the coaching experience together with the other coaches.

The coaches had a broad range of educational backgrounds, work experience and coaching educations. A partial aim of the project was to develop the concept of doctoral

coaching and the coaches met every three months to exchange experiences, supervise each other and try out new methods and tools. In this way the coaches got closely acquainted with each other's coaching methods and were surprised to experience how recognisable issues raised by the other coaches were. The impressions from these meetings were that the coaching carried out in the project built on methods from all three 'generations of coaching'. There were explicit examples of both cognitive-behavioural coaching, systemic methods and narrative coaching in the cases brought up in supervision.

In the project design we found it important to create a relation between the coach and the coachee that was as symmetric as possible as described above. It should be equally legitimate for the doctoral student to reflect on whether or not he/she wants to quit his study as well as having high ambitions for his work. This might not be the case if the coach is hired by the department and thereby might have an interest in the doctoral students' success in completing their studies. Even though some of the coaches worked at the participating universities, they could all be considered as 'external coaches' in relation to the organisational units where the doctoral students were situated.

Method in the quantitative part of the study

The results reported in this article build on selected data from the second coaching project. The data in the quantitative part of the study was collected from the final evaluation of the doctoral coaching project. A questionnaire comprising 48 questions was distributed to the 58 doctoral students who participated in the coaching course and 55 responded to the questionnaire (response rate 95%). The questionnaire consisted of a combination of closed questions and questions to be answered on a Likert scale (1–5), as well as space for qualitative answers. As such, the data are self-reported experiences of the coaching course.

Method in the qualitative part of the study

An element in the coaching project was an on-going evaluation where the coach sent the participant an evaluation scheme after three coaching sessions. It consisted of eight open questions to be answered and returned to both the coach and the project leader.

The data in the qualitative part of this study is based on statements collected from this evaluation. To answer the research question we chose to analyse the coachees' answers to the question: *What are your most important benefits from the coaching until now?* The full dataset comprises answers from 24 respondents, where each respondent often mentions a variety of benefits. The answers vary a lot in length and style and the full dataset is three pages long. We emphasise that the answers articulate the participants' perceived benefit from the coaching and are also aware that the dataset can be viewed as tendentious because we explicitly ask about benefits. This way of posing the question can make the respondents feel that they have to find some benefits. On the other hand the benefits they point out are in line with the answers in the quantitative study in which questions were phrased in a more open way.

For the qualitative analysis of the data we employed a thematic analysis as described by Braun and Clarke (2006). The analytical process included the following six phases:

(1) Familiarising yourself with your data.
(2) Generating initial codes.
(3) Searching for themes.
(4) Reviewing themes.
(5) Defining and naming themes.
(6) Producing the article.

Although the phases are presented as a linear process, in reality it was a more recursive process moving back and forth through the phases. In phase 1 and 2 we identified excerpts including expressions of all the different ways that the doctoral students benefitted from coaching. In phase 3 and 4 the excerpts were sorted into themes with the use of mind maps. Through several rounds of analysis the themes were re-organised and the process resulted in seven overall themes that described different types of benefits from the coaching sessions, which were named and defined. Especially in phase 2 and 5 the authors collaborated by doing separate analyses and comparing and discussing the results.

Findings from the quantitative study

Benefit and satisfaction

In the quantitative evaluation a majority of the participants stated that the coaching sessions have been a positive experience, that they have benefitted from the coaching sessions and that the coaching has prompted new reflections. The results are illustrated in Figure 1. The coachees were asked to answer the questions on a scale from 1 to 6 where 1 was 'totally disagree' and 6 was 'totally agree'. The categories have been paired resulting in three categories for a better overview.

The results indicate very high satisfaction rates (Figure 1). One could argue that as long as the coach is competent coaching is almost always a positive experience, due to the fact that it is always nice to be listened to, to get attention and have a room for reflection. The
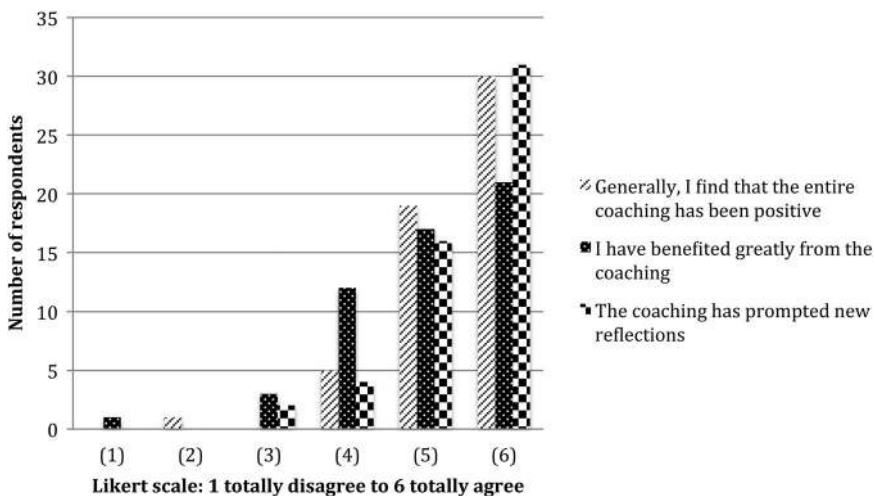
Figure 1. Satisfaction and benefit from the coaching.

subsequent questions in the quantitative evaluation aimed to shed light on how the coaching has resulted in action as changed behaviour although still based on the respondents' self-reported evaluations.

The results in Figure 2 clearly show that the participants have made use of their insights and have been motivated to work with the themes addressed in the coaching sessions. They are least satisfied with the effort they put into the coaching themselves. This can be understood from the perspective that coaching is often used as an occasion to set own goals and if these goals are not reached it will be natural to blame it on yourself.

One way to learn if students are honest about their responses is to ask whether or not they would recommend the coaching course to other students. The participants were asked the question; 'Will you recommend the coaching course to other Ph.D. students?' and 89% answered 'Yes, definitely', 9% answered 'Both yes and no' and only 2% (1 participant) answered 'No'.

Progress

Although the study is based on self-reported experiences we have tried to get deeper insights into the way coaching influenced the doctoral student's actual work by asking questions concerning experience of progress and behavioural change. As illustrated in Figure 3 the participants recognise that their progress with the Ph.D. study has increased considerably after the coaching sessions.

Furthermore, 81% of the participants agreed with the statement 'I have constructively changed behaviour after having completed my coaching' (Figure 2). These quantitative results indicate that coaching not only supports the doctoral students' feeling of progress, it also appears to affect their actual behaviour.
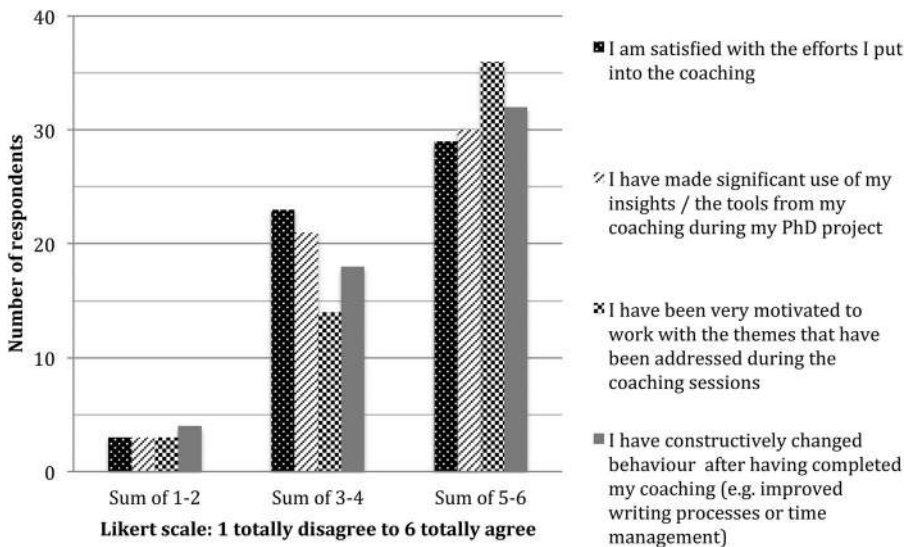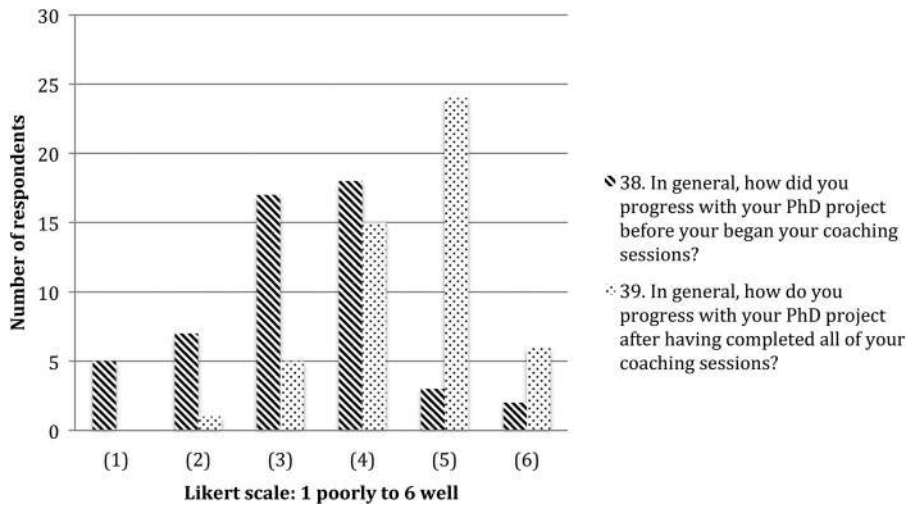

Figure 2. How doctoral students made use of the coaching sessions.

Figure 3. Doctoral students' experienced progress before and after coaching.

Topics dealt with in coaching and supervision

In the project coaching was meant to be an activity supporting and supplementing supervision and other academic activities. To shed light on the distribution of roles between coach and supervisor the respondents were asked questions about which topics they discussed, respectively, with the supervisor and the coach. The topics were rated according to the frequency at which they were addressed together with the coach and supervisor, respectively.

In Table 1 the topics are categorised according to who the doctoral students mainly discussed each topic with. It should be noted that there were examples of all topics being discussed with both coach and supervisor. A number of topics are discussed evenly with supervisor and coach, but we do not know if that covers the same content and whether they discuss them in the same way. A theme like 'time management' might be discussed with the supervisor in terms of setting deadlines while the coaching sessions could focus on tools to help manage daily work and avoid procrastination.

Not surprisingly, sessions with the supervisor were used to address matters related to the academic field whereas coaching sessions were used to address topics related to

Table 1. Categorisation of topics that the doctoral students discuss with their supervisor and the coach.

Mainly supervisor	Both	Mainly coach
Professional/academic presentations (47/15)	Planning and time management (58/78)	Dealing with stress (20/62)
Professional/academic subjects and/or decisions (56/13)	Own expectations and ambitions (40/66)	Relation to supervisor (22/58)
Challenges related to teaching (22/7)	Writing processes (56/49)	Effciency (33/58)
	Motivation in relation to the Ph.D. project (38/44)	Collegial relations/the workplace (29/56)
	Future and career opportunities (44/31)	Self-confidence/self-esteem (16/56)
	Expectations and ambitions of others on your behalf (20/27)	Personal relations (20/47)
		Benefit from supervision (13/26)

Note: (S/C) indicates frequency of topic discussed with supervisor/coach among all respondents.

time management, personal, emotional or relational challenges. In general the doctoral students marked fewer topics discussed with the supervisor than with the coach. The obvious explanation lies in the design of the evaluation: it focused on benefits from coaching and therefore the themes typically connected to supervision were not as differentiated as the themes typically connected to coaching.

The relationship between the doctoral student and the supervisor is central to the doctoral process and therefore the quantitative study included questions about the influence of coaching on supervision. Of 53 respondents 72% agreed that 'the coaching has had a positive impact on my collaboration with my supervisor' and 64% agreed that 'the coaching has helped me clarify how to make use of my supervisor'. This indicates that coaching has a positive influence on the collaboration between the doctoral student and the supervisor.

Deciding not to quit

Among the 58 coachees 49% of them had at some point considered quitting their doctoral studies, 30% seriously and 19% not seriously. As for the 30% who had seriously considered quitting, 35% replied 'yes' and 46% 'Yes, somewhat' when asked whether 'the coaching contributed to a decision about continuing the PhD'. Thus for 81% of those seriously considering quitting their doctoral studies the coaching had contributed to their decision to continue.

Findings from the qualitative study

The thematic analysis of the feedback from coachees after three coaching sessions resulted in seven themes establishing how the doctoral students perceived their benefit from the coaching sessions. The themes and selected excerpts are shown in Table 2.

A common characteristic for all the themes is that specific challenges were addressed, and that the challenges all related to handling the doctoral process. Ill-defined problems were concretised when they 'recognise problems', 'become aware of needs' and 'align with reality' and these could be seen as the first steps towards finding new ways to handle challenges.

A majority of the respondents mentioned benefits in more than one category. It might be a doctoral student who has come to realise how his work habits are not effective and he then tries to implement tools to structure work processes, or it could be a new understanding of why misunderstandings occur that lead to trying out new ways of communicating. Different themes should not be considered independent of each other, but to work with a problem or a challenge often comprises both clarifying thoughts and secondly working with the new insight in practice.

Discussion and conclusions

As we argue in the introduction, the pedagogy of self-organisation in a distributed learning environment requires a high degree of self-management and relational competences for doctoral students to succeed. In this study we investigate and assess coaching as a way to support the development of these general competences.

Table 2. Results from the thematic analysis organised as seven themes, descriptions of each theme and examples of excerpt from the data connected to each theme.

Theme	Descriptions	Excerpts
Recognise problems	This theme is about taking a meta-view of one-self and the context. To realise and admit one's own share in the problems and to realise that the doctoral study is a process that can be confusing and difficult	'Clarifying what the problem is for me' 'Became aware of disturbing elements' 'Understand why I have a problem right now' 'Awareness of own process' 'Understand mechanisms' 'Reflected on own process'
Awareness of needs	This is based on the realisation that there is not *the* right way to do a Ph.D. but instead exploring 'what is the best way for me?' This exploration is based on curiosity about 'what motivates me?' and 'how do I work best?'	'I have become aware of what motivates me' 'I have identified elements and practices that are important for a good work practice' 'Understanding the mechanisms of myself'
Confront problems	This theme comprises both expressions of realising the need for change, and concrete decisions they have taken and put into action. Changes they make include starting to use other qualities and abilities they possess. It also comprises handling unpleasant thoughts and feelings. This is about taking decisions and putting them into practice	'I have accepted the necessity to deal with difficulties' 'I have become aware that more depends on my actions' 'I have worked on sides of myself – turn them to something positive' ' … there is actually a lot I can do myself'
Align with reality	This is about accepting conditions that they cannot change anyway and to let go of the dream picture of how reality should be. By aligning their view of the world with reality they can act from there	'I accept frustration' 'I have come to accept my supervisor' 'I have become satisfied with my effort'
Enhance structure	This is based on the coach providing a range of tools for the coachee to try out, and helping the coachee to find out which tools work for them	'I have become better at planning and structuring my work' 'I have used concrete tools – elementary schemes – to get things out of my head and down on paper'
Improved relations	This theme covers a better understanding of the system and environment, leading to clarified expectations and clear communication. Through these changes relations to others are improved	'I am better at tackling my supervisor' 'Understanding my working environment and research group' 'More aware of behaviour towards others'
Support	Here the coach functions as mental support in a difficult situation. Just the feeling that someone understands and listens to their issues is a benefit. The fact that the coach is not involved in their Ph.D. and work relations is important	'Support from a person who is not involved in the research environment'

The results indicate that doctoral coaching has been in line with coaching in general since the benefits experienced by the doctoral students in the project correspond very well with the list of outcomes related to coaching generated by Griffiths (2005, 57). For instance when they indicated that they developed an awareness of needs it corresponded to 'heightened self-awareness' and 'increased awareness of wants' and 'improved relations' corresponded to 'better communication' and 'better perception and use of feedback'. The way that coaching creates a reflective space enables the doctoral students to move forward by capitalising on their own resources.

The study reported by Kearns, Gardiner, and Marshall (2008) is one of the very few empirical studies on doctoral coaching, and it is therefore relevant to compare our study with their results. Here we find that most themes overlap although they are structured differently. The themes that we identified through our thematic analysis of the qualitative data were generated in an inductive way, while Kearns and co-workers structured their results based on the model of cognitive-behavioural coaching, and this partly explains the different structure of the results in the two studies. The differences between the coaching approaches used by Kearns and co-workers and our project

concerns both the type of coaching (cognitive vs. systemic/reflective) and our project using individual coaching while Kearns and co-workers used coaching in groups at their workshops at Flinders University in Australia. In their programme Kearns and co-workers helped doctoral students identify and act on patterns of behaviour that otherwise reduced their efficiency. In our project coaching supported the doctoral students in developing competences that help them concretise their ill-defined problems and their capacity to confront them. Concretising problems involves recognising the problem and describing the specific elements of the problem in detail. Through confronting and solving problems supported by the coach they build up confidence and begin to confront problems themselves. This confidence can be strengthened when they learn to use different tools to manage the project. The two studies yielded similar results in spite of the differences in coaching methods, and this confirms the common-factors theory.

In comparing the two studies, setting measurable and time-specific goals in Kearns and his/her co-workers' programme corresponds to 'Enhance structure' in our project. The theme of realising costs corresponds to elements in our themes 'Confront problems' and 'Align with reality'. 'Action' in Kearns and co-workers' programme overlaps with our 'Confront problems' and 'Enhance structure' themes. And lastly Identifying and challenging beliefs corresponds rather well with our 'Awareness of needs'. This leaves two themes in our study that we did not find in the Australian study; 'Improved relations' and 'Support'. The latter may simply be explained by the exclusive attention that doctoral students experience from individual coaching rather than group coaching. The excerpt saying that a benefit is 'Support from a person who is not involved in the research environment' indicates the importance of having an independent coach rather than supervisors as coaches (or someone else representing the institutional context), and the special benefits that the doctoral students get from the coaching are best understood by exploring the special learning environment created in the coaching relationship. The learning space is characterised by being symmetrical and non-judgemental. Based on our description of the relationship between the coach and the doctoral student we believe that the fact that the doctoral student is considered the expert on the content in the reflective space enhances the doctoral students' self-confidence in general and promotes their abilities of approaching problems and searching for solutions. Although Kearns, Gardiner, and Marshall (2008) did not find this outcome from their programme, we suggest they might find that their participants benefited from peer support and mirroring in their programme if that was investigated.

The theme we identify as 'Improved relations' was not an outcome from the cognitive-behavioural coaching reported by Kearns, Gardiner, and Marshall (2008), as they explicitly write that 'factors relating to the student's relationship with their supervisor … did not change over the course of the workshop (87)'. In our project 72% of respondents agreed that coaching had a positive impact on their supervisory relationship, while Kearns and co-workers found that the supervisory relationships were not affected by coaching. One explanation might be that the doctoral students were coached individually in our project and in this more intimate setting had better opportunity to work with personal relationships compared with the coaching in groups in Kearns and co-workers' programme. Another explanation could be that the type of coaching actually matters contrary to the common-factors theory. Systemic coaching has greater focus on relational issues than cognitive-behavioural coaching and this

may result in building relational competences in systemic coaching. There could also be cultural differences between Denmark and Australia that could explain this, but it is not our impression that there are such significant differences between the two countries.

Hopwood (2010a) points to the importance that relational agency can have for doctoral students' learning and Wright (2003) also noted the relative success of those students who could seek help from others. The sense of an improved supervisory relationship that many coachees achieve makes us hypothesise that coaching can be a way to build relational agency. Exactly how the coaching works to build relational agency needs to be studied further. Relational agency is one of the key competences needed for doctoral students to succeed in the pedagogy of self-organisation in a distributed learning environment. The present study was not designed to investigate whether the doctoral students actually build general and personal competences and improve their progress or whether they actually build agency, confidence and self-efficacy. Research into self-efficacy beliefs (Bandura 1997) show correlations between self-reported self-efficacy beliefs and actual ability to perform (Stajkovic and Luthans 1998), and further research on doctoral coaching and self-efficacy beliefs will be helpful in consolidating and extending the present study.

In the introduction we argued that the pedagogy of support and provision also has a place in doctoral education. The thinking behind this pedagogy is that institutions need to provide the right support for doctoral students to complete their studies timeously. Coaching of doctoral students can be viewed as a support mechanism provided by the graduate school, and our results show that the doctoral students in the present study clearly feel that their progress is improved significantly (Figure 3). Furthermore, of those who had seriously considered quitting their studies, 4 out of 5 stated that the coaching sessions had contributed to their decision to continue. Thus, coaching can probably be an economic advantage for universities, in addition to the quality it brings to doctoral education through competence development.

In their review John and Denicolo (2013) call for research into interventions and activities that can positively impact students' sense of progress. The results of both the quantitative and the qualitative study clearly show that the doctoral students experience that coaching has helped them improve their sense of progress, prompted new reflections and constructively changed their behaviour. The scarcity of studies on doctoral coaching supports this finding (Kearns, Gardiner, and Marshall 2008). Many educational support centres have already integrated coaching as part of the support package based on their practice-based knowledge of the effectiveness of coaching, and this study thus confirms that coaching can impact students' sense of progress positively.

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Disclosure statement

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