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The interrelationship between pre-primary and early primary school teachers' learning in the professional community and burnout: a person-centered approach

Jenni Sullanmaa ^{a,b}, Janne Pietarinen^c, Lasse Lipponen ^b, Tiina Soini ^a and Kirsi Pyhältö^{d,e,f}

^aFaculty of Education and Culture, Tampere University, Tampere, Finland; ^bFaculty of Educational Sciences, University of Helsinki, Helsinki, Finland; ^cSchool of Applied Educational Science and Teacher Education, University of Eastern Finland, Joensuu, Finland; ^dCentre for University Teaching and Learning, Faculty of Educational Sciences, University of Helsinki, Helsinki, Finland; ^eFaculty of Education, University of Oulu, Oulu, Finland; ^fCenter for Higher and Adult Education, University of Stellenbosch, Stellenbosch, South Africa

ABSTRACT

Teacher learning is crucial in terms of good quality education in early years and, respectively teachers' professional communities are crucial for teacher learning. The meaning of engagement in collaborative learning and resources available in professional community are emphasized in educational reforms. In this study, we explored teachers' perceptions of the resources for learning within their professional community in terms of knowledge sharing, the professional recognition received and a constructive work climate in the beginning of national curriculum reform. Individual variation in these factors was explored using latent profile analysis with a sample of 272 pre-primary and early primary school teachers. Moreover, association with the experience of burnout symptoms was examined. Three distinct profiles were identified: *High fit*; *High recognition*; *Moderate knowledge sharing and fit*. The results showed that teachers in the *High fit* profile experienced less cynicism towards the professional community. The study sheds light on the role of the recognition received from co-workers and a constructive and enabling work climate for the increased capacity to construct shared knowledge in the context of curriculum reform, and for buffering experienced cynicism.

KEYWORDS

Early childhood education teachers; knowledge sharing; teacher community fit; burnout; national curriculum reform

Introduction

Pre-primary and early primary education teachers play a central role in early phases of children's school path and transition from early childhood education to school. The knowledge, skills, and practices of early childhood educators are important determinants of the quantity and the quality of learning and the preparedness of the child for entry into school (Sheridan et al. 2009). Accordingly, teacher's ability to adjust and renew their

CONTACT Jenni Sullanmaa  jenni.sullanmaa@tuni.fi  Faculty of Education and Culture, Tampere University, Åkerlundinkatu 5 A, 33014 Tampere, Finland Faculty of Educational Sciences, University of Helsinki, P.O. Box 9 (Silta-vuorenpenger 1B), 00014 Helsinki, Finland

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pedagogical practices is important for developing engaging learning environments for all children. Moreover, the changes in pre-primary and primary education, including curriculum reforms, increases the need for meaningful teacher learning. This is providing that teachers in pre- and primary school engage in continuous professional learning. This calls for continuous, sensitive and proactive adaptation and revision of one's pedagogical practices, including cultivating a holistic orientation towards learning and teaching having a vital impact on teacher's relationships with children and families (Pyhältö et al., 2014; Peters 2010).

Engaging in collaborative efforts and professional discussions is especially suggested to be central for developing pre-primary and primary education teachers' pedagogical practices (e.g. Karila and Rantavuori 2014; Kuh 2012; Ukkonen-Mikkola and Fonsén 2018). This can take place in formal professional development courses, programs or curriculum making, and is primarily embedded in pre-primary and early primary school development work, activity that is orchestrated and implemented by the professional community. In Finland, pre-primary and early primary school teachers have recently been confronted with several large-scale reforms. Changes have included pre-primary education becoming compulsory for all children in 2015, development of a more fluent transition from pre-primary to primary school (Karila and Rantavuori 2014), demands for more integrated, participatory and continuous education in early childhood (Kopisto et al. 2014; Ukkonen-Mikkola and Fonsén 2018) and reform of the core curriculum in 2014-2016. These reforms have challenged teachers' capacity for collective professional learning.

Research has shown that teachers' engagement in professional learning has several positive consequences for students, the school community and the teachers themselves, including implementing more student-centered methods in teaching (James and McCormick 2009), better learning outcomes among the students (Leana 2011), increased experimentation with teaching methods (Bakkenes, Vermunt, and Wubbels 2010), and committing to school development (Tikkanen et al., 2019). There is also tentative evidence that collaborative learning activities within the teacher community may reduce risk for suffering burnout (Pyhältö et al., 2015, 2019). Yet, individual teachers engage in such activities to different extents, further having different impacts on both their professional development (Bakkenes, Vermunt, and Wubbels 2010; James and McCormick 2009; Meirink, Meijer, and Verloop 2007), and potentially on their risk of suffering from burnout.

We know a lot about factors related to teachers' professional learning and there is an ample of variable centered research in the area (Owen 2015; Vescio, Ross, and Adams 2008). However, individual teachers differ greatly in this regard (e.g. Briggs, Russell, and Wanless 2018), and there is a need to know more about individual variations among pre-primary and early primary education teachers learning and how it contributes to their risk of experiencing burnout. The aim of this study is to bridge the gap in the literature by exploring individual variations in the perceived resources for teacher learning within their professional community, in terms of: (1) the practices of *knowledge sharing*, i.e. participatory sense-making in curriculum development work, and (2) experienced *teacher-environment fit*, i.e. the sense of belonging to the professional community in terms of receiving professional recognition and experiencing a constructive and enabling work climate. In the study, we examined these factors in the context of

the most recent core curriculum reform in Finland. Individual patterns in teachers' perceptions were examined by identifying latent profiles. In addition, the relationship between the teacher profiles and teachers' experiences of socio-contextual burnout symptoms were explored.

The professional community as a resource for pre-primary and early primary school teacher learning

The professional community provides a central resource for teacher learning in general and recently it has been studied intensively as part of the professional development of early years teachers (Cherrington and Thornton 2015; Damjanovic and Blank 2018; Owen 2015). At its best, professional community offers a pool of expertise and social support for the early years teachers in transforming and developing their professional practices through active and collective learning within the teacher community. In the context of curriculum reform learning is realized in *knowledge sharing*, entailing shared sense-making, negotiations and constructing knowledge in curriculum making, based on the distributed expertise of teachers (Pietarinen et al., 2017, 2019). This is particularly important for the pre-primary and primary school teachers since they have to bridge the gap between pre-primary and primary education in order to facilitate a smooth transition from early childhood education to school (Rantavuori, Kupila, and Karila 2017), requiring a shared sense making not only within the school or day care center, but also across the organizational boundaries. Engaging in knowledge sharing is characterized by drawing on the existing knowledge and experience of the professional community while collectively making sense of the curriculum reform and transforming it into pedagogical practice (see Pietarinen et al., 2017, 2019; Coburn 2001; Irvine and Price 2014; Kondakci et al. 2017; März and Kelchtermans 2013; Rantavuori, Kupila, and Karila 2017). Teacher involvement in such shared endeavors has been shown to have several positive effects, including enhanced teacher learning (see Vescio, Ross, and Adams 2008), commitment to school development (Pietarinen et al., 2017, 2019), positive reform outcomes in terms of changes in beliefs and practice (see Cheng, Wu, and Hu 2017; Harris 2004; Irvine and Price 2014; Kondakci et al. 2017; Thoonen et al. 2012), and reduced levels of reform-related stress (Pyhältö et al., 2019).

Yet, a teacher's opportunities to engage in knowledge sharing practices within their professional community are highly dependent on their relationship with it. A precondition for engaging in knowledge sharing in terms of curriculum making is that teachers experience trust and feel respected and valued by their professional community (see Bryk and Schneider 2003; Vangrieken et al. 2017). This experience is reflected in teachers' perceptions of their work environment. Teachers' positive relationship with their working environment, reflected in *the teacher-working environment fit* (e.g. Cable and Edwards 2004; Verquer, Beehr, and Wagner 2003), is a prerequisite for collective learning. The perceived teacher-working environment fit in the professional community can be examined in terms of *received professional recognition* and *a constructive and enabling climate* (Pietarinen et al., 2013a). Research has shown that receiving professional recognition and a constructive enabling climate are related to successful learning in teachers' professional communities, teachers' work commitment, self-efficacy and satisfaction (see Hur, Jeon, and Buettner 2016; Meristo and Eisenschmidt 2014; Thapa et al. 2013;

Vangrieken et al. 2017). However, research on professional learning communities in early childhood education contexts is still relatively rare, resulting in insufficient knowledge on how such communities can be established and embedded (Thornton and Cherrington 2019).

The experienced teacher-environment fit has also been shown to contribute to teachers' occupational well-being. While a good fit with the professional community has been shown to promote work engagement, job satisfaction and reduced risk for suffering burnout among the teachers (Dorman 2003; Pas, Bradshaw, and Hershfeldt 2012; Skaalvik and Skaalvik 2011; Thapa et al. 2013), a mismatch, for instance, in terms of high demands combined with low resources, is found to increase dissatisfaction, prolonged stress and burnout at worst (e.g. Pyhältö et al., 2011; Sharplin, O'Neill, and Chapman 2011; Schaufeli and Bakker 2004). While there is a strong body of evidence showing that good working environment fit buffers teachers' risk of suffering from burnout, there are also tentative results indicating that burnout can spread through the social support in a closely-knit professional community (see e.g. Bakker and Schaufeli 2000; Van Der Doef and Maes 2002). This further implies that the ways in which professional learning activities are orchestrated and individually experienced by the pre-primary and early primary education teachers may either reduce or increase their risk for burnout.

Teacher's socio-contextual burnout

Unfortunately, the professional community does not always constitute the optimal working environment for teachers. Compared with other occupational groups, teachers suffer from quite high levels of stress (e.g. Kalimo and Hakanen 2000; Smith et al. 2000), and in early education there are some specific stressors such as quality of instructional support and classroom organization (Sandilos et al. 2015) and children's behavioral problems (Jeon, Buettner, and Snyder 2014). Moreover, engaging in school reforms has been shown to increase teacher stress (Kyriacou 2001), although successful reform can reduce it in the long run through the development of more functional pedagogical practices (Van Droogenbroeck, Spruyt, and Vanroelen 2014), especially when they receive support from work colleagues (Kilgallon, Maloney, and Lock 2008). At its worst, extensive and prolonged stress can lead to teacher burnout (see Pietarinen et al., 2013a; Bakker, Demerouti, and Euwema 2005; Kokkinos 2007; Montgomery and Rupp 2005; Skaalvik and Skaalvik 2009). Teacher burnout involves three distinct symptoms (see seminal work by Maslach, Schaufeli, and Leiter 2001): *exhaustion* is characterized by lack of emotional energy, work overload and strain (Pietarinen et al., 2013b; Friedman 2000); *cynicism* entails indifference towards or distancing from work in general, and a disaffected or negative attitude towards pupils, parents or colleagues (Pietarinen et al., 2011, 2013b; Hakanen, Bakker, and Schaufeli 2006; Schaufeli and Buunk 2003); and *professional inadequacy* is characterized by self-evaluative experience of insufficient competence or reduced accomplishment, often related to teacher-pupil interaction (Pietarinen et al., 2011; Friedman 2000).

Previous studies have suggested that pre-primary education teachers appear to be particularly susceptible to burnout (Barford and Whelton 2010; Jungbauer and Ehlen 2015; Koch et al. 2015; Løvgren 2016; Maslach and Pines 1977). According to Blöchliger and

Bauer (2018), the number of pre-primary education teachers suffering from burnout symptoms or at risk of burnout is high: international studies report numbers ranging from 10% to 56%. Burnout symptoms among pre-primary education teachers have been shown to be clustered strongly within childcare centers (Blöchliger and Bauer 2018). Moreover, control and reward at an individual level, and workload at a childcare center level were found to be significantly associated with burnout symptoms among pre-primary education teachers (Blöchliger and Bauer 2018).

Accordingly, teacher burnout has shown to be highly socially embedded in the interactions in the educational context, particularly with the children and colleagues (e.g. Pyhältö et al., 2019; Fernet et al. 2012; Skaalvik and Skaalvik 2009). For instance, lack of support from colleagues or friction in the professional community can increase cynicism towards the professional community and undermine motivation to learn together (see Pyhältö et al., 2011; Bakker, Demerouti, and Euwema 2005). In turn, the support received from co-workers and leaders was found to be negatively correlated with burnout symptoms among pre-primary education teachers (Barford and Whelton 2010; Rudow 2004; Viernickel et al. 2014). Based on prior research, it is assumed that resources provided by the professional community for teacher learning – i.e. knowledge sharing and perceived fit with the professional community – may buffer pre-primary and early primary school teachers' risk of experiencing burnout. Thus, socio-contextual burnout was examined in relation to teacher profiles of the resources in their professional community.

Aim

The aim of this study was to gain a better understanding of the individual variation in pre-primary and early primary school teachers' perceived resources for teacher learning within their professional community, in terms of the practices of *knowledge sharing*, i.e. participatory sense-making regarding the curriculum reform, and experienced *teacher-environment fit*, i.e. the received professional recognition and a constructive and enabling work climate. Individual variation in teachers' perceptions was examined by identifying latent profiles. These individual patterns were examined in relation to the three dimensions of teachers' experiences of socio-contextual burnout. Accordingly, the following hypotheses were examined:

H1. Distinct teacher profiles, based on perceptions of *knowledge sharing*, and fit within the professional community in terms of *received recognition* and *constructive climate*, can be identified among pre-primary and early primary school teachers.

H2. The *knowledge sharing and fit profiles* differ in their experiences of the burnout symptoms: exhaustion, cynicism towards the teacher community, and inadequacy in teacher-pupil interaction.

Methods

Pre-primary and primary school education in Finland

The study is situated in the context of Finnish pre-primary and early primary school (teachers of grades 0–2, children up to 9 years-of-age). In Finland, pre-primary and primary

education are free of charge. The one-year pre-primary education for six-year-olds became compulsory in 2015. The pre-primary classes can be situated in day care centers or in schools. Children usually enter primary school at the age of seven. The basic education consists of primary school (grades 1–6) and lower secondary school (grades 7–9). The pre-primary and primary schools previously had separate administrations, and thus they have different traditions and cultures (Karila and Rantavuori 2014; Rantavuori, Kupila, and Karila 2017). However, recent developments have shown a trend towards continuous and holistic early childhood education and developing a fluent transition from pre-primary to primary school (Karila and Rantavuori 2014).

The national core curricula for both pre-primary and primary education were reformed in 2014. The simultaneous reforms aimed to strengthen the continuum of learning from pre-primary to primary school. The renewed core curriculum for basic education emphasizes active involvement of pupils, a holistic and integrative approach to instruction and versatile learning environments (Finnish National Board of Education 2014). The national core curricula set the general aims, principles and core content for education and act as a framework for constructing local curricula, which are constructed by local education providers, usually municipalities. Educational reforms in Finland apply participative strategy meaning that teachers in pre-primary and primary are involved in planning or at least have familiarized themselves with the becoming changes already before they are implemented (e.g. Soini et al., 2021). For example, the core curriculum work was launched in 2012, the feedback rounds and development continued through 2012–2014 and the implementation of the new curricula for pre-primary and primary schools started in autumn 2016.

Overall, the Finnish education system is characterized by trust. Finnish teachers are considered to be high-quality professionals and have pedagogical autonomy in developing their professional practice (Niemi 2016). Teacher education is one of the most desired higher education programs in Finland. Class teacher education for primary school teachers occurs at the master's level, entailing a 5-year university degree, while the early childhood teacher education is a 3-year bachelor's program. Teachers in pre-schools are most often early childhood teachers having university degree but also class teachers teach in pre-primary schools (Minedu 2020).

Participants

The data used in this study are part of a larger sample of Finnish comprehensive school teachers. The participants in this study consisted of 272 teachers of the early phase of school path (pre-school and 1st to 2nd grade primary school teachers), that were extracted from the larger data set. The data were collected from teachers in the case schools (the pre-primary education teachers situated in the school context were included) during the autumn term of 2016, that is, when the new curriculum in pre-primary and primary schools was first being realized. The data were collected by members of the researcher team at school staff meetings using paper surveys.

The pre-primary and early primary school teachers were from 62 schools in six case districts around Finland. The case schools represented variations in terms of the socio-economic status of the neighborhood near the school, location in urban and rural settings

around Finland, and size (from 3 to 68 teachers in a school). Most of the respondents taught in primary schools (77.6%), and a minority in combined primary and lower secondary schools (22.4%). Most of the pre-primary and early primary school teachers (87.9%) were female, and the minority men (7.7%). Female teachers were slightly over-represented in the data (see Paronen and Lappi 2018). The participants' teaching experience ranged from 0 to 37 years ($M = 14.51$ years, $SD = 9.33$). In the background information, 41% of the pre-primary and early primary school teachers indicated that they had considered leaving the profession.

Participation in the study was voluntary. Teachers were informed of the purpose of the research. No incentives were used. In Finland, the researcher must request an ethical review statement from a human sciences ethics committee, if their research contains certain features, such as intervention in the physical integrity of research participants or participants under the age of 15 being studied without parental consent (in detail in Finnish National Board on Research Integrity 2019). None of these conditions were fulfilled in this study. It is possible that survey items with statements on burnout are perceived as awkward. On the other hand, the items were embedded in a broader survey including many different aspects of teachers work, and as such should not expose teachers to discomfort beyond everyday life experiences. On the contrary, teachers may find it comforting that their experiences are worth scientific inquiry that can lead to the improvement in their working conditions.

Instruments

Scales measuring the *knowledge sharing* practices in curriculum reform work in the school community, the *teacher-working environment fit*, and the *socio-contextual burnout* were used in this study.

The *Knowledge sharing* scale (KS, 10 items, $\alpha = .91$) (see Pietarinen et al., 2017, 2019) measures the extent to which the school-level reform work is considered to engage the school community inclusively in the collective transformative learning by facilitating their participation, using their competence and expertise widely, and supporting open discussion and decision-making. The *Teacher-working environment fit* scale measures two factors of experienced fit within the teacher community (Pietarinen et al., 2013a): (1) *received professional recognition* (RECOG, 3 items, $\alpha = .90$) and (2) *constructive and enabling work climate* (CLI, 3 items, $\alpha = .81$). The scale drew on the job resources components by Bakker et al. (2007), derived from the Healthy Organization Barometer (Lindström 1997; Lindström, Hottinen, and Bredenberg 2000). The *recognition* factor measures the appreciation experienced by the teacher as a member of the professional community, reflecting the person-centered approach to the perceived fit. The *climate* factor measures the teacher's perceptions of the shared capacity to contribute to the optimal fit within the professional community, reflecting the environment-centered approach to the perceived fit (Pietarinen et al., 2013a).

The *Socio-contextual Teacher Burnout* scale (Pietarinen et al., 2013b) draws on Maslach and Jackson's (1981) burnout scale. The exhaustion component also includes the single-item stress scale by Elo, Leppänen, and Jahkola (2003). The socio-contextual burnout scale measures three factors of socio-contextual teacher burnout: (1) exhaustion (EXH, 3 items, $\alpha = .85$); (2) cynicism towards the teaching community (CYN, 3 items,

Table 1. Sample means and standard deviations of the scales and correlations between the scales.

	1.	2.	3.	4.	5.	6.
1. Knowledge sharing	–					
2. Fit: Recognition	.32**	–				
3. Fit: Climate	.43**	.61**	–			
4. Burnout: Exhaustion	–.27**	–.11	–.23**	–		
5. Burnout: Cynicism	–.35**	–.62**	–.66**	.33**	–	
6. Burnout: Inadequacy	–.09	–.11	–.09	.41**	.35**	–
<i>M</i>	4.05	5.51	5.01	3.99	2.77	2.78
<i>SD</i>	0.98	1.02	1.08	1.82	1.18	1.16

**Significant at $p < .01$.

Notes: All items were rated on a scale ranging from 1 to 7, except for the single stress item in the Burnout: Exhaustion scale, which was rated on a 10-point scale.

$\alpha = .75$); and (3) inadequacy in teacher-pupil interaction (INAD, 3 items, $\alpha = .71$) (Pietarinen et al., 2013b).

All items were rated on a 7-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree), except for the stress item in the exhaustion scale, which was rated on a 10-point scale. The scales have been published and validated in our previous studies (see Pietarinen et al., 2013a, 2013b, 2019). The full scales and items are shown in the Appendix. Observed mean variables were calculated for each scale for the latent profile analysis. The descriptive statistics of the subscales are displayed in Table 1. Overall, it seemed that the pre-primary and early primary teachers perceived their fit with the professional community to be relatively high in terms of the professional recognition received and a constructive work climate, while they experienced moderate levels of knowledge sharing regarding the curriculum development. The burnout symptoms experienced were positively related to each other. Exhaustion was negatively related to knowledge sharing and constructive work climate. Cynicism was negatively related to knowledge sharing and strongly negatively related to the experienced fit with the professional community. Inadequacy did not significantly correlate with knowledge sharing or fit. Knowledge sharing, recognition and climate were positively related to each other as expected.

Analyses

To examine individual patterns in experienced knowledge sharing and fit within the professional community, a latent profile analysis was conducted using Mplus version 8.3 (Muthén and Muthén 1998-2017). The perceived knowledge sharing and the two components of fit, i.e. professional recognition received and constructive climate, were used as latent class indicators. The residual variances of the scales were allowed to correlate. Within-class variances were constrained equal across classes. The analysis was conducted to estimate 1–5 class solutions. Choice of the final latent profile model was based on the Akaike information criterion (AIC), the Bayesian information criterion (BIC) and adjusted BIC (aBIC) information-criteria-based indices, and the Vuong–Lo–Mendell–Rubin likelihood ratio test (VLMR), the Lo–Mendell–Rubin Adjusted LRT (aLRT), and the Bootstrap Likelihood Ratio Test (BLRT) (Berlin, Williams, and Parra 2014; Nylund, Asparouhov, and Muthén 2007). Entropy statistics and average latent class probabilities were used in evaluating the clarity of the different solutions.

In order to test differences between profiles in the socio-contextual burnout experienced, the mean scores of the dimensions of burnout were added as auxiliary variables in the latent profile analysis using the BCH setting in Mplus (Asparouhov and Muthén 2014; Muthén and Muthén 1998-2017). Moreover, to examine the relationships with background variables, school size, teaching experience and teacher's turnover intention were included as covariates utilizing the three-step approach (R3STEP) in Mplus (Asparouhov and Muthén 2014).

Results

Knowledge sharing and working environment fit profiles

Based on the results of the latent profile analyses of 1 through 5 classes, the lowest value of the BIC indicated the three-class solution to have the best fit (Table 2). Moreover, the BLRT test showed that the fit did not improve after the three-class model. In turn, the AIC and aBIC indices, and the LMR and aLRT likelihood ratio tests indicated the best fit for the four-class model. However, the four-class model included one very small class (<2%) and with a rather small sample, the three-class model, supported by the BIC and BLRT, was chosen as the more reasonable model for further analysis. The entropy (.81) and average latent class probabilities were also considered sufficient.

Based on the results, three profiles were identified (Figure 1): *High fit*, *Moderate knowledge sharing and fit* and *High recognition*. Most teachers (76%) belonged in the *High fit* profile and perceived their fit within the teacher community to be high in terms of the professional recognition they received and constructive and enabling work climate. They also reported higher levels of engaging in knowledge sharing practices in their professional community in terms of the curriculum development work than those belonging to the *High recognition* profile. Teachers in the *Moderate knowledge sharing and fit* profile (13%) had moderate perceptions of the received professional recognition and constructive and enabling work climate within the teacher community and of the extent to which knowledge sharing had succeeded in the reform work. Finally, teachers in the *High recognition* profile (10%) received high levels of professional recognition from the professional community but did not perceive the collective factors of the work climate or knowledge sharing to be supportive in the professional community. The means and standard deviations in each profile, and the mean differences between the profiles are shown in Table 3.

The profiles' relationships with socio-contextual burnout and background variables

Further investigation showed that there were some differences between the *knowledge sharing and fit profiles* in the symptoms of socio-contextual burnout. The profiles differed significantly in terms of *cynicism towards the teacher community*. Teachers in the *High fit* ($M = 2.38$) profile experienced less cynicism than the *Moderate knowledge sharing and fit* ($M = 4.25$; $p < .001$) and *High recognition* ($M = 3.77$; $p < .001$) profile members. The *High recognition* and *Moderate knowledge sharing and fit* profiles did not differ significantly in the cynicism experienced. There were no differences between

Table 2. The latent profile solutions of 1–5 classes.

No. classes	LogL (nf)	AIC	BIC	aBIC	Entropy	Latent class probabilities	VLMR	aLRT	BLRT	Class counts ^a
1	–1067.89 (9)	2153.779	2186.23	2157.70	N/A	1.000	N/A	N/A	N/A	272
2	–1050.70 (13)	2127.40	2174.28	2133.06	.85	0.93, 0.97	.00	.00	.00	29, 243 (22, 250)
3	–1035.61 (17)	2105.22	2166.51	2112.61	.81	0.88, 0.93, 0.93	.00	.00	.00	36, 208, 28 (31, 219, 22)
4	–1028.67 (21)	2099.33	2175.05	2108.47	.84	0.92, 0.93, 0.87, 0.85	.02	.02	.09	203, 27, 36, 5 (214, 22, 32, 4)
5	–1026.27 (25)	2102.54	2192.69	2113.42	.82	0.94, 0.76, 0.84, 0.72, 0.92	.61	.62	1.00	27, 10, 5, 32, 198 (22, 9, 4, 29, 208)

LogL = log likelihood value; nf = number of free parameters; AIC = Akaike information criterion; BIC = Bayesian information criterion; aBIC = adjusted Bayesian information criterion; VLMR = Vuong–Lo–Mendell–Rubin likelihood ratio test; aLRT = Lo–Mendell–Rubin adjusted likelihood ratio test; BLRT = bootstrapped likelihood ratio test. The selected model is in boldface.

^aClass counts based on estimated posterior probabilities and the classification of individuals based on their most likely latent class membership (in parenthesis).

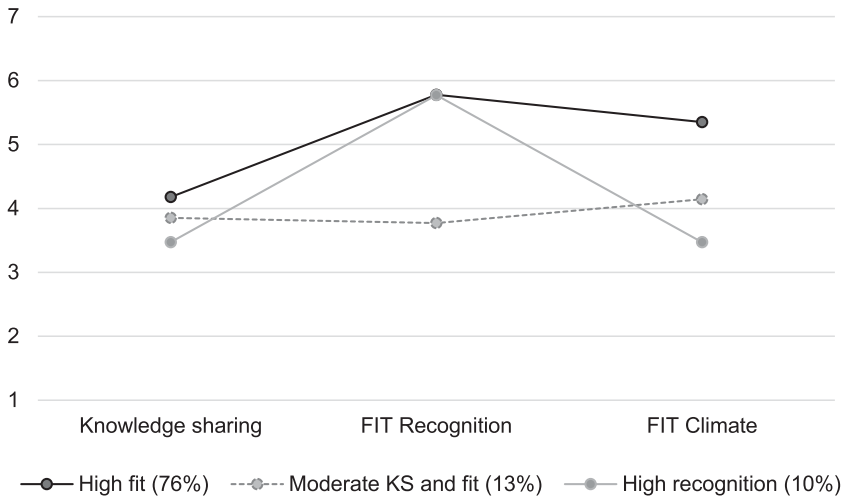


Figure 1. Profiles based on perceived knowledge sharing and fit including received recognition and constructive climate.

Table 3. Profile means and standard deviations.

	High fit		High recognition		Moderate KS and FIT	
	M	SD	M	SD	M	SD
Knowledge sharing	4.18 ^a	.94	3.47 ^b	1.08	3.85 ^{a,b}	.90
Fit: Recognition	5.78 ^c	.74	5.77 ^c	.76	3.77	.82
Fit: Climate	5.35	.84	3.47 ^d	.91	4.14 ^d	.98

Notes: Within-row means with the same superscript are not significantly different ($p > .05$).

the profiles on the other two dimensions of burnout. Moreover, it should be noted that teachers in all the profiles experienced rather low levels of burnout.

In terms of background variables, school size and teaching experience were not significant covariates of the profile membership. However, teachers that had considered leaving the profession had higher odds of belonging to the *Moderate knowledge sharing and fit* profile ($OR = 5.11$; $90\%CI = 1.95-13.41$) compared to the *High fit* profile, relative to teachers that had not considered leaving.

Discussion

The aim of this study was to gain a better understanding of the individual variation in pre-primary and early primary school teachers’ perceived resources for teacher learning within their professional community. Supporting our hypothesis (H1), three distinct profiles based on their perceptions of knowledge sharing and fit within the professional community, in terms of received recognition and constructive climate were found among teachers operating in early education.

Teachers in the *High fit* profile perceived their professional community as a supportive resource in their work, including an enabling work climate and knowledge sharing in the curriculum development. Teachers in the *Moderate knowledge sharing and fit* profile experienced lower levels of professional recognition from the

professional community than teachers in the other two profiles. *High recognition* profile members received professional recognition as individual professionals but did not experience the professional community as a collective, supportive resource in terms of knowledge sharing in the curriculum development.

The results imply that teacher's opportunities to engage in knowledge sharing practices within their professional community are related to their relationship with it. More specifically, it seems that the recognition received from the professional community and feeling valued by the community is essential, but not a sufficient precondition for teachers to engage in intentional knowledge sharing in terms of school development (such as curriculum making). The results imply that cultivating a constructive and enabling work climate in the professional community is a key for enhancing collective teacher learning within the reform work. For instance, dealing with everyday problems constructively and perceiving that work assignments are divided fairly among the early education teachers seem to contribute to teachers' engagement in transformative knowledge creation in the curriculum making aiming to develop novel pedagogical practices in working with children, parents and colleagues (e.g. Bryk and Schneider 2003; Vangrieken et al. 2017).

The results further showed that teachers in all profiles experienced rather low risk of suffering from burnout, including experiencing low levels of exhaustion, inadequacy in teacher-pupil interaction and cynicism towards the teacher community. Partly in line with our hypothesis (H2), the knowledge sharing and fit profiles differed partly in terms of the perceived cynicism towards the teacher community. Teachers in the *High fit* profile experienced less cynicism than the *Moderate knowledge sharing and fit* and *High recognition* profile members. Accordingly, the recognition received from co-workers and leaders, constructive and enabling work climate and collectively constructed knowledge that is based on the distributed expertise of teachers seem to buffer the pre-primary and early primary school teachers' perceived cynicism towards the teacher community.

This implies that the positive dynamics of and perceived relationship with the professional community has the potential to buffer the most detrimental burnout symptom, i.e. cynicism, in terms of teacher's commitment to shared school development. The finding is partly in line with the previous studies showing that the control and reward at an individual level (e.g. received recognition), and workload (e.g. biased division of work assignments) at a childcare center level were significantly associated with the burnout symptoms among childcare teachers (e.g. Blöchliger and Bauer 2018). In turn, the profiles of teachers' perceived fit and resources to contribute to the shared curriculum development in the professional community were not related to the exhaustion or inadequacy they experienced in teacher-pupil interaction, implying that exhaustion and inadequacy might be regulated by other attributes of pre-primary and early primary education teacher's work.

Our results further showed that the teachers who had considered leaving the profession had higher odds of belonging to the *Moderate knowledge sharing and fit* profile compared with the *High fit* profile. Hence, experiencing cynicism towards the professional community may alienate the teacher in the long term from joint activities such as school development and further trigger the teacher's turnover intentions. This, in turn, may increase the risk of gradually proceeding burnout symptoms and teacher attrition (see also Räsänen et al., 2020; Blöchliger and Bauer 2018).

The results also imply that the recognition received from co-workers, constructive and enabling work climate and opportunities to engage in knowledge sharing practices within the professional community were not associated with school size or teaching experience. This implies that the school structure and career phase per se did not determine the pre-primary and early primary school teachers' learning or the perceived capacity to engage in curriculum development work with their colleagues. This can be considered to be a positive result since the ways in which the professional community operates in everyday work practices and orchestrates shared school development, such as during a curriculum reform, seems to have a greater impact on teacher learning than structural attributes (see also Meristo and Eisenschmidt 2014). However, the relationships with school and individual-level factors should be further studied with larger samples and variable-centered approaches.

Limitations of the study

The study was conducted in Finland, and generalization of the results to other contexts should be considered carefully. The sample size in this study ($N = 272$) was moderate for the latent profile analysis. However, the pre-primary and early primary school teachers were a clearly identified sub-group in the large national teacher data. The results provide a descriptive account of individual patterns in pre-primary and early primary teachers' perceptions of the resources for learning in their professional community, in terms of the experienced knowledge sharing and fit within the teacher community. The results also shed light on the relation between these individual variations and socio-contextual burnout.

The cross-sectional design and the latent profile analysis as an exploratory method do not allow for causal inferences about the relationships between the variables. Thus, further research on the dynamics between pre-primary and early primary school teachers' knowledge sharing practices, fit within the professional community and burnout are needed with variable-centered approaches, longitudinal samples as well as in other national contexts. In addition, the number of classes in latent profile analysis were based on the BIC and BLRT indicators, which in general have been shown to perform well (Nylund, Asparouhov, and Muthén 2007). However, other indices would have indicated better fit for the four-class model, which included one very small profile. Thus, it would be useful to examine the knowledge sharing and fit profiles with larger samples. We also acknowledge that during the data collection period the reforms were in early stages and maturing of the reform could change teachers experiences.

Conclusion

This study provides new evidence of early years teachers' resources for learning in the professional community in reforms but also in everyday work where the curriculum reform is enacted and lived. Especially our results emphasize the role of the recognition received from co-workers and the constructive and enabling work climate for the increased capacity to construct shared knowledge in the curriculum development. This demonstrates well the intertwined nature of learning and well-being especially in complex human relation professions such as teaching. Schools that succeed in creating

supportive community for their teachers will more probably engage in a positive cycle and flourish both in terms of professional development and occupational well-being. And, in turn, this may constitute a significant factor for children's educational trajectories and therefore the quality of education in early years depends on being able to support learning and well-being simultaneously.

Constructing a professional community that supports both teacher learning and wellbeing in times of reforms as well as in professional learning happening every day in interaction children, colleagues and parents is a challenge for leadership in early education. In addition of being responsible for building knowledge and understanding of pedagogy, child development and assessment directors should be leading communal process that build capacity for continuous learning. This means for example creating places and allocating resources for shared sense-making where everyone in the professional community can be heard (Pietarinen et al., 2017). Bringing more dialogues in professional community would also allow detecting and finding ways to buffer the signs of burnout earlier. Even though there are some generalizable factors supporting teacher learning, our study showed that teachers also differ in their experiences about professional learning and it's relation to well-being. Therefore, in leading professional development, it is essential to facilitate both individual and collective teacher learning and recognize individual differences (see also Colmer, Waniganayake, and Field 2015).

We studied the Finnish context where teachers are usually very autonomous and have relatively high educational level. Also, the reforms are usually implemented in a more participative manner in many other countries. However, based on the literature in the area the everyday challenges teachers face in interaction with children, parents and colleagues seem rather similar all over the world. Continuous curriculum reforms and other educational changes in early years education causing for example changing work expectations and increasing work load and complexity are also experienced globally (e.g. Kiggallon, Maloney, and Lock 2008). Coping and flourishing with these challenges require experiencing oneself as recognized and trusted professional both individually as well as a member of supportive professional community. We believe that applies also in contexts outside Finland.

Further research is needed to explore the clustered nature of teachers' experiences to understand how the determinants at the level of the school could support or hinder individual teachers' resources for collective learning and well-being. Moreover, research with a longitudinal approach could add important insights into how the teacher-working community fit and knowledge sharing practices develop and relate to experienced burnout symptoms over time in teachers of the early phase of school path.

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ORCID

Jenni Sullanmaa  <http://orcid.org/0000-0003-4977-2426>

Lasse Lipponen  <http://orcid.org/0000-0001-6245-0398>

Tiina Soini  <http://orcid.org/0000-0002-0637-8931>

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Appendix. The scales and items.

Knowledge sharing (KS)

(In) the curriculum reform work ...

- KS01: I have been able to influence definitions and contents
- KS02: My competence has been utilised broadly
- KS03: Decisions are based on joint negotiations
- KS04: The feedback received has influenced the content of the curriculum
- KS07: Even radical ideas are welcome, and they are discussed jointly
- KS08: Work on the reform has been carried out jointly, not as a process dictated from above
- KS09: The competence of various actors has been utilised in an optimal manner
- KS10: Construction of an interactive atmosphere has been successful
- KS12: Working together is assessed on a regular basis
- KS13: The perspectives of the various teacher groups have been taken into account in an equal manner

Teacher-working environment fit

Received professional recognition (FIT Recognition)

- FIT11: My colleagues are interested in my opinions.
- FIT12: My colleagues provide me with encouragement and support.
- FIT13: I feel my colleagues appreciate the work I do.

Constructive and enabling work climate (FIT Climate)

- FIT21: My workplace has a fine atmosphere.
- FIT22: My working community deals with problems constructively.
- FIT23: The work assignments are divided fairly among the teachers.

Teacher's 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 towards the teacher community (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 in teacher-pupil interaction (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.

Note. Translated from Finnish.

*In the single stress item (EXH11) the scale is from one to ten: *Not at all* 1 – *Very much* 10. All other scales are from one to seven: *Fully disagree* 1 – *Fully agree* 7.