Working Community-Related Interaction Factors Building Occupational Well-Being – Learning Based Intervention in Finnish and Estonian Schools (2010–2013)

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Abstract

This article examines whether a three-year learning-based work community intervention resulted in changes in working community-related interaction factors and occupational well-being among Finnish and Estonian school staff. It reports the types of changes in working community-related interaction factors and their associations to the subjective occupational well-being and general occupational well-being of the working community. The initial quantitative survey data were collected in Finland (n = 486) and Estonia (n = 1330) in 2010 using the "Well-being at your work index questionnaire." The same measurement tool was used in 2013 to collect final survey data from school staff members in Finland (n = 545) and Estonia (n = 974). The data were analyzed statistically with percent, mean, SD, Mann-Whitney test, sum variables, one-way analysis of variance and Spearman's correlation. Changes were detected in factors related to working community interaction; in particular, statistically significant changes in work management and time use were detected in Finnish schools. Working atmosphere and appreciation of others' work, cooperation and information, and work management and time use were associated to both the subjective occupational well-being and general occupational well-being of the working community. Schools should plan and implement development activities to promote the subjective occupational well-being and general working community occupational well-being. Development work should focus on working community-related interaction, such as trust between workers. Principals should draw particular attention to principal–subordinate relationships and to providing information about changes.

Keywords: collaborative learning, occupational well-being, school staff, working community intervention

1. Introduction

The concept of occupational well-being has not been officially defined, and it seems to carry different meanings in various European countries. Its definition, however, often includes areas such as physical and mental well-being, psychosocial issues and working environment (European Agency for Safety and Health at Work, 2013). In workplaces, occupational well-being is promoted through various intervention studies (Randelin, Saaranen, Naumanen, & Louhevaara, 2013; Figl-Hertlein, Horsak, Dean, Schöny, & Stamm, 2014). Development programs based on collaborative learning, which are the focus of this article, have also generated positive experiences in school communities (Park & So, 2014). Collaborative learning is a learning phenomenon in which individuals interact in various social constellations (groups, teams and communities) in either physical or virtual environments in order to achieve direct or indirect common or individual learning objectives (e.g., sector-specific knowledge and social skills) (Strijbos, 2016). For example, when professional skills have been developed in school communities through collaborative learning (Owen & Davis, 2010), there has been an impact on the quality of teaching and mutual communication, insights on teachers' teaching skills have been deepened and a culture of peer learning has emerged (Park & So, 2014). A commitment to common goals and to problem-solving is characteristic of collaborative

learning, and to reach the set goals, shared understanding of the goals and of how to reach them is required (Dillenbourg, 1999).

Official leaders (those with management duties) and unofficial leaders (not official leaders of the organization) can also have an effect on learning. In particular, teachers who coach (focusing on both the tasks and human relations) can promote and guide group members toward collaborative learning (Chatalalsingh & Reeves, 2014). Apart from leadership, lack of time is another factor that may have an impact on the learning process. Lack of time has been reported as a significant limiting factor in the learning process (Park & So, 2014). These factors relating to work management and time use commonly pose a challenge in school communities. For instance, when one works with students with emotional and behavioral disabilities, only half of the available time can be spent on teaching tasks; the remaining time is consumed by tasks such as lesson planning, paperwork, consultation and collaboration on issues concerning students (Bettini, Kimerling, Park, & Murphy, 2015). Time management has also been found to be important in the school principal's work, as skilled time management of leaders is connected to a more productive manner of working and a more positive assessment of one's own work performance. In addition, leaders with good time-management skills (e.g., prioritizing skills) report lower stress levels and are able to devote more of their resources to principals and managerial duties (Grissom, Loeb, & Mitani, 2015).

The challenges described above are common in the school community and are also the basis of this intervention study. The need for this study rose from many internal problems (e.g., the challenges of time use, leadership, cooperation and social interaction) in occupational well-being of Finnish school staff members and the desire of the staff to solve these problems. Previous studies also support the view that the occupational well-being of school staff can be promoted by a school community's own development work (Saaranen, Tossavainen, Ryhänen, & Turunen, 2013; Laine et al., 2016). Thus, it was justified to design an intervention that would allow school communities themselves to solve the problem of occupational well-being and to develop well-being among their staff members. In this study, the planning and realization of working community interventions were based on the background philosophy of collaborative learning. In particular, schools developed factors in working community-related interaction, such as working atmosphere and appreciation of others' work (e.g., receiving and giving support and trust), cooperation and information (e.g., meetings, notification of changes and support from principals), and work management and time use (e.g., initiation and receiving of support to cope with changes), which are discussed in this study. The objectives of this study are to examine whether the three-year intervention in the learning-based work community resulted in changes in working community-related interaction factors and occupational well-being among Finnish and Estonian school staff.

1.1 Literature Review

Collaborative learning in workplaces requires that individuals are able to meet on a regular basis, although learning does take place also through unofficial interaction (Owen & Davis, 2010). Support and trust from colleagues and principals are also key elements in working community-related interaction factors. For example, having good relations with colleagues in a working community enables one to receive mental support in the workplace (Harper & Nicolson, 2013). Other factors connected to work satisfaction are mutual trust between teachers, students, parents and colleagues (Van Maele & Van Houtte, 2012) and support from colleagues and a management style that supports and encourages teachers in their work (You, Kim, & Lim, 2017). Correspondingly, difficulties between colleagues and leaders increase the risk of taking sick leave (Hultin et al., 2011). Good and confidential human relations play a key role in schools because they make development work possible (Park & So, 2014).

Social interaction also supports collaboration and communication. For instance, conversation with other teachers enables teachers to develop their working methods. Through peer support, inexperienced teachers are able to share experiences and learn from more experienced teachers (Castro, Kelly, & Shih, 2010). Collaboration and communication (e.g., on changes) is emphasized in the actual development work and management. Leaders play an important role as agents of change, which also has an impact on teachers' work satisfaction and commitment (Aydin, Sarier, & Uysal, 2013; Wahab, Fuad, Ismail, & Majid, 2014). In order to achieve excellence, leaders should commit their leadership of change to four dimensions (inspiration, motivation, intellectual stimulation and personal attention to workers), with the objective of improving workers' work satisfaction and commitment (Wahab et al., 2014). The principal, however, cannot be solely responsible for deciding what might be the best possible objective for a school; therefore, planning should take place on all levels, in collaboration with stakeholders and teachers (Williams & Johnson, 2013).

2. Study Questions

The specific study questions were as follows:

1) How did the working community-related interaction factors of working atmosphere and appreciation of others' work, cooperation and information, and work management and time use change as a consequence of work community interventions, as evaluated by staff in Finnish and Estonian schools?
2) What kind of association did the working community-related interaction factors of working atmosphere and appreciation of others' work, cooperation and information, and work management and time use have to the subjective occupational well-being and general occupational well-being of the working community in Finnish and Estonian schools?
3) How did school staff members evaluate changes in the subjective occupational well-being and general occupational well-being of the working community as a consequence of the working community intervention in Finnish and Estonian schools?

3. Materials and Methods

3.1 Study Design and Participants

This study is linked to a more wide-ranging long-term research project, "Promoting the occupational well-being of school staff − action research project in Finland and Estonia, 2009–2014." This project has also been part of the Schools for Health in Europe (SHE) network since 1992 (Young, St Leger, & Buijs, 2013), and it involves 45 European countries (School for Health in Europe, 2017). The idea of schools as creators of health (Young et al., 2013; Saaranen et al., 2015; Simovska, Nordin, & Madsen, 2016) provides a common basis for this network. A health-promoting school is defined as a school that for developing implements a systematic and structured plan to develop the well-being, health and social capital of both students and school staff (Young et al., 2013).

The working community intervention based on collaborative learning progressed in phases. First, school leaders and staff were engaged to promote occupational well-being. The importance of leaders as agents of change and as coaches was emphasized. The research data were collected from participating schools' staff members at the turn of the year 2009–2010 and the turn of the year 2012–2013. Henceforth, the turn of year 2009–2010 will be referred to as 2010, and the turn of year 2012–2013 will be referred to as 2013. An initial measurement survey was conducted in 2010 (Fig 1; Phase 1). Thereafter, occupational well-being groups (3–6 persons representing the school staff) were set up in schools and were requested to develop school staff members' occupational well-being with the research group's support. The occupational well-being groups were provided with the "Promotion of school community staff occupational well-being action plans" to be used as an instrument in the development work. The schools then examined the need for development of occupational well-being within their own communities and created development activities for promoting occupational well-being and solving problems.

Common goals and concrete activities for promoting occupational well-being were designated to the action plans (Fig. 1; Phase 2). School-specific occupational well-being groups continued to have interaction-based meetings and implemented school-specific development activities in collaboration with each school's entire staff in 2010–2012. School-specific development activities focused particularly on factors in working community-related interaction, such as an increase in open interaction, which was promoted, for example, by organizing discussions of opportunities with staff. In addition, they focused on improving communication and the flow of information; this was facilitated, for instance, by adopting common electric calendars, increasing info recesses, updating instruction folders and designating each new worker as a work partner. Meeting practices were improved by creating agendas. Also, performance appraisals/development discussions were held on a regular basis, and leaders committed to reacting instantly to any potential problems and involving themselves in work groups and staff events (Fig. 1; Phase 3).

After this, at the turn of year 2011–2012, an electronic open questionnaire was conducted in which the substance and implementation of these development activities was evaluated; a separate publication was issued based on the results (Laine et al., 2016). Schools updated their action plans within the context of this electronic open questionnaire. In the last phase (Fig. 1; Phase 4), a final survey was conducted. This article examines phases 1 and 4.

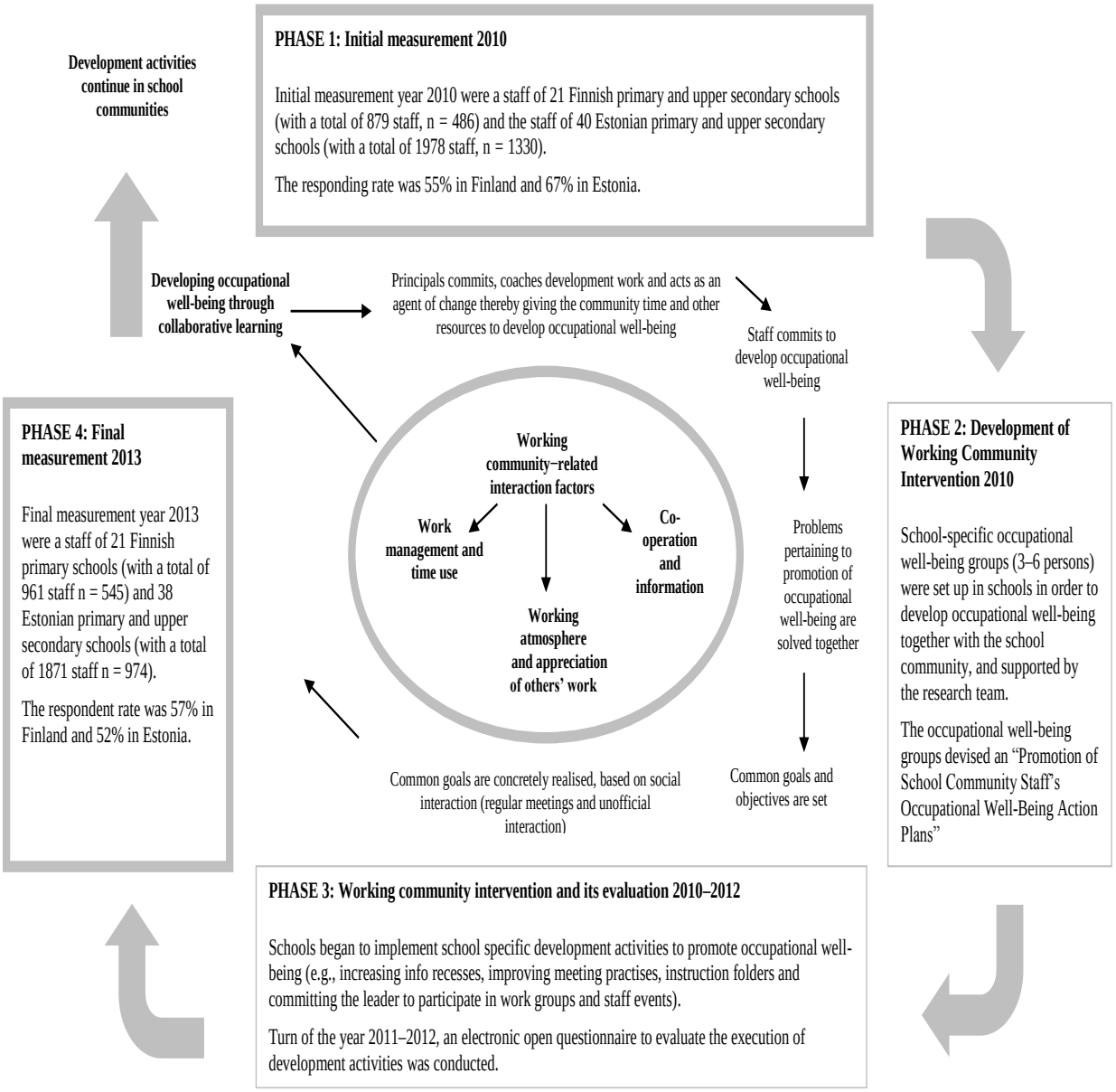

Figure 1. Study design and development of occupational well-being and factors in working community-related interaction as collaborative learning

The initial measurement's target group (in 2010; Phase 1) comprised school staff from 21 Finnish primary and upper secondary schools (N = 879) and school staff from 40 Estonian primary and upper secondary schools (N = 1978). Target groups consisted of entire school staff, including principals, teachers, school nurses and occupational health nurses, and other staff, such as cleaners and cooks. In Finland, 486 participants responded, and in Estonia, 1330 participants responded. Response rates in this initial measurement were 55% in Finland and 67% in Estonia. The final measurement's target group (in 2013; Phase 4) comprised school staff from 21 primary and upper secondary schools in Finland (N = 961) and school staff from 38 primary and upper secondary schools in Estonia (N = 1871). In Finland, 545 participants responded, and in Estonia, 974 participants responded. Response rates in the final measurement were 57% in Finland and 52% in Estonia.

The majority of the respondents in Finnish and Estonian schools in 2010 and 2013 were women, with the most active respondents representing the age category of 36–50 years. The age category with the lowest number of active

respondents was 35 or younger. The majority of respondents were teachers. Of the principals contacted, less than 10% responded (response rate: Finland 4% and Estonia 7% in 2010; Finland 4% and Estonia 8% in 2013) and of the school health nurses contacted, 1% or less responded. Other support staff (school assistants, psychologists or social workers) responded at a rate of about 10% (response rate: Finland 8% and Estonia 9% in 2010; Finland 11% and Estonia 7% in 2013), and other occupational groups (e.g., cooking and cleaning workers) responded at a rate of 6% in Finland and 17% in Estonia in 2010, and 6% in Finland and 12% in Estonia in 2013. School sizes varied, but the majority of respondents came from workplaces in which there were 41 or more staff members. A supporting statement was also obtained from the North Savo Nursing District's Advisory Board on Research Integrity in September 2009. Research permits were obtained from organizations in Finland and Estonia. Participation in school staff research was voluntary and was based on informed consent (a separate notice was sent to participants in electronic form).

3.2 Measures

The data were collected using the "Well-being at your work index questionnaire," which has been employed in earlier national and international studies (Saaranen, Tossavainen, Turunen, & Naumanen, 2006; Saaranen et al., 2012). This measure includes questions pertaining to background variables, the subjective occupational well-being and general occupational well-being of the working community, and issues related to occupational well-being, such as the worker and work, working conditions, professional competence and working community, which are based on the content model for the promotion of occupational well-being among school community staff and which has been tested using structural equation modeling (Saaranen, Tossavainen, Turunen, Kiviniemi, & Vertio, 2007). This study examines variables from the aspect of working community, which was investigated by 20 Likert-scale questions. With questions pertaining to factors in working community-related interaction factors, school staff were asked to give their opinions on whether they get support and help from their principals, whether the number of common staff meetings outside working hours is sufficient and whether information on changes had been adequate. With questions relating to occupational well-being, respondents were asked to evaluate their subjective occupational well-being compared to the highest possible level and the general occupational well-being of the working community using two Likert-scale (1–5) questions.

3.3 Statistical Analyses

Factors in working community-related interaction were analyzed as percentages, and sum variables were described using mean values and standard deviations. Formulation of sum variables was based on prior factoring (Saaranen et al., 2006). The sum variables were 1) working atmosphere and appreciation of others' work, 2) cooperation and information and 3) work management and time use. A one-way analysis of variance was used to test country-specific changes in Finland and Estonia between the initial and final measurements (see Table 1, 2).

The association between the sum variables of factors in working community-related interaction and the subjective occupational well-being and general occupational well-being of the working community was tested using a one-way analysis of variance and Spearman's correlation (see Table 3, 4). The correlation was classified as weak if $r = 0.0 – < 0.3$, moderate if $r = 0.3 – 0.5$ and strong if $r = > 0.5$ (Grove, Burns, & Gray, 2013). The statistical software used for the analysis was NCSS 10 (2015), Kaysville, Utah, USA.

School staff members' overall rating in Finnish and Estonian schools regarding the subjective occupational well-being (their subjective occupational well-being compared to the highest possible level) and general occupational well-being of the working community were analyzed using descriptive variables (percentage, mean and standard deviation). Mann-Whitney's test was used to test how the school staff members' evaluations of occupational well-being changed as a consequence of the working community intervention (see Table 5, 6). The limit of statistical significance in all tests was set to $p < 0.001$.

4. Results

4.1 Changes in Working Community-related Interaction Factors as Evaluated by School Staff in Finland

First, we examined changes in Finnish school staff members' evaluations of working community-related interaction factors (working atmosphere and appreciation of others' work, cooperation and information, and work management and time use) after the working community intervention. At the end of the working community intervention, it was assessed that work management and time use had changed in a positive way in Finnish schools and that the changes were statistically significant ($p < 0.001$). Of the Finnish school staff surveyed, 56% found that introducing new workers to work and to the working community was successful, a 12% increase. The share of those who found organization of work and time use to be on a good level was 59%, a positive change of 11% (Table 1).

Some positive development was also found in working atmosphere and appreciation of others' work. The share of Finnish school staff who found that principal–subordinate relationships functioned well was 67%, a positive change of 10%. Of Finnish respondents, 69% found that mutual relations between colleagues were on a sound basis, also a positive change of 10%. These positive changes were not statistically significant, however (Table 1).

Cooperation and information in working communities developed somewhat toward a positive direction, but this change was not statistically significant ($p = 0.056$). Of Finnish school staff, 68% felt that they were sufficiently informed on the expectations regarding their work, a positive change of 9%. Of the Finnish participants, 54% found the information about changes in the working community to be adequate, a 5% increase (Table 1).

4.2 Changes in Working Community-related Interaction Factors as Evaluated by School Staff in Estonia

This chapter examines Estonian school staff members' evaluations of changes in working community-related interaction factors after the working community intervention. Working atmosphere and appreciation of others' work were mostly unchanged among Estonian school staff. Of Estonian participants surveyed, 79% felt they could trust in others' work input within the working community, a positive change of 6%, and 72% felt that there was mutual understanding of their colleagues' work tasks and work in the working community (a 3% increase; Table 2).

Evaluations of cooperation and information were mostly unchanged as well. Of Estonian school staff, 61% found that common staff meetings outside working hours were sufficient, a positive change of 7%. In addition, 79% felt that they were sufficiently informed on the expectations regarding their work, a negative change of 6%. These changes were not statistically significant (Table 2).

Work management and time use decreased among Estonian school staff, although only slightly. Of respondents, 79% felt they had received enough support to manage changes in the working community, a negative change of only 2%. In addition, 65% felt that introducing new workers to work and to the working community was successful, although this represented a negative change of 6%. These changes were not statistically significant (Table 2).

Table 1. Changes in working community-related interaction factors in Finnish schools

Sum variables/ individual variables	FINLAND 2010 n = 486				FINLAND 2013 n = 545				
	Disa-gree %	Neither agree nor disa-gree %	Agree %	Mean/ SD	Disa-gree %	Neither agree nor disa-gree %	Agree %	Mean/ SD	p value[1]
Working atmosphere and appreciation of others' work				3.76 0.71				3.87 0.77	0.022
In my working community, people can openly discuss things related to work	34	9	57		27	7	66		
I regard my own work in the working community as important and significant	2	5	93		3	4	93		
Personal relationships between workers at my workplace are fine	29	12	59		23	8	69		
There is a spirit of "fair play" at my workplace, and there is no harassment of workers	22	14	64		18	11	71		
Principal –subordinate relationships are fine at my workplace	24	19	57		20	13	67		
There is mutual understanding of colleagues' work/tasks in my working community	24	15	61		21	13	66		
I get help and support from my colleagues when needed	6	5	89		6	6	88		
There is trust in other's work input in my working community	12	13	75		12	11	77		
My work is appreciated in my working community	9	15	76		11	10	79		
Cooperation and information				3.55 0.74				3.64 0.74	0.056
There is sufficient cooperation between the colleagues teaching the same field/subject	20	8	72		18	8	74		
There is sufficient cooperation between the different occupational groups	23	18	59		21	17	62		
Information about changes in the working community has been sufficient	36	15	49		35	11	54		
There are enough meetings/common discussions in my working community	22	7	71		22	8	70		
My closest principal gives me enough information about the expectations concerning my work performance	24	17	59		19	13	68		
My principal gives me help and support when I need it	14	15	71		17	8	75		
There are enough colleagues' meetings outside the working hours	29	16	55		22	20	58		
Work management and time use				3.29 0.77				3.46 0.76	<0.001
I am satisfied with my working time arrangements	17	11	72		13	7	80		
Organization of work and time use are good in my working community	35	17	48		27	14	59		
Introduction of new workers to their work and the working community has been satisfactory	28	28	44		22	22	56		
I have received enough support to manage changes at my workplace	31	36	33		27	30	43		

Note. Disagree = "1 totally disagree and 2 quite disagree" and Agree = "4 quite agree and 5 totally agree". SD = standard deviation. P value[1] = one-way analysis of variance tested whether there was any statistically significant changes ($p < 0.001$ statistically significant) in sum variables between initial and final measurements in Finland.

Table 2. Changes in working community-related interaction factors in Estonian schools

Sum variables/ individual variables	ESTONIA 2010 n = 1330				ESTONIA 2013 n = 974				
	Disa-gree %	Neither agree nor disa-gree %	Agree %	Mean/ SD	Disa-gree %	Neither agree nor disa-gree %	Agree %	Mean/ SD	p value[1]
Working atmosphere and appreciation of others' work				3.97 0.62				3.94 0.59	0.226
In my working community, people can openly discuss things related to work	18	10	72		17	10	73		
I regard my own work in the working community as important and significant	1	5	94		1	5	94		
Personal relationships between workers at my workplace are fine	9	8	83		11	9	80		
There is a spirit of "fair play" at my workplace, and there is no harassment of workers	15	16	69		13	17	70		
Principal–subordinate relationships are fine at my workplace	10	9	81		9	11	80		
There is mutual understanding of colleagues' work/tasks in my working community	16	15	69		15	13	72		
I get help and support from my colleagues when needed	5	3	92		3	4	93		
There is trust in other's work input in my working community	8	19	73		10	11	79		
My work is appreciated in my working community	11	23	66		5	27	68		
Cooperation and information				3.85 0.65				3.81 0.65	0.126
There is sufficient cooperation between the colleagues teaching the same field/subject	11	9	80		10	7	83		
There is sufficient cooperation between the different occupational groups	17	14	69		14	17	69		
Information about changes in the working community has been sufficient	18	11	71		16	14	70		
There are enough meetings/common discussions in my working community	9	4	87		12	6	82		
My closest principal gives me enough information about the expectations concerning my work performance	10	5	85		13	8	79		
My principal gives me help and support when I need it	8	8	84		10	10	80		
There are enough colleagues' meetings outside the working hours	24	22	54		24	15	61		
Work management and time use				3.93 0.71				3.87 0.68	0.034
I am satisfied with my working time arrangements	11	3	86		11	4	85		
Organization of work and time use are good in my working community	14	9	77		14	10	76		
Introduction of new workers to their work and the working community has been satisfactory	12	17	71		12	23	65		
I have received enough support to manage changes at my workplace	10	9	81		9	12	79		

Note. Disagree = "1 totally disagree and 2 quite disagree" and Agree = "4 quite agree and 5 totally agree". SD = standard deviation. P value[1] = one-way analysis of variance tested whether there was any statistically significant changes ($p < 0.001$ statistically significant) in sum variables between initial and final measurements in Estonia.

4.3 Association of Working Community-related Interaction Factors to Subjective Occupational Well-being and General Occupational Well-being in the Working Community in Finnish and Estonian Schools

First, the association between community-related interaction factors and subjective occupational well-being was examined. Working atmosphere and appreciation of others' work correlated moderately in both schools in 2010 and 2013. Cooperation and information correlated weakly in Finland in 2010 (r = 0.266) and in Estonia (r = 0.284), whereas in 2013, there was a moderate correlation between these factors in both countries (Finland r = 0.390, Estonia r = 0.341). Work management and time use correlated moderately in both countries in all evaluation sessions (Table 3).

Next, the association between working community-related interaction factors and the general occupational well-being of the working community in Finnish and Estonian schools was examined. Working atmosphere and appreciation of others' work correlated strongly in Finland (for year 2010, r = 0.576; for year 2013, r = 0.587), whereas in Estonia, the correlation was moderate (for year 2010, r = 0.395; for year 2013, r = 0.403). The correlation between cooperation and information and correlation between work management and time use were moderate in both countries in all evaluation sessions (Table 4).

Table 3. Correlation between working community-related interaction factors and subjective occupational well-being in Finnish and Estonian schools

Interaction-factors (sum variables)	Subjective occupational well-being, (categorical variable)	FINLAND 2010 n = 486			FINLAND 2013 n = 545			ESTONIA 2010 n = 1330			ESTONIA 2013 n = 974		
		Mean SD	p value[1]/ r	p value[2]	Mean SD	p value[1]/ r	p value[2]	Mean SD	p value[1]/ r	p value[2]	Mean SD	p value[1]/ r	p value[2]
Working atmosphere and appreciation of others' work	Disagree	3.08 0.84			2.88 0.86			3.21 0.70			3.55 0.75		
	Neither agree nor disagree	3.43 0.68			3.47 0.71			3.74 0.62			3.67 0.57		
	Agree	3.93 0.63			4.09 0.64			4.15 0.54			4.13 0.50		
			<0.001 0.350	<0.001		<0.001 0.446	<0.001		<0.001 0.361	<0.001		<0.001 0.387	<0.001
Cooperation and information	Disagree	2.98 0.93			2.76 0.71			3.26 0.68			3.41 1.01		
	Neither agree nor disagree	3.29 0.70			3.34 0.71			3.66 0.64			3.54 0.64		
	Agree	3.68 0.70			3.81 0.65			3.99 0.62			3.99 0.57		
			<0.001 0.266	<0.001		<0.001 0.390	<0.001		<0.001 0.284	<0.001		<0.001 0.341	<0.001
Work management and time use	Disagree	2.47 0.77			2.60 0.80			3.01 1.07			3.38 0.91		
	Neither agree nor disagree	2.96 0.62			3.09 0.71			3.65 0.70			3.53 0.66		
	Agree	3.47 0.75			3.65 0.66			4.13 0.60			4.09 0.58		
			<0.001 0.361	<0.001		<0.001 0.414	<0.001		<0.001 0.366	<0.001		<0.001 0.408	<0.001

Note. Disagree = "1 totally disagree and 2 quite disagree" and Agree = "4 quite agree and 5 totally agree". P value[1] = one-way analysis of variance ($p <. 001$ statistically significant). R = Spearman relation (weak correlation $r = 0.0 - < 0.3$, moderate correlation $r = 0.3 - 0.5$ and strong correlation $r = > 0.5$). P value[2] = Spearman correlation ($p < 0.001$ statistically significant).

All in all, all factors in working community-related interaction (working atmosphere, appreciation of others' work, cooperation and information, and work management and time use) were associated with both subjective occupational well-being and with general occupational well-being among school staff in Finland and in Estonia ($p < 0.001$). Working community-related interaction factors correlated with occupational well-being more noticeably in 2013 than

in 2010, and the correlation was stronger in Finnish schools than in Estonian schools. In most cases, working community-related interaction factors correlated more noticeably with general occupational well-being in the working community than with subjective occupational well-being (Table 3, 4).

Table 4. Correlation between working community-related interaction factors and general occupational well-being of a working community

Interaction-factors (sum variables)	General occupational well-being of a working community (categorical variable)	FINLAND 2010 n = 486			FINLAND 2013 n = 545			ESTONIA 2010 n = 1330			ESTONIA 2013 n = 974		
		Mean SD	p value[1]/ r	p value[2]	Mean SD	p value[1]/ r	p value[2]	Mean SD	p value[1]/ r	p value[2]	Mean SD	p value[1]/ r	p value[2]
Working atmosphere and appreciation of others' work	Disagree	2.99 0.62			2.91 0.74			3.27 0.80			3.40 0.63		
	Neither agree nor disagree	3.51 0.60			3.63 0.67			3.73 0.60			3.71 0.57		
	Agree	4.15 0.55			4.25 0.52			4.19 0.53			4.15 0.50		
			<0.001 0.576	<0.001		<0.001 0.587	<0.001		<0.001 0.395	<0.001		<0.001 0.403	<0.001
Cooperation and information	Disagree	2.88 0.73			2.92 0.75			3.23 0.67			3.25 0.88		
	Neither agree nor disagree	3.41 0.65			3.47 0.68			3.64 0.64			3.55 0.65		
	Agree	3.81 0.69			3.92 0.60			4.03 0.61			4.03 0.55		
			<0.001 0.386	<0.001		<0.001 0.456	<0.001		<0.001 0.322	<0.001		<0.001 0.382	<0.001
Work management and time use	Disagree	2.56 0.67			2.74 0.82			3.01 0.94			3.28 0.87		
	Neither agree nor disagree	3.08 0.67			3.28 0.62			3.66 0.72			3.59 0.66		
	Agree	3.64 0.69			3.75 0.65			4.16 0.60			4.09 0.59		
			<0.001 0.477	<0.001		<0.001 0.451	<0.001		<0.001 0.374	<0.001		<0.001 0.388	<0.001

Note. Disagree = "1 totally disagree and 2 quite disagree" and Agree = "4 quite agree and 5 totally agree". P value[1] = one-way analysis of variance ($p < .001$ statistically significant). R = Spearman relation (weak correlation $r = 0.0 - < 0.3$, moderate correlation $r = 0.3 - 0.5$ and strong correlation $r = > 0.5$). P value[2] = Spearman correlation ($p < 0.001$ statistically significant).

4.4 Changes in Subjective Occupational Well-being and General Occupational Well-being of the Working Community as Evaluated by Finnish and Estonian School Staff

This section examines the changes brought about by the working community intervention in the subjective occupational well-being and general occupational well-being of school staff in Finland and in Estonia. Of Finnish school staff, 71% considered their subjective occupational well-being to be at a good level, which was maintained after the working community intervention ended. Of Estonian school staff, 60% also evaluated their subjective occupational well-being to be at a good level, which meant that the level among Estonian school staff mostly remained at the same level (Table 5, 6).

Table 5. Changes in subjective occupational well-being and general occupational well-being of a working community in Finnish schools

Variables	FINLAND 2010 n = 486				FINLAND 2013 n = 545				
	Disa-gree %	Neither agree nor disa-gree %	Agree %	Mean/ SD	Disa-gree %	Neither agree nor disa-gree %	Agree %	Mean/ SD	p value[1]
Subjective occupational well-being at current workplace compared to the highest possible level	4	25	71	3.81 0.77	8	21	71	3.82 0.84	0.566
General well-being of the staff in my working community	10	41	49	3.42 0.77	14	33	53	3.44 0.85	0.339

Note. Disagree = "1 totally disagree and 2 quite disagree" and Agree = "4 quite agree and 5 totally agree". SD = standard deviation.

P value[1] = Mann-Whitney test ($p < 0.001$ statistically significant).

The general occupational well-being in the working community was assessing as good by 53% of Finnish school staff and in Estonia, it was assessing good by 55% of the school staff. In Finland, the general occupational well-being developed slightly positively, and in Estonia, it decreased slightly, but these changes were not statistically significant (Table 5, 6).

Table 6. Changes in subjective occupational well-being and general occupational well-being of a working community in Estonian schools

Variables	ESTONIA 2010 n = 1330				ESTONIA 2013 n = 974				
	Disa-gree %	Neither agree nor disa-gree %	Agree %	Mean SD	Disa-gree %	Neither agree nor disa-gree %	Agree %	Mean/ SD	p value[1]
Subjective occupational well-being at current workplace compared to the highest possible level	2	35	63	3.71 0.71	3	37	60	3.68 0.71	0.331
General well-being of the staff in my working community	1	42	57	3.61 0.63	2	43	55	3.58 0.62	0.297

Note. Disagree = "1 totally disagree and 2 quite disagree" and Agree = "4 quite agree and 5 totally agree". SD = standard deviation.

P value[1]= Mann-Whitney test ($p < 0.001$ statistically significant).

5. Discussion

Of factors in working community-related interaction, changes in work management and time use were statistically significant in Finnish schools, whereas in Estonia, the change was slightly negative, although it was not statistically significant. This same phenomenon was also detected to some extent in other working community-related interaction factors, so the changes achieved by the working community intervention in Finnish schools were slightly more positive and prominent compared to those in Estonia. Nevertheless, positive changes in individual variables could also be detected in Estonian schools. For example, trust in others' work input developed favorably in Estonian schools. Trust was on a good level in both Finnish and Estonian schools, which is important, because teachers find that trust is an important factor from the perspective of work satisfaction (Van Maele & Van Houtte, 2012).

Upon examination of the overall results (see Table 1, 2), it appears that Estonian school staff continued to be more satisfied than their counterparts in Finland pertaining to working community-related interaction factors, although there was a slight decrease (not statistically significant). One of the background reasons for this development may be the fact that occupational well-being in Estonian schools had not been given much attention to this research project. It is therefore natural that as learning and awareness get deeper, observations may equally change and become more critical. It also seems that general uncertainty (e.g., school closures and the renewal of the school system) in Estonian schools is more widespread than before, due to numerous changes. Nonetheless, working community-related interaction factors have remained more or less at the same level. For example, attention may have been drawn to informing staff about changes, which has compensated for the negative effects of uncertainty. In previous studies, it was found that leadership for change correlates with teachers' work satisfaction (Aydin et al., 2013; Wahab et al., 2014). Accordingly, the working community intervention may have had a more noticeable positive effect on occupational well-being than indicated by the results reported here.

This conclusion is supported by the fact that according to our findings, all factors in working community-related interaction (working atmosphere and appreciation of others' work, cooperation and information, and work management and time use) relate to occupational well-being in both Finnish and Estonian schools. These results (see Table 3, 4) indicate that investing in working community-related interaction factors is important when building

occupational well-being; they can be developed, for example, through working community interventions based on the notion of collaborative learning.

As a result, when developing working communities, it is important to take into account the community's needs and potential, because they create a common framework for developing a working community across professional boundaries. Together, the school staff can promote health and well-being in its own cultural environment through social interaction and learning, with the common goal of developing occupational well-being. Through continuous learning, school communities can promote occupational well-being more extensively and deeply as individuals and as a community, despite the ongoing changes in working life.

Upon examination of the results, very few changes in school staff members' subjective occupational well-being or in the general occupational well-being of the working community could be detected by the end of the working community intervention (Table 5, 6). This induced some consideration in the study group from different perspectives because some positive changes could be detected in individual variables of the working community-related interaction factors. First, it should be noted that the development of working community interventions and measurement of changes are challenging tasks because anticipating and controlling changes in schools is easier said than done, and one can never be completely certain whether changes in occupational well-being and working community-related interaction factors are the result of the working community intervention or another factor. Secondly, occupational well-being as a whole is affected by factors other than working community-related interaction factors. The association of such other occupational well-being aspects (work and worker, working conditions and professional competence) to occupational well-being has not been investigated in this article, but it will be taken into consideration in further studies.

Another outcome instigating some consideration was the discovery that in Finland, staff were more satisfied with their subjective occupational well-being than were the staff in Estonia, whereas in Estonia, general occupational well-being in the working community appeared to be better than in Finland. This phenomenon may be explained by the individualistic approach typical particularly in Finland, and therefore positive experiences of the working community may not be as pronounced as in Estonia. However, the schools participating in this study found that the working community aspect should be developed further, and a major part of development activities in schools was targeted at factors in working community-related interaction (working community aspect) (Laine et al., 2016).

This study followed common ethical principles (Finnish Advisory Board on Research Integrity, 2012), and the ethicality of the research was certified throughout the whole research process (Grove et al., 2013) from the research idea to the publication of the findings. Information about the premises of this project was widely disseminated, and the entire data collection process was systematically conducted and occurred simultaneously and similarly in the two countries. The same electronic form was used in the questionnaire in both countries and was available in both Finnish and Estonian. Respondents gave their informed consent by filling out the questionnaire. In addition, filling out the form was voluntary and was realized anonymously; these are important ethical factors in research (Polit & Beck, 2010). The "Well-being at your work index questionnaire" has been tested for reliability (Saaranen et al., 2006) and used in previous studies (Saaranen et al, 2012; Saaranen et al., 2013), in which it was found to work well. In the current study, the focus was on examining changes at a school-specific level and therefore, individual answers have not been sorted per person. As a consequence, there will be some additional uncertainty in the p values of statistical testing. The possibility of false conclusions has been minimized by setting the limit for statistical significance at a value of $p < 0.001$, where differences with little substantial significance will not appear statistically significant. It should also be noted that in the initial measurement, three Finnish schools involved in the initial measurement dropped out due to other obligations, and three other Finnish schools joined the project after the initial measurement and then participated in the final measurement. These late arrivals underwent initial measurements at the initial phase of the project, and these results then served as a basis for planning. Moreover, natural staff changes took place in schools (e.g., change of jobs or retirement). As these changes were diminutive, they did not have a significant impact on the results or reliability of the research. Finally, because the results were gained from participating school communities in two different countries, they cannot be generalized to apply to all school communities.

6. Conclusions

Collaborative learning-based work community intervention did promote working community-related interaction factors; working atmosphere and appreciation of others' work, cooperation and information, and work management and time use particularly in Finnish schools. Working community-related interaction factors were generally better in the Estonian schools than the Finnish schools, although there was a slight decrease in them from 2010 to 2013. Even though the level of working community-related interaction was good, in the future, even in the Estonian schools,

development activities to promote occupational well-being should be continuous and regular to maintain a good level of occupational well-being or even to further develop it, despite the ongoing changes in society and in the world of work.

A key result showed that working community-related interaction factors were related to both the subjective occupational well-being and general occupational well-being of the working community in Finnish and Estonian schools. Most school-specific development activities had a positive effect on working community-related interaction factors. The investment in these factors in this intervention study also built occupational well-being. Based on the research, it is recommended that through social interaction and learning, school staff work together to develop the occupational well-being of their own work community and thus the individual workers' health based on their own development needs. School staff must focus the development work especially on working community-related interaction factors such as the development of time use and trust in workers in the work community. School principals are responsible for developing principal–subordinate relationships and providing information about changes.

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References

Aydin, A., Sarier, Y., & Uysal, S. (2013). The effect of school principals' leadership styles on teachers' organizational commitment and job satisfaction. *Educational Sciences: Theory & Practice, 13*(2), 806-811.

Bettini, E., Kimerling, J., Park, Y., & Murphy, K. M. (2015). Responsibilities and instructional time: Relationships identified by teachers in self-contained classes for students with emotional and behavioral disabilities. *Preventing School Failure: Alternative Education for Children and Youth, 59*(3), 121-128. https://doi.org/10.1080/1045988X.2013.859561

Castro, A. J., Kelly, J., & Shih, M. (2010). Resilience strategies for new teachers in high-needs areas. *Teaching and Teacher Education, 26*(3), 622-629. https://doi.org/10.1016/j.tate.2009.09.010

Chatalalsingh, C., & Reeves, S. (2014). Leading team learning: What makes interprofessional teams learn to work well? *Journal of Interprofessional Care, 28*(6), 513-518. https://doi.org/10.3109/13561820.2014.900001

Dillenbourg, P. (1999). What do you mean by collaborative learning? In P. Dillenbourg (Ed.), *Collaborative-learning: Cognitive and computational approaches* (pp. 1-19). Oxford: Elsevier.

European Agency for Safety and Health at Work (2013). Well-being at work: Creating a positive work environment. Retrieved from https://osha.europa.eu/fi/tools-and-publications/publications/literature_reviews/well-being-at-work-creating-a-positive-work-environment

Figl-Hertlein, A., Horsak, B., Dean, E., Schöny, W., & Stamm, T. (2014). A physiotherapy-directed occupational health programme for Austrian school teachers: A cluster randomised pilot study. *Physiotherapy, 100*(1), 20-26. https://doi.org/10.1016/j.physio.2013.03.003

Finnish Advisory Board on Research Integrity (2012). Responsible conduct of research and procedures for handling allegations of misconduct in Finland. Retrieved from http://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf

Grissom, J. A., Loeb, S., & Mitani, H. (2015). Principal time management skills: Explaining patterns in principals' time use, job stress, and perceived effectiveness. *Journal of Educational Administration, 53*(6), 773-793. https://doi.org/10.1108/JEA-09-2014-0117

Grove, S. K., Burns, N., & Gray, J. (2013). *The practice of nursing research: Appraisal, synthesis, and generation of evidence* (7th ed.). Saint Louis: Elsevier.

Harper, F., & Nicolson, M. (2013). Online peer observation: Its value in teacher professional development, support and well-being. *International Journal for Academic Development, 18*(3), 264-275. https://doi.org/10.1080/1360144X.2012.682159

Hultin, H., Hallqvist, J., Alexanderson, K., Johansson, G., Lindholm, C., Lundberg, I., & Möller, J. (2011). Work-related psychosocial events as triggers of sick leave – Results from a Swedish case-crossover study. *BMC Public Health, 11*. https://doi.org/10.1186/1471-2458-11-175

Laine, S., Saaranen, T., Pertel, T., Hansen, S., Lepp, K., & Tossavainen, K. (2016). Significance of action plans in the development of occupational well-being in the schools of Finland and Estonia. *Evaluation and Program Planning, 54*, 74-81. https://doi.org/10.1016/j.evalprogplan.2015.10.004

Owen, S., & Davis, G. (2010). Law graduate attributes in Australia: Leadership and collaborative learning within communities of practice. *Journal of Learning Design, 4*(1), 15-24. https://doi.org/10.5204/jld.v4i1.65

Park, M., & So, K. (2014). Opportunities and challenges for teacher professional development: A case of collaborative learning community in South Korea. *International Education Studies, 7*(7), 96-108. https://doi.org/10.5539/ies.v7n7p96

Polit, D. F., & Beck, C. T. (2010). *Essentials of nursing research: Appraising evidence for nursing practice*. Philadelphia: Lippincott Williams & Wilkins.

Randelin, M., Saaranen, T., Naumanen, P., & Louhevaara, V. (2013). Towards sustainable well-being in SMEs through the web-based learning program of ergonomics. *Education and Information Technologies, 18*(1), 95-111. https://doi.org/10.1007/s10639-011-9177-5

Saaranen, T., Tossavainen, K., Turunen, H., & Naumanen, P. (2006). Development of occupational wellbeing in the Finnish European network of health promoting schools. *Health Education, 106*(2), 133-154. https://doi.org/10.1108/09654280610650963

Saaranen, T., Tossavainen, K., Turunen, H., Kiviniemi, V., & Vertio, H. (2007). Occupational well-being of school staff members: A structural equation model. *Health Education Research, 22*(2), 248-260. https://doi.org/10.1093/her/cyl073

Saaranen, T., Sormunen, M., Pertel, T., Streimann, K., Hansen, S., Varava, L., . . . Tossavainen, K. (2012). The occupational well-being of school staff and maintenance of their ability to work in Finland and Estonia – Focus on the school community and professional competence. *Health Education, 112*(3), 236-255. https://doi.org/10.1108/09654281211217777

Saaranen, T., Tossavainen, K., Ryhänen, E., & Turunen, H. (2013). Promoting the occupational well-being of teachers for the Comenius program. *International Journal of Higher Education, 2*(2), 159-174. https://doi.org/10.5430/ijhe.v2n2p159

Saaranen, T., Tossavainen, K., Sormunen, M., Laine, S., & Turunen, H. (2015). Developing and testing a health promotion theory – An example of creating a model on school staff's occupational well-being. In V. Simovska & P. Mannix- McNamara (Eds.), *SHE research book: Schools for health and sustainability, learning, and achievement* (pp. 405-422). Springer: Dodrecht.

School for Health in Europe. (2017). SHE Schools for health in Europe 2017 in focus. Retrieved from http://www.schools-for-health.eu/uploads/files/SHE_folder_2017(1).pdf

Simovska, V., Nordin, L. L., & Madsen, K. D. (2016). Health promotion in Danish schools: Local priorities, policies and practices. *Health Promotion International, 31*(2), 480-489. https://doi.org/10.1093/heapro/dav009

Strijbos, J. (2016). Assessment of collaborative learning. In G. T. L. Brown and L. R. Harris (Eds.), *Handbook of human and social conditions in assessment* (pp. 302-318). New York: Routledge.

Van Maele, D., & Van Houtte, M. (2012). The role of teacher and faculty trust in forming teachers' job satisfaction: Do years of experience make a difference? *Teaching and Teacher Education, 28*(6), 879-889. https://doi.org/10.1016/j.tate.2012.04.001

Wahab, J. A., Fuad, C. F. M., Ismail, H., & Majid, S. (2014). Headmasters' transformational leadership and their relationship with teachers' job satisfaction and teachers' commitments. *International Education Studies, 7*(13), 40-48. https://doi.org/10.5539/ies.v7n13p40

Williams, H. S., & Johnson, T. L. (2013). Strategic leadership in schools. *Education, 133*(3), 350-355.

You, S., Kim, A. Y., & Lim, S. A. (2017). Job satisfaction among secondary teachers in Korea: Effects of teachers' sense of efficacy and school culture. *Educational Management Administration and Leadership, 45*(2), 284-297. https://doi.org/10.1177/1741143215587311

Young, I., St. Leger, L., & Buijs, G. (2013). School health promotion: Evidence for effective action. Background Paper SHE Factsheet, 2. Retrieved from http://www.schools-for-health.eu/uploads/files/SHE%20Factsheet_2_Background%20paper_School%20health%20promotion_Evidence.pdf