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# Balancing between inspiration and exhaustion: PhD students' experienced socio-psychological well-being

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This paper explores doctoral students' experiences of their scholarly communities in terms of socio-psychological well-being. Further, the study examines how experiences were related to study engagement and to self-reported stress, exhaustion, and anxiety. Altogether 669 doctoral students from the University of Helsinki, Finland, responded a survey. The answers to an open-ended question were content analysed and then statistically compared to well-being and study engagement items. The results showed that there was variation in students' experiences of the scholarly community regarding socio-psychological well-being. More than half of the answers, where students had explicitly described their experience (n = 383), emphasised the scholarly community as source of burden (56%), but experiences of inspiration and empowerment were also frequently reported in the answers (44%). Feelings of empowerment were positively related to study engagement and negatively related to stress, exhaustion, and anxiety.

**Keywords:** special issue; doctoral education; well-being; scholarly community



The process of completing a PhD usually takes several years; during this period students are challenged both intellectually and emotionally. Many students have precious moments of enthusiasm coupled with joy of discovery and learning that keep them going (Stubb, Pyhältö, and Lonka 2010). Nonetheless, research on doctoral students' study experiences shows that doctoral students also express a great many negative emotions; for example, those related to stress and exhaustion during the process (International Postgraduate Student Mirror 2006; Kurtz-Costes, Helmke, and Ülkü-Steiner 2006; Toews et al. 1993; Toews et al. 1997). It has also been suggested that various student groups may experience PhD studies differently. For instance, in some studies, women have reported more stress than men (Kurtz-Costes et al. 2006; Toews et al. 1993, 1997; Ülkü-Steiner, Kurtz-Costes and Kinlaw 2000).

## Doctoral students' well-being as a relation between the individual and the environment

There are not many studies that have addressed the development of well-being in doctoral studies. However, there is a long tradition of research in occupational health

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and we aim to draw from this literature to investigate PhD students' well-being. In the context of doctoral education, course work, doing research and writing the thesis can be considered to be PhD students' main work, though there are many who only work part-time.

Research on occupational health suggests that ill-being is not simply an individual symptom, but instead a mismatch in the relationship between the individual and the environment, which often leads to stress and burn-out (Cole et al. 2010; Elo, Leppänen, and Jahkola 2003; Leiter and Maslach 1988; Maslach 2003; Maslach and Jackson 1981; Maslach and Goldberg 1998). As proposed by Maslach and Goldberg (1998, 64), burnout:

> is a type of prolonged response to chronic emotional and interpersonal stressors on the job. It is an individual stress experience embedded in a context of complex social relationships, and it involves the persons' conception of both self and others.

Maslach and Goldberg (1998) differentiated three elements that together constitute burnout. These are emotional exhaustion, cynicism and reduced sense of efficacy, and it is suggested that these experiences emerge from heavy work load, social conflict, lack of supporting resources as well as from experienced organisational injustice (Cole et al. 2010; Hakanen, Bakker, and Schaufeli 2006; Maslach 2003). Although well-being has typically been studied as lack of ill-being (Ryan and Deci 2001) it may also be considered as a positive entity in its own right: one that develops through cycles of positive and negative emotions between individual and environment (Hakanen, Bakker, and Schaufeli 2006). The reported experiences would be those of well-being, satisfaction and full-functioning (Keyes, Shmotkin, and Ryff 2002; Ryff and Singer 2000; Ryan and Deci 2001; Sheldon and Bettencourt 2002).

For doctoral students, the primary context for learning and working is the scholarly community (Pyhältö, Stubb, and Lonka 2009). Yet many PhD students feel isolated from the academic community or experience the relation between themselves and the community as somewhat problematic (Bair and Haworth 1999; Gardner 2007; Golde 2005; Pyhältö, Stubb, and Lonka 2009). Based on occupational health research, it is plausible that the stress and exhaustion that PhD students experience, at least in part, may arise from a mismatch between the individual student and the scholarly community. Yet the relationship between PhD students and their scholarly communities is a topic about which researchers have reported infrequently. In light of this previous research, the PhD journey can be seen as an ongoing meaning-making process, where students need to grow a feeling of themselves as competent researchers and essential, valued members of the academic community. These experiences may, at best, function as a buffer against stress, emotional exhaustion, and burnout (Hakanen, Bakker, and Schaufeli 2006).

Research on occupational health as well as on university students indicates that the ways in individuals experience the relation between themselves and the community plays a central role in engagement (Cole et al. 2010; Hakanen, Bakker, and Schaufeli 2006; Leiter and Maslach 1988; Mäkinen, Olkinuora, and Lonka 2004; Lonka et al. 2008). Stress, exhaustion, anxiety, and lack of interest can lead to withdrawal from both work and studies. Furthermore, well-being or ill-being during studies may have long-term effects on working-life. Investigators have reported that those students who had depressive symptoms during study years were at greater risk

of being unemployed after graduating (Nurmi and Salmela-Aro 2002). Also, doctoral students face a variety of episodes during their PhD process: some promote their interest and inspiration to do research and act as a part of the academic community while others may diminish their engagement. These experiences may also serve as a basis for well-being in the future.

We use the term *socio-psychological well-being* to refer doctoral students' experience of their well-being in their scholarly community. Furthermore, we presume that doctoral students' experienced socio-psychological well-being may have various different implications for the PhD process. Inspired and empowered students may be more likely to engage themselves in the PhD process and complete their theses in a timely manner.



**The scholarly community as a working environment for PhD students**

While there is information about how doctoral students are doing in general, we know surprisingly little about the context from where these experiences emerge. Some studies have suggested that the scholarly community plays a key role in how students experience their doctoral journey (Bair and Haworth 1999; Gardner 2007, 2008; Pyhältö et al. 2009). However, the scholarly community may be considered in a variety of ways. We consider the scholarly community to be a multi-layered learning community (Nummenmaa et al. 2009). The widest and perhaps the most abstract level of scholarly community is the whole discipline, the international community of researchers, and the arenas that promote the development of new knowledge in the discipline such as journals and conference meetings. The next level is typically the organisational level, which consists of the university and its faculties and departments. Typically closest to doctoral students are the various *communities of practices* (Lave and Wenger 1992) of the scholarly community. These are communities such as research groups, research units, seminars, and, for instance, peer groups (e.g., Shacham and Od-Cohen 2009; Hasrati 2005).

It has also been suggested that the *practice* of a specific *community* may differ across disciplines (Biglan 1973; Becher 1989; Becher and Trowler 2001; Kamler 2008). The practice in each scholarly community has cultural roots; it is based on different academic traditions and conventions that reflect various kinds of values, norms, and conceptions. Academic cultures also vary according to the research subject (the studied phenomena that are characteristic of those cultures). In this respect, academic cultures can be portrayed in terms of whether they represent more *well-defined* or *ill-defined* domains (e.g., Lonka, Joram, and Bryson 1996; Mandl, Gruber, and Renkl 1996; Voss et al 1983; Voss and Post 1988). Typical of well-defined domains is that the level of agreement between scholars is quite high, whereas typical of ill-defined domains is that academics have several, sometimes opposing, views about the acceptable ways of approaching the research subject. Mathematics and chemistry (so-called hard sciences) are examples of well-defined domains, whereas behavioural sciences represent more ill-defined domains. Medicine, for example, can be seen as a more multidimensional domain, since most biomedical sciences are rather well-defined research areas, whereas some other medical domains deal with more complex and ill-defined questions (Lonka 1997).

Academic cultures may also have different kinds of practices in respect to how the research work is typically carried out. For instance, in some disciplines it is more

common to work in a research group, while in some others the research work is more often conducted individually. These practices may also affect doctoral students' situation in different disciplines. It has, for example, been argued that science students are typically younger, full time, better funded and working in research groups, whereas PhD students in education are typically part-time, mid-career and in employment, which leads them to juggle between academic and career responsibilities (Leonard, Becker, and Coate 2004).

However, labelling disciplines solely based on their traditions and cultures may give a simplified picture of the reality, since there may be a large variation in how research is done even within one discipline. Furthermore, it is important to acknowledge that the very same scholarly community may be interpreted and experienced in a variety of different ways among students.



## Doctoral education in Finland

In Finland, the doctoral degree requires thesis, seminars, course work (from 40 to 80 European Credit Transfer and Accumulation System – ECTS – credits depending on the discipline) and a public defence of the thesis. Students need to apply to enter doctoral education. However, after gaining permission for doctoral studies, the licence has, until very recently, been valid for life. The average time for completing the degree is about six to seven years. Doctoral education is publicly funded with no cost to the student. However, students do not automatically get funding for conducting their studies full time by launching their doctoral project. There are a number of different ways to fund doctoral studies, such as personal grants from private foundations, university posts, and project funding from the Academy of Finland.

The doctoral thesis can be completed either in a form of a monograph or as a summary of articles. The summary of articles consists of three to five (depending on the discipline) articles published in peer-reviewed international journals and a short summary including introduction and discussion. In most cases, students' mother tongue is Finnish or Swedish, but the articles and the summary are written in English.

The student has at least one advisor (a full professor in the field of interest) and one supervisor. Also, the use of supervisory boards has become more popular during recent years (International Postgraduate Student Mirror 2006).

The evaluation process includes four stages. After the manuscript is accepted by the advisor and supervisor(s), the faculty council will name the pre-reviewers (usually full professors from other universities) for the thesis. The manuscript is reviewed by the pre-reviewers and the doctoral candidate will revise the manuscript based on their comments. The faculty council will then decide whether the student is given permission to publicly defend her thesis and name the opponent for the thesis. At this stage, the thesis is printed and published with an ISBN number and sent to the opponent. After the doctoral candidate has publicly defended his/her thesis, the opponent will decide whether he/she is going to recommend the ratification of it. Finally, the faculty council will decide on awarding the doctoral degree.

## The aim of the study

The aim of this study is to explore doctoral students' experiences of their scholarly communities in terms of socio-psychological well-being. The objective is to

investigate how these experiences were related to study engagement and experienced stress, exhaustion, and anxiety in the PhD process. The aims were approached by asking the following questions:

(1) How do PhD students describe their experienced socio-psychological well-being in their scholarly community?
(2) How is the experience of the community related to self-reported stress, exhaustion, and anxiety in PhD studies, and to study engagement in respect to lack of interest and intentions to withdraw from studies?
(3) How are gender, research group status, working status, and research context related to the experiences of the community?



## Method

### *National research project*

This study is a part of a national research project on PhD education in Finland that aims to understand PhD education from three complementary perspectives: central regulators and preconditions for a successful PhD process, academic supervision, and the dynamics of research groups as learning environments for academic expertise and literacy. The work has been carried out by using multiple methods (e.g., surveys, observations, and interviews). The data were collected at three different levels of PhD education from students, supervisors, and scholarly communities (e.g., research groups or seminars). The part of the study reported here focuses on doctoral students' socio-psychological well-being, experienced stress, exhaustion, and anxiety as well as study engagement.

### *Participants*

Altogether 669 doctoral candidates from three faculties at the Helsinki University, Finland (from humanities, medicine, and behavioural sciences) completed a survey in 2006. The total response rate was 38.4%.

All respondents had MA degrees, and they were all in various phases of their doctoral studies, though the majority of them (59%) were estimated to be in the last third of their thesis process. Table 1 shows that the majority of the respondents in each context were women and the mean age was 39 years (median: 35). Half of the students reported working full time and the other half part time on their thesis. A majority (78%) were working alone, with only 13% in a research group and the rest (9%) working both alone and in a group. Altogether 43% of the students had considered interrupting their doctoral studies at some point during their thesis process.

### *Measurements and data collection*

The data were collected with a survey in May 2006. The survey consisted of both Likert-type statements and open-ended questions. The themes of the open-ended questions were students' ideas of the PhD process and its main regulators (e.g., problems and critical incidents), perceptions of themselves as a part of the scholarly

Table 1. Age, gender, research group status and working status in each domain.

| | Medicine | Humanities | Behavioural sciences |
|---|---|---|---|
| Age (mean/median) | 38/34 | 34/34 | 41/39 |
| Gender | | | |
| *Women* | 129 (80%) | 244 (70%) | 123 (79%) |
| *Men* | 33 (20%) | 102 (30%) | 33 (21%) |
| Research group status | | | |
| *Alone* | 65 (43%) | 314 (93%) | 117 (78%) |
| *In group* | 29 (19%) | 14 (4%) | 20 (13%) |
| *Both* | 59 (38%) | 9 (3%) | 13 (9%) |
| Working status | | | |
| *Full time* | 85 (55%) | 184 (56%) | 51 (34%) |
| *Part time* | 70 (45%) | 143 (44%) | 101 (66%) |

community and perceptions of supervision. The items were designed to measure PhD students' perceptions of their learning environment, experienced stress, anxiety, and exhaustion as well as their ideas about academic writing and themselves as writers. In addition to these, there were background variables in the end of the survey.

The survey was sent to all doctoral students in the faculties of medicine, humanities and behavioural sciences. The contact information of the students was collected from the student register database. Students who did not have Finnish as their mother tongue received the questionnaire in English.

The survey was validated in the pilot study before conducting the survey in research contexts. Altogether 45 PhD students majoring in natural sciences participated in the pilot in January 2006.

### *Instrument*

This article focuses on an open ended question ('How do you see your own role as a PhD student in your scholarly community?') that was used to analyse students' experienced socio-psychological well-being in the scholarly community, and items related to stress, anxiety, exhaustion and lack of interest as well as back ground variables. Doctoral students' engagement in their studies and experienced stress, exhaustion, and anxiety were explored using a modified version of the MED NORD questionnaire (Lonka et al. 2008). The MED NORD questions were modified to fit the PhD context.

Table 2 shows that PhD students' study engagement and experienced well-being were measured with 10 modified MED NORD items that measured stress (Elo, Leppänen, and Jahkola 2003), exhaustion (modified from Maslach and Jackson 1981), as well as anxiety and lack of interest modified from Inventory of General Study Orientations (IGSO) (Mäkinen, Olkinuora, and Lonka 2004). The items were ranked on a 1 (do not agree) to 5 (fully agree) scale. Students' intentions to interrupt their studies were measured with a question, 'Have you sometimes considered interrupting your doctoral studies?' where students could answer either *yes* or *no*.

Table 2. The items included in the questionnaire.

| Scale | Items included in the scale |
|---|---|
| Stress | 'Stress' means a situation in which a person feels tense, restless, nervous, or anxious or is unable to sleep because his/her mind is troubled all the time. Do you feel this kind of stress these days? |
| Exhaustion | I feel exhausted. |
| | My workload is often too high. |
| | Doctoral studies are too stressful for me. |
| | I worry about the thesis in my free time. |
| Anxiety | I often fear that I will fail in my doctoral studies. |
| | I am stressed out by the workload, deadlines and competition in doctoral studies. |
| | I often have to force myself to work for my thesis. |
| Lack of interest | It is difficult for me to find meaning in my doctoral studies. |
| | I am not motivated by the content of my studies. |



### *Analyses*

#### *Qualitative analyses*

The answers to the open-ended question were content analysed by using an abductive strategy. In the first place, all the answers were read, and the ones that were left empty or that included too little information for appropriate analysis were left out. Altogether 554 students had answered the open-ended question and 115 had left it empty. Of these 554 answers, 383 were analysed more closely. The ones that were excluded from the thorough analysis, only described the experienced role in neutral terms ('I'm a junior researcher'/'I'm a student') or the main task ('I do research and publish'), instead of describing the quality of the experience.

In the second phase, the 383 answers were divided in several themes based on the experiences that they illustrated. Based on these themes, the answers were coded into two categories based on whether they reported a) *experiences of empowerment* or b) *experiences of burden*. Themes, and in the second phase categories, resulting from the content analysis were validated by the research group through discussing them and the criteria for analysis together. Typical of descriptions of *empowerment* was that the students reported their experience of the scholarly community in terms of socio-psychological well-being in a positive way and that they had expressed contentment towards the situation. Within *the empowerment category*, satisfaction, inspiration, and engagement were frequently mentioned. In general, answers categorised as *empowering* resembled an experience of the academic community as something that supports own learning and growing as a researcher. Typical of the answers in *the burden category* were reported sense of exclusion and feelings of exhaustion. Within this category, students described their relation (or lack of it) to their community negatively, expressed discontent with the situation, and in some cases expressed the hope for better. The 383 answers that were used in this analysis fit well into these categories. In the cases where students reported more mixed feelings about their scholarly community the answers were analysed based on the most prominent features of the experience that they emphasised. Usually in case of mixed answers about the community, students reported a negative feeling due to this ambivalent experience. After the qualitative content

analysis, the two categories were quantified in order to be able to study them statistically in the next part of the analysis procedures.

*Statistical analyses*

The sum variables (i.e., scales) measuring stress, exhaustion, anxiety, and lack of interest were formed, and the internal consistency of each scale was measured using Cronbach's Alpha. Differences in terms of the sum variables between empowered and burdened doctoral students as well as men and women were measured with an independent samples t-test ($p < .05$). The effect sizes for the t-test were calculated using Cohen's d. With respect to Cohen (1988), the limiting values were considered as follows. Cohen's $d = 0.3–0.5$ equals small effect, Cohen's $d = 0.5–0.8$ equals medium effect and Cohen's $d > 0.8$ equals large effect.

A $\chi^2$-test (significance level $p = < .05$) was conducted to measure whether doctoral students' experiences of their socio-psychological well-being were related to intentions to interrupt studies, discipline, research group status, and to working full-time vs. part-time. The effect sizes for $\chi^2$-test were calculated using Cramer's v.

## Results

### *Doctoral students' experienced socio-psychological well-being in the scholarly community*

Firstly, results suggested that definitions of 'scholarly community' given by the students varied from seeing the community as a research group or one's own department to the international research community. Secondly, the variation in students' experiences about their academic communities regarding socio-psychological well-being was considerable. Feelings of empowerment, enthusiasm, and inspiration, but also feelings of exhaustion, burden, and exclusion, were reported. However, experience about the community as *a source of burden* was reported in more than half (56%) of the 383 answers by those who explicitly described their experience of well-being:

> I'm just a hindrance to others. There's not much of a role to take, if you are nothing but at mercy of others. You just have to do your job alone without anyone to help you. You have to be on your own and be quiet. You better not criticise the system – that would only have bad consequences. I've been told that the student who needs a supervisor is a lousy student.

> At the moment I am a total outsider: I attend the seminars on a regular basis but I do not have any other contacts. I can consult my supervisor on official matters but I miss having more informal contacts and discussion with somebody who would be interested in the same kind of questions that I am.

Typical of these answers were experiences of exclusion and exteriority that hindered the PhD process and one's own learning process. Many of the students also reflected on the experience of unworthiness. They reported feeling that doctoral students were not considered as valuable members of the community. At the same time, they experienced doing most of the hard work alone regarding, for example, publications. Students identified the burdening factors to be *lack of meaningfulness, complexity of one's own situation and insecurity,* and *poor support for leaning and doing research.* Typical of *lack of meaningfulness* were sense of exclusion or outsider status and unworthiness. *Complexity of the situation and insecurity* of both present and

future referred to reported experiences that emphasised feelings of not knowing one's own place, or insecurity of what would happen in the future. Furthermore, *poor support for learning* was verbalised often as infrequent or low-quality supervision and insufficiency of both quantity and quality of courses.

On the other hand, positive experiences of the academic community as *a source of empowerment* were reported in 44% of those answers that reported the experienced well-being in the scholarly community:

> [I see the relation with the community] as both responsible and challenging but on the other hand as safe, because I fully trust my supervisors ability to evaluate the quality of my work. I think that my work creates new knowledge and it will create the possibility for further research. As a PhD student I'm independent and equal with others but still a student with an urge to learn and I have the right not to know yet…the privilege of asking questions and getting answers and supervision.

> Sometimes I consider myself still as a student when it comes to doing research and sometimes I already perceive to be an expert in my area. I feel that I'm doing a meaningful and important work in my scholarly community.

Typically these descriptions reported feelings of inspiration and support. These students reported their experiences in a positive manner. It became clear from their descriptions that the academic community was a supporting factor in their own research process. The factors that were considered to promote these kinds of positive feelings were almost opposite to the factors hindering socio-psychological well-being. Students reported feelings of meaningfulness, intensification of researcher identity, appreciation for the nature of research work, and good support for learning and doing research as promoting factors for empowerment. In addition, senses of belonging and meaningfulness were reported as core sources of empowerment. Typical of meaningfulness were descriptions of a sense of contribution, belonging, and worthiness. Intensification of one's own researcher identity was often manifested in a student's experiences of seeing oneself as a junior researcher, a colleague or an expert instead of 'just a student'. The nature of research work was considered a promoting factor because of its independent yet challenging nature. Finally, good support for learning and doing research was verbalised, for example, as high-quality supervision, useful courses for students, and one's own working space or office provided by the university.

### *Descriptive analyses*

The descriptive analyses for scales measuring stress, exhaustion, anxiety, and lack of interest with number of items, internal consistency (Cronbach's Alpha), scale means, standard deviations, and maximum/minimum values are presented in Table 3. It shows that internal consistency for each scale was either satisfactory or good, depending on the scale.

### *Experiences of the scholarly community in relation to negative emotions, study persistence, and study engagement*

Results indicated that students experienced some stress, exhaustion, anxiety, and lack of interest in their studies (see Table 4). The means were not high, but there was a

Table 3. Descriptive analyses of the scales (n = 669), number of items (N), internal consistency (Alpha), scales' mean values, standard deviations (SD), and minimum and maximum values.

| Items | N | Alpha | Mean | SD | Min | Max |
|---|---|---|---|---|---|---|
| Stress | 1 | | 2.8 | 1.2 | 1.00 | 5.00 |
| Exhaustion | 4 | .821 | 2.7 | .9 | 1.00 | 5.00 |
| Anxiety | 3 | .653 | 2.7 | 1.0 | 1.00 | 5.00 |
| Lack of interest | 2 | .758 | 2.1 | 1.1 | 1.00 | 5.00 |

great deal of variation. Also these experiences were related to the way in which the students experienced their own scholarly community in terms of socio-psychological well-being. Students who perceived the scholarly community as *a source of empowerment* also scored higher in self-reported well-being. Table 4 shows that they reported experiencing less study related stress, exhaustion, and anxiety during the PhD process than those who experienced the community as a burden. The effect was strongest in respect to engagement: those who perceived the scholarly community as a burden scored highest in the lack of interest. However, the experienced lack of interest was quite low in both of the groups.

Altogether 43% of the students who answered the survey reported to have considered interrupting their studies sometime during their PhD process. Furthermore, the results indicated that *experiences of empowerment* were related to persistence in studying in terms of intentions to interrupt studies. Consideration of withdrawing from studies was significantly related to *burdening experiences* in the scholarly community ($\chi^2 = 26.706$, df = 1, p = .000, Cramer's $\nu = .265$). Those students who experienced the academic community as a burden had more often considered interrupting their doctoral studies ($f = 122$, 58%) than students who had empowering experiences ($f = 52$, 31%).

### *Variation in experiences between different kinds of student groups*

No differences in experiences of academic community were found between the disciplines. In the answers where the experienced role was analysed, students from all three disciplines described more *burdening* experiences than *empowering* experiences

Table 4. Mean values, standard deviations (SD), differences and effect sizes (Cohen's d) in stress, anxiety, exhaustion and lack of interest between students who considered the scholarly community as empowering and students who considered it as a burdening factor.

| | Experienced | | | |
|---|---|---|---|---|
| | Empowerment | Burden | | |
| | Mean (SD) | | t (df) | Effect size |
| Stress | 2.6 (1.1) | 2.9 (1.2) | −2.4 (378) * | .25 (small) |
| Anxiety | 2.5 (.9) | 2.9 (1.0) | −4.1 (378) ** | .43 (small–medium) |
| Exhaustion | 2.6 (.9) | 2.9 (.9) | −3.1 (382) ** | .32 (small) |
| Lack of interest | 1.8 (.8) | 2.4 (1.1) | 5.8 (380) ** | .58 (medium–large) |

Notes: * p < .050, ** p < .001

regarding their academic communities. In addition, the phase of studying was not related to experiences of the scholarly community. Thus, the students in all domains were equally likely to describe their community more often as a source of burden than empowering.

On the other hand, experiences were related to working conditions. The community was more often considered as an empowering factor by those students who reported to work full-time on their theses and by those who worked at least partially in a research group (see Table 5). It was notable, however, that over a third of the students working in research groups described the community as burdening. Men and women differed from each other only in experienced exhaustion: men (mean = 2.86) reported more study-related exhaustion than women (mean = 2.67). The difference was statistically significant ($t = -2.401$, $df = 662$, $p = .017$).



## Discussion

This study focused on doctoral students' experiences of the scholarly community in terms of socio-psychological well-being and the relation of these experiences to self-reported stress, exhaustion and anxiety. Further, we investigated the relation between experiences of the scholarly community regarding socio-psychological well-being and study engagement in respect of lack of interest and intentions to interrupt postgraduate studies.

Our findings suggest that the scholarly community plays a role in socio-psychological well-being. Results indicated variation in experiences of scholarly community regarding socio-psychological well-being. We analysed these varying experiences by dividing students' answers into two groups based on whether they reported experiencing empowerment and inspiration or, in contrast, burden in the scholarly community. Analyses of the experiences and self-reported negative emotions indicated that students who experienced their own scholarly community as empowering and inspiring, also experienced less stress, exhaustion, and anxiety in

Table 5. Experienced socio-psychological well-being in relation to study conditions, results of $\chi^2$ tests and effect size measured with Cramer's ν.

| | Experiences of empowerment | | Experiences of burden | | Total | |
|---|---|---|---|---|---|---|
| | *f* | % | *f* | % | *f* | % |
| * | | | | | | |
| Full-time | 101 | 52 | 95 | 48 | 196 | 100 |
| Part-time | 62 | 37 | 104 | 63 | 166 | 100 |
| Total | 163 | 45 | 199 | 55 | 362 | 100 |
| ** | | | | | | |
| Alone | 109 | 38 | 178 | 62 | 287 | 100 |
| In a group | 32 | 64 | 18 | 36 | 50 | 100 |
| Both | 23 | 66 | 12 | 34 | 35 | 100 |
| Total | 164 | 44 | 208 | 56 | 372 | 100 |

Notes: *Relation was statistically significant $\chi^2 = 6.74$, $df = 1$, $p = .009$, Cramer's $\nu = 0.14$ (the chi-square value reported is the Yates chi-square, corrected for continuity)
**Relation was statistically significant $\chi^2 = 19.028$, $df = 2$, $p = .000$, Cramer's $\nu = 0.23$

their PhD process. Further analyses also showed a relation between positive and negative experiences about the scholarly community and study engagement; students who perceived their community as empowering reported less lack of interest towards their own studies, and they were less likely to have considered interrupting their PhD studies.

Analyses of the experiences in relation to research group status suggested that the experience of belonging and participation is an essential but not sufficient component for the development of socio-psychological well-being. More particularly, this meant that merely belonging to a group did not guarantee well-being. Our findings also indicated that at their best, positive experiences and empowerment promoted by the academic community may function as a 'buffer' against disengagement in doctoral studies. The effect size of the relation between lack of interest and experienced socio-psychological well-being was medium. Thus, the more lack of meaning and motivation doctoral students reported, the more likely they were to experience their scholarly community as a burden (Table 4).



### *Methodological reflections*

We collected data from a large number of doctoral students from the biggest research intensive university in Finland. Our dataset also covered different disciplines, which enabled us to get a good general level idea of PhD students' socio-psychological well-being. The coverage of different disciplines can be considered as a strength of this study.

The response rate of this study was rather low. The main reason for this was probably the nature of doctoral education system in Finland. Until very recently the policy has been quite liberal. Once one had a right to study for PhD, you would be enrolled for life. This is why there are a great many students in the student register who are no longer doing their postgraduate studies and who have informed neither their advisor nor the administrative staff about their absence.

We compared our sample with all Finnish PhD students in respect to gender and age, based on the statistics gathered by the University of Helsinki and Statistics Finland (Table 6). The sample represented the population quite well in terms of gender distribution. In terms of mean age, it appeared that students who completed the survey from humanities and behavioural sciences were slightly younger than the average, whereas students from medicine who completed the survey were slightly older than average. Students who had completed more than two thirds of the thesis process were, however, slightly overrepresented. This might be explained by that the fact that these students had more experience, and therefore they might have felt that they could describe their process as a whole.

Table 6. Statistics (year 2008) of gender distribution and mean age in different disciplines in university of Helsinki according to Statistics Finland and university's own statistics.

| | Women | Men | Age (mean) |
|---|---|---|---|
| Humanities | 66% | 34% | 42.4 |
| Behavioural sciences | 76% | 24% | 53.1 |
| Medicine | 71% | 29% | 35.3 |

Furthermore, in the absence of detailed national level statistics on Finnish doctoral students, we analysed the representativeness of our sample by comparing it to a larger national survey of Finnish doctoral students in all domains (Hiltunen and Pasanen 2006; International Postgraduate Student Mirror 2006). The proportion of full-time (59%) and part-time students (41%) was rather similar to our sample (50:50). Also, the working conditions were quite similar to the larger national study. The majority of the students (71%) reported to work alone and only 6% mainly as part of some research group. The remaining 23% reported to work equally much alone and in a group. Respectively, the same percentages in our study were 78% alone, 13% in a group and 9% both alone and in a group. The only difference in our sample compared to the larger national study was that the majority of the students who answered our survey estimated to be in the last third of their doctoral process, whereas the most of the respondents in the national survey were in the beginning stages.

The instruments used to measure stress, anxiety, and exhaustion as manifestation of well-being were reliable, based on both reliability analysis done with the present sample and previous studies (Lonka et al. 2008). However, there were some methodological limitations regarding construct validity in using these measures. The scales were quite narrow and they were only able to describe doctoral students' well-being in reference to a few clinical indicators of exhaustion and of general study orientation. This description alone would not give a holistic or precise picture of the multidimensional phenomena of socio-psychological well-being but instead sheds light on certain aspects of it. The items that were used were also negative in expression. This focus is, however, quite typical: a measure designed to study well-being actually measures ill-being. To our knowledge, there are not many instruments that reliably measure well-being. We chose to modify this instrument into the PhD context since it has been proven as reliable and valid in different academic contexts (Lonka et al. 2008). The statistical findings were quite robust and functioned as measures of criterion validity for the qualitative analyses.

On the other hand, with open ended questions, we were able to emphasise students' experiences and study them specifically contextualised to the academic community. The content analysis of the open answers resulted in two categories for opposite kind of experiences of the academic community: *empowering experience* and *burdening experience*. We realise that categorising the answers into two categories gives a rather simplified picture of well-being. Since the data consisted of quite short answers to one open ended question, we wanted to be cautious to not over interpret the data. However, the simplified two-category solution helped us to test the criterion validity of the items that were modified from MED NORD (Lonka et al. 2008) in the context of doctoral education. A more in-depth interview study is in progress that will help us to gain better understanding of the rich variation in PhD students' experiences as well as the processes through which well-being develops.

### *Theoretical considerations and suggestions for further research*

Well-being is a subject that has not been studied much in the context of PhD education. In this article we investigated doctoral students' experienced socio-psychological well-being in their scholarly communities partially from the perspective of occupational health. It provides a valuable perspective and the possibility to consider well-being not

only as an individual state but also as a dynamic interactive relation between the individual and the environment. Current research on occupational health emphasises the importance of work engagement and motivation as well as organisational commitment to be outcomes of the recourses provided by the working environment (Hakanen, Bakker, and Williams 2006; Hakanen, Schaufeli, and Ahola 2008).

The results of this study extend the present knowledge about well-being in the PhD process. While previous studies have reported on the stress that doctoral students experience (International Postgraduate Student Mirror 2006; Kurtz-Costes, Helmke, and Ülkü-Steiner 2006; Stubb, Pyhältö, and Lonka 2007; Toews et al. 1993, 1997; Ülkü-Steiner, Kurtz-Costes, and Kinlaw 2000), we were able to establish a relationship between the experienced distress and experience of the scholarly community. This notion of interplay between the individual and the environment is in line with previous research in occupational health (Cole et al. 2010; Elo, Leppänen, and Jahkola 2003; Leiter and Maslach 1988; Maslach 1981, 2003; Maslach and Goldberg 1998). Pyhältö et al. (2009) also reported that doctoral students experienced the community as a key factor in successful PhD processes. However, this is not the only regulator of doctoral studies; it is important to acknowledge that students' experienced socio-psychological well-being does not always arise from the scholarly community. Sometimes burdening may result from other aspects; for instance from disappointments of not receiving funding, from not proceeding with their own studies, or it may relate to some other aspect in students' lives. The results of this study also support other investigators' findings that suggest a correlation between experienced well-being and engagement in one's own work or studies (Cole et al. 2010; Leiter and Maslach 1988; Lonka et al. 2008; Mäkinen, Olkinuora, and Lonka 2004). We were also able to identify some factors that might contribute to experienced socio-psychological well-being and feeling empowered.

The results of this study contradict previous findings of gender differences in experienced well-being in doctoral studies. Some prior studies have suggested that women experience more distress during their postgraduate studies than do men (Kurtz-Costes, Helmke, and Ülkü-Steiner 2006; Toews et al. 1993, 1997; Ülkü-Steiner, Kurtz-Costes, and Kinlaw 2000). However, we did not find any differences in experienced socio-psychological well-being or self-reported stress and anxiety between men and women. The only difference in our results was that men reported being *more* exhausted than women. This result may be due to characteristics of the population in Finnish higher education. The majority of the students both among undergraduates and doctoral students are women, whereas in some other countries women might represent the minority. Our results showed no relation between the discipline and experiences of the scholarly community in terms of socio-psychological well-being.

In this study we were able to provide a 'snap shot' of how doctoral students' experienced their socio-psychological well-being in the scholarly community. We acknowledge these experiences to be dynamic and changing across time rather than static. For further research it is important to attempt to study PhD students' well-being with more in-depth qualitative methods. Socio-psychological well-being is a complex phenomenon and in order to understand it more thoroughly, it is crucial to focus on exploring its construction and development. This requires researchers to apply more longitudinal methods in the future (Hakanen et al. 2006; Hakanen Schaufeli, and Ahola 2008). Since it may also be hypothesised that socio-psychological well-being is context-specific, it would make a valuable theoretical

contribution to studies on doctoral education to investigate different trajectories of well-being during the PhD process in relation to the several different contexts in which students participate. Peers and supervisory relationships as well as working in collective research groups may all play their part. These different contexts may add differently to students' experienced well-being. Previous research indicates that the working environment may be more decisive for well-being than recourses provided by private life (Hakanen Schaufeli, and Ahola 2008).

### *Educational implications for doctoral education*

When socio-psychological well-being is considered as something that develops in the dynamic interplay between the individual and their environment – and something that can be fostered in scholarly communities – our results raise an important question: how can we help early career academics to flourish? Based on students' reports in our study, a strong sense of belonging and meaningfulness were the aspects that most promoted experiences of empowerment. Also, intensification of researcher identity and good support for learning and doing research were identified as promoters of empowerment and experienced socio-psychological well-being. These findings may suggest guidelines when one is seeking to support academic growth. In everyday life practices of academic communities, this means paying attention to how PhD students are recognised and accepted as junior members of the community. The continuous meaning-making process of the students should be nurtured in order to avoid experiences of disengagement, isolation and unworthiness.

The contexts where PhD students carry out their thesis work are variable. Thus, it is important to acknowledge that doctoral students' participation can be nurtured in several parallel contexts. Firstly, in supervisory relationships, questions of participation should be taken into account in the recruitment of new PhD students, for instance with respect to students' research plans and the options to work as part of a group. Supervisors may also encourage their students to get to know others in the same field by, for example, encouraging them to attend conferences and seminars. This is often referred to as the 'know who' part of doing research.

Secondly, peer groups can function as important and meaningful communities for students. Furthermore, it is crucial to notice that the interaction practices need to be guided within the peer groups: meaningful interaction is not necessarily something that happens by itself when people form a group. Not only does the peer group function as a support system for students, but it can also be seen as a supervisory resource. At best it promotes the development of both discipline-specific and generic skills such as motivation, strategic planning, and co-operating with others. For instance, in reference to academic writing, some ideas about how to facilitate peer group interaction have already been stated. Boice (1993) and later Lonka (2003) suggested that, for example, regimen, social support, and peer feedback are crucial in developing expertise in academic literacy.

Thirdly, questions concerning participation need to be taken into account in research groups. It is important to consider students as an essential part of the creation of new knowledge. In other words, students may contribute ideas that can develop and enhance the community. Research on occupational health indicates that

innovativeness of the working environment promotes well-being (Hakanen, Schaufeli, and Ahola 2008). Therefore the question should not merely be around the socialisation of newcomers into already existing practices. In general, maintaining socio-psychological well-being in the PhD process may well have long-lasting effects as Nurmi and Salmela-Aro (2002) suggested in their study on undergraduates. These experiences may function as a basis for the well-being and coping skills for working life after graduation.

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