

Teacher agency in the professional community and association with burnout: A longitudinal person-centred approach

Jenni Sullanmaa ^{1,2}

Corresponding author

¹ Faculty of Education and Culture, Tampere University, Finland

² Faculty of Educational Sciences, University of Helsinki,

P.O. Box 9 (Siltavuorenpenger 1B), 00014 University of Helsinki, Finland

jenni.sullanmaa@helsinki.fi

Kirsi Pyhältö ^{1,2,3}

¹ Centre for University Teaching and Learning, Faculty of Educational Sciences, University of Helsinki, Finland

P.O. Box 9 (Siltavuorenpenger 1B), 00014 University of Helsinki, Finland

² Faculty of Education, University of Oulu, Finland

³ Extraordinary Professor, Center for Higher and Adult Education, University of Stellenbosch

kirsi.pyhalto@helsinki.fi

Janne Pietarinen

School of Applied Educational Science and Teacher Education, University of Eastern Finland, Finland

Yliopistokatu 2, P.O. Box 111, University of Eastern Finland, Finland

janne.pietarinen@uef.fi

Tiina Soini ^{1,2}

¹ Faculty of Education and Culture, Tampere University, Finland

² School of Applied Educational Science and Teacher Education, University of Eastern Finland, Åkerlundinkatu 5A, 33014 Tampere University, Finland

tiina.soini-ikonen@tuni.fi

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Abstract

Agentic teacher learning is central for teachers' professional development, school development and student achievement. The purpose of the study was to explore trajectories of teachers' professional agency in the professional community during a three-year follow-up period. The data comprised surveys with Finnish comprehensive school teachers (N = 2645) and latent profile analysis was used to identify subgroups of teachers. Four trajectories were identified: High agency, Increase in agency, Decrease in agency and Moderate agency. The results showed that the profiles were partly predicted by school type, teachers' work experience, leadership role and turnover intentions. Moreover, agency in the professional community was connected to the teachers' experiences of socio-contextual burnout; teachers with a strong sense of agency in the professional community experienced lower levels of burnout symptoms. The findings imply that teachers' agentic learning within the professional community can facilitate both their professional development and work-related well-being.

Keywords: teacher agency, teacher learning, professional community, teacher burnout

Introduction

Collaborative, active, and intentional learning is a key resource for school development, teachers' professional renewal and enhancing student achievement (Pietarinen, Pyhältö and Soini 2016; Stoll et al., 2006; Vescio, Ross and Adams, 2008). Teachers need to learn actively and skilfully in their work to master uncertainties and disruptions, bridge discontinuities and generate pedagogical innovations through co-creation (Pyhältö, Soini and Pietarinen 2012; 2014; Lipponen and Kumpulainen, 2011; Rantavuori, Engeström and Lipponen, 2016). There is tentative evidence that the extent to which teachers engage in such agentic learning, characterised by their will to learn (motivation), beliefs in their ability to learn (self/co-efficacy), and skills of learning (self-/co-regulated learning skills) within the professional community, is related to their learning within classrooms and from the classroom interaction (Pietarinen, Pyhältö and Soini, 2016), involvement in school reforms (Pyhältö, Pietarinen and Soini, 2014; Imants and van der Wal, 2020; Kauppinen et al., 2020; Vähäsantanen, 2015), students' learning outcomes (see James and McCormick, 2009; Leithwood and Louis, 2012; Postholm, 2012; Vescio, Ross and Adams, 2008) and the reduced risk of developing burnout (Pyhältö, Pietarinen and Soini, 2015).

However, not all teachers engage in agentic learning in their professional communities. Professional collaboration that enables transformative learning, including discussing aspects of teaching critically, systematically taking advantage of peer feedback and observing each other's lessons, has been shown to be less frequent than collaboration focusing on practical issues (Vangrieken et al., 2015). At the same time, we know little about what predicts agentic teacher learning within the professional community, the kinds of professional agency trajectories teachers develop over time in the professional community or if and how teachers with various agency profiles in terms of learning within their professional community have a different likelihood of suffering from burnout symptoms. Our aim with this study is to bridge the gap in the literature by

exploring the trajectories of teacher agency in the professional community during a three-year follow-up period. Also, personal and school demographic predictors for the trajectories, including the school type and size, the teacher's work experience, leadership role and turnover intentions will be examined. Moreover, the interrelationship between the agency profiles and experiences of socio-contextual burnout is explored.

Teacher agency in the professional community

Over the past two decades, teacher agency has been studied from various perspectives ranging from focusing on the individual teacher behaviour to approaches emphasizing the socio-cultural context and structures within which teacher agency is manifested (see Eteläpelto et al., 2013; Priestley et al., 2012; Toom, Pyhältö and Rust, 2015). Recent literature on teacher agency has explored the dynamic and multi-level interactions between agency, professional development, and school improvement (see Imants and van der Wal, 2020). Our approach is aligned with the view: in this study we focus on exploring teacher agency in terms of learning within the professional community (see e.g. Imants and van der Val, 2020; Kauppinen et al., 2020), integrating the prerequisites for self-regulative and collaborative professional teacher learning (see Bandura 2001; Martin, 2004; Scardamalia 2002; Scardamalia and Bereiter 1991). Teachers' *professional agency in the professional community* comprises of three complementary elements of teacher learning: teachers' motivation to learn, efficacy beliefs in learning and learning skills within the professional community, which allow them to draw on collective resources of the community and contribute to professional learning of and with their colleagues (Pyhältö, Soini and Pietarinen, 2012; see also Postholm, 2012; Van Eekelen, Vermunt and Boshuizen, 2006). This involves active and intentional participation in learning within the professional community, including the teachers, principals, and other educational professionals such as school psychologists (Pietarinen, Pyhältö and Soini, 2016;

Pyhältö, Pietarinen and Soini, 2015). Professional agency is constructed through participation in the collective activities of the professional community (Robinson, 2012) and is hence highly socially embedded and relational. It entails reciprocal interaction, both using colleagues as a resource for learning and acting as a support for others (Edwards, 2005; Pyhältö, Pietarinen and Soini, 2015). Our cross-sectional studies on Finnish teachers' professional agency in the professional community have shown that it can reduce work-related stress through promoting the use of self- and co-regulative proactive strategies (Pyhältö, Pietarinen and Soini, 2015). Moreover, experiencing agency in the professional community is strongly related to agency in the classroom, in terms of constructing collaborative and interactive relationships with pupils and reflecting on the classroom practice (Pietarinen, Pyhältö and Soini, 2016). Hence, learning in the professional community seems to promote both teachers' well-being and the ability to support pupils' agentic learning.

Teachers' professional agency is context dependent and socially embedded. Accordingly, agency in the professional community is contextualised in five *modes of learning* that each have their own function in active and skilful teacher learning in the professional community. The modes include engaging in *transformative practice* in collectively developing the working environment, *collective efficacy* with regards to learning, *positive interdependency* in professional learning, *mutual agreement* in terms of committing to jointly developed practices, and *active help-seeking* in overcoming challenges by drawing on the collective resources (e.g., Pyhältö, Soini and Pietarinen, 2012; Pyhältö, Pietarinen and Soini, 2015). *Transformative practice* is characterised by commitment to collaborative learning within the professional community. It entails the will to develop one's practice, being inspired by colleagues, and considering the professional community as a resource for improving one's practice by utilising shared discussions and feedback (Pyhältö, Pietarinen and Soini, 2015; see also Vähäsantanen et al., 2017). *Collective efficacy*, in turn, refers to the sense of collective ability in reaching shared goals and developing the school (Pyhältö, Pietarinen and Soini, 2015; Skaalvik and Skaalvik, 2010). This consists of making collective

decisions and learning to overcome difficult situations together - thus implying the commitment to developing common practices and holding on to them in face of challenges.

Positive interdependency in terms of professional learning entails using others' feedback while further encouraging others in collaborative practice and reflection (Pyhäntö, Pietarinen and Soini, 2015). Interdependency entails investing in collective learning and working for the common good. For instance, it has been suggested that high levels of interdependency, in terms of focusing on shared challenges and aligning shared action, are related to teacher learning (see Decuyper, Dochy, and Van de Bossche 2010; Meirink et al., 2010; Runhaar et al., 2013). In turn, *mutual agreement* refers to the more tangible element of appreciating and believing in the professional community's commitment to the principles of shared work and agreed rules of behaviour (see also Clement and Vandenberghe, 2000). This provides the grounding for developing sustainable pedagogical practices together. Finally, *active help seeking* as a mode of professional agency refers to the ability, motivation, and efficacy to seek help from the professional community on difficult issues and challenging situations (Pyhäntö, Pietarinen and Soini, 2015). This can be considered to be a central precondition for learning from others, and further to be of benefit for the teacher community.

There is tentative evidence on individual differences in professional agency between the teachers regarding school development. We previously showed that teachers with a strong sense of professional agency tend to have a more holistic understanding of a school reform compared to those colleagues showing less agentic initiatives (Pyhäntö, Soini and Pietarinen, 2012; Pyhäntö, Pietarinen and Soini, 2015). Yet so far, the knowledge on how a teacher's professional agency develops over time, particularly regarding learning in the professional community, is very limited. In addition to the potential individual differences in teachers' sense of professional agency, agency is not a stable individual trait (Priestley, Biesta and Robinson, 2015), but evolves and changes over time depending on the dynamics between the teacher and their learning ecology. This implies that

the professional agency trajectories of individual teachers can vary (Edwards 2005; Edwards and D’Arcy 2004; Edwards and Protheroe 2003), and are not necessarily linear, but can range from gradual growth to bumpy trajectories including drawbacks (Oolbekkink-Marchand et al., 2017; Postholm, 2012). The trajectories are likely to be determined by the quality of social interactions that the teacher engages in (Edwards, 2005; Eteläpelto et al., 2013; Greeno, 2006; Lipponen and Kumpulainen, 2011; Robinson, 2012) and their individual stance on them. Accordingly, both individual teacher attributes such as educational background or work experience (Imants and van der Wal, 2020; Oolbekkink-Marchand et al., 2017), and contextual factors (Eteläpelto et al., 2013; Kauppinen et al., 2020; Priestley et al., 2012) such as school size are likely to have an impact on the development of individual professional agency trajectories in the professional community. This further implies that there is individual variation in how a teacher’s agency in the professional community is developed and how the modes are manifested over time.

Socio-contextual burnout

There is tentative evidence that a teacher’s professional agency is related to reduced levels of work-related stress (Pyhältö, Pietarinen and Soini, 2015). This has potentially significant implications for improving teachers’ occupational well-being since teacher burnout, resulting from prolonged and extensive work-related stress, has been recognised as a serious occupational hazard (Travers and Cooper, 1993; Kokkinos, 2007; Montgomery and Rupp, 2005). Teacher burnout is highly socially embedded and is characterised by three distinctive symptoms (Pietarinen, Pyhältö and Soini, 2013; see also Maslach, Jackson, and Leiter, 1996): *exhaustion* referring to feelings of being drained and lacking energy, *cynicism* entailing negative or indifferent attitudes toward the professional community and work in general, and *inadequacy* comprising of decreased feelings of competence regarding the work and interaction with pupils (Pietarinen, Pyhältö and Soini, 2013).

Accordingly, the quality and quantity of social interactions within the school community play a key role in the emergence or absence of burnout symptoms (Bakker, Demerouti and Euwema, 2005; Pietarinen, Pyhältö and Soini, 2013; Pyhältö, Pietarinen and Salmela-Aro 2011). Displaying strong agency in the professional community provides a potential lever for taking advantage of, building and renewing collective social resources of the community, effectively overcoming work-related stressors, and hence reducing one's risk for suffering from burnout. Due to the social nature of cynicism and inadequacy, it can be presumed that having access to the collective resources of the professional community, including a supportive climate and feedback, may reduce the risk of experiencing such symptoms (see e.g., Burke, Greenglass and Schwarzer, 1996; Lee and Ashforth, 1996; Skaalvik and Skaalvik, 2017; Soini et al., 2019; van Droogenbroeck, Spruyt and Vanroelen, 2014). In turn, reducing the risk of experiencing exhaustion may occur both via receiving well fitted social support from the professional community, and via reduced workload due to sharing responsibilities with colleagues. We presume that teacher's agency in the professional community provides a resource not only for teacher learning, but also for buffering burnout symptoms.

Aim of the study

The aim of this study is to explore longitudinal trajectories of teacher agency in the professional community over a three-year follow-up period. Associations between the profiles and background variables (school type, school size, work experience, leadership role and turnover intentions) are examined, as well as the interrelationship between the agency profiles and experiences of socio-contextual burnout. The following hypotheses were examined:

- H1. Distinct profiles can be identified based on trajectories of agency in the professional community.

H2. Teacher agency profiles can be predicted by the school type and size, teacher's work experience, leadership role and turnover intentions.

H3. Profiles of agency in the professional community differ in terms of experiences of socio-contextual burnout.

Method

Participants

The study participants were Finnish comprehensive school teachers ($N = 2645$) from 75 schools around Finland. The selection of the schools started by selecting six districts which represented variation in terms of both urban and rural geographical locations and the size of the network in which the most recent curriculum reform work was carried out. Then, a SES index was calculated for each school based on six different socio-economic indicators of the school neighborhood (see also Pietarinen et al., 2021). Next, schools in both the upper and lower quartiles of the SES index were included in the final sample of schools, which were invited to participate in the study. A total of 75 schools participated at the first time point. Accordingly, the schools varied in terms of the socio-economic status of the school neighbourhood, urban and rural settings, and size (3 to 100 teachers). The data were collected annually at three time points during the autumn school terms (T1 (2016): $N = 1525$; T2 (2017) $N = 1548$; T3 (2018) $N = 1476$). Members of the research group collected the data from teachers at school staff meetings using paper surveys. All teachers in the case schools were invited to respond. The response rates, calculated as a proportion of all teachers in the case schools, were 80 per cent at T1, 79 per cent at T2, and 77 per cent at T3. Not all of the same participants provided data at all three measurement points. Some of the teachers had identifiable responses at only one ($n = 1332$) or two ($n = 710$) of the measurement points, while

599 teachers responded at all three time points. For this study concerning teachers' perceptions of learning within their professional community, teachers who had changed schools during the follow-up were excluded from the data. The study was conducted following the guidelines for responsible conduct of research and the ethical principles of research with human participants by the Finnish Advisory Board on Research Integrity (2012, 2019). Participation in the study was based on informed consent and ethical review was not required (Finnish Advisory Board on Research Integrity, 2019).

The participants ($N = 2645$; including respondents of all measurement points) worked in primary schools (49.4%), lower secondary schools (15.0%) and combined primary and lower secondary schools (35.6%). Their average work experience was 13.9 years ($SD = 9.8$, $Min/Max = 0/46$). Most of the participants were female ($n = 1695$, 77%) and the minority male ($n = 509$, 23%). The observed gender distribution was representative of Finnish teachers (77% female, 23% male; Paronen and Lappi, 2018). The proportion of teachers with a leadership role (principal, vice or assistant principal) was 7.8 per cent. Half of the participants (49.0%) had considered leaving the profession.

Instruments

Scales for measuring teachers' professional agency in the professional community and socio-contextual burnout were used in this study. The *Professional agency in the professional community* scale measures the key elements of teachers' professional agency, including motivation to learn, efficacy beliefs about learning, and skills and activities to facilitate and manage learning in the professional community (Pyhältö, Pietarinen and Soini, 2015). The scale includes five factors of teachers' professional agency in the professional community: transformative practice (4 items; Cronbach's $\alpha^{T1-T3} = .85$), collective efficacy (4 items; Cronbach's $\alpha^{T1-T3} = .81-.83$), positive

interdependency (3 items; Cronbach's $\alpha^{T1-T3} = .75-.77$), mutual agreement (2 items; Cronbach's $\alpha^{T1-T3} = .64-.68$), and active help seeking (2 items; Cronbach's $\alpha^{T1-T3} = .62-.75$). All items were rated on a seven-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree).

The *Socio-contextual teacher burnout* scale (Pietarinen, Pyhältö and Soini, 2013) draws on both Maslach and Jackson's (1981) burnout scale and Elo, Leppänen, and Jahkola's (2003) single-item stress measure. The scale includes three factors measuring teachers' socio-contextual burnout: exhaustion (3 items; Cronbach's $\alpha^{T1-T3} = .81-.83$), cynicism towards the teacher community (3 items; Cronbach's $\alpha^{T1-T3} = .71-.72$), and inadequacy in teacher–pupil interaction (3 items; Cronbach's $\alpha^{T1-T3} = .70-.73$). All items were rated on a 7-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree), except the stress item included in the exhaustion scale which was rated on a 10-point scale. Full scales are shown in Appendix 1. The descriptive statistics and correlations between the mean scores of the modes of agency in the professional community and socio-contextual burnout are shown in Table 1.

Other variables used in this study included school size (number of teachers in the school), school type (primary, lower secondary or combined primary and lower secondary school), teacher's work experience in years (calculated to correspond to timepoint 1), leadership role (whether the respondent worked as a principal, vice or assistant principal) and turnover intention (whether the teacher had contemplated leaving the profession). In the longitudinal data set, for school size, school type and work experience, information from timepoint 1 was used when available and missing values were complemented from subsequent surveys when possible. For the turnover intention and leadership role, a positive response at any of the measurement points was taken into account.

[Table 1 about here]

Analyses

The person-centered approach (Magnusson and Stattin, 1998) was used to explore variation between individuals to better understand teachers' individual experiences of agency in the professional community. Latent profile analysis is a mixture modeling technique that identifies subgroups of individuals based on their individual response patterns on continuous indicator variables. The results give each individual probabilities of belonging to each profile. In this study, latent profile analysis with repeated measures was used to identify subgroups of teachers based on their sense of professional agency in the professional community over the three-year follow-up period (Berlin, Williams and Parra, 2014). The latent profile analysis with repeated measures does not impose a growth model for the data, rather, the change is modelled in any form it naturally occurs in each latent profile (see Collins and Lanza, 2010). The analyses were conducted with Mplus 8.3 (Muthén and Muthén, 1998-2017) and the full information maximum likelihood estimation (FIML) was used (Schafer and Graham 2002). The observed mean scores of the modes of agency in the professional community at three measurements were used as profile indicators. Correlations between the three measurements of each mode were released. The latent profile model was chosen with an exploratory approach, thus, the latent profile analysis was conducted for 1-6 classes, to be able to compare and choose the best model to represent the data. The Akaike (AIC), Bayesian (BIC) and adjusted Bayesian (aBIC) information-based measures of fit, and Vuong-Lo-Mendell-Rubin (VLMR), Lo-Mendell-Rubin (aLRT) and bootstrapped (BLRT) likelihood ratio tests were used to choose the final profile model (Berlin, Williams and Parra, 2014; Nylund, Asparouhov and Muthén, 2007). The average latent class probabilities and entropy statistics were also examined to evaluate the clarity of the solutions.

After the latent profile model was chosen, the R3STEP method was used to examine whether school type, schools size, teacher's work experience, turnover intention or leadership role were associated with the profile membership (Asparouhov and Muthén, 2014b; Muthén and Muthén, 1998-2015). Moreover, the mean differences between the profiles in socio-contextual burnout at timepoint 3 were examined with the BCH method in Mplus (Asparouhov and Muthén, 2014b; Muthén and Muthén, 1998-2015).

Results

Regarding the selection of the latent profile model that would best describe teachers' perceptions of their agency in the professional community, the fit of the profile model improved with each additional profile until the four-profile model, based on all fit indices and likelihood ratio tests. According to the VLMR and aLRT likelihood ratio tests, the model fit did not significantly improve with the addition of any subsequent classes after the four-profile model. However, the AIC, BIC and aBIC indices and the BLRT test showed increasing fit with additional profiles for the five and six-profile models as well. The four-profile solution was the most parsimonious model and as the VLMR and aLRT likelihood ratio tests showed no further improvement in model fit with additional profiles, the four-profile model was chosen for further analysis. In other words, four distinct profiles seemed to best describe the different response patterns among the teachers. The entropy statistic and the latent class probabilities in the four-profile solution also showed adequate separation between profiles.

[Table 2 about here]

[Figure 1 about here]

Four profiles of agency in the professional community were identified (Figure 1): 1) *High agency*; 2) *Increase in agency*; 3) *Decrease in agency*; and 4) *Moderate agency*. The *High agency* profile was the most typical among the teachers (43.4%). Teachers in the high agency profile showed a very strong experience of agency in the professional community in terms of all modes of agency in the professional community. More specifically teachers with the *High agency* profile consistently reported to utilise their colleagues as a resource for professional learning (PRAC), rely in co-creative learning with their colleagues to promote school development (CE), contribute to their colleagues' professional development (INTER), being committed to shared practices to advance professional learning (AGRM), and relying on their colleagues when facing problems (HELP). Their sense of agency also endured over the three-year follow-up period as there were no statistically significant differences between the mean levels over time, except for mutual agreement and active help-seeking which showed a slight decrease between T1 and T2 (see Table 3). Teachers in the *Increase in agency* profile (33.9%) also had a strong sense of agency in the professional community, which showed a further statistically significant increase from the first to the second year of the follow-up. However, this was then followed by a slight decrease, which was statistically significant in all other modes of agency except for mutual agreement. In turn, teachers in the *Decrease in agency* profile (14%) had a very strong sense of agency at the beginning of the follow-up period but experienced a considerable and significant drop in the agency they experienced during the second year. Hence, during the second year they reported less of inspiration from other teachers in advancing their teaching (PRAC), shared encouragement in the teacher community (CE), utilizing critical feedback from the teacher community (INTER), appreciation of shared rules (AGRM) and seeking help actively in difficult situations (HELP) compared to the first measurement point. However, their sense of agency bounced back in the third year of the follow-up, all other modes of agency except for mutual agreement showing a slight increase from the second

year. Finally, the *Moderate agency* profile included a minority (8.7%) of the teachers. These teachers showed the lowest sense of agency in the professional community in terms of all five modes. Thus, they experienced the least amount of developing their teaching by utilizing their colleagues (PRAC), efficacy of the teacher community in challenging situations (CE), willingness to act for the best of the teacher community (INTER), utilization of common rules (AGRM) and courage to ask for help (HELP). These teachers' perceptions did not show large changes during the follow-up, as no statistically significant changes in the mean levels of subsequent years were found.

When testing whether the profiles differed from each other in terms of the mean scores of the five modes of agency in the professional community, the results showed that the mean differences between the profiles were statistically significant ($p < .05$), except for between the *Increase in agency* and *Decrease in agency* profiles in terms of transformative practice and active help-seeking at T3 (see Table 3). Thus, the profiles differed from each other mostly in terms of the level of perceived agency in the professional community, and regarding the *Increase in agency* and *Decrease in agency* profiles, also in terms of the observed trajectories. Although the two profiles had a very similar sense of agency at the third measurement point, various trajectories of agency in the professional community preceded it.

[Table 3 about here]

Further analysis of the associations between the profiles and background variables showed that the profile memberships were associated with teachers' work experience, leadership role, turnover intentions and school type. Teachers with more work experience were relatively more likely to belong to the *Moderate agency* profile compared to all other profiles: *Decrease in agency* (OR =

1.06, 95%CI [1.03-1.08]), *High agency* (OR = 1.05, 95%CI [1.03-1.07]) and *Increase in agency* (OR = 1.04, 95%CI [1.03-1.06]), although this effect was small. Teachers with a leadership role (principal, vice or assistant principal) were more likely to belong to the *High agency* profile relative to any other profile: *Moderate agency* (OR = 10.35, 95%CI [3.29-32.62]), *Increase in agency* (OR = 4.87, 95%CI [2.58-9.17]) or *Decrease in agency* (OR = 2.51, 95%CI [1.19-5.33]). Moreover, teachers with a leadership role were more likely to be members of the *Decrease in agency* than *Moderate agency* (OR = 4.12, 95%CI [1.02-16.60]) profile. Teachers that had contemplated leaving the profession were more likely to be members of the *Moderate agency* (OR = 2.53, 95%CI [1.81-3.53]), *Increase in agency* (OR = 1.45, 95%CI [1.15-1.82]) or *Decrease in agency* (OR = 1.67, 95%CI [1.16-2.39]) profiles, compared to the *High agency* profile. Moreover, teachers with turnover intentions were more likely to belong to the *Moderate agency* compared to the *Increase in agency* profile (OR = 1.75, 95%CI [1.23-2.49]). With lower secondary school teachers as the reference group, primary school teachers were relatively more likely to be members of the *High agency* profile when compared to the *Decrease in agency* (OR = 2.28, 95%CI [1.35-3.84]) or *Moderate agency* profiles (OR = 1.66, 95%CI [1.06-2.61]), and more likely to be in the *Increase in agency* profile compared to the *Decrease in agency* profile (OR = 2.11, 95%CI [1.14-3.89]). Finally, teachers in combined primary and lower secondary schools were slightly more likely to belong to the *Increase in agency* profile compared to the *Moderate agency* profile (OR = 1.71, 95%CI [1.02-2.87]). Profiles were not associated with the size of the school, measured by the number of teachers.

The results further showed that the four teacher profiles of agency in the professional community differed in terms of the experienced socio-contextual burnout measured at time point 3 (Table 4). Teachers in the *High agency* profile experienced less exhaustion, cynicism and inadequacy than teachers in the *Moderate agency* and *Increase in agency* profiles, and less cynicism than teachers in the *Decrease in agency* profile. In turn, teachers in the *Moderate agency* profile

experienced the highest levels of burnout, except for inadequacy which did not significantly differ from the *Increase in agency* profile. Interestingly, the *Increase in agency* and *Decrease in agency* profiles only differed in terms of the inadequacy they experienced, with teachers in the *Increase in agency* profile having slightly higher experiences of lack of competence in their interactions with pupils.

[Table 4 about here]

Methodological reflection

The person-centred approach used in this study allowed us to explore individual variations and development in teacher agency in the professional community measured over a three-year period of follow-up. Choosing the number of profiles in latent profile analysis is not straightforward (Nylund et al., 2007) and thus, further studies are needed to examine whether similar or different profiles can be identified in other teacher groups. Moreover, it is important to note that causal inference should not be made based on the associations between the profiles and background variables or socio-contextual burnout. More longitudinal studies are needed to examine further the development of agency in the professional community and the association with socio-contextual burnout.

The study relied on self-report data from teachers in measuring their sense of agency within the professional community. Thus, the results do not necessarily reflect teachers' actions in terms of learning in the professional community, although their perceptions of motivation, efficacy and skills to learn in the professional community can be considered to be central facilitators for professional development. Moreover, self-report data is known to be susceptible to certain biases,

such as common method variance (Podsakoff, MacKenzie, Lee and Podsakoff, 2003) and social desirability bias (Nederhof, 1985). However, the self-report survey was a useful way to collect information on a large scale in a longitudinal design.

The reliability of the burnout scale was consistent through the measurements, however the factors of agency in the professional community scale with only two items had lower levels of reliability and thus, the validity of these scales should be further examined. The response rates within the case schools were high and the schools represented variation in terms of the school's location, size, type and socioeconomic status of the neighbourhood. Moreover, the sample represented Finnish teachers well in terms of gender. However, due to the sampling method of including all teachers in the case schools at the time of each data collection, not all of the same teachers responded at all time points, some having identifiable responses at only one or two time points.

Discussion

This study explored longitudinal trajectories of teacher agency in the professional community, manifested in the modes of learning with and from colleagues. The study supports earlier research showing that teacher learning is highly individual and varies in different contexts and over time (see Postholm, 2012). More specifically, the results showed that agentic learning in the professional community varies both in its level and its development over time. Teachers most typically displayed the *High agency* profile. Teachers in this profile had a very strong and consistent sense of agency within their professional community, and they identified the professional community as an important resource for their learning. Thus, the results imply that the teachers were able to both draw on and contribute to their professional communities as resources for their professional learning.

A significant number of teachers also belonged to the more fluctuating agency trajectories, with either an increase or decrease in agency in terms of their professional community. This implies that the dynamics between teachers and their professional communities offered varying opportunities for learning within and for the professional community. However, none of the profiles had a continuously increasing or decreasing trajectory. Hence, fluctuations between growth and drawbacks seem to characterise the development of teachers' agency in the professional community to a great extent in addition to more enduring trajectories shown by the high and moderate agency profiles. A small proportion of teachers displayed a moderate sense of professional agency in the professional community, showing consistently lower sense of agency in the professional community compared to the other profiles during the three years of follow-up. This might result from the lack of opportunities provided by their professional community for engaging in agentic learning or teacher's lack of motivation, self-efficacy or skills in engaging in such activities in the community. For instance, it might be that some of these teachers do not consider the professional community to be a significant arena for their professional development. Yet, creating a supportive and open climate for collaborative experimentation, knowledge sharing, and co-reflecting experiences might engage these teachers in building and drawing on the joint resources for learning, i.e., to promote teachers' agency in the professional community (see also Vähäsantanen et al., 2017). This can be considered to be important since the challenges faced in teacher's work are not limited to the classroom, and overcoming such challenges often requires co-construction of new practices.

Based on the findings, teachers that had a leadership role, either as a principal, vice or assistant principal, had a stronger sense of professional agency in the professional community as they were more likely to be in the *High agency* profile. This might imply that teachers who are active in learning within the professional community are more likely to be undertaking leadership tasks, or that obtaining a leadership role provides more opportunities to take the initiative to engage

in learning together and in developing the collective expertise and practice. Moreover, primary school teachers in general were more likely to have a higher sense of agency within the professional community. This is somewhat expected, because the organisational structures and professional communities in lower secondary schools might be more loosely coupled due to the subject-based identities and responsibilities of teachers (see Honingh and Hooge, 2014). Interestingly, more experienced teachers were slightly more likely to be in the *Moderate agency* profile, which had the lowest sense of agency among the profiles identified. This might imply that with experience, the teachers were less eager to invest in learning with colleagues or more self-sufficient and hence, less co-dependent on the professional community in solving challenges faced with pupils. Due to the longer work experience, they might also have more well-established routines in their work that are less easily changed (see Brody and Hadar, 2015; Hargreaves, 2005). However, it should be noted that the association between work experience and the profiles was relatively small. In addition, based on the findings, teachers with turnover intentions were less likely to have a high sense of agency in the professional community. Hence, the results imply that a lower sense of agency in terms of learning with and from the professional community is connected to insecurity about staying in the teaching profession. This has potentially significant implications for developing means to buffer teacher turnover, considered to be a major challenge in many countries (see Borman and Dowling, 2008).

Our results further showed that teachers' agency in the professional community was connected to the experiences of socio-contextual burnout in the third year of the follow-up. In general, teachers with a strong sense of agency in the professional community showed lower levels of experienced burnout symptoms, whereas teachers in the *Moderate agency* profile with the lowest sense of professional agency experienced more exhaustion, cynicism toward the teacher community and inadequacy in teacher-pupil interaction. Interestingly, the profiles with either an increase or decrease in agency over the follow-up study only differed in terms of inadequacy in teacher-pupil

interaction; the *Increase in agency* profile experienced slightly more inadequacy. As the experienced burnout was measured in the third year of the study, this finding might reflect the direction in which the sense of agency was developing in these profiles - agency in the *Increase in agency* profile was decreasing after growth during the second year, whereas the sense of agency in the *Decrease in agency* profile had already bounced back after the significant drop in the second year. On the other hand, it might also be that the teachers who experienced inadequacy in the teacher-pupil relationship are more likely to draw on the collective resources for learning provided by the professional community to solve the challenges that are causing the feelings of inadequacy. Overall, the results support tentative evidence provided by the prior literature in that teacher's active agency in learning within the professional community is associated with their well-being at work. This implies that learning within and for the professional community does not only provide a central resource for teacher renewal and school development, but also for buffering teacher burnout.

Teacher learning in terms of developing one's professional practice requires support from and meaningful interaction with the professional community (see Kauppinen et al., 2020). Creating collaborative cultures, within which the contemporary challenges and school development efforts are brought into practices by collectively developing a shared vision, transforming the main aims into meaningful pedagogical practices, negotiating shared actions and exchanging ideas and experiences is crucial (see Hargreaves, 1994). Agency in the professional community, in terms of being able to utilise colleagues as a resource, can support developing school practices that are better in line with school and teacher needs. Thus, learning in the professional community could act as a buffer from the stressors experienced due to increasing workloads and changes in the work environment (see Bakker, Demerouti and Euwema, 2005). Supporting teachers' agentic learning within the professional community can therefore facilitate both their professional development and work-related well-being.

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Appendix 1.

The scales and items for exploring teacher's sense of professional agency (translated from Finnish).

1) Teacher's professional agency in the teacher community

Transformative practice (PRAC)

Prac11: Other teachers' ideas inspire me to advance my own teaching.

Prac12: I'm able to utilize the feedback from teacher colleagues in developing my teaching.

Prac13: I'm willing to discuss my own work with my teacher colleagues.

Prac14: The discussions in the teacher community inspire my work.

Collective efficacy (CE)

Ce21: In our teacher community we encourage each other to develop.

Ce22: We are able to deal with challenging school situations together.

Ce23: Our teacher community is able to take care of our pupils together.

Ce24: The common development work in our school has made it easier to carry out my own teaching.

Positive interdependency (INTER)

Inter31: I'm willing to act in order to advance the best for our entire teacher community.

Inter32: I encourage my teacher colleagues to collaborate.

Inter33: I'm able to utilize the critical feedback I get from the teacher community.

Mutual agreement (AGRM)

Agrm41: Settling the common school behaviour rules helps me to advance my teaching.

Agrm42: I appreciate the fact that we have shared rules of behaviour in facing the most challenging pupils.

Active help-seeking (HELP)

Help51: I can discuss even the difficult subjects in my teacher community.

Help52: I'm not afraid to ask the other teachers for help.

2) Socio-contextual burnout

Exhaustion (EXH)

Exh11: Stress means a situation in which a person feels tense, restless, nervous or anxious or is unable to sleep at night because his/her mind is troubled all the time. Do you feel this kind of work-related stress?

Exh12: I feel burnt out.

Exh13: With this work pace I don't think I'll make it to the retiring age.

Cynicism (CYN)

Cyn21: I'm disappointed in our teacher community's ways of handling our shared affairs.

Cyn22: In spite of several efforts to develop the working habits of our teacher community they haven't really changed.

Cyn23: I often feel like an outsider in my work community.

Inadequacy (INAD)

Inad31: The challenging pupils make me question my abilities as a teacher.

Inad32: I often feel I have failed in my work with pupils.

Inad33: Dealing with problem situations considering my pupils often upsets me.
