

Focusing on doctoral students' experiences of engagement in thesis work

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Abstract

Little is known about what inspires students to be involved in their doctoral process and stay persistent when facing challenges. This study explored the nature of students' engagement in the doctoral work. Altogether, 21 behavioural sciences doctoral students from one top-level research community were interviewed. The interview data were qualitatively content analysed. The doctoral students described their engagement in terms of experiences of dedication and efficiency. They rarely reported experiences of absorption. The primary sources of their engagement in their thesis work were increased sense of competence and relatedness. In addition, three qualitatively different forms of engagement in doctoral work including adaptive engagement, agentic engagement and work-life inspired engagement were identified from the doctoral students' descriptions. Further, there was a variation among the students in terms of what forms of engagement they emphasised in different phases of their doctoral studies. This study contributed to the literature on doctoral student engagement by opening the nature of engagement at the interfaces of studying and working by shedding light on the dual role of doctoral students as both students and professional researchers. Moreover, this study broke down the complexity of engagement by identifying qualitatively different experiences and sources of engagement. The results encourage designing such engaging learning environments for doctoral students that promote their experiences of being competent researchers and integrated into their scholarly community.

Keywords: Engagement; Doctoral education; Doctoral experience; Scholarly community

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1. Introduction

Doctoral studies are about learning in terms of research work and becoming an acknowledged researcher in a scholarly community. This takes place at the interfaces of studying and working. Conducting doctoral research can be seen as both academic work and studying. Doctoral students take their first steps as professional researchers by carrying out doctoral research and teaching undergraduates, which both can be considered to be academic work (Brew, Boud, & Namgung, 2011; Golde, 1998; Turner & McAlpine, 2011). However, doctoral students also take courses in the role of a student (Brew et al., 2011; Golde, 1998; Turner & McAlpine, 2011). Such dual role at the interfaces of studying and working are nowadays required also more generally in life-long training to various professions in business, industry and government by the wider knowledge economy (Boud & Tennant, 2006; Bourner, Bowden, & Laing, 2001; Park, 2005) where solving complex, ill-defined problems (Alexander, 1992; Lonka, 1997) is constantly increasing.

Although doctoral students are highly competent and successful based on their academic backgrounds, earning the doctorate is always a highly challenging process. For instance, in doctoral education literature students' experienced distress (e.g., Hyun, Quinn, Madon, & Lustig, 2006; Kurtz-Costes, Helmke, & Ülkü-Steiner, 2006; Toews et al., 1997) and remarkably high attrition rates varying from 30% to 50% (Gardner, 2007; Golde, 2005; Lovitts, 2001; McAlpine & Norton, 2006) depending on the contexts have been identified as huge challenges. Especially in social sciences high attrition rates among doctoral students are a major concern (Lovitts, 2001; Lovitts & Nelson, 2000; McAlpine & Norton, 2006; Nettles & Millet, 2006). So-called "soft" or "ill-defined" domains such as the social and behavioural sciences are characterised by relatively loose theoretical structure and target of interest as well as unspecific strategies of inquiry (Alexander, 1992; Biglan, 1973a, 1973b). In such domains researchers often define and are involved in their own individual projects (e.g., Lovitts, 2001). Therefore, individualistic research structure may promote the idea of independent thinkers (Chiang, 2003). However, it can also entail separation, which, in turn, is likely to promote negative experiences (e.g., Chiang, 2003; Lovitts, 2001) and consideration of interrupting doctoral studies (e.g., Stubb, Pyhältö, & Lonka, 2011).

In order to find ways to support doctoral student persistence research on doctoral education has for a long time focused on attrition and negative experiences (e.g., Golde, 1998, 2005; Lovitts, 2001; Vassil & Solvak, 2012; Vekkaila, Pyhältö, & Lonka, 2013). Research among undergraduate students, however, suggests that by focusing on strengths, positive emotions and full functioning (Bresó, Schaufeli, & Salanova, 2011; Krause & Coates, 2008; Ouweneel, Le Blanc, & Schaufeli, 2011), a better understanding on doctoral students' engagement can be attained. This understanding provides tools for creating increasingly engaging environments for doctoral students (e.g., Pontius & Harper, 2006). Our study aimed at filling the gap in the doctoral education literature by exploring the nature of doctoral students' engagement in their thesis work in the domain of behavioural sciences.

1.1 Engagement in doctoral work

Owing to the dual nature of doctoral research, our study draws both on research on work engagement (e.g., Schaufeli, Martínez, Pinto, Salanova, & Bakker, 2002a; Schaufeli, Salanova, González-Romá, & Bakker, 2002b) and on study engagement (e.g., Fredricks, Blumenfeld, & Paris, 2004; Reeve, Jang, Carrell, Jeon, & Barch, 2004) to examine doctoral student engagement in doctoral work.

Engagement refers to a student's active involvement in a task or an activity at hand (e.g., Case 2008; Fredricks et al., 2004; Reeve et al., 2004). Accordingly, doctoral student engagement entails active involvement in the learning opportunities and practices provided by their environments. Engagement is characterised by positive, fulfilling experiences including *vigour*, *dedication* and *absorption* (Salanova, Schaufeli, Martínez, & Bresó, 2010; Schaufeli et al., 2002a, 2002b). *Vigour* refers to high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence in the face of difficulties (Schaufeli et al., 2002b). *Dedication*, on the other hand, is characterised by a sense of significance, enthusiasm, inspiration, pride and challenge (Schaufeli et al., 2002b). Being fully concentrated



on and immersed in one's work characterises *absorption* (Schaufeli et al., 2002b). Absorption is close to the flow experience in which an individual is deeply immersed in an activity that is intrinsically enjoyable (Csikszentmihalyi, 1990).

There is evidence that engaged doctoral students were likely to feel effective and satisfied with their thesis work, and remained determined when encountering challenges (Virtanen & Pyhältö, 2012). In contrast, students who suffered from disengagement from their doctoral studies, were likely to feel less satisfied and more likely to give up (Vekkaila et al., 2013). Moreover, engaged doctoral students have, for instance, been shown to attain better learning outcomes and relationships within their scholarly community (Gardner & Barnes, 2007).

Several factors contribute to engagement (e.g., Llorens, Schaufeli, Bakker, & Salanova, 2007; Reeve et al., 2004; Schaufeli & Bakker, 2004). For instance, in previous studies on doctoral education good quality supervision, support and constructive feedback (e.g., Golde, 2005; Hoskins & Goldberg, 2005) as well as meaningful interaction within the scholarly community (e.g., Gardner, 2007; Deem & Brehony, 2000; Lovitts, 2001; Pyhältö, Stubb, & Lonka, 2009; Stubb et al., 2011) have been identified as predictors of doctoral students' satisfaction, study persistence and well-being. For instance, Weidman and Stein (2003) found a link between the number of faculty-student interactions and students' involvement in their research projects. Moreover, Ives and Rowley (2005) showed that a constructive supervisory relationship was associated with students' progress and satisfaction with their doctoral studies, and hence their involvement in their thesis projects.

1.2 Engagement and dynamic interplay between doctoral students and their environments

The scholarly community often provides the primary work environment for doctoral students (Brew et al., 2011; Gardner, 2007; McAlpine & Amundsen, 2008; Pyhältö et al., 2009). Hence, doctoral students' learning is highly embedded in the practices of a scholarly community. However, this community itself is a complex, multilayered, nested entity (McAlpine & Norton, 2006) that can be defined as a discipline such as 'Education,' as a faculty, or as a specific research group (e.g., Austin, 2002; Pyhältö, Nummenmaa, Soini, Stubb, & Lonka, 2012a; White & Nonnamaker, 2008). Accordingly, the community provides various arenas and forms for student participation such as interaction with faculty, participation in international conferences, peer collaboration, working in a research group and teaching undergraduate students (Brew et al., 2011; Pyhältö & Keskinen, 2012). Further, students' involvement in the various arenas such as conducting research work, attending courses and participating in research collaboration may promote their experiences of dedication to and vigour in earning the doctorate as well as absorption in conducting research work.

The previous findings on doctoral education imply that the doctoral student engagement is regulated by a complex, dynamic interplay between the student and the environment rather than a single individual or environmental attribute (e.g., Golde, 2005; Virtanen & Pyhältö, 2012; Vekkaila, Pyhältö, Hakkarainen, Keskinen, & Lonka, 2012; Vekkaila et al., 2013). This includes that doctoral students' experiences of engagement are constantly constructed and re-constructed in the student-environment interaction. Such interaction entails the students' prior learning experiences, beliefs, goals, and the practices and culture of the environment. Doctoral students' perceptions, participation and other practices are mediated by their prior experiences and knowledge that have developed during their undergraduate studies and in their other professional careers or personal lives. The culture and practices of the environment, in turn, affect doctoral students' thinking, actions, and engagement. Accordingly, the complex doctoral student-learning environment interrelation mediates students' engagement in the doctoral process.

The dynamic interplay between the learner and learning environment (e.g., Lindblom-Ylänne & Lonka, 2000) contributes to not only whether or not students engage in their studies (e.g., Fredricks et al., 2004; Leiter & Bakker, 2010) but also to the ways in which they engage in their studies. Accordingly, the quality of the dynamics between the doctoral student and the environment is likely to contribute to the ways the student engages in doctoral work. Dynamics between students and their environment can contribute



to students' sense of *relatedness*, *competence*, *autonomy* (Deci & Ryan, 2002, 2008) and *contribution* (Eccles, 2008). Deci and Ryan (2002) have proposed that the experiences of relatedness, competence and autonomy are the prerequisites for individuals' personally meaningful actions and experiences (see the Self-Determination Theory). The sense of relatedness refers to feeling connected to others, having sense of belonging both with other individuals and with one's community, and be integral to and accepted by others (Deci & Ryan, 2002). The sense of competence, in turn, focuses on feeling effective and confident in one's on-going actions within the social environment and experiencing opportunities to express and exercise one's capacities (Deci & Ryan, 2002). When individuals are autonomous they feel as if they are the source of their own actions and behaviour even when those actions are influenced by outside forces (Deci & Ryan, 2002). That is, their actions are based on their own personal interests and values. Furthermore, it is important to feel a sense of contribution when acting in a personally meaningful way (Eccles, 2008).

Thus, the experiences of belonging, competence, autonomy and contribution are necessary in order to promote doctoral students' engagement (Mason, 2012; Virtanen & Pyhäältö, 2012). For instance, Appel and Dahlgren (2003) found that doctoral students were inspired in their studies by the opportunities available for intellectual development, feelings of having internal locus of control and academic freedom as a researcher, and chances to make a difference by their doctoral project. In addition, Stubb et al. (2011) and Pyhäältö and Keskinen (2012) more recently found that the doctoral students who experienced their scholarly community in a positive way, that is, as empowering, or who perceived themselves as active agents, less often reported lack of interest towards their own studies and considered interrupting their doctoral process less often than those students who had negative experiences or perceived themselves as passive objects. This indicates that doctoral students can be active in certain interaction arenas of a scholarly community whereas in some other communities they may participate infrequently and be more in a role of an observer. This, in turn, is likely to contribute to their engagement in doctoral work.

It follows that also students' engagement in terms of how agentic (Reeve & Tseng, 2011) they experience themselves in their doctoral work may vary. At its best a doctoral student's peripheral role gradually evolves towards active, relational agency as the student is involved more intensively in the research group's shared knowledge creation practices, and develops a sense of ownership of one's own doctoral research and identity as a researcher (Hakkarainen, Hytönen, Makkonen, Seitamaa-Hakkarainen, & White, 2013; Hopwood, 2010; Pyhäältö & Keskinen, 2012; Pyhäältö et al., 2012a; Vekkaïla et al., 2012). Relational agency (Edwards, 2005) refers to the capacity of doctoral students to work with other members of their research community in order to better respond to complex research problems (Pyhäältö & Keskinen, 2012). This means that doctoral students are not influenced only by the scholarly community but can, at least to some extent, choose their primary arenas in which to participate and take initiative, direct and re-direct their own activity and learning (Pyhäältö & Keskinen, 2012). Therefore by adopting different strategies, the students can actively modify their environment, and hence their opportunities to engage in the scholarly community in question (Virtanen & Pyhäältö, 2012) and, further, in their doctoral work.

Sometimes students' engagement in doctoral work may be inspired mainly by their work-life experience. Mäkinen, Olkinuora, and Lonka (2004) showed that especially in fields such as teacher education, law, and medicine, where the student aimed at professional development rather than abstract, theoretical understanding, the so-called work-life orientation dominated. In previous studies those university students who expressed so-called work-life orientation were interested in professional development and saw their studying as training for a certain profession or vocation (Lonka & Lindblom-Yläne, 1996; Mäkinen et al., 2004; Vermunt, 1996). They appreciated directly useful, concrete and applicable knowledge (Lonka & Lindblom-Yläne, 1996; Mäkinen et al., 2004; Vermunt, 1996). Such orientation on studying was considered to reflect practical interest rather than scientific ambition (Lonka & Lindblom-Yläne, 1996; Mäkinen et al., 2004). Brint, Cantwell, and Hannerman (2008), for instance, found in their study on undergraduate students that the culture of engagement in the arts, humanities and social sciences focused on participation and interest in ideas, whereas the culture of engagement in the natural sciences and engineering focused more on improvement of research skills, collaborative study, and the labour market. In our recent study on natural sciences doctoral students, this was not as straightforward: the students' inspiration and engagement in the doctoral work was often due to a strengthened sense of belonging and participation in the various practices



of their research community (Vekkaila et al., 2012). This suggests that students may have different ways of being engaged in their doctoral process and earning the doctoral degree. The present study focused on exploring behavioural sciences students' engaging doctoral experiences.

2. The aim of this study

This study is a part of a larger national research project on doctoral education in Finland that aims to understand the process of PhD education (see Pyhältö et al., 2009). The present study aimed at gaining a better understanding of doctoral student engagement in thesis work. In our study, the following research questions were addressed:

1. What kinds of experiences of engagement did the doctoral students describe?
2. What were the sources of engagement in doctoral work?
3. Were there qualitatively different forms of engagement?

3. Method

3.1 Doctoral education in Finnish context

In Finland, doctoral studies are heavily focused on conducting thesis research. There is no extensive separate course work required before launching the doctoral research project. In fact, course work from 40 to 80 European Credit Transfer and Accumulation System (ECTS) credits worth of postgraduate studies depending on the discipline included in doctoral studies are usually individually constructed and based on personal study plans that typically include international conferences and some methodological studies.

In behavioural sciences, an article compilation with a summary has become the dominant form of thesis (66%) during recent years (Pyhältö, Stubb, & Tuomainen, 2011). The article compilation is more dominant in psychology, whereas in educational sciences the dominant form is the monograph (a book format). The article compilation consists of three to five internationally refereed journal articles often co-authored with the supervisors and a summary that includes an introduction and a discussion bringing together the separate articles. Doctoral supervision is usually based on an apprenticeship, in both research groups and supervisor-student dyads (Löfström & Pyhältö, 2012).

In Finland, students can conduct doctoral studies full-time or part-time. The general target duration for full-time studies for the doctorate is four years. However, often the completion time for the doctorate is longer than this. According to a recent survey the average time for completing the degree in behavioural sciences is five to six years (Sainio, 2010). However, some sources indicate that the average completion time may be higher ranging from seven to over ten years (Pyhältö et al., 2011). This may be explained by the heavy requirements of earning the doctorate. The articles included in the article compilation need to be published in peer reviewed journals, students need to write the summary of them, the thesis need to be examined by two or three pre-reviewers, a student needs to defend the thesis publicly before the Faculty Council decides whether to award the doctoral degree. Long completion times may also be explained by the nature of Finnish doctoral education system, that is, doctoral studies are free for the students, the licence to conduct doctoral studies is valid for life and students can conduct their doctoral studies part-time and have other professional full-time jobs.

Although the doctoral education is publicly funded, the students have to cover their costs of living, which is typically done through personal grants, project funding or wages earned by working outside the university (Pyhältö et al., 2011). Doctoral education in Finland is more detailed described by the International Postgraduate Student Mirror (2006) and Pyhältö et al. (2012a).



3.2 Participants

The participants were 21 behavioural sciences doctoral students (female: 17; male: 4) from a major research-intensive Finnish university. All the participants were from the same case community participating in the larger national research project on doctoral education in Finland (see Pyhältö et al., 2009) and its all doctoral students were invited to participate in the study. Participation was voluntary. The case community was chosen because it represented a national and international well-established research group and was considered to be good representative of organisation of doctoral education.

Eleven of the participants were full-time doctoral students and ten were part-time. Six participants were pursuing a monograph, seven a summary of articles; eight participants were unsure of the form their theses would take. All the participants had Master's degrees, typically in educational sciences and they were in different phases of their doctoral process. According to the participants' own estimates, twelve of them were in the beginning of the doctoral process meaning that they were typically launching their research projects, collecting and/or analysing data, or writing their first and/or second article. Four were in the middle part of the process that typically included data analysis, and writing the monograph, or writing third and/or fourth article. Four of the participants were in the last part of the process that typically meant finalising the monograph or the last articles and the summary of the articles. One of participants had already graduated. All the participants were interviewed on a voluntary basis.

3.3 Interviews

Semi-structured interview (e.g., Kvale, 2007) data were collected in 2007–2008. The interviews were designed to investigate the doctoral students' experiences of their thesis process and their views of themselves within it (see Appendix 1). At the beginning of the interviews, the students were asked some background information questions about their discipline or subject, time spent on their thesis/studies, the phase of the process and time of graduation, as well as the form of the thesis and whether they were working on it full-time or part-time. The interview focused both on the retrospection of previous experiences of the Ph.D. process and on the present situation. (Stubb, 2012.)

The interview was piloted before the actual data collection. In the first stage, it was tested with four doctoral students in behavioural sciences, and minor modifications to the questions were made. Then the interview was tested with seven science students and no further modifications were required. All interviews were conducted by a researcher from the authors' research group (except one, which was done by a trained research assistant). Each interview lasted approximately one hour (ranging from thirty minutes to almost three hours). The interviews were recorded and transcribed. (Stubb, 2012.)

3.4 Analysis

The interview data were qualitatively content analysed (e.g., Patton, 1990) by relying on an abductive strategy (e.g., Coffey & Atkinson, 1996; Morgan, 2007). Hence, the data observations and prior understanding based on theories were repeatedly assessed in relation to each other in order to acquire the most optimal understanding of the phenomenon (Coffey & Atkinson, 1996; Morgan, 2007), that is, doctoral student engagement, when categorising the data.

At the beginning of the first analysis phase, all the text segments in which the doctoral students referred to engaging experiences in terms of their doctoral work were coded into the same hermeneutic category by using a grounded strategy (e.g., Harry, Sturges, & Klingner, 2005; Mills, Bonner, & Francis, 2006). Accordingly, all the text segments referring to engaging doctoral experiences from the 21 interviews were grouped together and formed the ground data for further analysis. The unit of analysis included the totality of thought referring to engaging experiences ranging from a sentence to dozen sentences. These text segments included expressions of interest, inspiration, energy, devotion, meaningfulness and positive doctoral thesis related emotions.



After this, the analysis focused on what the participants experienced, that is, the different qualities of engaging doctoral experiences. Data were coded into three exclusive main categories by relying on research on characteristics of engagement introduced in the literature review (e.g., Salanova et al., 2010; Schaufeli et al., 2002a, 2002b) as follows:

- (a) *Dedication* including participants' experiences where they expressed earning the doctorate, being a doctoral student, and conducting research and studies as personally highly meaningful and significant, and entailing strong devotion and positive emotions such as joy, enthusiasm and inspiration;
- (b) *Efficiency* including participants' experiences of having willingness to invest effort in their research work and studies, strengthened self-images of themselves as researchers and having the effective and energetic drive to conduct doctoral work, and
- (c) *Absorption* including participants' experiences of intensive situations where they experienced being fully concentrated on and engrossed in their research work and studies.

The three main categories reflected the main experiences of engagement in doctoral work. The category labelled "efficiency" came close to vigour (e.g., Schaufeli et al., 2002a, 2002b), however, the category was named as efficiency because in students' descriptions experiences of strengthened self-efficacy beliefs and an energetic drive with the research work were emphasised.

At the end of the first phase, the analysis focused on what contributed to students' experiences of engagement in their doctoral work. The text segments in the categories representing the main experiences of engagement were coded into four basic categories according to the primary sources of, that is, causes for engagement as described by the participants by relying on Deci and Ryan's (2002, 2008) as well as Eccles's (2008) works introduced in the literature review:

- (a) *Competence* including participants' descriptions where their experiences of engagement in doctoral work were promoted by development of their academic skills and expertise, learning and developing understanding of the domain and own topic, and gaining insights into their own research;
- (b) *Relatedness* including participants' descriptions where their experiences of engagement in doctoral work were strengthened by having dialogues and collaboration with supervisors, other researchers and peers, as well as participating in and becoming a valued part of a scholarly community;
- (c) *Autonomy* including participants' descriptions where their experiences of engagement in doctoral work were promoted by being in control of their own research work, and following their own interest in their doctoral process, and
- (d) *Contribution* including participants' descriptions where their experiences of engagement in doctoral work were strengthened by producing such significant scientific knowledge that make a difference, and seeing the value of their own research in practice.

A visualisation of the first analysis phase is provided in Figure 1. The agreement between the two classifiers regarding the independent parallel analysis of 30% ($f = 36$) of the text segments in relation to the main experiences of engagement was 94% and in relation to the sources of engagement was 97%. Interrater reliability measured with Cohen's kappa (κ) in regard to the main experiences of engagement was 0.91 and in regard to the sources of engagement was 0.95, indicating almost complete agreement. The text segments related to the main experiences and sources of engagement were quantified and the relation between them was analysed with cross-tabulation and χ^2 -tests.

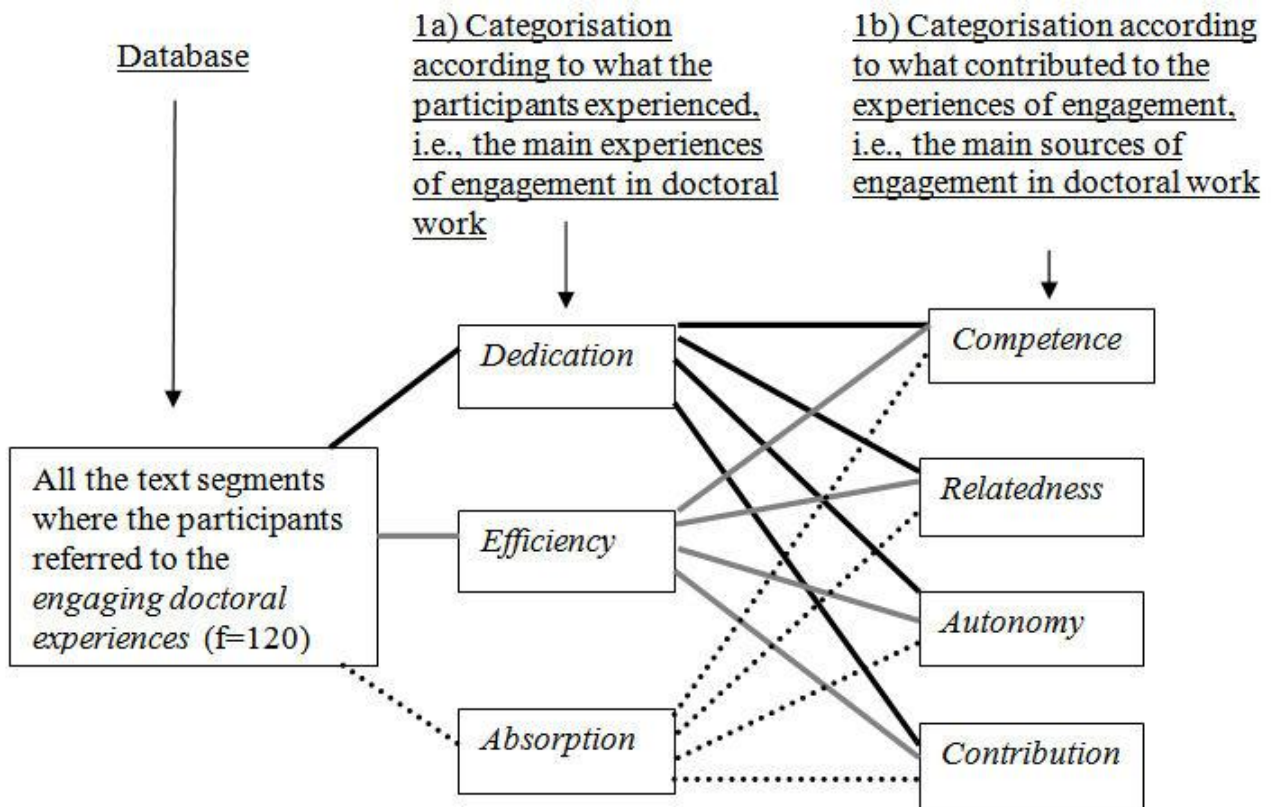


Figure 1. A visualisation of the first analysis phase.

In the second phase of the analysis, a person-oriented analysis strategy was applied. The person-oriented analysis involved that the analysis focused on identifying the forms of student's engagement in doctoral work. In practice, each participant's engaging experiences that were identified at the very beginning of the analysis from the interview data were grouped together, that is, formed own unity, and were separated from the experiences reported by the other participants. At first, the different forms of engagement presented in each participant's descriptions were investigated to delineate the initial categories by exploring the patterns, that is, differences and similarities in the main experiences and sources of each individual student's engaging experiences. Also, each participant's engaging experiences were interpreted within the larger interview context. Then, the similarities and differences in the main experiences and sources were explored across all participants' descriptions of engaging experiences. As a result, the experiences were divided into their own categories based on their differences, following the idea that the experiences presenting a certain form of engagement in one category were mutually similar, while being distinct enough from the other categories.

The categories appeared to differ from each other in terms of how the participants expressed: (1) the dynamics between themselves and their scholarly community in the engaging experiences, and (2) the source of inspiration in their doctoral work in the engaging experiences. From the participants' descriptions three categories representing the qualitatively different forms of engagement in doctoral work were identified: *adaptive form of engagement*, *agentic form of engagement* and *work-life inspired form of engagement*. In adaptive and work-life inspired forms of engagement the dynamics between the doctoral students and their scholarly community was expressed as being static in nature, that is, providing an arena for adjusting and acquiring knowledge, whereas in the agentic form of engagement the dynamic was expressed as being reciprocal, that is, an arena for dialogue. In the students' expressions the source of inspiration in doctoral work in adaptive form of engagement was adapting and conforming to the current conditions and acquiring



the knowledge and skills that were valued in the scholarly community. In turn, in agentic form of engagement creating new knowledge was more emphasised as source of inspiration in doctoral work, whereas in work-life inspired form of engagement the students highlighted the importance of applying the new knowledge and skills acquired in the scholarly community in order to solve practical problems and contribute to the work-life outside academia.

The qualitatively different forms of engagement were also studied in relation to the phase of studies. Study phase was determined based on students' own evaluation of whether they were at the beginning, middle, or end of their own doctoral process. Although in the participants' descriptions typically at least two of the forms of engagement were present, one of the forms was emphasised in their descriptions. In the results, we provide quotations of participants' descriptions that were translated from Finnish into English.

4. Results

The results suggested that there was a variation in the participants' experiences of engagement. The doctoral students' descriptions of *dedication*, *efficiency* and *absorption* ranged from experiencing their doctoral work as highly meaningful to having energetic drive while conducting it. Moreover, the sources of engagement varied from developing an understanding of one's own research into belonging to the scholarly community. The students also described qualitatively different forms of engagement.

4.1 Main experiences of engagement in doctoral work

The participants emphasised experienced *dedication* (53%) in their doctoral work (see Table 1). For instance, the students perceived earning the doctorate and training as personally meaningful and significant, and described their strong devotion in their doctoral process and interest in their research. They also expressed extremely positive emotions including pleasure, satisfaction and joy. They were also enthusiastic about being doctoral students and pursuing their PhDs in the training program. For instance, as one of the students described:

I like this graduate school because every time we have here a seminar, I leave it with a growing zeal. I think that conducting research is the right work for me. Participating in this graduate school and its seminars really promote my excitement and inspiration. (P10)

The students also often highlighted a sense of *efficiency* in conducting their doctoral work (40%). They reported positive, strengthened perceptions of their self-efficacy beliefs as researchers and their clear perceptions of the next steps in their research, and ability to organise and steer their own doctoral process. They were also willing to make efforts for their doctoral work and described having active, efficient and energetic drive when conducting it. As one of the students shared:

When I present my work in different seminars and receive feedback . . . it has a practical influence on my work and then I really need to get to work with my research; then I know what I have to get working on next . . . It gives me energy to conduct my research further and I try to find time to conduct it . . . Then my research moves forward . . . (P17)

The students rarely described experiences of *absorption* in the doctoral work (7%). In these cases, for example, they described intensive episodes during which they were fully immersed in their work, including data analysis or writing the thesis. They were involved in the doctoral work even to the extent that other activities were brushed aside. As one student described:



Then came this very intensive period . . . I was in the field collecting data every day for several months . . . I was immersed in the data collection for several years, because I found the situation in the field really interesting. (P21)

4.2 Sources of engagement in doctoral work

The sources that the participants identified as contributing to the engaging experiences varied. However, the engagement was often described in relation to learning and developing as a researcher as well as interacting with other researchers. Table 1 shows that the participants emphasised an increased sense of *competence* (39%) as an important source of their engagement. The students' sense of competence often emerged as development of understanding or new academic skills. Hence, their engagement often stemmed from learning and development as scholars. These experiences included, for instance, deepening their understanding of research work and theories, creating new knowledge, and developing their thinking and learning about their themes in more profound ways, as well as providing new insights in their research. As one student remarked:

I think that finding and learning new knowledge is fun. My supervisor says that I should not read anymore, but when new research is published, I have to read it. I suppose I like to gain new insights and understanding about my research theme. They are really the best experiences in this work. (P15)

Almost as often, the students highlighted their sense of *relatedness* (37%) as a significant source of engagement in their doctoral work (Table 1). Characteristic of the situations in which the students' experiences of relatedness were promoted was that they perceived being actively involved in their scholarly community, and having a sense of belonging to it and being valued by others. They also described various participation and interaction arenas including research collaboration, receiving constructive feedback and discussions, and sharing interest and expertise with more experienced researchers, supervisors, and peers on research work in general and especially on their own doctoral research. As one of the students described:

Usually I become inspired by our seminars and discussions. The first thing that comes to my mind is Professor H's ways of stating concepts. He somehow makes theories clearer and adds new perspectives. I have also participated in a group where we have discussed the doctoral theses of other advanced doctoral students and through those discussions I have had many new ideas . . . I get the feeling that it is wonderful that I am able to do this and it is amazing to be here, that this work is really fun. (P1)

Sometimes the students described their sense of *autonomy* (13%) as the source of engagement in their doctoral work. They expressed the significance of being able to conduct such research work that was one of their personal interests, based on their own decisions, were in their own control, and defined on their own terms even though they often worked in research projects with other researchers. As one student commented:

That seminar began and there we read the central texts related to the theory together in our graduate school group. It was an amazing time and we were given time and space to think . . . It was really nice time . . . [it was a] time when I did not have to limit myself and had the freedom to do and be. (P16)

Less often, the students expressed sense of *contribution* (11%) to be a source of their engagement. When the students described sense of contribution they typically reported the importance of being able to produce original scientific knowledge with significance and develop such understanding of the research themes that would be valued and making a difference especially in the practical work-life outside academia. As one of the students shared:



It really inspired me that some group with our support would innovate and develop a new way of performing and working and they would begin to apply it in practice. It is inspiring to be involved in those processes. I think that this research is useful and I can have an impact on something larger through this work. (P3)

Further investigation showed that there was a relation between the main experiences and sources of engagement ($\chi^2 = 13.42$, $df = 6$, $p = 0.037$). The sources of students' dedication and efficiency in terms of their doctoral work were typically their strengthened senses of competence and relatedness (Table 1).

Table 1

The main experiences and sources of engagement in doctoral work (based on 120 engaging experiences reported by the participants)

Sources of engagement	Experiences of engagement			
	Dedication f (%)	Efficiency f (%)	Absorption f (%)	Total f (%)
Competence	19 (16%)	24 (20%)	4 (3%)	47 (39%)
Relatedness	22 (18%)	20 (16%)	3 (3%)	45 (37%)
Autonomy	12 (10%)	2 (2%)	1 (1%)	15 (13%)
Contribution	11 (9%)	2 (2%)	-	13 (11%)
Total	64 (53%)	48 (40%)	8 (7%)	120 (100%)

4.3 Qualitatively different forms of engagement in doctoral work

Our person-oriented analysis showed that the participants' descriptions included three qualitatively different forms of engagement (see Table 2). In each form the dynamics between the doctoral students and their scholarly community as well as the source of inspiration in doctoral work were expressed differently by the students. The first category was labelled *adaptive form of engagement*, where the students emphasised their experiences of dedication and efficiency through adapting and adjusting to their scholarly community and its research traditions and practices. Such experiences reflected a static, one-directional relation between the students and their scholarly community. The students usually reported their relatedness to their own research community which provided the arena for acquiring knowledge from more experienced researchers, for instance, through supervision and following theoretical discussions. The students expressed adapting and conforming to the current conditions and acquiring the knowledge and skills that were valued in their scholarly community as the significant source of inspiration in doctoral work. Such knowledge and skills included, for instance, writing skills and gaining the relevant theoretical understanding. Being able to conduct the research according to the community's framework and criterion was also important. The students, for instance, described adaptive engagement in relation to their supervision and research as follows:

I got a good feeling when I exchanged a few words with my supervisor. Then it was all clear how I should continue my work . . . I learned something relevant or gained insights, because this is a new world for me . . . (P1)



Overall this graduate school has been rewarding because it was a new experience to create the research plan but at the same time I could see what others had done and from others' work I got some hints . . . I made notes and out of that mess I gradually came up with a logical vision and started to lay out my research plan. (P19)

Such *adaptive form of engagement* was most often described by students who were at the beginning of their doctoral process.

In the second category, *agentic form of engagement*, the students emphasised their experiences of dedication and efficiency through a dialogical relationship between themselves and their scholarly community. Such experiences reflected an active and re-forming interplay between the students and their community. The students also perceived their relatedness to both their own research community and the larger scholarly environment including international conferences that provided an arena for sharing research ideas, receiving constructive feedback and collaboration. The students highlighted creation of new knowledge as the important source of their inspiration in doctoral work. This included, for instance, being able to redefine their own research work in relation to their research community's framework, becoming autonomous and work on their own terms, and being able to argue their own point of view when contributing to their scholarly community. For example, the students expressed their agentic engagement in terms of dialogues with others and their own research work as follows:

The most rewarding for me are the moments when I can share my thinking with others . . . For instance, I have those experiences where there were interesting discussions and I could present my point of view and we can develop some insights . . . I have found pleasure in those encounters in the field, or with my supervisor, when she can follow my ideas and clarify them, or through some e-mail conversations with a colleague. Of course, these experiences require that I must also write something and then share it with others. (P16)

At first, I did not know much and I was all at sea about on what theme I should focus my research; it was quite superficial . . . Now I have hope . . . I have familiarised with it little by little and now I develop and cherish my own ideas. Now I feel that it is my own project, more than before . . . (P12)

The *agentic form of engagement* was typically reported by those students who were either halfway through or at the end of their process.

The third category was labelled *work-life inspired form of engagement*, in which the students emphasised the influence of their professional lives on their dedication to their doctoral work. Such experiences reflected three-directional relations between the students, their work-life outside academia and their research community. Typically, the research community where they were receiving doctoral training provided the arena for acquiring such theoretical knowledge and research skills that extended their understanding of their research questions evolved from their work-live contexts. The students emphasised applying the new knowledge and skills in order to solve practical problems and contribute to the work-life outside academia as the significant source of inspiration in doctoral work. The students described their work-life inspired engagement, for instance, as follows:

These were those moments of insight. I really understand my [professional] work now in a more profound way and can combine concepts that I have not previously realised to be related. I find answers to those questions from practical problems that I have seen in my own work . . . and I have gained a lot from the graduate school seminars where there have been discussions on these ideas . . . Now, for instance, I have read a doctoral thesis and then I have gained some new insights into my own data and concepts, and through those concepts I can understand better my data . . . (P4)



Actually the inspiring experiences and moments of joy or inspiration related to doctoral studies arise when I lead the groups involved in the project . . . their own zeal also encouraged me to continue and the idea that my research work could make a difference and support these practices in the future. (P10)

Such *work-life inspired form of engagement* was reported by the students in different phases of their doctoral process.

Table 2

Qualitatively different forms of engagement (based on the person-oriented analysis of the participants' engaging experiences)

	Qualitatively different forms of engagement		
	Adaptive	Agentic	Work-life inspired
What kind of dynamic exists between the doctoral students and their scholarly community	<i>Dedication and efficiency through a one-directional relation where the scholarly community provides the arena for the students to adjust and acquire knowledge</i>	<i>Dedication and efficiency through a dialogical relation between the students and the scholarly community where both the students and the community re-form</i>	<i>Dedication through a three-directional relation where the scholarly community provides the arena for the students to acquire knowledge to answer questions that have evolved from their work-life outside academia</i>
The source of inspiration in doctoral work	<i>Dedication and efficiency through conforming to the current conditions and acquiring the knowledge and skills valued in the scholarly community</i>	<i>Dedication and efficiency through creating new knowledge in relation to the scholarly community's theoretical framework, being able to work on their own terms and develop their own points of view</i>	<i>Dedication through applying the scholarly community's theoretical knowledge and research skills in order to solve practical problems and contribute to the work-life outside academia</i>

5. Discussion

5.1 Theoretical reflections and implications

Engaging doctoral experience is rarely explored in both doctoral education and engagement literature. Hence, our study provided new insight into doctoral student engagement by breaking down the complexity of engagement by identifying qualitatively different experiences and sources of engagement. Results showed that the main experiences of engagement in doctoral work were *dedication* and *efficiency*. Experiences of *absorption* were rarely reported. Our findings were in line with the previous findings of work engagement research carried out in other work-life contexts and among undergraduate students where engagement is explored in terms of dedication, vigour and absorption (e.g., Bresó et al., 2011; Krause & Coates, 2008; Ouweneel et al., 2011; Salanova et al., 2010; Schaufeli et al., 2002a, 2002b). This implies that previous research on work engagement (e.g., Salanova et al., 2010; Schaufeli et al., 2002a, 2002b) appeared to provide a functional framework for exploring students' engagement in their doctoral work.



Further investigations showed that the primary sources for engaging doctoral experiences were increased sense of *competence* and *relatedness*. The students reported sometimes sense of *autonomy* and *contribution* as sources for engagement in their doctoral work. This is in line with previous research suggesting that students' and workers' self-motivation, optimal functioning and psychological well-being are fostered when their senses of relatedness, competence, autonomy (e.g., Deci & Ryan, 2008; Niemic & Ryan, 2009; see also Mason, 2012; Virtanen & Pyhäältö, 2012) and contribution (Eccles, 2008; see also Virtanen & Pyhäältö, 2012) are promoted. However, the findings here clarify further the understanding of different sources of engagement in doctoral work. In our findings the experiences of competence and relatedness were emphasised. This may reflect the development of engagement during the doctoral process. In the present study, the doctoral students' dedication and sense of efficiency appeared to be strengthened when they developed their competences as researchers and became more related to their scholarly community. It may be that when students perceive themselves as competent and acknowledged members experiences of having autonomy and making contributions may become more salient ones.

In addition, our results confirmed the previous findings suggesting that students' feelings of belonging and participation in a scholarly community contribute to their positive experiences, wellbeing as well as satisfaction with and persistence in doctoral studies (Deem & Brehony, 2000; Golde, 2005; Hoskins & Goldberg, 2005; Lovitts, 2001; Pyhäältö et al., 2009; Pyhäältö, Vekkaïla, & Keskinen, 2012b; Stubb et al., 2011). The results of our study also provided new insights by demonstrating how students' experiences of belonging were significant in terms of their engagement in doctoral work. The significance of experienced belonging among the behavioural science doctoral students may have to do with the nature of the research in their discipline. As part of the soft sciences, the behavioural sciences are sometimes characterised by solitary research work in libraries, archives or in the field (Lovitts, 2001). One would therefore expect that relatedness would not be as important. In our participants reports the possibilities for experiencing being a valued, acknowledged member of a scholarly community was important. However, some students in these fields may also work in research groups (e.g., Austin, 2010), for instance, in archaeology.

Also different forms of engagement, including *adaptive engagement*, *agentic engagement* and *work-life inspired engagement*, were identified. To our knowledge, qualitatively different forms of engagement have not been previously reported among university students. Hence, this study contributed to the literature on doctoral student engagement by opening the nature of engagement at the interfaces of studying and working by shedding light on the dual role of doctoral students as both students and professional researchers.

It is possible that the varying forms of engagement reflect the different meanings of doctoral work that were given by the participants (e.g., Meyer, Shanahan, & Laugksch, 2005; Stubb, Pyhäältö, & Lonka, 2012a, 2012b). For instance, to some extent our results resembled the different perceptions of doctoral research found by Stubb et al. (2012b). In their research the doctoral students perceived research work as 1) "a personal learning process", 2) a "job to do", 3) "making a contribution" and 4) "obtaining qualifications and gaining accomplishments". The first category and the agentic and work-life inspired forms of engagement overlap with one other since in all of them the significance of exploring something that was defined in one's own terms or was personally interesting were emphasised by the participants. In turn, the second category and the adaptive form of engagement resemble each other, because, for both of these, the participants highlighted doctoral research as an activity in which they follow the traditions and practices of the scholarly community or its use in fulfilling the community's requirements for a doctorate. In addition, in the third category, answering interesting questions that made a difference was viewed as meaningful to the doctoral students, and, hence, has similarities with work-life inspired engagement. However, in work-life inspired engagement, the contribution focused mainly on professional contexts outside academia, whereas in the third category, the contribution focused both on the discipline and society. Moreover, the fourth category of "accomplishment" not only included demonstrating one's excellent performance, but also the creation of new knowledge and, therefore, has similarities with the agentic form of engagement. However, gaining merit and status were also emphasised in this particular category, but were not expressed by the participants in relation to agentic engagement. Hence, it may be that the sources of inspiration in doctoral work at least



partially reflect the students' motives, goals and aspirations related to their PhDs.

Furthermore, the meanings of doctoral research given by students and goals for earning the doctorate may affect what kinds of scholarly identities (e.g., Pyhäältö et al., 2012a) doctoral students construct, for instance, a professionally oriented one, and also their engagement in the doctoral process. If students perceive the meaning of doctoral work to be obtaining qualifications for work-life outside university and construct their identity through their professional careers it is likely to be reflected into their engagement in the doctoral process. Then it may be that doctoral experiences that promote the connection between the doctoral work and professional life, and practical meaning and value of doctorate are likely to enhance students' engagement in doctoral work. In turn, experiences that do not enable students to make a meaningful connection between the doctorate and their aspirations may reduce their engagement in their doctoral work.

Moreover, our findings suggested that the qualitatively different forms of engagement were emphasised differently by the participants in different phases of the doctoral process. *Adaptive engagement* was more often described by the students who were at the beginning of their doctoral process, *agentic engagement* by those students who were either halfway through or at the end of their process. *Work-life inspired engagement* was reported by the students in all phases of the doctoral process. A reason for the adaptive form of engagement was being emphasised at the beginning of the doctoral process maybe that doctoral students' active agency and participation in their scholarly communities increases over time as they progress in their thesis process (e.g., Hakkarainen et al., 2013; Hopwood, 2010; Pyhäältö & Keskinen, 2012).

5.2 Methodological reflections and its limitations

In this study, semi-structured interview data were collected and qualitative content analysis relying on abductive strategy that combined both grounded and theory-guided analyses (e.g., Coffey & Atkinson, 1996; Harry et al., 2005; Kvale, 2007; Mills et al., 2006; Morgan, 2007; Patton, 1990) was used to identify the students' experiences of engagement in doctoral work. Engagement has typically been investigated by using quantitative methods (e.g., Ouweneel et al., 2011; Salanova et al., 2010, Schaufeli et al., 2002a, 2002b). The strength of our approach was that it allowed us to explore students' experiences of engagement in a profound manner and provided insights in the various aspects of engagement in doctoral work.

Certain challenges are involved in using a retrospective approach (e.g., Cox & Hassard, 2007). The participants' experiences and their overall life situations are often difficult to recall and sum up in a single interview (Kvale, 2007). Accordingly, the retrospection was likely to have affected the data, including a generalisation of experiences. The retrospective approach and semi-structured interviews also had their advantages (e.g., Cox & Hassard, 2007). The reflective and process-oriented design gave the participants an opportunity to reflect on their doctoral journey and identify significant experiences in it. This resulted in rich data and ensured that the participants recalled and reported only significant experiences.

Moreover, we explored the engagement among 21 behavioural sciences doctoral students who were conducting their thesis in one top-level research community. Because of the distinctive features of the discipline (e.g., Lindblom-Ylänne, Trigwell, Nevgi, & Ashwin, 2006; McCune & Hounsell, 2005) and the limited sample size, generalising the results to other disciplines and in other countries should be done with caution. However, we have looked at doctoral students' experiences in other domains, and, for instance, results here resemble our (Vekkaïla et al., 2012) recent findings regarding natural sciences students' significant engaging and disengaging doctoral experiences.

Further longitudinal studies are needed to explore the development of engagement (e.g., Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) in doctoral work among doctoral students from different domains and countries. This may provide a better understanding, for instance, of whether students experience their engagement in their thesis work differently in various domains and at the different phases of the doctoral process. Also, the relation between engagement in the doctoral process, the meanings of earning the doctorate given by the students and development of a scholarly identity is worth of further investigation.



5.3 Educational implications

In terms of developing more engaging learning environments for doctoral students, our findings imply that engagement is not a singular entity; instead it is multidimensional and entails various qualities. Doctoral student may experience engagement in their doctoral work in varying ways, and hence it is one matter to be dedicated to doctoral research and another to experience oneself as an efficient researcher or absorption in research activities at hand. Dedicated doctoral students are likely to be engaged in their doctoral work by their sense of significance, commitment and positive thesis related emotions. Students feeling efficiency, in turn, are likely to express their engagement through their positive self-images as researchers and by their energetic actions, whereas absorption is likely to entail students' full concentration and being totally immersed in their study or research activities for certain periods of time. Accordingly, the ways to support doctoral student engagement need to be diverse.

Our results implied that doctoral students' engagement in doctoral work can be supported by enhancing their experiences of being competent researchers and integrated into their scholarly community. Such experiences can be supported by, for instance, facilitating doctoral students' participation in collaborative academic practices. An example of a practice that is likely to promote students' engagement is a learning community formed around certain academic activities (Zhao & Kuh, 2004) which are designed to strengthen students' positive self-efficacy beliefs, provide academic challenges, and involve active and collaborative learning techniques, interaction opportunities and social support (Bresó et al., 2011; Overall, Deane, & Peterson, 2011; Umbach & Wawrzynski, 2005). This could be applied in doctoral education both in supervisory meetings and in different academic groups that support, for instance, peer learning, writing processes, dialogues and collaborative problem solving (Aitchison & Lee, 2006; Boud & Lee, 2005; Lonka, 2003).

It is interesting that the doctoral students rarely described experiences of absorption in their doctoral work. A reason for this maybe that the experiences of absorption remain an unidentified or unused resource for supporting students' engagement in their doctoral work. Absorption resembles the flow experience (Csikszentmihalyi, 1990); hence, emerge of such intrinsically enjoyable experience can be fostered by optimising the balance between the challenges of learning tasks and students experiencing competence (e.g., Inkinen et al., 2013). For instance, in their recent study on university students Inkinen et al. (2013) noted that although positive and active emotions are only one aspect of the complex flow experience, they found that these kinds of emotions occurred when the perceived challenge and required skills were both very high and in balance. The balance may be reached by providing doctoral students the resources they need such as supervision, constructive feedback of their learning and development as a researcher, peer support, and control over their own research. Then, when doctoral students experience balance between their resources and the unique challenges set by the doctoral research and intensively work at the edge of their competences they are more likely to experience absorption.

Moreover, based on our results doctoral students' engagement in their doctoral work may be facilitated by shared meaning-making among doctoral students and supervisors regarding their goals for the doctorate and meanings of research work given by both students and supervisors. In practice, this can be supported, for instance, by encouraging supervisors and students to reveal and elaborate on their perceptions in supervisory discussions. Such elaborations may provide a tool for and support supervisors and students to construct a shared understanding of the focus of supervision. Supervisory discussions on the goals and perceptions of doctoral research are important especially at the beginning of the doctoral process when supervisory relationships are formed and students plan and get started with their doctoral projects. Golde (1998), for instance, showed that one of the main reasons for doctoral students leaving their studies during the first year was a mismatch between the students' and supervisors' goals, expectations and practices.

At the same time, there may be both individual and contextual variations. Doctoral students, supervisors and other members of a scholarly community face more and less difficult times. There is also the reciprocal, continuously evolving relation between students and their environments in which engagement is constructed. It follows that both the students and scholarly community need to be constantly adjusting. The results of our study can be used both by students themselves for preparing themselves for the doctoral



process and considering meaningful and active participation strategies, and by supervisors and other doctoral educators for supporting their students' engagement in the best possible ways.

Designing more engaging learning environments for today's doctoral students is also an investment for the future academics and other knowledge workers. Doctoral students' experiences of engagement are likely to have long-lasting effects. For instance, Stubb et al. (2012a) demonstrated a relation between doctoral students' perceptions of their doctoral project, well-being and engagement. The results showed that participants who perceived their doctoral research as a process (e.g., learning and developing as a researcher) reported less stress, exhaustion, anxiety and lack of interest than students who perceived their research as a product (e.g., career qualification) or both as a process and product. Moreover, those students who reported process related-meaning had less frequently considered interrupting their studies than others. Accordingly, students' experiences of engagement during their doctoral process may function as a basis for their further engagement and well-being.

Keypoints

- Engaging doctoral experience is rarely explored in both doctoral education and engagement literature.
- This study provided new insight in doctoral student engagement by breaking down the complexity of engagement by identifying qualitatively different experiences and sources of engagement.
- This study contributed to the literature on doctoral student engagement by opening the nature of engagement at the interfaces of studying and working by shedding light on the dual role of doctoral students as both students and professional researchers.
- The results encourage designing such engaging learning environments for doctoral students that promote their experiences of being competent researchers and integrated into their scholarly community.
- The relation between engagement in the doctoral process, the meanings of earning the doctorate given by the students, and development of a scholarly identity is worth of further investigation.

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Appendix 1

Doctoral student interview

Discipline or subject:

Been as a PhD student since:

I'm doing a monograph/collection of articles:

I'm female/male:

I'm doing my thesis full-time/ part-time:

Phase of my study:

1. How did you become a PhD student?
 - What is the topic of your PhD work? How did you come up with this topic? Does it relate to the work of others in your group?
2. What motivates you to do your PhD research?
3. Describe in your own words, how has your PhD process gone so far?
4. Describe some situation, event or episode from your PhD studies that has really influenced your own thoughts about doing PhD research or something else related to that. What happened? Why? What did you think of and how did you feel?
5. At the moment, do you have some question/challenge that you are wondering about? If so, what? Why?
6. What is the most enjoyable thing in postgraduate studies? What is the hardest?
7. Describe a situation that gave you inspiration. What happened? Why do you think it happened? What did you do, think and feel? Describe a situation in your PhD process that was in some way negative. What happened? Why do you think it happened? What did you do, think and feel?
8. What kind of supervision have you gotten in your PhD process? What kind of supervision would you hope for?
9. Do you get support to your work from somewhere else? What kind of support? Would you need something more?
10. Describe a situation in your PhD process where you felt that your supervisor especially succeeded. What happened and why was that situation meaningful to you?
11. What kind of role do other researchers and PhD students have in your process?
12. In your opinion, how should postgraduate education be developed?



13. What kind of advice would you give to a student who is considering PhD studies? Why?
14. Is there still something you would like to tell?
15. What would you have wished to be asked about?