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Research paper

Teachers' work engagement and burnout profiles: Associations with sense of efficacy and interprofessional collaboration in school

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ABSTRACT

This study provides new insights into the work-related well-being of teachers, defined here as engagement and burnout, by investigating their associations with the teachers' sense of efficacy and interprofessional collaboration in school. Using a person-oriented approach and latent profile analysis, a sample of Finnish comprehensive school teachers (N = 355) were classified based on their work engagement and burnout. Three profiles were identified: *engaged*, *engaged-exhausted*, and *burned-out*. Teachers with distinct profiles differed from each other in terms of their sense of efficacy and experiences of interprofessional collaboration, suggesting that both might have an important role in enhancing work engagement and preventing burnout.

1. Introduction

While knowledge about the factors related to teacher well-being has significantly increased in recent years, burnout seems to have remained a common issue in teachers' work (Pyhältö et al., 2021; Richards et al., 2018; Salmela-Aro et al., 2019; Upadyaya & Salmela-Aro, 2020). A heavy workload combined with a lack of commitment to work as well as the constantly changing work requirements has even been identified as one of the most important reasons for teachers to consider leaving the profession (Räsänen et al., 2020; also Amitai & Van Houtte, 2022; Juvonen & Toom, 2023). On the other hand, certain resources in the workplace have been found to enhance work engagement and, conversely, prevent burnout (Bakker et al., 2008; Hakanen et al., 2006). Interprofessional collaboration as an opportunity to share responsibilities and utilize common knowledge with other professionals (see Edwards, 2012; Thistlethwaite, 2012) might be one of these essential resources. However, we need empirical research exploring the possible associations between teacher well-being and interprofessional collaboration in schools. Furthermore, teacher sense of efficacy – as related to their experience of being able to organize functional classroom situations and support the pupils in the classroom (Tschannen-Moran & Hoy, 2001) – has been linked with teacher well-being (e.g., Skaalvik & Skaalvik, 2007; 2010; Zee & Koomen, 2016) and therefore, seems relevant to study jointly with teacher well-being and interprofessional collaboration. Against this background, the purpose of this study is to investigate what kinds of teacher well-being profiles Finnish comprehensive school teachers represent, and how teachers with different patterns of work engagement and burnout experience both their sense of efficacy and interprofessional collaboration in school.

1.1. Teacher work engagement and burnout

Despite the evident interest in teacher well-being in recent years, there is no uniform definition of the concept (Hascher & Waber, 2021, for a review). Most previous studies, however, have

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conceptualized teacher well-being as a multifaceted construct that considers both negative dimensions, such as work-related stress or burnout, and positive dimensions, such as job satisfaction or engagement (Hascher et al., 2021; Hascher & Waber, 2021). In the present study, to capture both positive and negative aspects, teacher well-being is defined as an individual's experience of work engagement and burnout.

Based on the extensive studies of Bakker, Schaufeli, and colleagues, work engagement is a combination of vigor, dedication, and absorption (e.g., Bakker et al., 2008; Schaufeli & Bakker, 2010; Schaufeli et al., 2002). Vigor is characterized by high levels of energy, resilience, and willingness to make efforts at work. Dedication, in turn, can be seen as strong identification to one's work which appears as a sense of significance, enthusiasm, and inspiration. Finally, absorption is characterized by concentration and engrossment leading to focused attention at work. Through these three dimensions, an employee can experience fulfillment and positive engagement with their work (Schaufeli & Bakker, 2010; Schaufeli et al., 2002). Despite the general agreement on the multidimensionality of work engagement, it is also commonly recognized that these dimensions correlate highly with each other. Thus, work engagement has been treated both as unidimensional (see Schaufeli et al., 2006) and three-dimensional (see Schaufeli & Bakker, 2010; Seppälä et al., 2009) in previous studies.

Work engagement has been found to be a moderately stable and unchanging affective-cognitive state (Schaufeli et al., 2002; Seppälä et al., 2009) that is associated with various motivational outcomes (Bakker et al., 2014; Hakanen et al., 2006, 2008). Interestingly, however, recent research has revealed instability in work engagement, suggesting that the level of engagement varies substantially between work tasks (Sonnentag, 2017) and workdays (Sonnentag et al., 2010; Sonnentag & Kühnel, 2016; also Bakker et al., 2014).

In contrast to work engagement, burnout is a set of negative experiences that can be seen as a response to protracted emotional or social stress at work (Maslach & Leiter, 2007). Burnout is commonly recognized by three core dimensions: emotional exhaustion, cynicism, and professional inefficacy or inadequacy (see Maslach et al., 2001; Maslach & Leiter, 2007; Schaufeli & Bakker, 2004). Emotional exhaustion can be seen as an employee's reflection of stress and overload at work that appears as an experience of strain and fatigue. It often emerges with feelings that one's physical or emotional resources have been exceeded. Furthermore, cynicism as a reaction to exhaustion occurs as distancing oneself from work practices or people connected to work. Finally, inadequacy is characterized by a lack of efficacy, competence, and productivity at work. In people-oriented human service occupations, such as teaching, all three dimensions have commonly been admitted (Maslach et al., 2001; Schaufeli et al., 2002).

Previous studies have found that teachers experience high levels of work engagement (Hakanen et al., 2018), while also demonstrating increasing symptoms of burnout (Pyhältö et al., 2021; Salmela-Aro et al., 2019; Schaufeli et al., 2009). The combination of engagement and burnout has been extensively investigated in recent years (e.g., Innanen et al., 2014; Salmela-Aro et al., 2019; Upadyaya & Salmela-Aro, 2020), and the rather complex relationship between these two concepts has been discussed. Researchers have suggested that engagement and burnout can be seen either as distinct yet partially overlapping constructs or opposite dimensions of the same phenomenon (see González-Romá et al., 2006; Maricuțoiu et al., 2017; Mäkikangas et al., 2012; Schaufeli et al., 2002; Taris et al., 2017). According to the current understanding, work engagement and burnout demonstrate a reciprocal negative correlation, but to some extent, an employee may experience both at the same time (Leiter & Maslach, 2017; Mäkikangas et al., 2017; Salmela-Aro et al., 2019, 2020).

Although teaching as a challenging human service occupation has been recognized as exposing teachers to burnout (Schaufeli et al., 2009), the reasons causing prolonged overload seem to be partially unexplained. Previous research has demonstrated several individual and environmental factors, such as teacher personality (Alarcon et al., 2009; Kim et al., 2019), proactive strategies (Pietarinen et al., 2013; Pyhältö et al., 2021), school environment and culture (Pyhältö et al., 2011; Richards et al., 2018), as well as student-level variables (Saloviita & Pakarinen, 2021) that are associated with teacher well-being. Moreover, in accordance with the principles of the job demands-resources model (Demerouti et al., 2001), for example, teacher resilience, self-efficacy, and social relations in school have been found to be associated with teachers' work engagement and burnout (see Bakker et al., 2007; Bakker et al., 2014; Bakker & Costa, 2014; Hakanen et al., 2006; Salmela-Aro et al., 2019; Upadyaya et al., 2016; Upadyaya & Salmela-Aro, 2020). In other words, previous research has gained a lot of knowledge about the factors related to teacher well-being, but as the teaching profession and expectations towards teachers are constantly changing (Juvonen & Toom, 2023), different factors must be further examined. Both previously studied (here, a sense of efficacy) and under-researched factors (here, interprofessional collaboration) are important to consider in order to gain both cumulative evidence and new insights on the factors contributing to teacher well-being.

1.2. Work engagement and burnout profiles

In psychological research, including many burnout studies, the application of a person-oriented approach has increased in recent years (for a review, see Mäkikangas & Kinnunen, 2016; also Bergman & Andersson, 2010; Lundh, 2019; Raufelder et al., 2013). This sort of approach enables extracting groups of individuals according to the patterns they show in terms of the studied individual characteristics (here, work engagement and burnout) as well as examining how big a proportion of the sample shows a particular pattern and, also, how specific patterns are related to the outcomes of interest (here, a sense of efficacy and interprofessional collaboration) (see e.g., Bergman & Andersson, 2010; Bergman & El-Khouri, 2003). When investigating simultaneous engagement and burnout of teachers, employing a person-oriented approach might be especially fruitful as there is evidence that despite the negative association between these factors, variegated patterns can be found (Salmela-Aro et al., 2019, 2020).

Previous research simultaneously examining work engagement and burnout with a person-oriented approach has so far been rather limited both among teachers (Salmela-Aro et al., 2019, 2020) and other professionals (Innanen et al., 2014; Upadyaya & Salmela-Aro, 2020; also Mäkikangas et al., 2017). However, these studies have shown that at least two distinct profiles are clearly distinguishable from both teachers and other employees.

Studies investigating various professional groups have identified a large group representing engaged employees. These employees are most often characterized by a high level of engagement and either low or moderate symptoms of burnout (Innanen et al., 2014; Upadyaya & Salmela-Aro, 2020). Furthermore, the second profile in both the studies of Upadyaya and Salmela-Aro (2020) and Innanen et al. (2014) demonstrated an average level of engagement with simultaneous high overall burnout, although in the first study burnout symptoms increased (profile named as *increasing burnout*) and in the latter decreased (profile named as *exhausted-workaholic*) over time. The second profile included less than one fifth of the employees in both studies.

Regarding studies examining only teachers and, more

specifically, Finnish subject teachers' engagement and burnout profiles, Salmela-Aro et al. (2019) identified two distinct profiles: *engaged-burnout* (70%) and *highly engaged* (30%). Teachers representing the engaged-burnout profile expressed moderate engagement but simultaneously elevated burnout symptoms. Highly engaged teachers, in turn, experienced low levels of burnout and high engagement (Salmela-Aro et al., 2019). Partially consistent results were obtained in a study by Salmela-Aro et al. (2020) conducted in Finland in the spring of 2020 during the COVID-19 pandemic. Up to four distinct teacher engagement and burnout profiles were revealed. The largest group, *engaged* teachers (42%) showed simultaneously high engagement and low burnout, while *burnout risk* teachers (37%) expressed a moderate level of both work engagement and burnout. *Engaged but burned out* teachers (11%), in turn, experienced low energy and high exhaustion. Finally, in the smallest group, *severely burned-out* (10%) teachers were characterized by feelings of severe burnout symptoms and only low work engagement. In conclusion, most teachers seem to represent a profile with some signs of burnout symptoms (Salmela-Aro et al., 2019, 2020), which, however, may occur with simultaneous high engagement.

Results on gender differences regarding the level of simultaneous work engagement and burnout among teachers have varied, showing either slightly higher work engagement among females, and thus, more likely belonging to the engaged profile (see Salmela-Aro et al., 2019; Salmela-Aro & Upadyaya, 2018) or no gender differences (Hultell & Gustavsson, 2011). However, person-oriented studies on the topic are still scarce.

1.3. Teacher sense of efficacy

In the context of work-related well-being, several concepts of teacher efficacy, such as teacher sense of efficacy, teacher self-efficacy, and professional efficacy, have been explored with a variety of dimensions (e.g., Innanen et al., 2014; Skaalvik & Skaalvik, 2007; Upadyaya & Salmela-Aro, 2020). Teacher's sense of efficacy according to Tschannen-Moran et al. (1998) is a distinct and extended concept from self-efficacy that is generally defined by Bandura's (1997) social cognitive theory as an individual's beliefs about their capabilities to achieve designated performance in different situations and contexts. In this study, the concept of a teacher's sense of efficacy is utilized (see Tschannen-Moran & Hoy, 2001) and considered as a motivational factor related to teacher's overall well-being.

According to Tschannen-Moran et al. (1998), a sense of efficacy emerges when a teacher believes in their ability to organize classroom activities in a way that successfully achieves the tasks set for a particular teaching situation. Furthermore, it can be seen as an individual's belief in their competence to achieve pupil motivation and engagement with learning in different learning situations (Tschannen-Moran & Hoy, 2001). In order to capture the multidimensional content of a teacher's sense of efficacy, Tschannen-Moran and Hoy (2001) have identified three distinct dimensions: *student engagement*, *instructional strategies*, and *classroom management*.

The associations of teacher sense of efficacy with both work engagement and burnout at the variable level have been investigated in several previous studies with the conclusion of a moderately strong positive association with the first and a negative with the latter (Aloe et al., 2014; Brouwers & Tomic, 2000; Burić et al., 2022; Fernet et al., 2012; Saloviita & Pakarinen, 2021; Skaalvik & Skaalvik, 2007; 2010; 2019; Zee & Koomen, 2016). Furthermore, teachers with a lower self-efficacy have been found to be more likely to belong to the increasing burnout group than the high engagement group in a person-oriented study examining longitudinal employee engagement and burnout profiles (see Upadyaya & Salmela-Aro, 2020). As the studies conducted at the individual level are still limited in amount, further research in different contexts is needed.

1.4. Interprofessional collaboration in school

Unlike teacher sense of efficacy, interprofessional collaboration has so far not attracted widespread interest as a factor related to teacher well-being. On the contrary, in healthcare and social services, interprofessional collaboration has traditionally been seen as an integral part of the work culture, and its importance for the job satisfaction and participation of professionals has been generally acknowledged (e.g., Petri, 2010). However, despite extensive research on the phenomenon, the operationalization of the concept of interprofessional collaboration as well as distinguishing it from related terms and collateral concepts has been challenging (Petri, 2010; Mellin, 2009; Thistlethwaite, 2012). This, in turn, has made both the practical implementation and research on the phenomenon rather inconsistent.

One of the extensively utilized models in the social and healthcare fields is the Model for Multidisciplinary Collaboration by Bronstein (2003) that is originally developed to describe collaboration between social workers and other professionals. According to Bronstein (2002, 2003) interprofessional collaboration ideally includes five main components: (1) interdependence, (2) newly created professional activities, (3) flexibility, (4) collective ownership of goals, and (5) reflection on the process. Further elaborated, interprofessional collaboration is an effective process in which common goals are not possible to achieve if professionals tend to act on their own (also Green & Johnson, 2015). In order to achieve these goals, it is essential for professionals to have a clear idea about their own and other professionals' knowledge and roles, as well as mutual respect for one another's work (Bronstein, 2003; Green & Johnson, 2015; Petri, 2010).

In addition to Bronstein (2003), several studies have examined interprofessional collaboration in different social and healthcare contexts, achieving a rather similar theoretical consideration and main factors related to the phenomenon (e.g., Gabrielová & Veleminsky, 2014; Green & Johnson, 2015; Mellin, 2009, Mellin et al., 2010; Petri, 2010; Rose & Norwich, 2014). At the same time, however, for example, Borg and Drange (2019) point out that previous research and literature do not realistically reach the nature of interprofessional collaboration in school. This may be due to the fact that the collaborative practices and the roles of professionals are not as established in schools as in the social and healthcare sectors (see Bronstein, 2003; Hietanen-Peltola et al., 2019; Leppäkoski et al., 2017). Furthermore, the composition of interprofessional groups in schools varies and their members are selected according to the situational needs of pupils and available resources. Given this, it is important to consider whether models and instruments developed for different types of contexts and disciplines are appropriate in a school context (see Bronstein, 2002; Mellin et al., 2010; Mellin et al., 2013).

As described above, previous research provides a consistent background for interprofessional collaboration in social and healthcare contexts. This study, however, seeks to investigate interprofessional collaboration from a teacher's perspective, and thus takes into account variables that are particularly important in the school context. A new measurement scale was developed for this study, as a suitable scale for this context was lacking. Based on theoretical considerations and previous research findings (e.g., Leppäkoski et al., 2017; Mellin et al., 2013; Thuneberg et al., 2014; Vainikainen et al., 2015), interprofessional collaboration is here seen as consisting of three dimensions: *student support, the amount*

of collaboration, and the operating culture. These dimensions seem especially important in an inclusive school in which collaboration mainly occurs in questions related to student support issues (i.e., pedagogical or welfare challenges).

Student support is characterized by a strong connection to student welfare services and interprofessional practice (Thuneberg et al., 2014; Wiedebusch et al., 2022) as the constitution of an interprofessional team to a large extent depends on students' pedagogical and welfare support needs. Although interprofessional collaboration can take place outside of issues related to student support, for example between teacher and librarian, it is evident that most collaboration occurs with student welfare actors. An important role in this is given to teachers, who are primarily responsible for assessing students' need for support as well as initiating further activities (Ekornes, 2015). Therefore, it is important to identify whether teachers perceive their skills and opportunities to assess the different support needs of their students as good enough. However, teachers should not implement student support alone, but with an adequate amount of collaboration with other professionals (Thuneberg et al., 2014; Vainikainen et al., 2015). As defined here, the amount of collaboration represents the idea that collaboration between teachers and other professionals must be continuous and regular to provide students with the individual support they need (see Vainikainen et al., 2015). Finally, an operating culture that supports interprofessional collaboration and new professional practices (see Leppäkoski et al., 2017) by constantly being developed by the entire work community, emerges as being necessary for the collaboration to take place.

1.5. Interprofessional collaboration as an integral part of student support in an inclusive school

The Finnish school system is used in this study as an example of how solutions to the pedagogical and well-being challenges of pupils are sought in an interprofessional manner and how student support is intrinsically related to the interprofessional collaboration in an inclusive school. One of the main principles of the Finnish school is the overall well-being of pupils and their ability to attend school, which is ensured by school welfare services and pedagogical support that are equally accessible to all pupils (Finnish National Agency for Education, 2021; Jahnukainen et al., 2023). In addition, Finnish school emphasizes preventative interprofessional collaboration and early intervention in pupils' pedagogical or welfare challenges (Thuneberg et al., 2013, 2014; Vainikainen et al., 2015) as a response to situations where pupils with special educational needs are integrated into regular classrooms. Against this background, collaborative actions should be a core dimension of a Finnish inclusive school (see Lakkala et al., 2021), although Finland lacks a legislative definition of inclusive education (Jahnukainen et al., 2023).

Even though Finnish comprehensive school teachers are often found to have rather neutral or positive attitudes towards inclusive education (e.g., Saloviita, 2020; Saloviita & Schaffus, 2016; Takala & Sume, 2018), recent research has shown that a significant proportion of teachers still question their knowledge and abilities to support pupils with special educational needs in mainstream classrooms (Moberg et al., 2020; Paju et al., 2016). Furthermore, teachers experience that the schools' resources do not meet the pupils' needs (Räsänen et al., 2020; also Lakkala et al., 2021; Savolainen et al., 2020) and interprofessional collaboration does not always function as desired (Länsikallio et al., 2018). These challenges, together with a heavy workload and changing requirements at work, such as increased paperwork and meetings (see Räsänen et al., 2020), may lead to a situation where teachers get overloaded or even burned out.

Previous research has revealed some indications of problems in the practical implementation of interprofessional collaboration between teachers and other professional groups (Hietanen-Peltola et al., 2019; Savolainen et al., 2020). Notably, however, a collaboration between teachers and school health care professionals seems to function moderately well, while problems are emerging in collaboration with actors mostly from outside the school, for example, the mental health care services (Savolainen et al., 2020). At least some of the challenges in collaboration have been identified as a result of the unclear division of labor between the various actors (Bronstein, 2003; Hietanen-Peltola et al., 2019; Leppäkoski et al., 2017) as well as the ambiguity with data sharing legislation (Lakkala et al., 2019; Leppäkoski et al., 2017). In addition, it has been found that professionals are unfamiliar with the content or practices of each other's work, which may further impair the interaction (Leppäkoski et al., 2017).

In recent years, both practical and research interest in interprofessional collaboration in school seems to have increased. At the same time, the need for a broader understanding of the phenomenon, as well as factors related to it, is acknowledged (see Lakkala et al., 2021). There is an obvious need for research in which interprofessional collaboration is considered as a pivotal element of an inclusive school and teachers as key collaborators with other professionals in the field. Finally, as studies conducted within healthcare and social services have shown, the consequences of interprofessional collaboration for professionals and their job satisfaction are encouraging (see Petri, 2010), and thus its connection to teachers' work and well-being would be beneficial to investigate.

2. The present study

As described above, teachers are often engaged in their work (Hakanen et al., 2018; Salmela-Aro et al., 2019; Salmela-Aro et al., 2020) but, at the same time, work-related stress and even burnout among teachers seem to have increased in recent years (e.g., Pyhältö et al., 2021; Salmela-Aro et al., 2019; Upadyaya & Salmela-Aro, 2020). Despite this rather negative development, it is important to note that not all teachers are at risk to burn out (see e.g., Hascher & Waber, 2021). Against this background, it seems relevant to consider both positive and negative elements of teacher well-being; that is, to obtain an understanding of simultaneous teacher work engagement and burnout at the individual level. There are some previous studies examining teachers' work engagement and burnout profiles (Salmela-Aro et al., 2019, 2020), but it is important to both gain more knowledge about these profiles and to compare the findings with prior studies conducted in different contexts and, also, to examine how those profiles are linked with, for example, teacher sense of efficacy and interprofessional collaboration in school. This understanding could inform actors in the school management and at the municipal level about how the opportunities for interprofessional collaboration could be reorganized and teacher well-being supported.

Since the research on the relationship between teacher work engagement, burnout, and a sense of efficacy has so far been mostly variable-oriented (see Upadyaya and Salmela-Aro, 2020; for a person-oriented study), the objective of this study is to deepen the understanding of the phenomenon at the individual level. Furthermore, due to the acknowledged importance of interprofessional collaboration in school (e.g., Lakkala et al., 2021; Vainikainen et al., 2015; Wiedebusch et al., 2022) and its apparent association with pupil learning and well-being (e.g., Herman et al., 2018; Madigan & Kim, 2021; Shen et al., 2015; Tikkanen et al., 2021), the aim is to provide a new perspective on interprofessional collaboration in school by investigating its relation to teacher

well-being (i.e., work engagement and burnout). In addition, the research seeks to disclose dimensions of interprofessional collaboration that are particularly important in the school context.

The present study addressed the following research questions.

1. What kinds of work engagement and burnout (i.e., exhaustion, cynicism, inadequacy) profiles can be identified among comprehensive school teachers?

Based on the previous research it is hypothesized that teachers will be distributed into at least two distinct groups representing different engagement and burnout profiles. First, we assume to find a positive profile representing high engagement combined with only low burnout (see Salmela-Aro et al., 2019; Upadyaya & Salmela-Aro, 2020). Second, we are expecting to identify a more mixed profile with teachers showing simultaneously moderate to high engagement and high burnout (Salmela-Aro et al., 2019, 2020). Further, in line with the study by Salmela-Aro et al. (2020), a negative profile characterized by low engagement and high burnout might be identified.

2. How do teachers with different work engagement and burnout profiles differ concerning their sense of efficacy and experiences of interprofessional collaboration?

Teachers with different work engagement and burnout profiles are assumed to vary concerning their sense of efficacy and experiences of interprofessional collaboration. It is hypothesized that teachers with high levels of engagement and low burnout express a better sense of efficacy (see Aloe et al., 2014; Bakker & Costa, 2014; Upadyaya & Salmela-Aro, 2020). To our knowledge, this is the first study examining teachers' work engagement and burnout profiles together with interprofessional collaboration but, still, we cautiously assume that teachers displaying high engagement and low burnout might also have positive experiences of interprofessional collaboration (see Upadyaya & Salmela-Aro, 2020, for results concerning interpersonal demands and team climate). In contrast, teachers with high burnout and low engagement are assumed to experience less efficacy and evaluate interprofessional collaboration more critically.

3. Methods

3.1. Participants and procedure

This study included data from 355 comprehensive school teachers (grades 1–9) from 47 schools in Southwest Finland. Most of the participants were class teachers ($N = 152$, 43%) or subject teachers ($N = 128$, 36%) and the rest were special class teachers ($N = 40$, 11%) or special education teachers ($N = 35$, 10%). The mean age of the participants was 44.8 years ($SD = 9.27$; min 25, max 67 years). The sample represented the gender distribution of Finnish teachers (see Teachers and principals in Finland 2019) due to 79% ($N = 281$) of participants being female and 17% ($N = 60$) male. Less than 1% ($N = 3$) represented other genders and 3% ($N = 11$) did not report their gender.

The data collection for the study was carried out in autumn 2019 using an online self-report questionnaire. Participants were contacted through the ParasKoulu Varsinais-Suomi project that brought together primary and lower secondary schools in nine municipalities. Educational leaders within each municipality were asked to send a research request to all principals in the municipality, who in turn forwarded the request to the teachers of their schools. Following the first request, two reminders were sent to educational leaders. Teachers were allowed to complete the research questionnaire during their work hours. The questionnaire could be completed regardless of time and place, and answering was instructed in writing at the beginning of the questionnaire.

Participation in the study was voluntary and all participants were asked to give their research consent before completing the questionnaire. Participants were informed of the possibility to revoke their research consent at any stage of the study by contacting the researcher. The data collection followed the ethical guidelines of the Finnish National Board on Research Integrity TENK and the University of Turku and complied with the GDPR requirements within the EU. All data were handled anonymously and confidentially.

3.2. Measures

3.2.1. Work engagement, burnout, and teacher sense of efficacy

Teacher *engagement* was measured with three items (i.e., "At my work, I feel bursting with energy.", "I am enthusiastic about my job.", "My job inspires me.") drawn from the Finnish version of the Utrecht Work Engagement Scale (UWES) (Hakanen, 2009; Schaufeli et al., 2006, for original scale). The items referred to teachers' current situation in their work and were scored on a 7-point Likert-type scale ranging from 0 (never) to 6 (daily). The original UWES-9 consists of nine items assessing distinct dimensions of vigor, dedication, and absorption, but these dimensions have been highly correlated with one another in previous studies (see Hakanen, 2009; Leiter & Maslach, 2017; Schaufeli & Bakker, 2010) and the unidimensional version has been found to be appropriate when studying general work engagement (see Schaufeli et al., 2006; Seppälä et al., 2009).

For assessing teacher burnout, the short form of the Bergen Burnout Inventory (BBI) (Salmela-Aro et al., 2011; Näätänen et al., 2003, for original scale) was utilized. The inventory consists of three subscales: *exhaustion* (e.g., "I often sleep poorly because of the circumstances at work."), *cynicism* (e.g., "I feel that I am gradually losing interest in my pupils or other employees."), and *inadequacy* (e.g., "I felt more appreciated at work before."). Each subscale comprised three items, which were scored on a 6-point Likert-type scale ranging from 1 (completely disagree) to 6 (completely agree). Participants were asked to choose the option that best describes their current work situation.

Finally, the short form of the Teacher Sense of Efficacy Scale (TSES) (Tschannen-Moran & Hoy, 2001) was used to assess three dimensions of a sense of efficacy: *student engagement* (e.g., "I can motivate students who show low interest in school work."), *instructional strategies* (e.g., "I can use a variety of assessment strategies."), and *classroom management* (e.g., "I can intervene in disruptive behavior in the classroom."). Each dimension was measured with four items, and teachers were asked to assess their current efficacy on a 6-point Likert-type scale ranging from 1 (completely disagree) to 6 (completely agree).

Preliminary analyses concerning the structural validity of all teacher well-being scales were conducted using confirmatory factor analysis (CFA) in Mplus 8.4 software (Muthén & Muthén, 1998–2017). Each indicator was set to load only on the corresponding factor and the factors were free to correlate. The model fit was evaluated by using model chi-square (χ^2) with degrees of freedom (df) and p-value. In addition, the following fit indexes were utilized: the Root Mean Square Error of Approximation (RMSEA) with a cut-off value of $< .06$, the Comparative Fit Index (CFI) with a cut-off value of > 0.95, and the Standardized Root Mean Square Residual (SRMR) with a cut-off value < 0.08 (Kline, 2016).

The initial confirmatory factor analysis on all well-being measures (i.e., engagement, exhaustion, cynicism, inadequacy, student engagement, instructional strategies, and classroom management)

described the data rather well; χ^2 (231) = 510.795, $p < .001$, CFI = 0.94, RMSEA = 0.058, SRMR = 0.048. According to the modification indices, error covariances between two pairs of items were released and, consequently, the fit was further improved; $\chi^2(229) = 453.901$, $p < .001$, CFI = 0.95, RMSEA = 0.053, SRMR = 0.047. Standardized factor loadings are presented in Table 1 and Cronbach's alpha reliabilities in Table 2.

3.2.2. Interprofessional collaboration

There is no established or validated measure for interprofessional collaboration in school as the phenomenon has mostly been investigated by the means of qualitative methods (e.g., Bates et al., 2019; Borg & Drange, 2019; Lakkala et al., 2019). Furthermore, the scales used in previous quantitative studies are formulated for the school principals (Vainikainen et al., 2015) or for collaborative contexts that differ significantly from the context of a Finnish school (see Mellin et al., 2010; Mellin et al., 2013). Consequently, based on a theoretical and practical consideration of interprofessional collaboration (Leppäkoski et al., 2017; Mellin et al., 2010, Mellin et al., 2013) and an inclusive school system (Thuneberg et al., 2013, 2014) as well as by partially following the principles of the measurement scale for principals by Vainikainen et al. (2015), the measurement scale for interprofessional collaboration in the present study was developed.

An interprofessional team consisting of two teachers, one principal, a school social worker, a director of social work, and two researchers was responsible for drafting the items of the measurement scale. The researchers presented the other professionals with previous measures of interprofessional collaboration in school, from which they were able to choose questions that were suitable for their own work context (i.e., Finnish inclusive comprehensive school). The professionals came to the conclusion in which the school's interprofessional collaboration is based on three key dimensions: the teacher's ability to assess and support their pupils' individual needs, the amount of collaboration with different professionals, and finally the school's operating culture supporting interprofessional collaboration. However, the existing measures did not offer adequate questions about these dimensions, and thus, the questions were defined within the group. Consequently, previous studies and the measurement scales used in them only serve as a basis for discussion within an interprofessional team, but their questions were not directly used in this study.

In the developed measurement scale teachers were asked to assess student support and practical implementation of the interprofessional collaboration at their schools. The measurement scale was divided into the following three dimensions: *student* support consisting of five items (e.g., "I am able to assess pupils' need for differentiated support and proceed on that basis."), *amount of collaboration* consisting of three items (e.g., "I think the amount of collaboration with the school social worker is adequate in my school."), and *operating culture* including two items (e.g., "In my opinion, the operating culture is being developed in our school.") Answers were requested according to the teachers' work situation at the time on a 5-point Likert-type scale from 1 (completely disagree) to 5 (completely agree).

Confirmatory factor analysis was conducted for evaluating the structural validity of all three dimensions in the interprofessional collaboration measure (i.e., student support, amount of collaboration, and operating culture). The initial CFA described the data rather well; χ^2 (32) = 96.861, $p < .001$, CFI = 0.94, RMSEA = 0.076, SRMR = 0.067, but, based on the modification indices, two items from student support were removed. The final model with altogether eight items fit the data well; $\chi^2(17) = 36.382$, $p < .005$, CFI = 0.98, RMSEA = 0.057, SRMR = 0.042. The Cronbach's alpha reliabilities were 0.80 in student support, 0.71 in the amount of collaboration, and 0.75 in operating culture. Standardized factor loadings for all interprofessional collaboration items are presented in Table 3.

3.2.3. Correlations between variables

The correlational results between and within work engagement, burnout, teacher efficacy, and interprofessional collaboration

Table 1
Standardized factor loadings and residual variances for teacher well-being.

Item	ENG	EXH	CYN	INA	STU	INS	CLA	Residual variances
ENG1	.88							.23
ENG3	.96							.09
ENG4	.93							.13
EXH1		.74						.45
EXH2		.71						.31
EXH3		.67						.50
CYN1			.83					.41
CYN2			.77					.29
CYN3			.84					.39
INA1				.84				.54
INA2				.78				.30
INA3				.67				.55
STU1					.71			.54
STU2					.78			.50
STU3					.73			.39
STU4					.56			.40
INS1						.66		.56
INS2						.66		.41
INS3						.84		.46
INS4						.62		.51
CLA1							.68	.58
CLA2							.78	.30
CLA3							.76	.69
CLA4							.70	.61

Note. ENG = engagement, EXH = exhaustion, CYN = cynicism, INA = inadequacy, STU = student engagement, INS = instructional strategies, CLA = classroom management.

Table 2
Descriptive statistics and internal consistencies (Cronbach's alpha) for study variables.

Measures (response scale)	*M*	*SD*	α
1. Engagement (0–6)	4.67	1.35	0.94
2. Exhaustion (1–6)	3.37	1.20	0.75
3. Cynicism (1–6)	2.47	1.24	0.85
4. Inadequacy (1–6)	2.57	1.27	0.80
5. Student engagement (1–6)	4.38	0.73	0.77
6. Instructional strategies (1–6)	4.83	0.68	0.80
7. Classroom management (1–6)	4.71	0.71	0.82
8. Student support (1–5)	4.13	0.71	0.80
9. Amount of collaboration (1–5)	3.44	0.91	0.71
10. Operating culture (1–5)	3.73	0.84	0.75

Table 3
Standardized factor loadings and residual variances for interprofessional collaboration.

Item	SUPP	AMO	OPE	Residual variances
SUPP1	.60			.64
SUPP2	.87			.24
SUPP3	.86			.25
AMO1		.59		.66
AMO2		.81		.35
AMO3		.67		.56
OPE1			.71	.50
OPE2			.86	.27

Note. SUPP = Student support, AMO = Amount of Collaboration, OPE = operating culture.

showed expected relations (see Table 4). First, engagement showed a rather high negative correlation with cynicism ($r = -0.55$) and inadequacy ($r = -0.58$), but a slightly weaker negative correlation with exhaustion ($r = -0.30$). In addition, dimensions of burnout (i.e., exhaustion, cynicism, and inadequacy) showed fairly strong internal connections with each other, which is consistent with previous research in which cynicism and inadequacy in particular have shown high intercorrelation (Feldt et al., 2014; Salmela-Aro et al., 2011; Upadyaya & Salmela-Aro, 2020).

Teacher sense of efficacy in student engagement, instructional strategies, and classroom management was positively associated with engagement and interprofessional collaboration (i.e., student support, amount of collaboration, and operating culture), whereas relations to burnout dimensions were negative. Similarly, all interprofessional collaboration dimensions were negatively related to all burnout dimensions, although the correlations were partially rather weak. Interestingly, the operating culture showed a somewhat stronger negative correlation with cynicism ($r = -0.35$) and inadequacy ($r = -0.32$) than with exhaustion ($r = -0.11$). Finally, all dimensions of interprofessional collaboration were positively related to engagement.

4. Data analyses

4.1. Latent profile analysis

In order to determine distinct well-being profiles based on teachers' work engagement and burnout, a person-oriented approach and latent profile analysis (LPA) were utilized. Analyses were conducted in Mplus 8.4 software (Muthén & Muthén, 1998–2017). The LPA was used to identify the smallest number of latent classes (groups) that adequately describes the associations among observed continuous variables of teachers' engagement and burnout. The LPA was applied on item-level (i.e., 12 clustering variables). In LPA, Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and sample-size adjusted BIC (SABIC) were utilized as an auxiliary combination of information criteria for choosing the solution that best fit the data (Ferguson et al., 2020; Marsh et al., 2009). Additionally, Vuong–Lo–Mendell–Rubin (VLMR) and adjusted Lo–Mendell–Rubin (LMR) likelihood ratio tests together with entropy value were considered for evaluating the final model fit. The model with lower AIC, BIC, and SABIC values is considered to provide a better fit to the data, and a p-value less than 0.05 for VLMR and LMR indicates that the model with one less class should be rejected in favor of the estimated model (Lo et al., 2001). A high value of entropy (>0.80) has been demonstrated to represent a better fit with the observed data (Tein et al., 2013). In addition, the meaningfulness, the simplicity of interpretation, and the conformity of the solutions in relation to prior research and theory were considered, as this has been found to be essential alongside statistical criteria when comparing different models (see Marsh et al., 2009).

4.2. The BCH method

In the Bolck–Croon–Hagenaars (BCH) approach (Bolck et al., 2004), relations between the latent categorical variable and continuous outcome variables are explored (Asparouhov & Muthén, 2021) by determining weighted ANOVAs with classification errors (Bakk & Vermunt, 2016). The approach is useable with both equal and unequal variance across classes (Bakk & Vermunt, 2016). The analysis provides the results of equality tests that compare class-specific means of the distal outcomes across latent profiles. In this study, the BCH method was applied for examining profile differences in clustering variables (i.e., engagement and burnout), as well as in the teacher's sense of efficacy and interprofessional collaboration. Finally, for considering the role of gender, the R3STEP command in Mplus was utilized. The R3STEP enables gender to be considered as an auxiliary latent class predictor (Asparouhov & Muthén, 2014). The output is interpreted as multinomial logistic regression.

5. Results

5.1. Teacher work engagement and burnout profiles

The first aim of the present study was to examine what kinds of work engagement and burnout profiles can be identified among Finnish comprehensive school teachers. The information criteria of LPA (AIC, BIC, SABIC) continued to decrease slightly when additional latent classes were added, but the entropy values were especially high for the three- (0.933) and four-class (0.952) solutions (see Table 5). The p-values from VLMR and LMR tests rejected the four-class solution, which also included one very small class (3%). Thus, we ended up with a three-class solution, which was also interpretable and compatible with previous research and theory. The results of BCH also supported the three-class solution by showing meaningful profile differences in all clustering variables (see Table 6).

After considering the results of the LPA, three different teacher groups with distinct well-being profiles were identified and labeled as (1) *engaged*, (2) *engaged-exhausted*, and (3) *burned-out*. The mean scores on the clustering variables by group are presented in Fig. 1 (see also Table 6, for mean differences in engagement and burnout). The engaged profile was the most common with 54% ($N = 192$) of teachers. Engaged teachers were highly engaged and scored the lowest in all three symptoms of burnout. The second profile, representing engaged-exhausted teachers, showed a pattern of simultaneously high engagement and exhaustion but only slightly elevated levels of cynicism and inadequacy. About a

Table 4
Correlations for study variables.

Measures	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Engagement	1									
2. Exhaustion	−.30**	1								
3. Cynicism	−.55**	.52**	1							
4. Inadequacy	−.58**	.52**	.87**	1						
5. Student engagement	.42**	−.20**	−.30**	−.37**	1					
6. Instructional strategies	.31**	−.13*	−.16**	−.26**	.56**	1				
7. Classroom management	.35**	−.27**	−.23**	−.31**	.60**	.54**	1			
8. Student support	.21**	−.13**	−.16**	−.20**	.40**	.40**	.43**	1		
9. Amount of collaboration	.18**	−.26**	−.21**	−.20**	.16**	.18**	.28**	.28**	1	
10. Operating culture	.31**	−.11*	−.35**	−.32**	.22**	.20**	.16**	.22**	.35**	1

Note. **p < .01, *p < .05.

Table 5
Fit indices for latent profile analyses.

k	AIC	BIC	SABIC	Entropy	*p*VLMR	*p*LMR	Group sizes
1	15,274.159	15,367.090	15,290.951	–	–	–	355
2	13,831.757	13,975.026	13,857.646	0.920	0.0044	0.0047	221, 134
3	13,254.866	13,448.472	13,289.850	0.933	0.0033	0.0035	46, 118, 191
4	13,047.344	13,291.287	13,091.424	0.952	0.1015	0.1042	12, 195, 119, 29
5	12,832.394	13,126.675	12,885.570	0.904	0.0322	0.0336	12, 113, 123, 79, 28
6	12,715.678	13,060.296	12,777.950	0.910	0.3902	0.3949	8, 111, 28, 34, 122, 52

Note. K = number of latent classes, AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion, SABIC = Sample-Size Adjusted BIC, pVLMR = Vuong-Lo-Mendell-Rubin likelihood ratio test, pLMR = Lo-Mendell-Rubin adjusted likelihood ratio test.

Table 6
Mean differences in work engagement, burnout, sense of efficacy, and interprofessional collaboration between the work engagement and burnout profiles based on the BCH method.

Variable	engaged		engaged-exhausted		burned-out			
	M	*SE*	*M*	*SE*	*M*	*SE*	X^2	*p*
engagement	5.42	0.05	4.58	0.06	1.73	0.16	553.664	<0.001
exhaustion	2.80	0.08	3.99_a	0.10	4.16_a	0.17	112.228	<0.001
cynicism	1.56	0.04	3.37	0.08	3.96	0.19	495.891	<0.001
inadequacy	1.58	0.04	3.58	0.08	4.13	0.16	628.676	<0.001
student engagement	4.61	0.05	4.23	0.06	3.79	0.11	54.666	<0.001
instructional strategies	5.01	0.04	4.69_a	0.07	4.46_a	0.13	26.971	<0.001
classroom management	4.94	0.04	4.51_a	0.07	4.27_a	0.13	42.906	<0.001
student support	4.23_a	0.05	4.09_a	0.06	3.78	0.12	12.214	<0.01
amount of collaboration	3.66	0.06	3.20_a	0.09	3.17_a	0.12	22.385	<0.001
operating culture	3.95	0.06	3.62	0.07	3.11	0.15	32.546	<0.001

Note. Response scale in engagement from 0 to 6; in burnout (i.e., exhaustion, cynicism, and inadequacy) and self-efficacy (i.e., student engagement, instructional strategies, and classroom management) from 1 to 6; and in interprofessional collaboration (i.e., student support, amount of collaboration, and operating culture) from 1 to 5. Means within a row sharing the same footnote letter are not significantly different at the $p < .05$ level based on the Wald test in the BCH method.

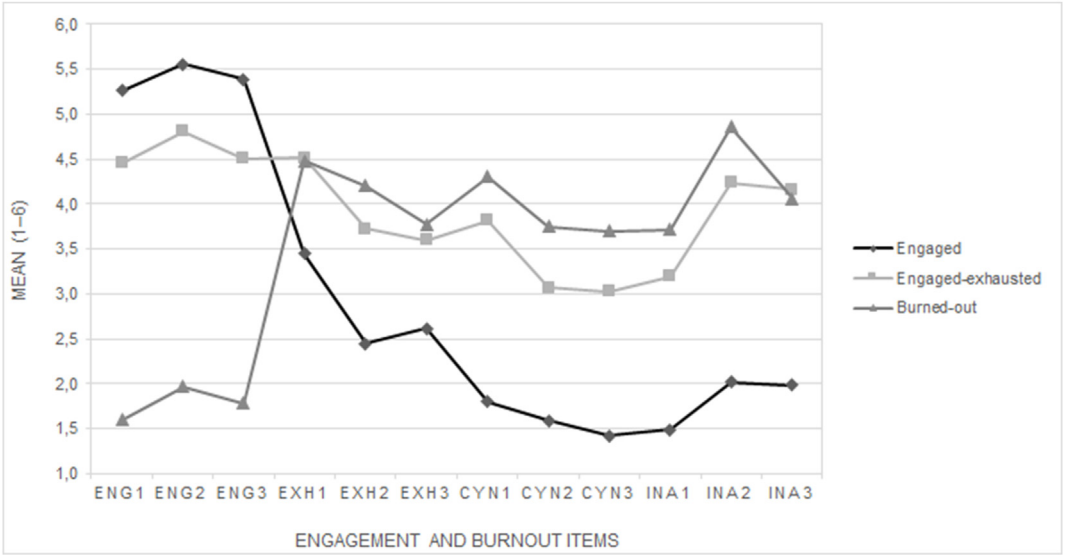

Fig. 1. *Teacher work engagement and burnout profiles.*
Note. The LPA was applied on item-level (i.e., 12 clustering variables). Response scale in engagement (ENG) from 0 to 6; in exhaustion (EXH), cynicism (CYN), and inadequacy (INA) from 1 to 6. ENG1 = "I feel full of energy while I am working.", ENG2 = "I am enthusiastic about my job.", ENG3 = "My job inspires me.", EXH1 = "I am snowed under with work.", EXH2 = "I often sleep poorly because of the circumstances at work.", EXH3 = "I constantly have a bad conscience because my work forces me to neglect my close friends and relatives.", CYN1 = "I feel dispirited at work and I think of leaving my job.", CYN2 = "I frequently question the value of my work.", CYN3 = "I feel that I am gradually losing interest in my pupils or my other employees.", INA1 = " I feel that I have gradually less to give in my job.", INA2 = "My expectations to my job and to my performance have reduced.", INA3 = "I felt more appreciated at work before."

third of the teachers (33%; $N = 117$) fell into the engaged-exhausted group. Finally, in contrast to engaged teachers, burned-out teachers expressed relatively high levels of emotional exhaustion, cynicism, and inadequacy but the lowest work engagement. Up to 13% ($N = 46$) of teachers represented the burned-out profile. Engaged-exhausted and burned-out teachers did not differ in exhaustion; that is, both groups expressed a rather high level of emotional exhaustion at work (see Table 6). Finally, gender was added as a covariate to the model using the R3STEP method. The tests of multinomial logistic regressions indicated that gender did not

Table 7
Gender as a predictor of profile membership.

	B	*SE*	*p*	*OR*
burned-out vs. engaged	−0.222	0.498	0.656	0.801
engaged-exhausted vs. engaged	0.181	0.328	0.580	1.199
engaged-exhausted vs. burned-out	0.403	0.525	0.442	1.496

Note. OR = odds ratio.

predict profile membership (see Table 7).

5.2. Profile differences in a sense of efficacy and interprofessional collaboration

The second objective of this study was to examine whether teachers with different work engagement and burnout profiles differ concerning their sense of efficacy and experiences of interprofessional collaboration. Our results showed that all teachers scored relatively high regarding all the dimensions of the sense of efficacy and interprofessional collaboration (see Table 6). The BCH method revealed that in student engagement all three profiles significantly differed from each other, with the mean being highest in the group of engaged teachers, followed by engaged-exhausted and finally burned-out teachers. Moreover, in instructional strategies and classroom management, engaged teachers experienced slightly more efficacy than teachers in the two other profiles, with differences being statistically significant. Engaged-exhausted and burned-out teachers did not differ significantly in these indicators, although the mean average of engaged-exhausted teachers was slightly higher in both.

Regarding student support, engaged and engaged-exhausted teachers scored significantly higher than burned-out teachers. In the amount of collaboration, the mean was highest among engaged teachers. Engaged-exhausted and burned-out teachers scored significantly lower without a statistical difference between them. Finally, in the operating culture, all three groups differed significantly from each other. Engaged teachers scored the highest, followed by engaged-exhausted and burned-out teachers.

6. Discussion

It has been observed that teachers are often highly engaged in their work but, at the same time, there are rather worrying indications that teacher burnout is on the rise. Consequently, it seems crucial to explore the complex phenomenon of teacher well-being by investigating the simultaneously salient work engagement and burnout, and by examining its associations with factors possibly promoting teacher well-being.

In this study, the engagement and burnout profiles of comprehensive school teachers were investigated using cross-sectional data. In addition, profile differences in terms of teacher efficiency and interprofessional collaboration were examined. The associations, especially between teacher well-being and interprofessional collaboration yielded new insight into how we could support teacher well-being through support systems. These systems could be organized as a collaboration between the school, school welfare services, and actors outside the school, such as mental health care services.

6.1. Work engagement and burnout profiles among teachers

Our results revealed three distinct teacher work engagement and burnout profiles and were thus consistent with previous studies and our first hypothesis. Slightly over half of the teachers belonged to the *engaged* group and were, accordingly, highly engaged with their work and experiencing only low levels of burnout. This highly adaptive profile is similar to the profile of engaged employees found in previous studies, both from teachers (Salmela-Aro et al., 2019, 2020) and other employees (Innanen et al., 2014; Upadyaya & Salmela-Aro, 2020). Thus, the engaged profile appears to be commonly recurrent, but the number of employees representing the profile varies somewhat between studies and is more prevalent among other employees (84%; see Innanen et al., 2014; Upadyaya & Salmela-Aro, 2020) than among teachers (30–42%; see Salmela-Aro et al., 2019; Salmela-Aro et al., 2020).

Consistent with prior studies conducted among Finnish teachers (Salmela-Aro et al., 2019, 2020), we found a group of *engaged-exhausted* teachers. This profile is characterized by a moderate engagement in work accompanied by elevated levels of exhaustion. At the same time, however, experiences of cynicism and inadequacy are lower. In our research, about one third of the teachers were identified as engaged-exhausted. The simultaneous occurrence of moderately high levels of work engagement and exhaustion reinforces the notion that an increase in symptoms of exhaustion does not always mean a decrease in engagement, or vice versa. It seems that these teachers are so engaged in their work that it entails some strain and fatigue but still does not lead to distancing oneself from work or lack of efficacy at work. It is important to note, however, that one possible burnout development profile is characterized by a high initial level of exhaustion which is finally followed by two other symptoms of burnout (exhaustion-instigated, increasing burnout profile) (Mäkikangas et al., 2020). Such a negative development in teacher well-being should be avoided.

The last profile, *burned-out* teachers, demonstrated only low engagement and the experience of clearly elevated levels of all burnout symptoms; that is, exhaustion, cynicism, and inadequacy. Slightly over a tenth of all teachers were found to be burned-out. This profile was in line with our hypothesis based on the previous study by Salmela-Aro et al. (2020), in which 10% of teachers belonged to a severely burned-out group.

6.2. Profile differences in a sense of efficacy and interprofessional collaboration

Consistent with our second hypothesis, all three teacher profiles differed in the three dimensions of sense of efficacy. Engaged teachers experienced more self-efficacy in student engagement, instructional strategies, and classroom management compared to burned-out and engaged-exhausted teachers, supporting the perception of the association between high work engagement and high self-efficacy experiences. At the same time, burned-out and engaged-exhausted teachers only differed in student engagement indicating an association between increased burnout symptoms and decreased self-efficacy experience (see Saloviita & Pakarinen, 2021). These results support previous research findings suggesting that teachers with better self-efficacy are more likely to belong to a profile with high engagement and less symptoms of burnout (see Upadyaya & Salmela-Aro, 2020).

In the present study, we aimed to provide new insight into teacher work-related well-being by looking more closely at interprofessional collaboration in school and its connection to teacher engagement and burnout. Interprofessional collaboration was determined as consisting of student support, amount of collaboration, and operating culture. Our results showed that engaged and engaged-exhausted teachers experienced their abilities to support pupils to be better than burned-out teachers. The result is rather interesting, as individual pupil support in the mainstream

classroom is one of the key elements of the inclusive school system. Furthermore, teachers in the engaged profile evaluated the amount of interprofessional collaboration being more adequate than teachers in the other two profiles. Interestingly, engaged-exhausted and burned-out teachers do not differ much in their experience of the amount of interprofessional collaboration. Thus, the amount of collaboration appears to be an important dimension in terms of work engagement and burnout of the teachers. Finally, all three teacher profiles differed from each other in operating culture. Based on our results, engaged teachers had the best experience of the school's operating culture, while burned-out teachers had the most negative experience.

Consequently, our findings suggest that there are important aspects in interprofessional collaboration when looking at teacher work engagement and burnout. Although there are no prior studies with a similar design, the results are in line with Upadyaya and Salmela-Aro's (2020) study, in which associations were found between interpersonal demands and team climate both seen as a part of a wide range of work demands and resources. Interprofessional collaboration considered in the context of the job demands-resources model could be seen as one of the salient resources for teachers' work.

6.3. Practical implications and suggestions for future research

Although a majority of teachers in this study were engaged, the finding that 13% of teachers were burned-out and one third experienced elevated exhaustion (i.e., engaged-exhausted teachers), has important practical implications. It points to the need to identify those teachers who are characterized by or at risk for burnout and try to support their engagement and overall well-being at work. Thus, we would benefit from studies that investigate the long-term development of teachers' work engagement and burnout in order to find out how the well-being profiles will further develop and how teachers will be distributed into them in the long term. Additionally, although gender did not predict teacher profile membership in this study, future studies could investigate gender differences more closely, as findings have so far been mixed.

Due to the unfavorable development of burnout symptoms, it seems crucial to further study different factors that might affect teachers' overall well-being. The results of the present study provide promising evidence that both a teacher sense of efficacy and interprofessional collaboration are the kind of substantial factors that should be considered more closely when talking about enhancing teachers' engagement and preventing burnout at work. Longitudinal research is needed to disclose how the associations between these factors develop over time.

As previously described in this article, teacher efficacy and its connections to other dimensions of well-being have been studied from many different perspectives, and this research should continue further. In addition, as an infrequent topic in educational research, interprofessional collaboration would be worth paying more attention to. Longitudinal and experimental research is needed to explore the developmental relations between teacher well-being profiles and interprofessional collaboration, especially the amount of collaboration that seems to be a pivotal dimension here. Further research would help education providers to underline the benefits of interprofessional collaboration to both teachers and other professionals. In order to study the phenomenon in more detail, first, interprofessional collaboration in school should be consistently defined and, second, a measurement scale for interprofessional collaboration in school needs to be developed and validated. Here, we took the first step in constructing and testing such a measure in the context of an inclusive school.

In this article, the Finnish school has been used as one example of an inclusive school system in which interprofessional collaboration plays a crucial role. However, it is particularly important to consider whether the dimensions of interprofessional collaboration manifest themselves in the same way in different educational settings and whether similar results can thus be observed in other countries and their diverse school systems. As practices of interprofessional collaboration vary between countries and even between schools in the same educational system, we would benefit from examining their relationship to the well-being experienced by teachers in different school contexts. Additionally, more attention should be paid to the connection between interprofessional collaboration and teacher efficacy. Important new information could be gained by examining whether investing time and resources for interprofessional collaboration increases teachers' sense of efficacy and thus has a positive impact on their well-being and teaching. Increased knowledge could lead to a shared operating culture, where both education providers as well as teachers and other professionals recognize the added value of interprofessional practices and their connection to teacher well-being.

6.4. Limitations

There are some limitations in this study that should be taken into account when interpreting the results. First, regarding the measurement of teacher well-being, there were some rather high correlations (e.g., between cynicism and inadequacy) that may affect the profile solution. Notable, however, similar high correlations have been observed in previous studies using similar burnout measures as well (e.g., Feldt et al., 2014; Salmela-Aro et al., 2011).

Second, the measurement scale for interprofessional collaboration in school was used for the first time in this study. Although the scale fit the data of this study well, it should be further tested and the research design reproduced with a larger number of participants and within different school systems. This could reveal either differences or similarities in results in different contexts and thus lead to new types of research questions as well as a better understanding of interprofessional collaboration in school. Further, the content of the items in the measurement scale must be considered in more detail and compared with the structure of student welfare services as well as with professionals outside the school that are collaborating with teachers. Depending on the school system, it may be necessary to critically review and adjust the items of the scale to fit the particular context. In this study, items concerning the amount of collaboration were limited to special education teachers, school social workers, and school psychologists (see Appendix), although teachers collaborate with several other actors on a daily basis. Taking into account the challenges of interprofessional collaboration identified in previous studies, especially between teachers and professionals working outside the school (Savolainen et al., 2020), it would be worthwhile to include the questions concerning these professionals in future studies.

Finally, the nature of the present study is exploratory in certain respects. That is, there is very limited research on interprofessional collaboration in school, and no previous research has been conducted on the connections between teacher work engagement or burnout and interprofessional collaboration. Thus, our study brings

out new results and perspectives, especially regarding interprofessional collaboration in school. However, further studies with corresponding research questions are needed. Also, our findings are correlational. In future research, particularly beneficial would be to implement a follow-up study, which would enable exploring longitudinal dynamics.

7. Conclusions

Engaged, self-efficacious teachers who promote interprofessional collaboration in their daily work are a crucial part of an inclusive school. The findings of the current study show that 13% of teachers are characterized by low engagement and high levels of all burnout symptoms, while one third of teachers are engaged but simultaneously display exhaustion at work. On the other hand, half of the teachers experience high engagement at work and only low burnout. Our findings suggest that both a teacher's sense of efficacy and interprofessional collaboration play an important role in how the teacher experiences their well-being at work. Consequently, well-being support for teachers and adequate resources for interprofessional collaboration should be provided equally in all schools.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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Appendix. The Final Version of the Measurement Scale for Interprofessional Collaboration

The following questions concern student support and practical implementation of the interprofessional collaboration at your school. Please, choose the option that best describes your current work situation.

Completely disagree 1	Partly disagree 2	Neither agree nor disagree 3	Partly Agree 4	Completely agree 5

1. I have enough knowledge about three-tiered support practices. (SUPP1)
2. I am able to assess pupils' need for differentiated support and proceed on that basis. (SUPP2)
3. I am able to act in a way that my pupils' individual needs require. (SUPP3)
4. The amount of collaboration with a special education teacher is sufficient at our school. (AMO1)
5. The amount of collaboration with a school social worker is sufficient at our school. (AMO2)
6. The amount of collaboration with a school psychologist is sufficient at our school. (AMO2)
7. Good practices are disseminated at our school. (OPE1)
8. Operating culture is being developed at our school. (OPE2)

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