

**Antecedents for  
the Crossover of Teacher Burnout  
-  
Individual, Transactional and Organizational Factors**

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Tiivistelmä - Referat - Abstract <p>Teacher burnout has negative consequences on an individual, transactional and organizational levels between teachers and pupils. Compared to other fields, the educational field experiences higher levels of burnout. Previous studies indicate that burnout is connected to turnover, withdrawal, pupils' motivation, and problems in the working community in addition to the individual's health. The burnout symptoms have been found to differ in gender, career phase, academic level, socio-economic level of the neighborhood and organization size. Previous research has found that burnout crossover happens from an individual to another across the teacher community. The buffering and exposing attributes concerning the crossover of teacher burnout have been studied rather little. The aim of this research is to discover which individual, transactional and organizational attributes could potentially buffer or expose to the crossover of burnout.</p> <p>Research data was gathered as a part of a wider, national research project called School Matters by the members of the Learning and Development in School research group (Pietarinen, Pyhältö &amp; Soini, 2017). The participants were selected from six different areas. Altogether 1531 teachers from primary, secondary and combined schools completed the questionnaire. The teachers were divided into groups based on their gender, academic level, the level of socio-economic status (SES) of the school neighborhood, career phase and school size. Individual, transactional and organizational factors' connection to the burnout symptoms were examined through correlations, t-test and One-way analysis of variance.</p> <p>Results indicate that on average the teachers are doing quite well and experience quite moderate levels of burnout. Even so, quite many of them reported higher and lower levels of the symptoms. The symptoms correlate positively with each other. Based on the research findings it can be suggested that individual attributes, including male gender and higher number of years in the profession, buffer from the crossover of burnout. In addition, the higher socio-economic status (SES) of the school neighborhood – a transactional attribute – and smaller school size – an organizational attribute – also act as buffers. On the other hand, exposing attributes include the female gender, less years in the profession, lower socio-economic status of the school neighborhood and large school size. The result may be generalized to the Finnish teaching community as a whole because the research population was large and the geographical distribution of the population was comprehensive.</p>		
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Tiivistelmä - Referat - Abstract <p>Opettajien työuupumus vaikuttaa niin yksilö-, kuin organisaatiossa sekä vuorovaikutuksissa työyhteisön sekä opettajan ja oppilaan välillä. Koulutusala koetaan suhteessa enemmän työuupumusta muihin toimialoihin verrattuna. Sen on todettu olevan yhteydessä niin työssä jaksamiseen, alanvaihtoon kuin vetäytymiskäyttäytymiseen, sekä oppilaiden motivaatioon, työyhteisön ongelmien ja yksilön terveyden lisäksi. Työuupumusoireiden on todettu vaihtelevan niin sukupuolen, uravaiheen, koulutustason, koulun alueen sosio-ekonomisen tason sekä organisaation koon suhteen. Työuupumuksen on todettu tarttuvan yksilöstä toiseen sekä organisaatioissa, että perheen kesken. Opettajien työuupumuksen tarttumista edistäviä ja estäviä tekijöitä on kuitenkin tutkittu melko vähän. Tämän tutkimuksen tavoitteena oli selvittää, mitkä yksilölliset, vuorovaikutteiset sekä organisaatio tason tekijät voisivat mahdollisesti puskuroida tai altistaa työuupumuksen tartumiselle.</p> <p>Tutkimusaineisto kerättiin osana laajempaa kansallista Oppiminen ja kehittyminen koulussa tutkimusryhmän Koululla on väliä tutkimushanketta (Pietarinen, Pyhältö &amp; Soini, 2017). Kyselyyn vastasi 1531 opettajaa sekä ala-asteelta, yläasteelta, että yhtenäiskoulusta. Opettajat jaettiin ryhmiin sukupuolen, opetettavan kouluasteen, koulun alueen sosioekonomisen aseman, työkokemuksen, sekä opettajamäärän mukaan. Yksilöllisten, vuorovaikutteisten sekä organisatoristen tekijöiden yhteyttä työuupumusoireisiin tarkasteltiin korrelaatioiden, t-testin ja yksisuuntaisen varianssianalyysin avulla.</p> <p>Tulosten perusteella opettajat näyttivät kokevan melko kohtuullisia työuupumuksen oireita, mutta varianssin perusteella korkeampia työuupumusoireita koettiin verrattain paljon. Työuupumus oireet korreloivat positiivisesti keskenään. Työuupumuksen tarttumista estäviä tekijöitä tutkimuksen perusteella olivat yksilöllisinä tekijöinä miessukupuoli, pidempi työkokemus – vuorovaikutteisena tekijänä – korkeampi koulun sosioekonominen asema ja – organisatorisena tekijänä – pieni koulun koko. Altistavia tekijöitä työuupumuksen tarttumiseen olivat naissukupuoli ja matalampi työkokemus, koulun matala sosioekonominen sekä koulun suuri koko. Tutkimustulokset ovat yleistettävissä koko Suomen opettajakuntaa koskeviksi tutkimusdatan kattavuuden vuoksi.</p>		
Avainsanat - Nyckelord <b>Opettaja, työuupumus, tarttuminen, sukupuoli, uravaihe, akateeminen taso, koulun naapuruston sosio-ekonominen asema, koulun koko, kvantitatiivinen tutkimus</b>		
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# TABLE OF CONTENTS

1	INTRODUCTION .....	2
2	TEACHER BURNOUT .....	5
2.1	Negative consequences related to teacher burnout .....	5
2.2	Teacher burnout symptoms .....	7
2.3	The development of burnout symptoms .....	9
2.4	Factors contributing to the teacher burnout .....	10
2.5	Crossover of teacher burnout in the professional community .....	12
2.6	Individual, transactional and organizational determinants of teacher burnout crossover .....	16
2.6.1	Gender .....	16
2.6.2	Phase of career .....	17
2.6.3	Class teacher vs. subject teacher .....	18
2.6.4	The socioeconomic status (SES) of the school area .....	19
2.6.5	The size of the school .....	21
3	AIM OF THE STUDY .....	23
4	METHODS .....	24
4.1	Teachers work in primary and lower secondary education .....	24
4.2	Participants .....	26
4.3	Data collection .....	26
4.4	Measures .....	27
4.5	Analysis .....	28
4.5.1	Preliminary analysis .....	28
4.5.2	Statistical analysis .....	29
5	RESULTS .....	31
5.1	Descriptive statistics .....	31
5.2	Associations between Exhaustion, Cynicism and Inadequacy .....	31
5.3	Interrelation between burnout symptoms, gender, socio-economic status of school neighborhood and school grade, school size and career phase .....	32
6	DISCUSSION .....	37
6.1	Research Ethics .....	37
6.2	Results in the light of previous research .....	39

6.3	The individual, transactional and organizational factors that buffer or expose to crossover burnout .....	44
6.4	Pedagogical implications and Recommendations for future research .....	45
7	FUNDING .....	47
8	REFERENCES .....	48
9	APPENDIX.....	65

## TABLES

Table 1 Means, standard deviations and reliability of all variables.....	31
Table 2 Correlations between the burnout symptoms .....	32
Table 3 Interrelations between burnout symptoms and gender .....	32
Table 4 Interrelations between burnout symptoms and the career phase .....	33
Table 5 Interrelations between burnout symptoms and the level of socio-economic status of the school neighbourhood .....	34
Table 6 Interrelations between burnout symptoms and the academic level .....	35
Table 7 Interrelations between burnout symptoms and the size of the school .....	36

# 1 Introduction

Teacher burnout has gained prominence as a central concern among policy makers, educational developers and researchers (Kauppinen, Mattila-Holappa, Perkiö-Mäkelä, Saalo, Toikkanen, Tuomivaara, Uuksulainen, Viluksela & Virtanen, 2012; Hakanen, Bakker & Schaufeli, 2006). In many countries, teachers are found to experience the highest levels of job stress, when it comes to physical and psychological wellbeing and the lowest levels of job satisfaction compared to other fields (Johnson, Cooper, Cartwright, Taylor, Millet, 2005; Stoeber & Rennert, 2008; Kauppinen, et al., 2012). Though, compared to their peers in other countries, Finnish teachers are found to be rather happy and satisfied with their profession (OECD, 2018). Yet also in Finland, the number of individuals experiencing work stress (12%) and having negative feelings toward one's job was higher among teachers (16%) than average (8%; 9%) (Kauppinen et al., 2012, 198). Teachers are found to have higher burnout levels and greater vulnerability to experience burnout symptoms compared to other workers on average (Länsikallio, Kinnunen & Ilves, 2018; Schaufeli & Enzmann, 1998) and this is why further research concerning teacher burnout is important.

Teacher burnout has negative consequences on an individual, teacher-, pupil-, organizational and societal levels (Saloviita, & Pakarinen, 2021, 2). On an individual level, burnout affects one's self-rated health and mental health, creates feeling of low job satisfaction, and self-efficacy (Maslach, Schaufeli & Leiter, 2001). It has been noted that teachers play a significant role in children's lives, and especially their scholastic lives. It has been elaborated that there is an indirect, but significant connection between children's socioemotional adjustment and academic performance and teacher efficacy (Hamre & Pianta, 2004; Moolenaar, 2010). The topic is relevant also because exhausted teachers may remain in the profession for several years, affecting multiple classes and pupils' development in a negative way (Klusmann, Richter & Lüdtke, 2016). In addition to these, teacher satisfaction connected to working conditions is at the core when designing effective schools that enable greater pupil-learning opportunities, pupil engagement, better teacher-pupil relationships and better pupil achievement (Manuel, 2003; Cuttance, 2001). Moreover, the understanding of teacher well-being which is connected to fostering teachers' job commitment and prevention of withdrawal is relevant (Spilt, Koomen &

Thijs, 2011) as emotional exhaustion and cynicism (also known as depersonalization) have been found to correlate negatively with the working ability of Finnish teachers (Hakanen et al., 2006).

Teacher burnout is connected to job withdrawal or absenteeism, and when staying in one's job, it leads to lower productivity and effectiveness at work and reduced commitment to the job and organization (Friedman, 1991; Rudow, 1999; Maslach et al., 2001). As it is important to retain high quality teachers in the profession in addition to recruiting new graduates (Manuel, 2003; Merrow, 1999), this issue is relevant to address. Moreover, it has been elaborated that losing experienced teachers creates a problem for schools, as those who remain are increasingly worn out, discouraged and may feel trapped (Tye & O'Brien, 2002). Recent research results on Finnish teachers indicate that work stress has increased substantially and worryingly in all age groups. In the oldest and youngest age groups the felt work related stress has increased distinctly from the year 2015, with no significant difference between women and men in these results. (Länsikallio et al., 2018.) The challenges, problems and strengths concerning education and the teaching profession are not only viable and relevant for the teacher profession, but they concern all professions. However, the teacher profession is an exemplar profession to study and look at concerning today's working life welfare problems and challenges. (Hakanen, 2004.)

There is tentative evidence that burnout can spread across the teacher community (Meredith, Schaufeli, Struyve, Vandecandelaere, Gielen and Kyndt, 2020; Westman & Etzion, 1999). A teacher struggling with burnout may behave in a manner that burnout becomes contagious when perpetuating through informal interactions during work (Bakker, van Emmerik & Euwema, 2006; Maslach et al., 2001). Accordingly, gaining better understanding for such personal, interindividual, transactional and organizational factors that make teachers vulnerable for experiencing burnout would be important. Such factors may also function as antecedents of the crossover of burnout. Teachers' work is highly socially embedded (Bakker et al., 2006): they work in teams, groups and as part of larger organizations which include hierarchies, operating rules, resources and space distribution that affect the basic expectations of fairness and equity (Maslach et al., 2001). Teachers can draw on the social resources provided by the teacher community, but it can also make them more prone to experience burnout. Teacher burnout is an individual



syndrome with an interpersonal context through social interaction partners (Meredith et al., 2020), thus there is need to study the occurrence of burnout within a social context. The aim of this research is to gain better understanding of how Finnish comprehensive school teachers experience burnout symptoms, i.e., exhaustion, cynicism, and inadequacy, and how the symptoms are related to each other. Moreover, the effect of individual, transactional and organizational attributes connected to the crossover of teacher burnout is addressed.

## 2 Teacher Burnout

The origin of burnout research is placed in the 1970s as a psychiatrist Freudenberger defined it to be a work-related state of fatigue and emptiness of physical and mental power caused by an overload of demands from energy and strength. Burnout has been thought to be connected to human service professionals, such as the field of education, social services, criminal justice system and other people-oriented occupations, where one's work evolves and surrounds other people (Maslach & Jackson, 1981; Maslach, 1982 & 1993; Jackson, Schwab & Schuler, 1986). Nowadays, it is thought that burnout can occur in multiple careers and fields, even with minimal connection to other people, stressors being found from common job-related stressors such as workload, time pressure and role conflicts more often than from client-related issues (Maslach et al., 2001). In contrast to other fields, teachers are frequently exposed to provocative situations and their self-regulative options to manage their emotional reactions are limited (Jennings & Greenberg, 2009) This is why teacher burnout is continuously important to study and learn from.

### 2.1 Negative consequences related to teacher burnout

Burnout can have serious consequences for the individual, the professional community and pupils through for example school mission and quality of teaching (Cherniss, 1980; Hakanen et al. 2006; Maslach & Jackson 1981; Noworol, Zarczynski, Fafrowitz & Marek, 1993, Shirom, 2003; Weisberg & Sagie 1999). Previous studies have found that teacher burnout is related to feelings of low job satisfaction, well-being and self-efficacy (Maslach et al., 2001). Moreover, burnout has been associated with several health problems, including headaches and sleep disturbance, and mental health-related psychological symptoms, such as depression and anxiety, extreme reactions of anger, fatigue, boredom, guilt, psychosomatic reactions and sometimes also emotional breakdowns in addition to behavioral stress reactions where one's consumption of for example alcohol is increased (Bakker & Schaufeli, 2000; Friedman, 1991; Hakanen et al. 2006; Maslach & Jackson, 1981; Maslach, Jackson & Leiter, 1996; Maslach et al., 2001; Rudow, 1999; Schonfeld & Bianchi, 2016; Talmor, Reiter & Feigin, 2005). These health problems may occur because of the chronic character of the syndrome (Bakker, 2009).

It has been shown that teacher burnout has an impact on the pupils: significant correlation between teacher burnout, and specifically teachers' emotional exhaustion and pupils' perception of the reduced quality of instructions the teachers are providing, has been detected (Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008). Teacher burnout is found to be related to the decrease of the thoroughness of work preparation and involvement in classroom or neglect, employing rigid instructional strategies as well as negative and low expectations of pupils combined with increased pupil criticism. (Farber & Miller, 1981; Friedman, 1991; Jennings & Greenberg, 2009; Klusmann et al., 2008; Maslach, 1976; Shen, McCaughtry, Martin, Garn, Kulik & Fahlman, 2015; Spaniol & Caputo 1979). Connected to this, exhausted teachers have been found to behave differently in class and have difficulties in supporting students' learning efforts (Klusmann et al., 2008; Whitaker, Dearth-Wesley, & Gooze, 2015). This may further result in reduced intrinsic motivation, study engagement and lower learning outcomes among the pupils (Shen et al., 2015). Moreover, teacher burnout is negatively associated with pupils' autonomous motivation and thus being an important environmental factor explaining the pupils' motivational changes (Shen et al., 2015). Teachers' lack of feeling and impersonal response could damage pupils' autonomous motivations (Shen et al., 2015), which can be further connected to the teachers' inflexibility towards pupils. Moreover, the exhaustion experienced by teachers has also been associated with student achievement (Klusmann et al., 2016), which in turn may diminish motivational factors. Teachers with higher burnout symptoms have also been found to respond less to students' problem behavior, which was connected to withdrawal or decreased engagement (Pas, Bradshaw, Hershfeldt & Leaf, 2010)

It has been suggested that teachers feeling drained and exhausted have low autonomous motivation towards teaching (Shen et al., 2015). For example, burnout has been connected to many forms of job withdrawal, such as intention to leave one's job or absenteeism and actual turnover. When staying in one's job, it leads to lower productivity and effectiveness at work and reduced commitment to the job and organization. (Federici and Skaalvik, 2012; Friedman, 1991; Rudow, 1999; Maslach et al., 2001; Schaufeli & Bakker 2004; Skaalvik & Skaalvik 2011; Weisberg & Sagie 1999; Whipp, Tan, & Yeo, 2007.) These can be linked to the symptom of professional inadequacy and cynicism, which are two of the symptoms of burnout.

## 2.2 Teacher burnout symptoms

Burnout develops gradually when work-related stress becomes overbearing and is prolonged (Maslach, 1993; Maslach & Jackson, 1981; Maslach et al., 2001). It consists of three symptoms: *exhaustion*, *cynicism* and *professional inadequacy* (Jackson et al. 1986; Maslach, 1982; Maslach et al., 1996). It is a psychological syndrome, which occurs as an internal psychological experience involving, for example, feelings, attitudes, motives and expectations (Maslach, 1982). Burnout at its core is a negative experience, being a response to chronic interpersonal stressors on the job (Maslach, 1982; Maslach & Leiter, 2016). Burnout is a problem specifically concerning the working life in contrast to depression, which has similar symptoms, and often invades one's life in every domain (Bakker et al., 2006; Maslach, Schaufeli, Sixma & Bosveld, 2001).

Firstly, *exhaustion*, characterized by a psychological feeling of wearing out, depletion and fatigue, additionally sometimes having physical symptoms, consists of feelings of being emotionally drained and depleted of emotional resources (Klusmann et al., 2008; Maslach, 1982; Maslach & Jackson, 1986; Maslach et al., 1996). The feeling of exhaustion is considered to be the core of the burnout symptoms and it is most commonly referred to when describing burnout experiences (Bakker et al., 2006; Maslach & Leiter, 2016; Maslach et al., 2001). According to Chang (2009, 196), "emotional exhaustion is a personal psychological status which cannot capture other behaviors that relate to burnout". When the feeling of emotional exhaustion becomes chronic by energy depletion, teachers can no longer dedicate themselves to pupils as they once were able to. This causes cynicism among teachers who are exhausted and no longer have positive emotions about their pupils. (Maslach et al., 1996.) Exhaustion is not connected to any specific strain peak, it is constant, and the energy depletion is so strong that a person suffering from it can't recuperate from it during free-time (Kalimo & Toppinen, 1997).

*Cynicism* is characterized by negative feelings and attitudes towards clients and colleagues and irritability, which often accumulates and develops over time (Jackson et al., 1986; Maslach, 1982; Maslach et al., 1996). Cynicism is the interpersonal component of burnout (Hakanen et al., 2006; Maslach et al., 2001; Shirom, 2003). Cynicism is reflected in detachment from other people, from teacher colleagues or pupils, actualized,

for example, in calling them by derogatory labels, exhibiting cold and distant attitudes or even physically distancing oneself from the pupils by for example actively ignoring the qualities that make pupils unique and engaging (Bakker & Schaufeli, 2000; Bakker et al., 2006; Leiter & Schaufeli, 1996; Maslach, 1993; Maslach et al., 1996; Maslach & Leiter, 1997; Maslach et al., 2001; Shen, et al., 2015; Schwab, Jackson & Schuler, 1986). Cynicism is an attitude of scornful or jaded negativity, which can be seen as distrust of others (Chang, 2009). Cynicism is the only aspect of burnout, which is directly related to self-esteem (Buunk & Schaufeli, 1993), losing interest towards work, reduced sense of meaning of work, low organizational commitment and feelings of disappointment towards work (Hakanen et al., 2006; Kalimo & Toppinen, 1997; Schaufeli & Buunk, 2003). Finnish teachers experiencing cynicism feel it primarily towards their professional community, rather than pupils (Pyhältö, Pietarinen & Salmela-Aro, 2011). It is assumed that the professional community can be a major source of cynicism (Tikkanen, Pyhältö, Pietarinen & Soini, 2017).

The third dimension of burnout is *professional inadequacy* characterized by the declining of one's sense of competence and success in one's work, in other words reduced professional efficacy (Schwab et al., 1986; Maslach, 1993; Bakker & Schaufeli, 2000; Maslach et al., 2001; Leiter & Schaufeli, 1996; Maslach et al., 1996; Maslach & Leiter, 1997) here having the feeling of unsuccessful teaching outcomes etc. It is found that teachers feel professional inadequacy within the professional community because of destructive frictions and problematic encounters with pupils: Professional inadequacy was reported within the teacher-pupil interaction (64%) and the primary form of burdening in the professional community was cynicism and alienation (54%). (Pyhältö et al., 2011.) The sense of professional inadequacy can be thought to be a self-evaluation component of burnout and consist of both social and non-social aspects of occupational accomplishment (Brouwers & Tomic, 2000; Hakanen et al., 2006; Maslach & Leiter, 2008). One of the characterizing elements of professional inadequacy is the dissatisfaction towards one's own work performance (Maslach & Jackson 1981; Federici & Skaalvik, 2012).

Professional inadequacy is particularly important for teachers as most teachers enter the profession to help others to learn and grow (Maslach e al., 1996). It has been connected to teachers' feelings of confidence about their capabilities to affect pupils' performance

and learning both individually and collectively (Brouwers et al., 2000; Klassen, Tze, Betts, & Gordon, 2011). Among teachers, the feeling of professional inadequacy is connected especially with challenging interactions with pupils (Pyhältö et al., 2011). Professional inadequacy makes one believe that they are no longer able to fulfill one's job responsibilities (Bakker et al., 2006). One might feel that the work they are doing is not in their control (Kalimo & Toppinen, 1997).

### 2.3 The development of burnout symptoms

There are different kinds of opinions when it comes to the development of burnout (Shirom, 1989; Leiter, 1993; Maslach et al., 2001). Although the feeling of exhaustion is considered to be the core of burnout symptoms (Bakker et al., 2006; Maslach & Leiter, 2016; Maslach et al., 2001; Shirom, 1989), focusing only on exhaustion means the burnout experience is disconnected from work and the work environment, the context of burnout (Maslach et al., 2001). There is also research evidence indicating that exhaustion and cynicism are the core of burnout and the role of professional efficacy is contradictory (Maslach & Jackson, 1981; Maslach et al., 2001; Maslach & Leiter, 2008). The perception of fairness in the workplace has been found to be a tipping point in the change towards burnout compared to engagement, especially in exhaustion and cynicism (Maslach & Leiter, 2008).

Exhaustion is not only experienced, but it might also cause actions and adjustments in one's behavior to distance oneself emotionally and cognitively from work, supposedly to manage the overload caused by one's work, thus being a coping mechanism (Bakker et al., 2001; Maslach et al., 2001). When one distances oneself from the service recipients – in this case pupils – it is an immediate reaction to exhaustion meaning that there is a strong directional relationship from exhaustion to cynicism (Bakker et al., 2001; Maslach et al., 2001). In other words, exhaustion might cause cynicism as a way of coping with one's work overload (Maslach et al., 2001). Also, interrelation between the reduced professional efficacy and cynicism have been proposed (Golembiewski, Munzenrieder & Stevenson, 1986; Mäkikangas, Leiter, Kinnunen & Feldt, 2020). The sense of inefficacy is related to reduced productivity and capability to work and cope with stressors, as well as low morale and withdrawal (Jackson et al. 1986; Maslach, 1982; Maslach et al., 1996).

Thus, resulting in the feeling of cynicism. Self-esteem mediates the relationship between workplace factors and burnout (Byrne, 1999). Also, self-efficacy is seen to have a negative relation to teacher burnout dimensions; emotional exhaustion and cynicism (Skaalvik & Skaalvik, 2010). Even though burnout components might be relatively stable on a group level, individual differences in teacher burnout have been detected (Pyhältö, Pietarinen, Haverinen, Tikkanen & Soini, 2020; Fernet, Guay, Senécal & Austin, 2012).

## 2.4 Factors contributing to the teacher burnout

According to Hakanen et al. (2006) the dual role of job resources are central when addressing teacher burnout: teachers may be able to draw upon job resources and gain vigor and dedication. On the other hand, the lacking of job-resources may be connected to burnout, as it may further undermine work engagement leading to lower organizational commitment (Hakanen et al., 2006). The dynamics contributing to the burnout or lack of it can be explored with job demands-resources (JD-R) model (Bakker, Demerouti, De Boer & Schaufeli, 2003; Demerouti, Bakker, Nachreiner & Schaufeli, 2001). It has been suggested that the combination of high job demands, and the lack of job resources may cause burnout (Bakker et al., 2003; Demerouti et al., 2001). The central assumption in the JD-R model is that as a person's job resources have exceeded, job stress arises (Bakker & Demerouti, 2007). It has been found that burnout is predicted by teachers' *perception* of job demands and the absence of job resources (Hakanen et al., 2006). For example, changes in teachers' perceptions of the school environment, meaning demands and resources, have been found to predict changes in the burnout components; emotional exhaustion, cynicism, and reduced professional efficacy, through motivational factors; autonomous motivation and self-efficacy (Fernet et al., 2012).

Job demands refer to *physical, psychological, social and organizational* aspects that use cognitive and emotional resources, costing psychologically or physiologically (Bakker et al., 2003; Demerouti et al., 2001). Job demands in teachers' work that are nomological can include the following: work overload, role problems, school policies and climate, decision-making, and pupils' behavioral problems (Hakanen et al., 2006; Pyhältö, Pietarinen, & Salmela-Aro, 2011; Skaalvik & Skaalvik, 2010). These demands are strongly and positively related to exhaustion (Demerouti et al., 2001; Pyhältö et al., 2011).

Job demands (e.g., work overload) may exhaust employees' mental and physical resources to leading in health problems and burnout (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

Job resources on the other hand are *physical, psychological, social and organizational* aspects that can be functional in achieving work goals, reduce job demands or stimulate personal growth and development (Bakker et al., 2003). Job resources can be seen as administrative leadership, flexible schedules, skill utilization, participation in decision-making and support from colleagues (Byrne, 1999; Rudow, 1999). These can be seen as the social interactions affecting one's personal feelings through transactions with others at the workplace. These transactions are frequent in the school community (Pietarinen, Pyhältö, Soini & Salmela-Aro, 2013.) The lack of job resources precludes goal accomplishment which may cause frustration, leading to withdrawal from work, and reduced motivation or commitment (Bakker et al., 2003) that are all connected to burnout as job resources are strongly and negatively related to cynicism (Demerouti et al., 2001).

Factors affecting teacher burnout include 1) *individual factors*, for example age, gender, personality, being a class teacher or subject teacher, and even phase of career 2) *transactional factors*, which include, for example, perceptions of organizational leadership style and interactions within school community, poor classroom climate and pupils' misbehavior and 3) *organizational factors* meaning, for example, socioeconomic status of school, administrative support, large class size, school size, work overload (Chang, 2009; Saloviita & Pakarinen, 2021). Burnout can also be a symptom of larger social factors, outside one's individual experiences and specific organizational surroundings, meaning that the societal and structural layers affect burnout and its occurrence (Schaufeli & Enzmann, 1998).

Teachers have to deal with highly complex and emotional situations at work, exposing them to emotionally draining and discouraging experiences (Maslach & Leiter, 1997). Exhaustion specifically from the symptoms of burnout is caused by both organizational and transactional factors of the school environment by experienced workload and time pressure (Bakker et al., 2001; Maslach et al., 2001). Exhaustion is strongly associated with role conflict at one's job (Jackson et al., 1986).



Reduced professional efficacy is caused by a chronic, overwhelming job situation that continues causing exhaustion and cynicism, thus creating a feeling of inefficacy (Bakker et al., 2001). Feelings of personal accomplishment are highest for teachers in supportive environments and the support from the principal is particularly important (Jackson et al., 1986). As an organizational factor the effect of the school environment is also related to burnout as it is connected to poor atmosphere characterized by, for example, increased risk of personal conflicts within the professional community, lower performance, and reduced organizational commitment (Hakanen et al., 2006; Maslach et al., 2001; Noworol et al., 1993). Research findings have also shown that the workload index has a strong correlation with burnout and emotional support from colleagues has an indirect effect on burnout as it strengthens the effect of resources (see Szabo & Jagodics, 2019). They also showed that job resources are strengthened by perceived collective self-efficacy, meaning joint input towards common goals (see Szabo & Jagodics, 2019).

The risk of teacher burnout is based on a number of work-related transactional factors, and, for example, the lack of clarity in regards to a teacher's obligations, rights, status and accountability affect the teacher burnout (see Byrne, 1999; Maslach et al., 2001). Previous studies have shown that burnout has a strong correlation to organizational factors such as role conflict, role ambiguity, the lack of social support (Maslach et al., 2001; Skaalvik & Skaalvik, 2011). In addition to these organizational variables, autonomous motivation, intrinsic and identified regulation towards work is negatively related to burnout, and controlled types of motivation, introjected and external regulation, are positively associated with teacher burnout (Fernet, Senécal, Guay, Marsh & Dowson, 2008).

## 2.5 Crossover of teacher burnout in the professional community

Crossover is defined as “the reaction of individuals to the job stress experienced by those with whom they interact regularly” (Westman, 2001, 717). For example, in the teaching profession, it can be assumed that teacher colleagues affect each other in their regular interactions at the school. The crossover of burnout can also be addressed by *burnout contagion*, which is regarded as a form of *emotional contagion* (Meredith et al., 2020). It is demonstrated that “burnout is – to some extent – contagious and that this contagion occurs through interpersonal interaction.” (Meredith et al., 2020,). It is also relevant to

point out that this contagion has long-term effects on experienced burnout (Meredith et al., 2020). According to Bakker, Westman and Schaufeli (2007, 221), “- crossover is an interindividual transmission of stress and strain.” In addition to crossover, it is important to understand the concept of spillover, which is a within-person transmission of stress and strain from one area of life to another, mainly being from work to home but also vice versa, being an intra-individual transmission (Bakker, Westman & van Emmerik, 2009).

Crossover happens when an individual's feelings or happenings affects others in a dyad, being a family member or a work-group member (Westman & Etzion, 1999; Bakker, Demerouti & Schaufeli, 2005). Crossover effect is a dyadic, inter-individual, inter-domain contagion, which causes similar reactions in another individual (Westman, 2001). Crossover happens when a stress or strain experienced by one or multiple persons affect the level of strain another person is experiencing in the same social environment (Westman, 2001), here being the school and more specifically teacher colleagues. The shared environment's impact is crucial for the crossover burnout process (Westman & Etzion, 1999). Their study on the crossover effect from principals to teachers and vice versa indicate a crossover effect of strain between principals and teachers in the school environment. In the shared environment people might experience a similar level of stress and as they express strain, a so-called ping-pong effect starts and causes elevation to people's reaction to the stressful situation. (Westman and Etzion, 1999.)

This dyadic effect is thought to be one part of the crossover effect simultaneously with the network effect, because one is always affected by all their connections at the same time, and not only one person (Meredith et al., 2020). In previous research, crossover effects appear between closely related partners who care for each other and share a lot of time together (Bakker et al., 2005; Westman & Bakker, 2008). It is said that strain in one partner creates empathetic reaction in the other, increasing their level of strain (Riley & Eckenrode, 1986). In the research the focus was on marital crossover in working couples (Westman, 2001; Bakker et al., 2005). Moreover, research findings suggest that not only the negative effect of feeling exhausted, but also the negative attitudes towards work, such as cynicism, can be transferred from husbands to wives and vice versa (Bakker et al., 2005). Moreover, research findings suggest that there is a bi-directional crossover of burnout and work engagement across working couples (Bakker et al., 2005). They also found that both negative effects (feeling exhausted) and negative attitudes towards work

(cynicism) can transfer from husbands to wives and vice versa (Bakker et al., 2005). The notion that crossover effect appears between closely related partners is strengthened as research results indicate that burnout feelings are more contagious when one interacts with a colleague with whom they have a stronger connection and relationship with (Meredith et al., 2020). It has been shown that closely related partners often take the perspective of the other, creating a shared feeling (Bakker & Demerouti, 2009). This is reaffirmed by research results indicating that burnout can cross over and has an indirect effect on partner health, because partner burnout was found to be predictive of own burnout (Bakker, 2009).

Employees experiencing burnout can negatively impact others in an organization by for example increasing the risk of inter-personal conflicts and by disrupting job tasks, thus being contagious through informal interactions on the job, also referred to as crossover burnout (Maslach et al., 2001). Other research has strengthened this view that burnout could be contagious as colleagues act as role models whose actions, and in this case burnout symptoms, are imitated through *emotional contagion* where one automatically, unconsciously, mimic others facial expressions and other physical traits to better align with the counterparts' feelings (Buunk and Schaufeli, 1993; Bakker et al., 2001; Fischer & van Keef, 2010). Hatfield, Cacioppo and Rapson (1993) described the emotional contagion in a similar way, adding that as one syncs themselves to another person, they converge emotionally (Hatfield Cacioppo & Rapson, 1993). A conscious cognitive process has also been introduced in which one *tunes in* to the emotions of others. This tuning in is especially typical for human-service workers, such as teachers, as they are likely to act in a way that they consciously try to tune into the emotions of colleagues and pupils (Bakker & Schaufeli, 2000; Bakker et al., 2009). So, to summarize, the contagion can be conscious or unconscious, but the connecting point is that exposure to others' feelings and emotions is crucial (Hatfield et al., 1993). Anttila (2019) and Becker, Goetz, Morgen and Ranellucci (2014) have pointed out that teachers' emotions have an effect on pupils' emotions through emotional transmission. Thus, the topic of burnout crossover is not merely concerning teachers, rather the whole educational community.

In teams, shared feelings of burnout and work engagement can be conceptualized as a "collective mood" (Bakker et al., 2006). According to Bakker et al. (2006), the crossover of burnout is most likely to occur when a high number of team members suffer from the

symptoms of burnout. Studies by Bakker and Schaufeli (2000) and Meredith et al. (2020) both point out the finding from McIntosh, Druckman and Zajonc in 1994, that negative emotions seem to be more contagious, thus suggesting that burnout symptoms, them being mainly negative, are appropriate for this emotional contagion and that it plays a role in the development of burnout. This same notion is shown as sharing negative experiences and emotions, and discussing pupil-related problems with burned-out colleagues causes crossover effect to negative attitudes, thus creating a contagion between colleagues (Bakker & Schaufeli, 2000). This thought is confirmed in other research as findings were similar regarding the possibility to communicate burnout from one employee to another in addition to finding that *priming* might affect the felt emotional exhaustion in the contagion process (Bakker et al., 2007). On the other hand, it is elaborated that the crossover process is similar in positive and negative attitudes and emotions, but the crossover research has focused on negative emotions (Bakker et al., 2005).

Research findings by Totterdell (2000) introduced two ways for a team to gain a collective mood, the first being that the members of a team could react in a similar way to shared events, thus feeling the same way. In this context it can be assumed that a team could feel either burned out or engaged with their work. The second way is that as team members affect each other's moods, changing their moods closer to each other (Totterdell, 2000).

Three mechanisms have been introduced that may be affected due to a crossover process: *direct empathetic crossover, indirect crossover of strain and common stressors* (Westman & Vinokur, 1998). These mechanisms are elaborated as following: the direct empathetic crossover means that stress and strain are transmitted through empathetic reactions from a partner to another; indirect crossover which implies that the crossover effect is not direct, but is a reaction when one is affected for example by burnout and because of that interacts in a negative way with another person, creating a negative feeling and atmosphere in which the other person's level of strain or burnout rises. It has been found that burnout at the team level is connected to individual burnout scores, both directly and indirectly through burnout's relationship with individual's job demand, job control, and perceived social support (Bakker, Demerouti & Schaufeli, 2003). The third, common stressors affect both partners and might appear to be due to a crossover effect between the two, but is in fact a mutual reaction to common stressors (Westman, Etzion & Horovitz, 2004).

Even with common stressors, the crossover might happen between spouses through the first two mechanisms mentioned above. (see Westman et al., 2004.)

## 2.6 Individual, transactional and organizational determinants of teacher burnout crossover

Teacher burnout and hence crossover is likely to be affected by both individual, transactional and organizational determinants. The determinants examined in this thesis were selected based on their relevance for teacher's individual burnout risk, and hence potentially also regulating crossover. They can predispose a person to experience burnout and thus crossover.

### 2.6.1 Gender

In Finland, the teacher profession is very skewed in the gender division, and it is seen as problematic – 77% of the basic education teachers and principals are women (Kumpulainen, 2017). The findings in previous studies have been contradictory and slim in terms of gender burnout relation (Byrne, 1999; Maslach et al., 2001). In some studies, women are shown to be more prone to burnout (Lau, Yuen, Chan, 2005; Maslach et al., 2001; Pietarinen et al., 2013.), while in other studies, no gender differences in experienced burnout were found (Jamshidirad, Mukundan & Nimehchisalem, 2012). It is relevant to show is that in these previous studies, there has been one small but consistent gender difference and this is that males have scored higher in cynicism, and in some studies women have had the tendency to score a bit higher on exhaustion (Lau et al., 2005; Maslach et al., 2001; Pietarinen et al., 2013.) In accordance with the Maslach et al. (2001) research, male teachers score slightly higher in cynicism (Lau et al., 2005; Maslach et al., 1996; Russell, Altmaier & Van Velzen, 1987; Skaalvik & Skaalvik, 2009; Vercambre, Brosselin, Gilbert, Nerrière & Kovess-Masféty, 2009). It has also been found that male teachers score slightly lower on their relationships to parents, which has been found to affect job satisfaction and burnout by causing stress and strain because one may feel untrusted or criticized by the parents (Skaalvik & Skaalvik, 2009; see Skaalvik & Skaalvik, 2010). The relation to parents was found to be the strongest predictor for both teacher self-efficacy and cynicism (Skaalvik & Skaalvik, 2010). The failure to resolve conflicts with parents has been named as a factor to cause teacher burnout (Pyhältö et al.,

2011). Some studies have found that women are more prone to become emotionally exhausted over the school year than men (Fernet et al., 2012; Pietarinen et al., 2013; Pyhältö et al., 2011). Women have also been found to experience lower levels of personal accomplishment compared to men (Lau et al., 2005). This notion is strengthened by research where it was found that high-burnout schools employed fewer female teachers compared to low-burnout schools (Friedman, 1991). In contrast to the above findings, there is some evidence that there are no gender differences in the burnout dimensions (Jamshidirad et al., 2012). All in all, the research findings imply that there might be gender-related patterns in teacher burnout and stress.

The evidence concerning gender differences in crossover effects is mixed, though this might be because the previous crossover research has concentrated on husbands and wives crossover effects and the study samples have not been equal (Westman, 2001). On the other hand, in accordance with the gender differences and burnout, there is also a difference in emotional contagion within genders; women are somewhat more prone to emotional contagion in both positive and negative emotions than men, thus it can be said that they are affected more by the emotional atmosphere that surrounds them compared to men (Doherty, Orimoto, Singelis, Hatfield, Hebb, 1995).

This is also reaffirmed by other research, as the evidence shows that wives' physical, mental and emotional exhaustion was a stronger, but not significant predictor of husbands' exhaustion than vice versa (Westman & Etzion, 1995). Because women experience more exhaustion than men, it has been elaborated that they may bring out to their partners their feelings of exhaustion as direct crossover, or they may expect husbands to be involved in the household work, creating more exhaustion to men, as indirect crossover (Demerouti, Bakker & Schaufeli, 2005).

### 2.6.2 Phase of career

Demographic variables have been studied in the effects of burnout and especially age has been most consistently related to burnout and it has been found that work experience, or rather the lack of it, appears to have an effect on burnout. However, there might be biases as people prone to burnout might leave their jobs and thus aren't found in the latter career phases anymore, when measuring burnout. (Maslach & Jackson, 1981; Maslach et al.

2001.) Age is a major predictor of exhaustion, meaning younger teachers score higher than older teachers (Maslach et al., 1996; Russell et al., 1987). This notion might reflect a generational bias in reporting stressful events (see Russell et al., 1987). In contrast, other research shows that exhaustion and reduced accomplishment increase significantly with the number of years in the teaching profession (Klusmann et al., 2008; Santavirta, Aittola, Niskanen, Pasanen, Tuominen, & Solovieva, 2000; Skaalvik & Skaalvik, 2009). It is said that there is more burnout in schools where teachers have more experience and are older (Friedman, 1991; Vercambre et al., 2009). On the other hand, research findings have shown that novice teachers teaching in poor neighborhoods (low SES), were more likely to feel depressed than other new teachers (Devos, Dupriez, & Paquay, 2012). Moreover, findings suggest that multiple meetings and activities aiming to support novice teachers' efficacy beliefs were affected negatively, if the teacher had problems in teaching (Devos, Dupriez & Paquay, 2012).

### 2.6.3 Class teacher vs. subject teacher

According to multiple studies there is a significant association between the grade level taught and teacher burnout. It has been generalized that teachers teaching higher grades (specifically subject teachers) experience more overall burnout than their colleagues in lower grades (being class and special education teachers) (Arvidsson, Håkansson, Karlson, Björk, & Persson, 2016; Pietarinen et al., 2013; Saloviita & Pakarinen, 2021). Maslach et al., (1996) findings suggest that high school teachers and junior high school teachers, here being subject teachers, tend to score lower levels of personal accomplishment than their elementary school colleagues. They also have more cynical feelings towards their pupils than either elementary or junior high school teachers (Maslach et al., 1996; Saloviita & Pakarinen, 2021). There are significant differences in class and subject teachers in the feeling of reduced personal accomplishment, meaning that greater feelings of personal accomplishment were reported by teachers teaching primary levels, and the reported level of cynicism is higher in the teachers teaching secondary grades (Russel et al., 1987; Vercambre et al., 2009). Moreover, it has been shown that subject teachers experience higher levels of inadequacy in the teacher-pupil interaction compared to other teacher categories (Pietarinen et al., 2013). Emotional exhaustion is significantly connected to teaching in primary school (classroom teachers) and cynicism scores were low (Saloviita & Pakarinen, 2021; Vercambre et al., 2009).

The low rate of cynicism has been connected to their work situations as long-term teachers of small groups of young children, thus they are able to connect and create personal relationships with pupils which has been found to form lower levels of stress and exhaustion (Milatz, Lüftenegger & Schober, 2015; see Spilt et al., 2011). Moreover, teaching-related positive emotions are connected to time spent with the pupils (Hagenauer, Hascher, Volet, 2015) and also the significance of the teacher-pupil relationship declines as pupils transit from primary school to secondary school (Pietarinen, Soini, & Pyhältö, 2014).

The highest levels of experienced inadequacy in teacher-pupil interaction was found in subject teachers, compared to class teachers and special educators (Pietarinen et al., 2013). Research findings suggest that class teachers experience less cynicism towards the professional community than subject or special education teachers (Pietarinen et al., 2013). In overall burnout the findings suggest that subject teachers' risk was statistically significantly higher, and they scored higher than the class and special education teachers in all three burnout symptoms (Pietarinen et al., 2013; Saloviita & Pakarinen, 2021).

On the other hand, a study about teachers' perceived stress showed that to some extent more stress is perceived in teachers teaching primary school children than secondary school children (Jepson and Forrest, 2006).

#### 2.6.4 The socioeconomic status (SES) of the school area

As the Finnish basic education is nonselective, meaning that schools do not select their pupils, the effect of the socioeconomic status of the school area on teacher burnout is relevant to address. The well-being of teachers and pupils is likely to be interrelated, both influencing each other, and in constant interaction (Ervasti, Kivimäki, Puusniekka, Luopa, Pentti, Suominen, Ahola, Vahtera & Virtanen, 2012; Ervasti, Kivimäki, Puusniekka, Luopa, Pentti, Suominen, Vahtera, et al., 2012). This is why it is relevant to address the effect of the socio-economic status of the school area towards teachers' well-being. It has been found that schools where the students have lower socio-economic status, teacher effect is larger, meaning that teachers are more relevant (Nye, Konstantopoulos & Hedges, 2004). Low socio-economic status (SES) of a family is known to affect negatively the health, cognitive, and socio-emotional development of children in addition to school



achievement (Bradley & Corwyn, 2002) and consequently these may have a negative effect on teachers as they have to interact with the disadvantaged pupils daily. Research findings suggest that the lowest school satisfaction was found in the schools where pupils' parents had the lowest socioeconomic position (Ervasti, Kivimäki, Puusniekka, Luopa, Pentti, Suominen, Ahola, et al., 2012). A vicious circle may occur in which pupils' negative feelings and attitudes toward school increase ill-health in vulnerable teachers (Ervasti, Kivimäki, Puusniekka, Luopa, Pentti, Suominen, Ahola, et al., 2012). This is why the effect of neighborhood socioeconomic status is relevant to research.

Intuitively it may be thought that a traditionally successful school with good educational results would be a good place to work in, but it might cause a pressure cooker effect on the teachers and pupils in the school as the expectations are high, and ways of working are established, and new ways of working might be hard to introduce to the community (Friedman, 1991). On the other hand, it has been found that SES affects the way teachers perceive their pupils and their academic possibilities. Teachers have lower expectations of pupils from low SES and these expectations may have a negative impact on the pupils' achievements. (Auwarter and Aruguete 2008; Bradley & Corwyn, 2002; McLoyd, 1998). Exhaustion and cynicism have been connected to teaching in underprivileged neighborhoods (Vercambre et al., 2009).

Research findings suggest that in Finland teachers working in low socioeconomic neighborhoods reported the lowest frequency of workplace meetings and in contrast, teachers working in higher SES areas reported more active participation in occupational training, higher teaching efficacy and lower mental workload compared to others (Virtanen, Kivimäki, Elovainio, Linna, Pentti & Vahtera, 2007). This notion can be connected to the organizational aspects of burnout factors as organizational commitment and support have been found to be vital in preventing burnout and the lack of communal feelings among teachers in the school might cause teacher burnout (Maslach, 1981). Also, the mental workload is a vital aspect of teacher burnout since if it gets prolonged, the risk of becoming burnt-out gets higher. Accordingly, emotional labor, meaning that one needs to “induce or suppress feeling in order to sustain the outward countenance that produces the proper state of mind in others” (Hochschild, 1983, 7), and specifically in the teacher profession meaning suppressing feelings is more likely for teachers working in low-SES areas as the children have various challenges and problems causing the teachers to

perform emotional labor more often than in wealthier areas (Linnansaari-Rajalin, Kivimäki, Ervasti, Pentti, Vahtera & Virtanen, 2014). This is relevant since research findings have shown that emotional labor may have negative effects on employee health, especially emotional exhaustion (Zapf, 2002) and work outcomes such as reduced organizational commitment (Seery & Corrigall, 2009)

It is said that female special education teachers work more often in schools located in neighbourhoods of lower resident income level (Ervasti, Kivimäki, Pentti, Suominen, Vahtera & Virtanen, 2011). This might affect the results also as females have been accounted to be more easily burned out.

#### 2.6.5 The size of the school

Research findings are not consistent in the effect of school size on burnout. On the one hand large class size has been connected to higher levels of overall burnout and the feeling of emotional exhaustion (Russell et al., 1987). This is reaffirmed by other research as it was found that teachers working in large schools tend to receive less social support from the professional community compared to teachers working in smaller schools. It is said to affect teacher burnout in all three burnout categories and their side effects: decreased job satisfaction, lower accomplishment and sense of cynicism. (Skaalvik & Skaalvik, 2009.) In line with the results above, Saloviita and Pakarinen (2021) found that teachers in smaller schools reported less cynicism than those in larger schools, although they pointed out that larger schools could be related to other factors that may contribute to teacher burnout, such as urbanization and poverty (Saloviita & Pakarinen, 2021). Also, specifically exhaustion has been found to be connected to teaching big classes (Vercambre et al., 2009).

The notion that larger schools increase risk of burnout is reaffirmed in other research as findings in Finland indicate that teachers teaching in large schools with over 600 pupils were more likely to experience burnout compared to teachers working in smaller schools with less than 100 pupils meaning that the schools structural characteristics are risk factors for the experienced socio-contextual teacher burnout (Pietarinen et al., 2013).

As it has been noted in burnout research, people's careers and working life is a part of larger organizations, which include hierarchies, operating rules, resources, and space distribution. These factors, if managed poorly, violate the basic expectations of fairness and equity, creating stressors that can cause burnout when influencing the values which shape the emotional and cognitive relationship developed in work. (Maslach et al., 2001.)

### 3 Aim of the study

The aim of this thesis is to examine the extent to which Finnish teachers experience burnout symptoms, and how various individual, transactional and organizational attributes are associated with the teacher burnout symptoms, and potentially function as determinants (either buffering or increasing exposure to) for burnout crossover within the teacher community. The individual attributes associated with the teacher burnout examined in the study include *gender and career phase*; transactional attribute, entail *socio-economic background (SES) of the school neighborhood*, and the organizational attributes include *the academic level of the school and size of the organization*. It can be presumed that these individual, transactional and organizational attributes also expose to the crossover of burnout. Following research questions were addressed:

1. To what extent do Finnish comprehensive school teachers experience burnout symptoms, i.e., exhaustion, cynicism, and inadequacy? How are the symptoms related to each other?
2. How are a) the *individual attributes* (gender, career phase) b) *the transactional attributes* (socio-economic background (SES) of the school neighborhood) and c) *the organizational attributes* (academic level of the school and size of the organization) related to teacher burnout?

The data addressed in this research has been collected as a part of School Matters research project (Pietarinen, Pyhältö & Soini, 2017).

## 4 Methods

### 4.1 Teachers work in primary and lower secondary education

The Finnish teacher education is highly appreciated around the world and in Finland. Teachers in Finland work in one of the most wanted and respected professions in the country. The OECD 2018 Teaching and Learning Survey (TALIS) found that teachers in Finland perceived the teaching profession to be valued in society (58% agreed), compared to the average of across OECD countries and economies participating in the TALIS (26% agreed) (OECD, TALIS 2018). Sahlberg (2011) has also found that the teaching profession has been highly appreciated.

Teachers do not work in isolation, rather through frequent social interactions within the school community. During a single working day, teachers communicate with various pupil groups, other teachers and members of the school community, and often also with parents. The Finnish school system is quite unique in the worldwide context. Aho, Pitkänen and Sahlberg (2006) have introduced the Finnish educational system extensively as following: the main goal is to provide all citizens equal opportunities to receive high-quality education and there is no private school system. There are no tuition fees and education publicly funded in addition to having daily school meals and health services. The comprehensive school educational system is all in all quite equal, and it doesn't separate pupils early on to academic or vocational education. The trust towards individual schools is also strong (Aho et al., 2006), as is the trust towards teachers is great. Accordingly, teachers have pedagogical autonomy to design and implement their teaching and assessment methods as they see best (e.g. Paronen & Lappi, 2018; Sahlberg, 2007, 2011). The assessment of the pupils' progress is based on the objectives of the national curriculum, and teachers are responsible for it. There are no national tests or ability tracking (Kumpulainen & Lankinen, 2012). Nearly all children in Finland complete the nine years of compulsory basic education.

All teachers in Finnish comprehensive schools are highly educated. They hold a Master's degree in educational sciences or some other subject such as biology, religion, etc. Teachers in primary education working as a class teacher in grades (0) 1-6, pupils ages varying from 7 to 12, have a Master's degree in educational science (ETCS 300cr. –

European Credit Transfer and Accumulation System) and are qualified to teach as a classroom teacher and as a pre-school teacher. (Liuski, SOOL, referred 31.8.2020.) Their main subject is applied educational sciences or educational psychology. In the primary grades, teachers usually have their own class or group to whom they teach most of the subjects, except foreign languages. As the teacher profession is highly sought after, it is relatively hard to get into the Department of Education – only about 10% of the applicants are accepted (Kumpulainen, 2017) and in the University of Helsinki, only eight per cent of the applicants are admitted to the educational program (University of Helsinki, 2017). The target time to complete the Master's degree is five years and the education is funded by the state.

In the Finnish school system, lower secondary teachers are mainly subject teachers in a specific subject, teaching grades 7-9, ages 13 to 15. These subjects can be for example religion, literacy, history, psychology, chemistry, etc. (OECD, 2003). In the Finnish context one can become a subject teacher by mastering the specific subject with 300 credit master's studies with an additional 60 credit pedagogical studies from the Faculty of Education (University of Helsinki web-page.) Another way is to conduct straight away a subject teacher education, but this is only possible in a few subjects (Liuski, SOOL, referred 31.8.2020).

There are approximately 85,600 teachers working in Finland and the overall employment is 175,000 persons, which is 7% of the Finnish workforce. Women are in the majority in the teaching field by 66% (Kauppinen et al., ttl.fi, 2012.), more specifically 77% in the basic education teacher profession (Kumpulainen, 2017). At least weekly 39% of the people working in the educational field work overtime from home, which is clearly higher compared to other fields (15%) (see Kauppinen et al., ttl., 2012). According to the Trade Union of Education (OAJ), the amount of work and the time spent for work for teachers has grown and differs from the average Finnish working life. Up to 59% of the participants for the OAJ Työolobarometri 2017 study thought that there is too much work very often or quite often (Länsikallio et al., 2018). Burnout is connected to these questions of wellbeing and working life, thus being a relevant topic to study.

## 4.2 Participants

The participants in the study were 1531 in-service teachers from 74 schools. 52.8% ( $n = 809$ ) of the participants were primary school teachers, 17.5% ( $n = 2689$ ) lower secondary school teachers, and 29.7% ( $n = 454$ ) teachers at combined primary and lower secondary schools. The participants in this research were distributed as following: women in majority ( $n = 1083$ , 76%) and men in minority, ( $n = 337$ , 24%). The gender distribution was in coherence with the national statistics of teacher gender distribution: females 78% and males 22% (Finnish National Board for Education, 2020). All respondents had a Master's degree, and the career stages varied (i.e. working experience in teaching profession: mean 15.5 years,  $SD = 9.6$ , range 0-46 years). The range of the size of the teacher community was 3-68 teachers per school, and the average size was 35 teachers.

## 4.3 Data collection

The data were collected as a part of a research project (2013-2019) by the members of the Learning and Development in School research group (see [www.learninginschool.fi](http://www.learninginschool.fi)). The data collection was carried out in the fall of 2016 during teacher meetings on school premises. Taking part in the research was voluntary and the teachers were informed about the study before the data were collected – the survey could be filled anonymously. However, the schools were identified for all teachers to enable clustering them correctly to their professional communities. Those teachers that were absent during the first collection of data were able to participate in the research as the researchers left blank survey forms with return envelopes. The ethical principles of the study were discussed with and the detailed information related to the data management, restoring and reporting was provided for the participants.

The selection of the schools for the study proceeded in three nested phases. First, the six school districts that presented variation in terms of geographical location, both urban/rural, and the size of the network in which the most recent curriculum reform work was carried out, were selected. (Pyhältö, Pietarinen & Soini, 2018.) The nationwide curriculum reform was introduced and introduced in 2016 for schools to use and implement (Finnish National Board of Education, 2014). Second, based on the national SES indicator data

(Statistics Finland 2013), the SES index was calculated for all schools in the selected districts (N = 303). The SES index was based on the six different socio-economic indicators: the proportion of adults with a higher education degree, the proportion of adults with a pure basic education (i.e., only a compulsory education including primary and lower secondary school levels is completed), the median income of the residents, the median income of the households, the unemployed–employed ratio, and the unemployment percent in the living area surrounding each school (Pietarinen, Pyhältö, Haverinen, Leskinen & Soini, forthcoming; Tikkanen, Haverinen, Pyhältö, Pietarinen & Soini, forthcoming). Concluded from this, three-quarters of the schools (> 50 pupils) posited in the upper and lower quarters in terms of the SES index were included in the final sample (n=122) (Pietarinen et al., forthcoming; Tikkanen et al., forthcoming). With the district and city-level permissions, those schools were contacted and invited to participate in the study (Pietarinen et al., forthcoming; Tikkanen et al., forthcoming). 75 out of 122 schools accepted the invitation and participated in the study (Pietarinen et al., forthcoming; Tikkanen et al., forthcoming). The schools in the sample represented the demographic variation of the schools in Finland, that is, they were situated throughout the country and varied in size, location (rural/urban) and school SES (low/high) (Pietarinen et al., forthcoming; Tikkanen et al., forthcoming). The teachers' answers to the utilized scales were received from the 74 out of 75 schools due to the technical paper print survey error (one page did not copy to one school's printed paper surveys).

#### 4.4 Measures

The *Socio-contextual Teacher Burnout Inventory (STBI)* (Pietarinen et al., 2013) was used in this study. The measure draws on Maslach and Jackson's (1981) burnout scale and Elo, Leppänen and Jahkola's (2003) single-item stress scale and specifies the social contexts of experienced cynicism and inadequacy (Soini, Pyhältö, & Pietarinen, 2010; Pyhältö et al., 2011). The STBI measured three factors: a) *exhaustion* (3 items), b) *cynicism towards the teacher community* (3 items), and c) *inadequacy in teacher-pupil interaction* (3 items) (Pietarinen et al., 2013). All items were rated on a 7-point Likert-type scale ranging from 1 (completely disagree) to 7 (completely agree) (excluding the stress item that was rated on a 10-point scale) (Pietarinen et al., 2013).



The individual background variables used in this research were *gender and the phase of the career*. The transactional background variable, *the socio-economic status (SES) of the school area*, was measured based on the national SES indicator data from the Statistics Finland bureau (see also Statistics Finland, 2013).

The organizational factors included school size and academic level of the school. *The school size* was identified by asking the number of teachers in the school where the teacher worked. *The academic level* of the school indicated whether the school was primary school (grades 0- 1-6), secondary school (grades 7-9) or combined school (grades 0-1-9).

## 4.5 Analysis

The data were analyzed with the IBM SPSS Statistics program versions 26 and 27.

### 4.5.1 Preliminary analysis

First the data were reviewed manually to see if there are any faults. The mean variables for exhaustion, cynicism, and inadequacy were calculated. In this analysis, the previously confirmed factors (Pietarinen et al., 2013) were maintained, so that the results could be compared to the results of other studies. The Cronbach alpha coefficients were calculated for each subscale. The Cronbach alphas ranging from .71 (for inadequacy) to .83 (for exhaustion) indicated that the subscales were internally coherent. The values could be seen as adequate as they exceed the value .60 (Nunnally & Bernstein, 1994, referred in Metsämuuronen, 2011, 78) The alpha values would not be better if any of the items were deleted.

Second, the distributions of the variables were evaluated graphically, and the skewness and kurtosis were evaluated based on the descriptive statistics. As the variables were evaluated graphically, it was seen that all of the variables were skewed and not distributed normally, though the skewness was considerably mild. Exhaustion was closest to normally distributed, whereas inadequacy was least normally distributed. As the values of means, medians and mode were not same in any of the variables, the distribution can be seen as not normally distributed. However, concerning every variable, skewness stayed

between (-2 - +2), which means that the distribution can be seen as normal (Heikkilä, 2008, 103), and it was positive in every variable, .288 (for exhaustion), .463 (for cynicism) and .569 (for inadequacy) (see appendix 4, 5. and 6), meaning that most of the answers scored higher than the average. As the kurtosis values were  $< 0$ , (-.934 for exhaustion, -.268 for cynicism, -.159 for inadequacy), the distribution can be considered as flat (Nummenmaa, 2009, 72). Parametric tests could be used because of the large sample size ( $N = 1531$ ) (Nummenmaa, 2017, 200; Reunamo). To make sure that the skewness of the distributions did not affect the results, the results were confirmed using non-parametric tests.

#### 4.5.2 Statistical analysis

As the sample size was large ( $N = 1531$ ), the parametric Pearson's correlation was used to analyze the correlation between the mean variables (Nummenmaa, 2009, 279), i.e., exhaustion, cynicism, and inadequacy. To explore gender differences in the burnout symptoms, an independent-samples T-test was performed, as the T-test is a specific test to compare the difference between two groups concerning one dependent factor (Nummenmaa, 2009, 171).

In addition, One-Way ANOVA was used to analyze whether teachers who were at different stages in their careers differed from each other in burnout symptoms (exhaustion, cynicism and inadequacy). The One-Way ANOVA is used to examine if there is a difference in a specific factor between more than two groups (Nummenmaa, 2009, 194). Before examining these differences, the teachers were divided in three groups based on their work experience as a teacher: early career teachers (5 years or less,  $N = 320$ ), mid-career teachers (6- 20 years,  $N = 765$ ) and experienced teachers (more than 21 years,  $N = 446$ ). In the multiple comparison tests, it is relevant to test the homogeneity of variances. If the variances homogeneity is similar, the Tukey HSD test is a safe test concerning the type 1 errors (Nummenmaa, 2009, 208). The Tukey pairwise was chosen, because it takes into consideration the distribution and it was believed to give reliable results (Metsämuuronen, 2006). Based on the tests of homogeneity of variances, the variances were homogeneous, thus the post hoc-comparison was done with the Tukey HSD test.

The differences in the experienced burnout symptoms concerning the school grade taught (primary school, secondary school and combined school) was analyzed by one-way analysis of variance, one-way ANOVA. Based on the tests of homogeneity of variances test, the variances were homogenous statistically significantly, thus the post hoc-comparison is done with the Tukey HSD test.

Then the difference in the experienced burnout symptoms in different sized school communities was analyzed by using One-Way ANOVA. Before examining the differences in the school sizes, the schools were divided to three groups based on their size: small schools (less than 20 teachers, N= 253), medium sized schools, (20-39 teachers, N = 748) and large schools (40 teachers or more, N = 517). Based on the tests of homogeneity of variances, the variances were homogenous statistically significantly, thus the Tukey HSD test is used in the Post Hoc-comparison.

And lastly, the effect of the area's socio-economic status was analyzed by using T-test, as the T-test is an analysis method to measure the differences between two distributions at a time (Nummenmaa, 2009, 184).

## 5 Results

### 5.1 Descriptive statistics

In general, teachers reported experiencing moderate levels of exhaustion ( $M = 3.74$ ), and relatively low levels of cynicism towards the teacher community ( $M = 2.83$ ) and inadequacy in the teacher-pupil interaction ( $M = 2.68$ ). However, the standard deviations of the experienced exhaustion ( $SD = 1.82$ ), cynicism towards the teacher community ( $SD = 1.18$ ) and inadequacy in the teacher-pupil interaction ( $SD = 1.17$ ) were relatively large, suggesting that there were differences between teachers in their experiences of exhaustion, cynicism and inadequacy. The means, standard deviations and reliability of all variables are shown in Table 1.

Table 1 Means, standard deviations and reliability of all variables

Sum variables	<i>n</i>	Descriptive statistics				
		Min	Max	M	<i>SD</i>	$\alpha$
Exhaustion	1531	1.0	8.0	3.74	1.82	.832
Cynicism	1518	1.0	6.67	2.83	1.18	.714
Inadequacy	1521	1.0	7.0	2.68	1.17	.705

Alphas  $>.60$ , reliability is good

### 5.2 Associations between Exhaustion, Cynicism and Inadequacy

The correlations between teachers' burnout symptoms were statistically significant and could be considered moderate (see table 2). Exhaustion was associated with increased levels of inadequacy in the teacher-pupil interaction ( $r = .464$ ,  $p < .01$ ) and cynicism towards the teacher community ( $r = .304$ ,  $p < .01$ ). Cynicism towards the teacher community and inadequacy were also positively correlated ( $r = .329$ ,  $p < .01$ ). The results indicate, that teachers who experienced higher levels of exhaustion were also likely to experience increased levels of inadequacy in the teacher-pupil interaction and cynicism towards the teacher community.

Table 2 Correlations between the burnout symptoms

Variables		1.	2.	3.
1	Exhaustion	—		
2	Cynicism	.304**	—	
3	Inadequacy	.464**	.329**	—

\*\*  $p < .01$  (2-tailed)

### 5.3 Interrelation between burnout symptoms, gender, socio-economic status of school neighborhood and school grade, school size and career phase

There were statistically significant differences between *male and female* teachers in experienced exhaustion ( $t(594.588)=5.084, p < .01$ ) and inadequacy in the teacher-pupil interaction ( $t(632.006)=4.057, p < .01$ ) (see Table 3). More specifically, the results showed that women experienced more exhaustion ( $M=3.86, SD=1.83$ ) compared to men ( $M=3.31, SD=1.71$ ), they also experienced higher levels of inadequacy in the teacher-pupil interaction ( $M=2.74, SD=1.19$ ) than men ( $M=2.47, SD=1.04$ ) (see table 3). In turn, the gender differences in experienced cynicism towards the teacher community were not statistically significant ( $t(1406)=1.634, p = .102$ ).

Table 3 Interrelations between burnout symptoms and gender

	Exhaustion			Cynicism			Inadequacy		
	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>
<i>Gender (t-test)</i>									
Female (n= 1083)	3.86	1.83	<.001	2.83	1.18	.102	2.74	1.19	<.001
Male (n = 337)	3.31	1.71	<.001	2.71	1.13		2.47	1.04	<.001

There were statistically significant differences in the teachers' sense of inadequacy in the teacher-pupil interaction based on their *career phase*  $F(2,1588) = 18.303, p < .001$ . More specifically, early career teachers experienced higher levels of inadequacy in the teacher-pupil interaction ( $M = 3.01, SD = 1.263$ ), than mid-career teachers ( $M = 2.64, SD = 1.26$ ) and experienced teachers ( $M = 2.51, SD = 1.14$ ). However, mid-career teachers did not differ statistically significantly from experienced teachers in their experiences of inadequacy in the teacher-pupil interaction. The differences in experienced exhaustion  $F(2,1528) = 1.826, p = .161$  and cynicism towards the teacher community  $F(2,1515) = .293, p = .746$ , were not statistically significant. (see table 4). The Post Hoc-comparison showed that there was a statistically significant difference in the experienced inadequacy between early career teachers – mid-career teachers ( $p < .001$ ), early career teachers – experienced teachers ( $p < .001$ ), and non-significantly between mid-career teachers – experienced teachers ( $p = .185$ ).

Table 4 Interrelations between burnout symptoms and the career phase

	Exhaustion			Cynicism			Inadequacy		
	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>
Phase of career (One-Way ANOVA)									
Early career teachers (5 years or less of experience)	3.85	1.74		2.79	1.11		3.01	1.26	
Mid-career teachers (6-20 years of experience)	3.78	1.86		2.85	1.18		2.64	1.13	
Experienced teachers (21 or more years of experience)	3.61	1.82	.161	2.83	1.21	.746	2.51	1.14	<.001

There was a statistically significant difference between teachers working in schools located in low- and high-SES areas in teachers' experienced exhaustion ( $t(1529) = 3.270, p < .001$ ), experienced cynicism towards the teacher community ( $t(1516) = 2.465, p = .014$ ) and inadequacy in the teacher-pupil interaction ( $t(1519) = 2.346, p = .019$ ). More

specifically, the results showed that teachers teaching in low-SES areas experienced more exhaustion, cynicism towards the teacher community and inadequacy in the teacher-pupil interaction in the teacher-pupil interaction, than teachers teaching in high-SES areas (see table 5).

Table 5 Interrelations between burnout symptoms and the level of socio-economic status of the school neighbourhood

	Exhaustion			Cynicism			Inadequacy		
	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>
	<i>SES (t-test)</i>								
high (n = 752)	3.60	1.80	.001	2.76	1.21	.014	2.61	1.16	.019
low (n = 799)	3.90	1.83		2.90	1.14		2.75	1.18	

It was noticed that *the academic level of the school* had an effect on the teacher burnout symptoms. Statistically significant differences were detected in experienced cynicism towards the teacher community  $F(2,1515) = 5.654$ . More specifically, teachers in combined schools experienced higher levels of cynicism ( $M = 2.96$ ,  $SD = 1.18$ ), than teachers in primary schools ( $M = 2.74$ ,  $SD = 1.18$ ) or teachers in secondary schools ( $M = 2.90$ ,  $SD = 1.12$ ). The differences between the school types were not significant in teachers' feelings of exhaustion  $F(2,1528) = .156$ ,  $p = .856$ , and experienced inadequacy in the teacher-pupil interaction  $F(2,1518) = .582$ ,  $p = .559$ . (see table 6). The post hoc-comparison showed that teachers differed in the experienced cynicism based on their grade level taught: statistically significantly between primary – combined school ( $p = .004$ ), statistically non-significantly between primary – secondary school ( $p = .128$ ), and between secondary school – combined school ( $p = .784$ ).

Table 6 Interrelations between burnout symptoms and the academic level

	Exhaustion			Cynicism			Inadequacy		
	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>
Academic level (One-Way ANOVA)									
Primary school (0-1-6), (n = 809)	3.76	1.83		2.74	1.19		2.65	1.15	
Secondary school (7-9), (n = 268)	3.69	1.83		2.90	1.12		2.74	1.25	
Combined school (0-1-9), (n = 454)	3.75	1.82	.856	2.96	1.18	.004	2.69	1.16	.559

School size was related to teachers' cynicism towards professional community  $F(2,1515) = 9.615, p < .001$ . More specifically teachers in small schools experienced lower levels of cynicism towards the teacher community ( $M = 2.54, SD = 1.23$ ), than teachers in medium sized schools ( $M = 2.90, SD = 1.16$ ) and large schools ( $M = 2.88, SD = 1.16$ ). The differences in experienced exhaustion  $F(2,1528) = 1.656, p = .191$  and inadequacy in the teacher-pupil interaction  $F(2,1518) = .824, p = .439$ , were not statistically significant. However, teachers in medium sized schools did not differ statistically significantly from teachers in large schools in their experiences of cynicism towards the teacher community. There were no statistically significant differences either in experienced exhaustion  $F(2,1528) = 1.656, p = .191$  or inadequacy in the teacher-pupil interaction  $F(2,1518) = .824, p = .439$  based on school size. (see table 7). The post hoc-comparison showed that among teachers there were differences in the experienced cynicism toward the teacher community: statistically significantly between small schools – medium sized schools ( $p < .001$ ), and between small schools – large schools ( $p < .001$ ), and statistically non-significantly between medium sized schools – large schools ( $p = .960$ ).



Table 7 Interrelations between burnout symptoms and the size of the school

	Exhaustion			Cynicism			Inadequacy		
	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>
School size (One-Way ANOVA)									
Small schools (less than 20 teachers)	3.61	1.69		2.54	1.23		2.65	1.11	
Medium schools (20–39 teachers)	3.83	1.88		2.90	1.16		2.72	1.18	
Large schools (40 teachers and more)	3.69	1.80	.191	2.88	1.16	<.001	2.64	1.19	.439

## 6 Discussion

### 6.1 Research ethics

In all the phases of the study, the ethical principals were taken into consideration and good scientific policy was complied with (Finnish Advisory Board of Research Integrity, 2012). The participation in the study was voluntary and privacy was also guaranteed to the participants. The research project was described to the participants and contact information was shared for follow-up questions. In addition, as the data was collected as a part of field work, in person with the researchers present, the participants questions could be addressed. The research consent was acquired by the research team from the schools and municipalities. The research participants could withdraw their participation at any point without a separate notification. The data was also retained behind a password.

In the analyses of this research the data were handled in a coherent manner. The analyses did not require the usage of the participants personal data, thus the information was not shared with the researcher. All in all, the preparation and handling of the data, in addition to the reporting of the results were managed in the most honest and meticulous manner when presenting and evaluating the research results. Also, in the reporting, it was taken into consideration that none of the participants could be identified from the results.

*Reliability* means the repeatability of the measured results (Hirsjärvi, Remes & Sajavaara, 2004, 216). The usage of the Likert-scale may be problematic in terms of reliability: The distance between the 7-point Likert scale may be thought to be identical, but in the eyes of the participant, the range may vary. Moreover, it is relevant to notice that only the extremities were named and explained (range from 1 (completely disagree) to 7 (completely agree) (excluding the stress item that was rated on a 10-point scale)). Thus, it is not certain, what the participant has meant if they have answered something in between the two extremities. It can be argued that the data collected in the research is superficial, as the participants were not able to comment their answers. The research participants answered pre-designed questionnaires, and the researcher could not know the way the participants think, though as the researchers were present when the data was collected, teachers participating could ask clarifying questions. However, it was not possible to know how truthfully or carefully the participants answered the questionnaire. Even though

confidentiality was emphasized, it may be considered that some teachers have answered the questionnaire in a way that it would give a more favorable view of the profession. On the other hand, the burnout symptoms were measured in different measures and questions, which can have a positive effect on the reliability. The most reliable results are attained from matters that the participants are interested in and that are connected to their lives (Alkula, Pöntinen & Ylöstalo, 2002). It can be assumed that in this research, the participants are interested in their own wellbeing and working conditions, especially as the participation to the research was voluntary. It can be assumed that the participants have answered the research truthfully and with a necessary severity.

The *reliability* of the measures was evaluated by the calculated Cronbach's alpha coefficients. The range of the Cronbach's alpha coefficients varied from .71 (for inadequacy) to .83 (for exhaustion) indicating that the subscales were internally coherent. As the Cronbach's alpha value is over .60, the measure can be seen as reliable (Nunnally & Bernstein, 1994, referred in Metsämuuronen, 2011, 78). The high alpha values are likely because the measures have already been validated (Pietarinen et al., 2013). Concerning the validity and reliability, the data collection was done in a coherent manner. The validity of the instrument used to collect the data was good as the measure draws on the Maslach and Jackson's (1981) burnout scale and Elo, Leppänen and Jahkola's (2003) single-item stress scale, and specifies the social contexts of experienced cynicism and inadequacy (Soini et al., 2010; Pyhältö et al., 2011). The used MBI (Maslach Burnout Inventory) measure has been validated in many previous studies (see Schaufeli, Maslach & Marek, 1993). On the other hand, some researchers have questioned the validity of the MBI scale (Demerouti, Bakker, Nachreiner & Ebbinghaus, 2002). *The construct validity* is discussed to assess if the used measures actually measure the studied phenomenon (Cozby, 2006, 97). It can be presumed that the construct validity concerning the questionnaire is good also in this research as it has been used in multiple studies concerning teacher burnout. The used Socio-contextual Teacher Burnout Inventory STBI has been tested in previous research (see i.e., Pietarinen et al., 2013) and it has been found to have good validity and reliability. It can be seen as a strength in this research. The experienced cynicism, inadequacy and work-related exhaustion have been found to be separate components which are connected to each other (Pietarinen et al., 2013).

The *external validity* is used to evaluate the generalizability of the research (Cozby, 2006, 272). It evaluates if the results are reproducible with different research participants and in different surroundings, or whether the results are possible to generalize to apply to other populations and circumstances. The research participants in this study were teachers around Finland, from six different areas. They represented the demographic variation of the schools in Finland, that is, they were situated throughout the country and varied in size, location (rural/urban) and school SES (low/high). Thus, the research result may be generalized to the Finnish teaching community as a whole. As the questionnaires for this cross-sectional data are filled at specific moments, whether being quantitative or qualitative, the participants' mental state at the specific moment affects the results. Of course, this research was connected to the mental state of the teacher, which it is relevant to point out. The used questionnaire could not elaborate which symptom and effect was caused by which. Moreover, the season in which the questionnaire is filled in, may affect the answers concerning burnout and stress as they might vary in the darkest months compared to lighter months. Also, it has been found that some teachers get more burnout symptoms during the school year (Fernet et al., 2012; Pietarinen et al., 2013; Pyhältö et al., 2011).

As burnout is a personal syndrome, it is relevant to understand that people may differ in the ways they analyze their own feelings and symptoms – some may be more sensitive towards burnout symptoms: exhaustion, cynicism and inadequacy. Even though the instrument has been validated and tested, the effect of the human mind and behavior must be taken into account.

## 6.2 Results in the light of previous research

The aim of this thesis was to examine the extent to which the Finnish teachers experience burnout symptoms, and how various individual, transactional and organizational attributes are associated with the teacher burnout symptoms, and potentially functions as determinants (either buffering or increasing exposure to) for burnout crossover within the teacher community.

Even though the participants of the study reported moderate levels of the burnout symptoms i.e., exhaustion, cynicism and inadequacy, the variation between the teachers was considerable, suggesting that there were a lot of teachers reporting higher and lower levels of the symptoms. Out of three burnout symptoms, the teachers reported highest levels of exhaustion, which is in line with prior studies suggesting that the exhaustion is the core of burnout symptoms (Bakker et al., 2006; Maslach & Leiter, 2016; Maslach et al., 2001). Exhaustion is also shown to cross over between teachers (Bakker and Schaufeli, 2000; Meredith et al., 2020, 331), hence the increased levels of teachers' exhaustion provide not only risks for individual teachers to develop burnout, but also increase the risk of burnout crossing over in teacher communities. This can take place either via emotional contagion or decreased quality of professional behaviors (Bakker et al., 2007, Westman & Vinokur, 1998). The emotional contagion could be seen as a preliminary crossover mechanism concerning exhaustion, as it has been shown that people might unconsciously, mimic others facial expressions and other physical traits to better align with the counterparts' feelings (Buunk and Schaufeli, 1993; Bakker, Schaufeli, Sixma & Bosveld, 2001; Fischer & van Keef, 2010). Moreover, research findings have shown that tuning into another's feelings is likely as teachers try to consciously tune into the emotions of both colleagues and pupils (Bakker & Schaufeli, 2000; Bakker, Westman & van Emmerik, 2009).

The results showed that higher levels of exhaustion were related to increased levels of inadequacy in the teacher-pupil interaction and cynicism towards the teacher community. This implies, in line with previous research, that as exhaustion becomes chronic by energy depletion, teachers can no longer dedicate themselves to pupils as they previously have been able to (Maslach et al., 1996). This again causes the declining of positive emotions about pupils, and moreover, the experience of cynicism (Maslach et al., 1996). As the crossover effect is a dyadic, inter-individual and inter-domain contagion (Westman, 2001), it can be assumed that as the burnout symptoms affect each other in a cumulative manner, the possibility for the crossover effect rises. It has been shown that teachers tend to share their negative feelings and experiences about pupil-related problems with other teachers (Bakker & Schaufeli, 2000), which may further increase the risk for burnout to crossover in the teacher community (Bakker & Schaufeli, 2000).

*The individual attributes* studied were gender and career phase. Differences between male and female teachers in the experienced exhaustion and inadequacy in the teacher-pupil interaction were found: women experienced more exhaustion and higher levels of inadequacy in the teacher-pupil interaction than men, which is in line with previous studies. It has been shown that women are more prone to experience burnout, and especially higher levels of exhaustion and inadequacy compared to men (Fernet et al., 2012; Pietarinen et al., 2013; Pyhältö et al., 2011; Lau et al., 2005; Maslach et al., 2001). Moreover, this could also be connected to the crossover of burnout as women get more exhausted during the school year (Fernet *et al.*, 2012; Pietarinen et al., 2013, 77; Pyhältö et al., 2011), suggesting that the shared experiences, in this context, the experienced burnout, could elevate the levels of burnout specifically amongst female colleagues. Moreover, there is some evidence showing that women are more prone to be affected by the emotional atmosphere surrounding them, compared to men (Doherty et al., 1995). This implies that women may be more vulnerable to experience crossover of burnout as they experience higher levels of the two symptoms, exhaustion and inadequacy in the teacher-pupil interaction.

The results suggested that early career teachers experienced higher levels of inadequacy in the teacher-pupil interaction than mid-career teachers or experienced teachers. The results from this research indicate that the level of inadequacy seems to get lower as the years go by and teachers gain more experience. Previous research results have in contrast shown that inadequacy increases with the number of years in the profession (Klusmann et al., 2008; Santavirta et al., 2000; Skaalvik & Skaalvik, 2009). In this study, no differences were detected in the levels of teacher exhaustion and cynicism based on their career phase. The findings from previous research concerning the relation between career phase and exhaustion have been contradictory: on one hand it has been found that age is a major predictor of exhaustion, meaning that younger teachers score higher than older teachers (Maslach et al., 1996; Russell et al., 1987), but on the other hand exhaustion has been found to increase significantly as the number of years in the profession grow (Klusmann et al., 2008; Santavirta et al., 2000; Skaalvik & Skaalvik, 2009). This is not confirmed by this research as results concerning exhaustion were not statistically significant.

*The transactional attribute*, the socio-economic background (SES) of the school neighborhood, had differences in all burnout symptoms, exhaustion, cynicism towards the teacher community and inadequacy in the teacher-pupil interaction. The results showed that teachers teaching in low-SES areas experienced higher levels of the symptoms compared to high-SES areas. This finding is in line with the previous research. As teachers communicate and interact with pupils daily, the effect of low-SES on i.e. pupil's ill health and school achievement (Bradley & Corwyn, 2002) are known to have negative consequences on teachers and their experienced wellbeing. It may be that pupils' increased levels of support and on the other hand their increased levels of behavioral problems may further cause negative consequences on teachers' health. Moreover, it has been elaborated that a vicious circle may occur as pupil's negative feelings and attitudes toward school increase the ill-health in vulnerable teachers (Ervasti, Kivimäki, Puusniekka, Luopa, Pentti, Suominen, Ahola, et al., 2012). The organizational factors including leadership support and commitment have been connected to burnout (Maslach, 1981), in addition to findings that in Finland teachers in low-SES areas report the lowest frequency of workplace meetings compared to colleagues in high-SES areas (Virtanen et al., 2007). These in turn further explain the results of this research. Previous research findings have also found that teaching in underprivileged areas is connected to teachers' experienced exhaustion and cynicism (Vercambre et al., 2009), and the findings of this research support this notion. Moreover, the suppression of feelings has been found to be more likely for teachers working in low-SES areas and this again is connected to the various challenges the children in low-SES areas have compared to high-SES areas (Linnansaari-Rajalin et al., 2014). Furthermore, emotional labor has been connected to having negative effects on employee health, especially emotional exhaustion (Zapf, 2002).

Concerning *the organizational attributes*, the findings showed that the academic level of the school was related to teachers' cynicism towards the teacher community. More specifically, teachers working in combined schools experienced higher levels of cynicism than the teachers working in primary or secondary schools. Differences between the teachers working in higher grades and lower grades concerning overall burnout levels have been previously detected (Arvidsson et al., 2016; Pietarinen et al., 2013; Saloviita & Pakarinen, 2021). Also, inadequacy levels and cynicism towards their pupils have been found to be higher for subject teachers than their elementary school colleagues (Maslach et al., 1996, 2007; Saloviita & Pakarinen, 2021; Russel et al., 1987; Vercambre et al., 2009).

Moreover, teachers in secondary schools have been shown to experience more burnout symptoms than teachers in primary or combined schools (see Pietarinen et al., 2013). Accordingly, the results of this study are partly contradictory to prior findings. A reason for teachers in combined schools to experience more cynicism may be that combined schools are often quite large organizations, and it has been found that teachers may receive less social support from the professional community in large schools (Skaalvik & Skaalvik, 2009), which may further contribute to increased levels of cynicism. Moreover, as teaching-related positive emotions are connected to the time spent with the pupils (Hagenauer, Hascher, Volet, 2015), it could potentially be, that teachers teaching in combined schools have less opportunities to spend time with the pupils compared to primary schools, thus they could potentially know their students less. Also, as the teacher-pupil relationship declines as the pupils get older (Pietarinen, Soini, & Pyhältö, 2014), it may influence the experienced burnout symptoms. It may be harder to communicate and have a connection to the teenagers.

Regarding the size of the organization, the research findings indicate that teachers in small schools experienced lower levels of cynicism towards the professional community compared to teachers in medium or large schools. The previous research findings have not been consistent, but the indication that teachers in large schools tend to receive less social support from the professional community (Skaalvik & Skaalvik, 2009), could explain the current research results. It may be that teachers feel disappointed about their professional community and its mode of operations. Moreover, the research results indicate that teachers in large schools are more likely to experience burnout compared to small schools (Pietarinen et al., 2013). As the professional community may be more scattered and there may be less opportunities to talk in large schools with colleagues about the difficult pupils and burnout (Bakker & Schaufeli, 2000), teaching in large schools could buffer the crossover effect even though the levels of the burnout symptoms were higher. The job demands, job control, and perceived social support have been connected to the burnout on a team level (Bakker et al., 2003), and the research results of this study reaffirm this notion as the results indicated that teachers in large schools experience higher levels of the syndrome symptoms, which in turn has been connected to lower social support from the professional community (Skaalvik & Skaalvik, 2009).



### 6.3 The individual, transactional and organizational factors that buffer or expose to crossover burnout

Based on the research findings, it can be suggested that the individual factors buffering crossover of teacher burnout could be the male gender, as they have been found to experience lower levels of the burnout symptoms: lower levels of exhaustion and lower levels of inadequacy in the teacher-pupil interaction. Moreover, previous research findings have suggested that men are less exposed to the crossover effect, as it has been elaborated that women are more prone to be affected by the emotional atmosphere surrounding them (Doherty et al., 1995). Therefore, the research finding suggests that men may have more buffering features when it comes to burnout contagion.

The career phase's effect on burnout remains contradictory and its effect on the crossover of burnout is also vague. According to the results, the level of inadequacy seems to get lower as the years go by and teachers gain more experience. Thus, the results indicate that work experience could potentially buffer the crossover of inadequacy, though it is relevant to note that it is yet unclear how much the level of inadequacy may crossover.

The organizational attribute, the school size, may also have an impact on the crossover of burnout. The results showed that teachers in small schools experienced lower levels of cynicism towards the professional community, which might imply that the risk for crossover of cynicism is lower in small schools compared to medium-sized or large schools. In addition, considering the transactional attribute addressed in this research, the higher socio-economic background (SES) of the school neighborhood could be seen as a potentially buffering attribute when it comes to the crossover effect as teachers teaching in high-SES areas experienced lower levels of all the three burnout symptoms, exhaustion, cynicism towards the teacher community and inadequacy in the teacher-pupil interaction. Accordingly, teaching in low-SES neighborhoods may be seen as an exposing factor for the crossover of burnout as the levels of all burnout symptoms were higher compared to high-SES areas.

The factors increasing exposure to the crossover of burnout may potentially be the individual attribute female gender, as females in this research experienced higher levels of exhaustion and higher levels of inadequacy in the teacher-pupil interaction than men. Moreover, previous results have indicated that women are more prone to be affected by the emotional atmosphere surrounding them (Doherty, Orimoto, Singelis, Hatfield, Hebb, 1995).

The large school size may potentially expose to the crossover of burnout as the teachers in large schools experienced more cynicism towards the teacher community compared to teachers teaching in small schools. Moreover, the previous research results may further verify this as it has been indicated that teachers in large schools tend to receive less social support from the professional community (Skaalvik & Skaalvik, 2009).

#### 6.4 Pedagogical implications and Recommendations for future research

Based on this research, some pedagogical implications can be suggested to prevent teacher burnout and crossover. The individual, transactional and organizational attributes studied have an effect on teacher burnout, and they are not disconnected from each other, rather they interact with each other. It would be relevant to address the entity of these attributes as a whole when designing and developing educational organizations. The school administration could in collaboration with the municipalities design and divide resources accordingly to make the best possible units and organizations to work in. As stated previously, teachers reported the highest levels of exhaustion, which has also been shown to cross over between teachers, thus the focus should be on teachers' experienced exhaustion and the possibilities to buffer it. Moreover, as it is thought to be the core of the symptoms, making sure teachers' levels of exhaustion are moderate or possibly low would benefit the occupation. The burnout symptoms are tightly connected to each other, thus lowering the experienced exhaustion, would also lower other symptoms. Teachers' experienced burnout levels have an effect on teachers' overall wellbeing in addition to the pupils they teach, thus it is a relevant topic to further study on a national level. Increased levels of teachers' exhaustion provide not only risks for individual teacher to develop burnout, but also increase the risk of burnout crossing over in teacher communities and possibly even to pupils. The job demands and resources should be

examined in order to create the best working conditions for teachers to work in. The job demands and resources could be examined by both organizational and transactional factors of the school environment by experienced workload and time pressure, also making clear distinctions of roles could buffer the role conflicts that have been connected to exhaustion.

Women were detected to experience more exhaustion and higher levels of inadequacy in the teacher-pupil interaction than men, and moreover they have been found to be more vulnerable to the crossover of emotions (Doherty et al., 1995), thus their job resources and organizational support should be focused on. As women are more vulnerable for the surrounding atmosphere, the organizational support and meetings could help in creating a more coherent and connected community. Focusing on the school atmosphere could buffer the experience of burnout and thus the exposure to crossover would reduce.

Based on the research findings, teachers teaching in the lower socio-economic neighborhoods were at risk when it comes to experienced burnout, thus it could be implied that organizations, and specifically teachers teaching in these areas should gain more focus and support from the school administration and society. For example, the level of the school districts' SES could be taken into consideration when budgets and professional help distribution are calculated.

As smaller school size was found to buffer from crossover of burnout, it could be considered when designing new educational organizations. It might be that a smaller school size prevents teacher burnout, thus creating smaller teaching organizations could be beneficial for the well-being of teachers and pupils. The schools' structural characteristics have been found in previous studies as risk factors for the experienced socio-contextual teacher burnout (Pietarinen et al., 2013). Thus, the school structures and surroundings should be considered, i.e., the school size and resources.

The research results shed some more light on the socio-contextual teacher burnout and its symptoms in addition to their buffering and exposure increasing attributes. It could be interesting to connect and study the pupils' experienced burnout symptoms and the crossover possibility in the same school districts and specific schools which participated in this research. It would be interesting to find out, if the students would report similar

levels of burnout symptoms as the teachers and how they could be connected. Future research could concentrate on the level of the school district SES and its effect on teacher burnout, as the results showed that all symptoms had statistically significant differences.

The research timing could be adjusted in a way, that in the future the dark months results could be compared to light months as the seasonal affected disorder could have an effect on the results. Also, it would be interesting to compare different occupations concerning the burnout symptoms, and how various individual, transactional and organizational attributes are associated with the teacher burnout symptoms, and potentially function as determinants (either buffering or increasing exposure to) for burnout crossover. Moreover, it would be interesting to add qualitative measures to the research, in order to get better and deeper knowledge about the buffering and increasing determinants for burnout crossover.

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## 9 Appendix

### APPENDIX 1

#### **The scales and items of teacher burnout and proactive strategies (translated from Finnish)**

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Scales and items\*

##### **Socio-contextual teacher burnout inventory (STBI)**

###### **Exhaustion (EXH) (3 items)**

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?<sup>1</sup>

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) (3 items)**

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) (3 items)**

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.

##### **Proactive strategies for reducing teachers' socio-contextual burnout symptoms**

###### **Self-regulation (SREG) (4 items)**

Stra11: I'm able to control my work pace in the busy school work schedule.

Stra12: I can set limits to my work assignments.

Stra13: I know when it's time for me to adjust my work pace.

Stra14: It's possible to learn to adjust the way you manage your work strain.

###### **Co-regulation (CREG) (3 items)**

Stra21: I'm able to support the colleagues who feel strain in their work.

Stra22: I'm asking my colleagues for support when facing exhausting work situations.

Stra23: I'm getting better and better in recognizing the situations in which I have succeeded as a teacher.

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\*The item scale: completely disagree—1 2 3 4 5 6 7—*completely agree*. <sup>1</sup>Except for the item Exh11 that was measured on a 10-point scale from 1 = not at all to 10 = *very much*