Employees' Self-Determination in Collegial Learning Situations at Work: A Comparative Study of a Finnish ICT Organization and a Central Hospital

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ABSTRACT

Expert work, seen as continuous learning and development, requires autonomy and responsibility at the individual level and collegiality and sharing of expertise at the team level. To have strong intrinsic motivation, employees must have the volition, ability, and interest to develop themselves and gain new knowledge. Enabling intrinsic motivation requires the self-determination to fulfill three basic psychological needs: autonomy, competence, and relatedness. However, self-determination not only relies on an individual's own activity but is also influenced by the demands, obstacles, and affordances of the sociocultural context. Likewise, studies on learning in expert work in the field of adult education have shown that collegiality and social interaction are vital resources for learning. Therefore, this study explores employees' self-determination in collegial learning situations in expert work in two contexts. A comparative qualitative research strategy and directed content analysis were utilized. The data consist of thematic interviews ($N = 56$) with employees from a Finnish central hospital and a Finnish information and communication technology organization. The findings show that self-determination is an essential part of collegial learning in modern expert work, thus providing the motivation behind learning. Social interaction can be seen as an enabler of employees' sense of self-determination to be fulfilled in learning situations. The paper concludes with a discussion of the commonalities and differences in self-determination in collegial learning situations in these two expert work contexts. Finally, suggestions for future research are provided.

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INTRODUCTION

Learning is an essential prerequisite for work tasks to be accomplished in the fields of healthcare and technology. In hospitals, employee learning is critical to ensuring patient health (Stabel et al., 2022) and working responsibly (McConnell et al., 2018), while in information and communication technology (ICT) organizations, it is the key to responding to digitalization and the rapid development of technologies (Ha, 2015). In both contexts, the work can be understood as expert work, as the completion of tasks and the quality of the work rely on individual competencies and expertise. Such expert work is seen as continuous learning, which requires autonomy and responsibility at the individual level and collegiality and sharing of expertise at the team level (Noe & Ellingson, 2017). Continuous learning in modern expert work demands employees to be active, willing, able, and interested in learning—in other words, to have strong intrinsic motivation (Ryan & Deci, 2000).

According to the self-determination theory (SDT) by Ryan and Deci (2000), enabling employees' intrinsic motivation relies on the fulfillment of three basic psychological needs—autonomy, competence, and relatedness—which are seen as essential to optimal human growth and development (Rigby & Ryan, 2018) and learning in the work context (Hetzner et al., 2012; Willems & Lewalter, 2012). In recent years, learning requirements in organizations have been met by increasing employees' freedom and autonomy. However, prioritizing autonomy alone can generate unwanted outcomes, leading individuals to become too independent, separate from others, or feel unsupported when their own competence is not sufficient to overcome a challenging work situation (Collin et al., 2021; Gijbels et al., 2012). Therefore, alongside autonomy, it is important to focus on the other key psychological needs of SDT: competence and relatedness.

Research on the basic psychological needs underlying intrinsic motivation has tended to focus on individual-oriented perspectives (Rigby & Ryan, 2018), although the fulfillment of these needs does not rely only on the individual's own activity but is also influenced by the demands, obstacles, and affordances of the sociocultural context in which the person acts (Ryan & Deci, 2000). At the same time, studies on adult education have shown that collegiality and social interaction are vital resources for learning at work, as learning occurs through participation in socially shared practices in the work community (Billett, 2014). As expert work is rarely completed alone, learning emerges as interactive, shared, and relational at the collegial level (Billett, 2014). Therefore, learning and social interaction can be seen as intertwined, rather than separate elements of expert work (Collin, 2008). Given that collegial learning is an increasingly central part of expert work itself, it is

important to point out that previous work-life studies on SDT have not focused on the context of collegial learning; however, they have shown that the self-determination arising from intrinsic motivation and basic needs is a central starting point in contemporary work emphasizing individual responsibility.

In the organizational context, SDT has been previously examined in relation to, for example, work-related stress (Olafsen et al., 2017), job satisfaction (Nie et al., 2015), and psychological well-being (Gomez-Baya & Lucia-Casademunt, 2018). In the educational context, SDT has been widely utilized to study, for example, motivation in online learning settings (Chen & Jang, 2010), learning through reflection (Hetzner et al., 2012), and improving learning outcomes in higher education through learning communities (Beachboard et al., 2011). Most of these studies are quantitative (e.g., Bauer & Mulder, 2006; Beachboard et al., 2011; Chen & Jang, 2010), and scholars have called for empirical qualitative research on SDT (Ryan & Deci, 2020). However, while self-determination has been widely explored in conventional learning settings (Hsu et al., 2019) and educational training contexts (Chambers et al., 2007), more research is needed on the different learning environments (Hsu et al., 2019), especially in different organizations and work contexts (Gagné & Deci, 2005).

This study investigated self-determination in the context of collegial learning at work in two different organizations, an ICT organization and a central hospital, which we understand to be rich learning environments for employees. This study aims to increase the understanding of self-determination and its definition in the context of collegial learning situations in expert work. This study contributes to previous research on self-determination and the utilization of SDT in different contexts by increasing the qualitative understanding of self-determination and its relation to collegial learning in different workplaces. In addition, from the perspective of adult education, collegial learning based on social interaction and participation in social activities at work becomes essential to affording employees a sense of self-determination to be fulfilled and, thus, enabling them to feel intrinsically motivated.

In the following, we present our theoretical background of self-determination and describe what collegial learning at work means. We then highlight findings from previous research in two targeted industries: hospital and technology. We present the research aim and questions, as well as the methodological choices related to qualitative comparative research. Then, we present the main findings of our study through four categories of outcomes. We illustrate how employee self-determination is described in these collegial learning situations and show, in detail, how the findings of self-determination differ between the two target organizations. Finally, we discuss the study's findings, novelty, and shortcomings in relation

to previous research, describe key research needs for further research, and offer practical suggestions.

SELF-DETERMINATION IN THE CONTEXT OF COLLEGIAL LEARNING SITUATIONS AT WORK

SDT is an appropriate approach to studying learning (Willems & Lewalter, 2012), as it simultaneously considers an individual's need for autonomy, competence, and relatedness (Ryan & Deci, 2000). These needs can be seen as key to supporting the intrinsic motivation needed for learning and successful performance in the work context (Baard et al., 2004; Bauer & Mulder, 2006; Ryan & Deci, 2000). The more employees feel the fulfillment of these needs, the more they take the initiative, which in turn leads to better learning outcomes (Hetzner et al., 2012). First, autonomy is considered an integral part of an individual's learning in the work context, in which individuals have become increasingly responsible for their own work and learning (Noe & Ellingson, 2017). Second, competence can be seen as being directly linked to learning, as it refers to employees' needs to gain new knowledge and develop themselves (Rigby & Ryan, 2018). Finally, relatedness is an integral part of learning at work, as learning often takes place as a collegial phenomenon in social interactions in work situations (Billett, 2014; Lemmetty, 2020).

SELF-DETERMINATION THEORY (SDT)

SDT is based on the idea that all human beings have the three abovementioned fundamental psychological needs (Ryan & Deci, 2000). First, *autonomy* refers to a sense of choice and self-endorsement of one's actions and ownership of and volition for one's work. In working life, individuals do not always have the option to choose; instead, they have specific tasks and goals to accomplish. However, individuals can have autonomy in these tasks when they are clear and accepted. Essential to fulfilling the need for autonomy is a clear purpose and rational explanation for the action (Rigby & Ryan, 2018). Autonomy, as a feeling of volition, can be accompanied by any act, individual or collective (Ryan & Deci, 2000). Autonomy can be defined as self-determination in deciding what to do and how to do it (Willems & Lewalter, 2012). Second, *competence* refers to the basic need to feel effective, successful, and developed. In organizations, individuals want to feel as though they have all the resources, skills, and expertise necessary to complete their daily tasks. Therefore, competence is continuously expressed by organizations. Employees also want to continually stretch their abilities to feel that they have the opportunity to grow and develop toward their career goals. Finally, *relatedness* refers to the need for belonging, a sense of meaning and connectedness

to others, and feelings of being supported and that one's support is valued. In the workplace, the need for relatedness is fulfilled when employees feel respected, valued, and engaged at all organizational levels. (Rigby & Ryan, 2018).

The fulfillment of basic psychological needs facilitates intrinsic motivation, which refers to acting with a sense of endorsement, volition, and congruence (Deci & Ryan, 2012). This includes the idea that individuals are motivated when they are allowed to carry out their own intentions, develop things that are important to them, and act in their own interests (Deci & Ryan, 2008). The basic psychological needs of SDT are essential to creating the basis for the intrinsic motivation that defines a person's will to act based on their own interests, not external coercion or control. Gagné and Deci (2005) argue that work environments that promote the fulfillment of these three basic psychological needs increase employees' intrinsic motivation, which in turn produces positive outcomes, performance, creativity, cognitive flexibility, job satisfaction, and behavior change.

SDT's purpose is to define the factors that nurture a human's natural potential to grow, develop, and feel content, and thus, to research the processes and circumstances that promote effective activity and development among individuals, groups, and communities (Ryan & Deci, 2000). Exploring the social-contextual conditions that either facilitate or hinder people's self-motivation, performance, and development is essential (Ryan & Deci, 2000). The fulfillment of these three needs leads to higher job satisfaction and more positive well-being at work (Gomez-Baya & Lucia-Casademunt, 2018) and supports learning in the context of work (Bauer & Mulder, 2006). Basic psychological needs are necessary for optimal human growth (Rigby & Ryan, 2018). Thus, they can be assumed an essential precondition and part of both individual and collegial learning in the work context (Willems & Lewalter, 2012). From this perspective, studies on collegiality between members of the work community in learning at work are also pertinent.

COLLEGIAL LEARNING AT WORK AS A SHARED PRACTICE

Workplaces are learning environments that include structured practices for individuals to participate in learning situations and in learning derived through everyday participation in different activities at work (Billett, 2014). Learning situations at work usually encompass characteristics of both formality and informality (Collin, 2008; Malcolm et al., 2003), which should be seen more as a continuum and interrelated (Marsick, 2009) than as the opposite of each other. The work community can be seen as an important learning environment (Collin, 2008) in which learning needs to emerge (Billett, 2014). Expert work, in particular, is

often problem-based, development-oriented work in which the learning processes of individuals and groups arise through everyday activities and practices (Tynjälä, 2013). Learning in the workplace can be broadly defined as learning activities at work and for work (Billett, 2008; Tynjälä, 2013).

When workplaces are approached as rich learning environments, an essential aspect is how learning arises from participation in social practices in the workplace (Billett, 2014). From this perspective, learning emerges and is based on people's participation in different workplace activities and practices (Manuti et al., 2015; Tynjälä, 2013). Learning includes social interaction between colleagues (Collin, 2008), and the relationship between individuals and social practices shapes learning (Billett, 2014). As learning and social interaction at work can be seen as intertwined elements, social communities and communal practices create space for learning when these practices are shared in social interactions among employees in teams, groups, and networks (Collin, 2008).

Collegial learning arises as shared practice when others tell, teach, instruct, demonstrate, or otherwise guide an individual's learning (Billett, 2014). One concrete form of learning in the workplace is asking for help and guiding others in work tasks (Collin, 2008; Smet et al., 2022). Learning also manifests as observing colleagues' actions (Bjørk & Sørensen, 2013; Smet et al., 2022), active retrieval of information (Kyndt et al., 2009), and learning through trial and error (Tynjälä, 2013). In such learning situations, more experienced or expert colleagues play a major role in guiding others (Billett, 2014). However, learning is not limited to situations in which it is guided directly and intentionally by others. Instead, learning emerges as a continuous process in which individuals participate in daily activities in the work community. Thus, learning also occurs outside of direct guidance (Billett, 2014) through the completion of daily work tasks. Therefore, from a sociocultural perspective, learning at work includes both individual and collective perspectives (Billett, 2014).

HOSPITALS AND ICT ORGANIZATIONS AS CONTEXTS FOR LEARNING AND SELF-DETERMINATION

Organizations based on expert work, such as hospitals and ICT organizations, can be considered places where learning and competence development are necessary. According to Berings et al. (2008), learning in a hospital occurs through one's own work, social interactions with colleagues, theory or guidance, reflections on work experiences, and life outside of work. In addition, learning through reflective work-related discussions, collaboration, and feedback plays a critical role in employee learning and the sharing of what has been learned (Bontemps-Hommen et al., 2020; Kyndt et al., 2016; Riera Claret et al., 2020). An essential resource

for learning is interactions with colleagues and other specialists (Brooks et al., 2017; Stabel et al., 2022). Thus, consulting and interprofessional teamwork are typical ways to complete everyday tasks and learn in hospitals (Pimmer et al., 2013).

Similarly, researchers in the ICT field have found that learning is linked to everyday work and is framed by solving complex problems (Collin, 2008) and working with technologies (Vähäsantanen & Eteläpelto, 2017). Learning takes place either in interactions with colleagues and customers or independently as information retrieval (Gijbels et al., 2012; Ha, 2015; Lemmetty, 2020), which requires employees' autonomy and control over their own learning processes (Bell, 2017; Frenkel & Sanders, 2007). Due to digitalization and the rapid development of technologies in the ICT industry, professionals are required to engage in learning in response to the continuous performance demands in the field (Ha, 2015). In addition, the younger generation expects more meaningfulness, autonomy, and responsibility from work (Noe & Ellingson, 2017). In both the hospital and ICT sectors, autonomy has been found to be an essential precondition for expert work and learning in the workplace (Clarke, 2005; Lemmetty, 2020). Freedom and autonomy are required to complete work tasks as tasks become more complex and nonroutine (Saks & Leijen, 2014). In expert work, employees' self-determination is important because external control may negatively affect learning and creativity (Collin et al., 2018).

ICT organizations are often based on a less hierarchical configuration (Lee & Edmondson, 2017; Holbeche, 2015) because they utilize agile developmental methods that require different teams and organizational structures (Moe et al., 2008). Autonomy and flexibility are enhanced in ICT organizations (Cerasoli et al., 2018) by minimizing hierarchy, creating independent teams, and even allowing for nonleadership (Auvinen et al., 2017; Collin et al., 2018). Thus, the power, responsibility, and opportunities for decision making by individuals and teams are greater (Moe et al., 2008; Rigby & Ryan, 2018). A low hierarchy also offers employees' personal fulfillment, meaningful work, and opportunities to learn and develop (de Hauw & de Vos, 2010). In traditional organizations like hospitals, top management often makes bigger decisions and directs employees. However, autonomy does not depend only on the structure of an organization. Studies conducted in hospitals have shown that autonomy in this field is also essential (Clarke, 2005), especially in the daily work context of physicians and nurses. Nurses are independent in their daily work of caring for patients, although they are not responsible for administrative and organizational decisions and actions (Varjus et al., 2011). Likewise, physicians are already trained during their studies to be independent and autonomous in the clinical learning environment (Liljedahl et al., 2019). Therefore, hospitals are multifaceted and complex

learning environments (Cronin, 2014), especially from a hierarchical point of view (Riera Claret et al., 2020). However, autonomy and self-determination can be seen as essential requirements of expert work.

Increasing autonomy and freedom in expert work requires greater responsibility (Rigby & Ryan, 2018). Thus, as learning in the workplace becomes a greater part of work, it requires stronger individual autonomy and a shift in responsibility from management and supervisors to individual employees and groups (Lemmetty, 2020). However, the meaning of different organizational structures for learning and self-determination remains unclear. A less hierarchical structure produces freedom, which contributes to individual learning (Mintzberg, 1980), whereas rigid guidance can impair employees' creativity and spontaneity (Takeuchi & Nonaka, 1986). However, clear structures are needed to support learning (Bunderson & Boumgarden, 2010), especially if employees' knowledge and competencies are not sufficiently strong (Ashton, 2004). Without support, learning can, at worst, be entirely an individual's responsibility, which may become burdensome and problematic (Gijbels et al., 2012; Lemmetty, 2020). Therefore, so that individuals and organizations do not suffer, autonomy and self-determination should not imply loneliness or working alone (Collin et al., 2018).

RESEARCH AIMS AND QUESTIONS

This study aims to increase the understanding of self-determination in the context of collegial learning situations in expert work in a Finnish ICT organization and a Finnish central hospital. The following research questions were investigated:

1. How do employees in central hospital and ICT organization describe self-determination in collegial learning situations at work?
2. How do the descriptions of self-determination differ between the two target organizations?

METHODS

In this study, we used a qualitative comparative research strategy (Greckhamer et al., 2018) as a systematic means to study two different cases: an ICT organization and a central hospital (Lucas & Szatrowski, 2014). A qualitative comparative research strategy is case-oriented and focuses on key comparisons between cases (Lucas & Szatrowski, 2014). The case strategy is appropriate for analyzing similarities and differences across cases (Miles et al., 2014). In this study, a qualitative comparative case study was applied to reveal commonalities and differences in the descriptions of self-determination

between these two organizations. The comparative case study approach also allows for building a deep within-case understanding (Stake, 2008) of self-determination as a phenomenon in two organizations. Therefore, we purposefully chose two organizations that differ from each other in history, hierarchy, culture, and industry (see Greckhamer et al., 2018).

TARGET ORGANIZATIONS AND COLLECTED DATA

The study participants were employees from the two organizations. The first participating organization was from the healthcare industry—a midsized hospital with approximately 2,500 employees. The participating personnel were from an operational unit consisting of nurses and physicians. The hospital is a multifaceted environment for learning research because various learning situations with patients require collaboration and guidance, in addition to more traditional apprentice models, to avoid inefficient training and incorrect learning results. Thus, consulting and interprofessional teamwork are typical ways to complete everyday work tasks. The second organization was a midsized technology organization with over 450 employees. The company serves Finnish clients from other industries, the public sector, and international organizations from over 30 countries. The personnel work as software developers, IT experts, and knowledge management experts. In this organization, teamwork and leadership practices have been developed to support learning. Moreover, virtual communication channels and remote working conditions are typical parts of everyday interactions and work. An ethical preassessment was conducted in connection with the participation of the hospital organization before the start of the study (1810/13.00.04.00/2020), and the study was approved by University of Jyväskylä, Human Sciences Ethics Committee. Regarding the participation of an ICT organization, a separate ethical evaluation was not considered necessary. However, all stages of the study were conducted in accordance with research ethics regulations and practices.

The study data consisted of thematic interviews (*N* = 56). The interviewees were selected to represent different job titles of employees, line managers, and supervisors. Interviewees from the hospital were physicians and nurses, while interviewees from the ICT organization were titled, for example, software developers, design engineers, sales managers, and team leaders. The interviews were conducted as individual semi-structured interviews to emphasize open conversations between the interviewer and interviewee. The themes discussed touched on competence development, workplace learning, work responsibilities, the work community, and the autonomy of the work. The following are examples of questions used in the interview: "What kind of help or support would you need to develop your competence?",

"Do you feel that you have opportunities to learn at work?", "What kinds of things would support or hinder your opportunities to learn every day at work?"

ANALYSIS

Before the main analysis began, the interviews were transcribed and then analyzed using qualitative directed content analysis, in which the analysis is guided by a theory or relevant research findings for the initial codes. The aim of directed content analysis is to conceptually extend the existing theory (Hsieh & Shannon, 2005). In this study, directed content analysis was used to deepen the understanding of self-determination (Ryan & Deci, 2000) in the context of collegial learning at work. In the preliminary phase, all descriptions of collegial learning situations at work were depicted in interviews with employees. The selection of learning situations was guided by previous theories of learning as a phenomenon shared by colleagues in a work community (Billett, 2014; Collin, 2008). The purpose of this preliminary phase was to limit the data relevant to this study based on the research questions.

The first phase of the main analysis was based on a previous understanding of the three basic needs of SDT: autonomy, competence, and relatedness (Rigby & Ryan, 2018). These needs were operationalized through a previous definition, and the focus of the analysis was to find different descriptions of these needs in collegial learning situations. All phrases, paragraphs, or sections describing autonomy, competence, or relatedness were highlighted from the transcripts and coded with the initial subcodes generated from the data (Hsieh & Shannon, 2005). For example, the code for competence development was attributed to data suggesting individuals' intentions to gain knowledge and develop their competence. All codes were then categorized according to the three needs of SDT. Directed content analysis guided this first phase of analysis (Hsieh & Shannon, 2005) by determining operational definitions for each need and therefore guided the coding and categorization process. This phase addressed the first research question by focusing on descriptions of autonomy, competence, and relatedness.

In the second analysis phase, comparisons were made by finding similarities and differences in the descriptions of each psychological need and comparing them between the two organizations. The focus was on to what extent the needs are expressed and determining the target of the expression of the need. The aim was to answer the second research question by revealing contextual and organizational differences in the descriptions of self-determination in collegial learning situations.

Next, we present our findings as a result of the directed content analysis. The findings are presented based on the previously discussed theory (Hsieh & Shannon, 2005) of self-determination and its three basic psychological needs (Rigby & Ryan, 2018). After that, we describe the commonalities and differences in self-determination between the two target organizations. The beginning of each Findings subsection presents the learning situations in which each need is fulfilled. Then, we describe each need in these learning situations.

FINDINGS

DESCRIPTIONS OF AUTONOMY

Descriptions of autonomy were found in conjunction with learning situations in which individuals share information or experiences with others and ask colleagues for help solving a problem or challenging task or get a colleague's opinion. Autonomy was also seen in daily work situations in which individuals discuss important things concerning their work, team, or current work tasks. In these collegial learning situations, many illustrations of autonomy were found in the sense of choice and self-endorsement of one's actions, ownership, and volition in work.

In the ICT organization, autonomy was seen to arise from self-awareness of the limitations of one's own understanding and, as a result, as the conscious choice to ask for help from a colleague or supervisor. Participant 23 (developer) stated, "People ask [me for] help [...] every day, and I ask [for] help every day. The information moves between people. If you can't find out something, it doesn't have to stay that way." An individual does not wait for the problem to be solved but rather actively chooses to ask for help. Thus, autonomy was linked to a work approach emphasizing an individual's initiative and responsibility.

Autonomy was also visible in an individual's ability to help other members. Helping others was seen to as an easy daily practice at work and thus essential to making work run smoothly. In the ICT organization, colleagues help each other both face to face and through information technology systems. Participant 14 (developer) explained, "We have a very low threshold to ask [for] help from [a] colleague who has been working on this for a long time. We have this Slack system for internal communication in [the] organization."

In the ICT organization, autonomy, based on the conscious choice to ask for help, manifested as a practice that creates collegial learning situations at work. The nature of expert work in ICT organizations is based on freedom and autonomy. Participant 23 (developer) explained that the initial assumption in problem-solving situations is to first try solving work tasks independently. However, an individual's autonomous actions and choice to ask for help play an important role in creating collegial learning situations.

Furthermore, an individual's choice to ask for help, and thus be active in the process, is a significant practice for creating access to collegial learning situations. Thus, individual autonomy was expressed as a sense

of choice to share a problem with a colleague. For example, Participant 14 (developer) explained that, when he told a colleague about his problem at work, the colleague advised him about a remote coffee break during which he could gain more information and discuss and solve problems collaboratively. This illustrates how an individual's sense of choice to act in a certain way can provide access to collegial learning situations, thus enabling collaboration.

In the central hospital, autonomy emerged as self-awareness of the limitations of one's own understanding and as the conscious choice to actively ask for help. In this case, help is sought from more experienced colleagues. As seen in Participant 56's (nurse) statement below, awareness of one's limitations and asking for help were perceived as intertwined and linked practices:

> [If] the situation is new [to] me, or I have seen it sometimes, but I don't necessarily remember properly, [...] I ask [a] more experienced colleague or [a] colleague who knows something about it.

Furthermore, autonomy was illustrated not only as the conscious choice to search for information but also as the choice to share it with others in the community. Through teamwork and social interaction, individuals share important work-related information with one another. Participant 45 (nurse) explained:

> If something changes, I will figure it out somehow. Ask colleagues. We have very close relationship[s] with other nurses here since there are not many of us anymore. So, we share information [with] each other daily when we hear that something has changed or where the latest information can now be found.

Thus, the desire to share information may not result from an external compulsion to share work-related information with others but rather from one's own perceptions and choice to share the information because it could benefit others. Hence, autonomous actions were linked to initiative, which is important to effective work.

Autonomy appeared in an individual's ability to help others in the work community. This ability is based on the desire to make another person's work easier. As Participant 45 (nurse) explained, employees "share work tasks with nurses" so that they do not "duplicate work" and so that their "work hours may be sufficient." Thus, in the hospital, helping others involves dividing work tasks evenly and guiding and advising others in difficult work situations.

In addition, autonomy was seen in the need to discuss one's work experiences and, in the hospital context, difficult patient cases with colleagues. It is important that individuals are conscious of their ability to participate in social interactions and understand how these discussions make learning possible in the community. The following response by Participant 35 (physician) illustrates how employees in the hospital share work-related information, their own experiences, and difficult cases with each other:

> We often discuss where I visited [during the day], and I did this and that. We share experiences with residents, so we learn from other's experiences, especially if someone [does] something particularly good or something exceptionally rare comes up. We go through our mistakes as well to figure out what could have been done better.

The hospital employees' need to have discussions with others and hear their opinions on current issues was further linked to the decision-making process regarding patient treatment. Physicians consciously choose to gather information from colleagues or the community, even when they are responsible for a patient's treatment. In this case, autonomy does not refer to a fully independent activity. Rather, autonomous action is targeted at the community and social levels of interaction. This is illustrated in the following statement by Participant 41 (physician), which demonstrates a strong sense of communality and consultation for work and learning in the hospital:

> The most important principle for every physician is the autonomy to accomplish one's work. [The] physician makes the treatment decisions with the patient and is responsible for that. The responsibility is undivided [...] But, of course, we are a community. There [are] many ways to get consulting and peer support—different working groups, or clinical meeting[s] where these problem-solving situations, in particular, can be considered.

DESCRIPTIONS OF COMPETENCE

Descriptions of competence emerged in connection with learning situations in which a colleague teaches, demonstrates, or guides someone, either face to face or via digital communication tools. These kinds of situations were described as formally instructed situations or informal situations that individuals face at work on a daily basis. Competence could also be seen in apprentice model situations in which more experienced colleagues guide or teach others. Competence occurs in daily work situations in which individuals collaborate to complete daily tasks. These learning situations contain many illustrations of competence as a need to feel effective, be successful, and grow at work.

In the ICT organization, competence was illustrated as knowledge of one's own competence at work and the ability to observe one's own work and actions and then recognize the issue at hand. Furthermore, competence appeared to be the ability to ponder different solutions to current problems. However, individuals may not be able to solve them alone. Participant 15 (developer) described how individuals require knowledge of their own work to describe the problem and the desired solution to a colleague:

> First, you need to recognize the problem. Then, try to think about the path to the solution. What are the possible solution options to get the desired result? [...] When you get someone to help you, you need to know how to describe the problem [to] him/her and the desired result.

In collegial learning situations, competence was also presented as an awareness of one's own competence in relation to colleagues' competencies in the work community. In the ICT organization, participants described the importance of knowing and identifying who could offer their help to solve work issues. Individuals need knowledge of others' competencies to identify someone in the work community who may be able to help. According to Participant 11 (developer), someone rarely solves a problem alone. Rather, one "need[s] to know the right people" to ask for help, which can, in turn, develop one's competence.

In addition, competence was attached to competence development by performing tasks on a daily basis with colleagues or a team. Participants linked competence to the choice of asking colleagues or teammates for help. Thus, individuals should take the initiative to develop competence and complete the task under a colleague's guidance. As Participant 21 (developer) explained, if a technical challenge arises or she has to solve a difficult problem, she will approach it with her team. She further stated that she asks, "Has anyone done this before?" or "Could someone help?", and then proceeds to solve it with someone who can help.

In the central hospital, competence was seen as occurring with the help of the community. The community helps identify one's competence and guides competence development in situations in which a more experienced colleague can advise or teach them, either verbally or through example. In these situations, a more experienced colleague explains what is happening and helps the individual identify the limits of their own competence. Participant 37 (physician) explained that more-experienced physicians can help identify the limits of specialized physicians' competencies by observing how they operate. He stated that "the attending physician's role is [to monitor] the situation." Furthermore, he expressed that an experienced physician can explain

how and why they would do something in a certain way when the specialized physician does not yet have that knowledge. Thus, competence is developed through the guidance and supervision of more knowledgeable colleagues.

Additionally, an organization's culture is based on the idea that more experienced colleagues are potential sources of new knowledge from whom individuals can learn new things through teaching, guidance, or observation. According to Participant 37 (physician), "Teaching is kind of an unwritten part of this job—that the information and knowledge will be shared forward." Hence, transferring lessons to younger colleagues is an integral part of the culture of performing everyday work tasks.

For physicians, the development of competence in social interactions with colleagues was also found to be an important practice. Particularly with special or challenging issues, individuals have discussions with colleagues about the situation and the potential options for supporting the development of their own competencies. After a discussion, individuals find it easier to make an overall assessment and, thus, a decision; this reflects the importance of communal discussion for their own competence and its development. Participant 38 (physician) explained:

> First, you recognize that it is a special case [...] then you discuss it with colleagues and ponder different options. [...] It is nice to hear an experienced colleague's opinion about what kind of risks are involved in special cases, and you get different perspectives than [when] you just read the literature. When we have pondered the issue overall, it is easier to make an overall assessment, which is logical.

Competence was also seen to emerge in the performance of daily work tasks. Learning and competence development as part of everyday work is an integral part of the hospital's work culture. In addition to formal guidance and teaching situations, competence development situations are often everyday work scenarios that individuals face. Participant 44 (nurse) stated that one "can find the right answer or instruction from [the] intranet" and support from other colleagues. Hence, competence development as daily work was seen in social interactions with others and was linked to an individual's autonomy to ask for help.

In the hospital, competence also emerged as a communally shared phenomenon in which the competencies of everyone in a situation can be developed at the same time. Participant 38 (physician) stated:

> Sure, there will be many basic operations, but there [are] also rarities. We can do together very

rare operations, which nobody will face very often during their career. So, at the same time, everyone's competence is developed when we operate together. It is important. The collegial support and the presence of colleagues, it is a very valuable thing.

This illustrates how competencies can be shared and developed for more than one person in the community by performing rare challenging tasks together. Thus, working together enables valuable and meaningful collegial support for competence development.

DESCRIPTIONS OF RELATEDNESS

Descriptions of relatedness were depicted in learning situations in which individuals support each other and work together on a project, either formally or informally, face to face or via digital communication tools. The sense of relatedness was also seen in peer-to-peer and pair work situations, as well as in apprentice model situations and when consulting colleagues. These collegial learning situations presented many descriptions of relatedness as a need to belong and "matter" to others, to feel connected in meaningful ways, and to feel supported while also experiencing that others need and value our support.

In the ICT organization, relatedness was presented as peer support from colleagues or larger teams. According to Participant 7 (developer), the strongest learning comes from peer support. He further explained that, "if there are challenging situations, the support and perspective comes from [people] who have been in the same situation before," which creates a good sense of support on many levels. This support comes in the form of advice, help, and guidance from more experienced colleagues. The feeling of support and a sense of belonging to the wider work community allows individuals to feel that their work and challenges are meaningful to others.

The sense of relatedness could be seen as the possibility of leaning on the community and its members. Participants described how it is possible to ask for help from colleagues and that support for work tasks or challenging problems is always available. In the ICT organization, Participant 14 (developer) explained that the ability to lean on colleagues also occurs over online mediums, such as Slack, Skype, or Teams, through which colleagues can share, work, and complete tasks together.

The sense of relatedness was seen in encouragement and support within the work environment in a team or larger work community. In the ICT organization, an encouraging, supportive work environment means helping others, working together, and creating a culture in which individuals can ask for help. According to Participant 15 (developer), a "supportive work atmosphere" is also linked to "a good spirit within [the] team" through which people help one another.

Additionally, relatedness refers to the ability to work in a common direction through encouragement, peer support, and a good work environment by engaging in social interactions and sharing information. According to Participant 26 (developer), remote work poses a challenge to the ability to engage in social interactions in organizations, making it difficult to share tacit knowledge between persons, which is essential for creating a common direction.

Participant 26 also explained that the best way to work is with several people on the team. This makes it possible to work together and share ideas, allowing individuals to feel a sense of relatedness. The importance of the work community to working and learning also reflects how one cannot know everything by oneself, despite the freedom and autonomy emphasized in ICT organizations. Therefore, the existence of community and the sense of relatedness that individuals feel through community also support learning.

In the central hospital, relatedness was also presented through collegial support. A sense of relatedness occurs through and alongside completing daily work tasks together. Support is obtained from individuals who have been in similar situations before or from more experienced colleagues. Working together and receiving help are essential expressions of relatedness. The following response from Participant 56 (nurse) demonstrates how relatedness emerges in colleagues' support as teaching, guiding, or setting an example in challenging situations:

> The situation would be new for me, or I have seen it sometimes, but I don't remember so well. Then, we collaborate so that the more experienced [person] teaches the new person, [is] present in the situation, [and] either operates or gives [guidance].

Moreover, the sense of relatedness is present when performing work tasks together. Daily work tasks are tackled with colleagues and under the guidance of colleagues. As Participant 36 (physician) explained, working with more "experienced colleagues" could be described as "mentoring."

Relatedness also emerged in interviews with hospital staff as experienced colleagues showing faith and trust in those in the learner position. Therefore, the feeling that help and support are available if needed in learning situations is essential to a sense of relatedness. Creating faith and trust for learning also creates a safe atmosphere to try, which is the basis for learning to take place, as Participant 32 (physician) explained: "[With] younger colleagues who are here to learn, it [is] more like [an] apprentice model; along with daily work, learning takes place and information will be shared. It is mentoring even, giving them [the] confidence to try."

Similarly, relatedness refers to the ability to lean on more experienced colleagues' competencies and knowledge. In the hospital, this means getting help easily and asking for help without hesitation. Participant 56 (nurse) confirmed this by stating that the work community enables learning and that there are physicians available to consult: "You kind of know that there is always someone to ask."

A sense of relatedness could also be found in the need to connect with others, discuss important things concerning work, and share one's own experiences with the community. According to Participant 36 (physician), work situations are less burdensome and more meaningful when there is the possibility of discussing and sharing ideas in social interactions with colleagues:

> Let's say that, when we get to do and think together, it is not so burdensome anymore; it is more meaningful. [...] Although it is not a big issue, in rare situations, we will always discuss [...] and that kind of makes learning more meaningful because both can share [their] experiences and perspectives and read things. It is continuous learning when we discuss.

Therefore, a sense of relatedness was linked to a trusting, safe work atmosphere in which the experiences and perspectives of others are valued.

COMMONALITIES AND DIFFERENCES IN SELF-DETERMINATION BETWEEN THE ICT ORGANIZATION AND THE CENTRAL HOSPITAL

Generally, individuals' self-determination was described similarly in both organizations. However, several differences could be seen in how autonomy, competence, and relatedness were described in collegial learning situations. This section describes these differences. Table 1 summarizes the findings regarding the three needs of self-determination in both organizations.

In both organizations, autonomy was seen as arising from self-awareness of one's own competence, which leads to the conscious choice to ask for help from the community, as well as the ability to help others. Similarly, individuals' autonomy over their abilities and choices was perceived as essential. In the ICT organization, individuals' conscious actions were found to be the precondition for participating in collegial learning situations and the ability to do so. Often, individuals first try to solve problems or current work tasks alone; then, if they do not succeed, they ask for help from others. Alternatively, in the hospital, autonomy was illustrated as the choice to share information with others, without the intention of solving the problem, and the need to discuss it with colleagues, without the intention of producing something that can be utilized at that moment. Furthermore, the willingness to participate in social interactions with others plays a natural and important role in work, which, in itself, creates value for employees and their competence development. However, in both organizations, individual autonomy was found to be a significant part of the nature of expert work.

In the ICT organization, competence was strongly linked to the individuals themselves. While individuals require knowledge of their own competence, they also require knowledge of the competence of others in the work community. The initiative taken to develop one's own competence relies on autonomous actions. Only after individuals take this initiative (ask for help) can competence emerge through collective competence

	ICT ORGANIZATION	CENTRAL HOSPITAL
Autonomy	The need for choice and self-endorsement of one's own actions, ownership, and volition	
Descriptions	– self-awareness of one's own understanding – conscious choice to ask for help – ability to help others	– self-awareness of one's own understanding – conscious choice to ask for help – choice to share information with others – ability to help others – need to discuss with colleagues
Competence	The need to feel effective, be successful, and grow	
Descriptions	– knowledge of one's own competence – knowledge of others' competencies in the work community – competence development through working together on a daily basis	– knowledge of one's own competence with the help of the community – competence development with the help of community – competence development through working together on a daily basis – sharing competence communally
Relatedness	The need to belong and matter to others, feel connected in meaningful ways, feel supported, and value support	
Descriptions	– peer support – ability to lean on colleagues – encouraging and supportive work environment – ability to create a common direction at work	– collegial support – performing collectively – showing faith and trust – ability to lean on colleagues – need to connect with others

Table 1 Findings of autonomy, competence, and relatedness in the ICT organization and the central hospital.

development with colleagues. In the ICT organization, the individual's active role in competence development was emphasized. However, in the hospital, community was highlighted as a strong factor in revealing competence. Competence as knowledge of one's own competence and competence development was illustrated as a communal and collegial phenomenon. The identification and development of one's competence occur with help from the community, usually from more experienced colleagues. Competence development situations are also purposefully designed to benefit as many people as possible so that new knowledge can be shared throughout the community. In the hospital, the nature of work regarding consulting, multiprofessional collaboration, and competence development is based on the traditional apprentice model. Therefore, work and competence development during work tasks are completed together, and the community plays the role of supporter for individuals.

In both organizations, relatedness was illustrated as support—peer support in the ICT organization and consulting and multiprofessional support in the hospital. In the hospital, the sense of relatedness emerged strongly as collaboration on a daily basis due to work tasks rarely being performed completely alone or independently. In both organizations, relatedness was also linked to the work atmosphere. In the ICT organization, the sense of relatedness was linked to an encouraging and supportive teamwork atmosphere, while in the hospital, relatedness was demonstrated as showing faith and trust in the person in the learning position. In both the ICT organization and the hospital, relatedness refers to an ability to lean on colleagues' competencies if needed, which also shows an important element in creating a suitable atmosphere for learning. In addition, in the hospital, relatedness was linked to the need to connect with others and interact with colleagues. This was perceived as important for learning, making it less burdensome and more meaningful for individuals. In the ICT organization, relatedness was presented as an important element in creating a common direction at work.

DISCUSSION

This study helps increase the understanding of self-determination and its relation to collegial learning in expert work. We have qualitatively illustrated how the three basic psychological needs of self-determination— autonomy, competence, and relatedness—are fulfilled and thus defined in the context of collegial learning situations at work. Through this study, we contribute to the previous studies of SDT, not only from the individually oriented perspective, but also by exploring it in relation to the social context of collegial learning at work

emphasized in the field of adult education (Billett, 2014). The findings of this study confirm an understanding of self-determination and the three psychological needs as essential elements and requirements for learning (Bauer & Mulder, 2006) thus providing the motivation behind learning in modern expert work.

Studies on self-determination tend to understand learning as a positive outcome of an individual's self-determination (Hetzner et al., 2012), but the results of this study offer the understanding of collegial learning as a framework to fulfill employees' basic psychological needs in work organizations where learning is an essential part of daily work. Based on the findings, social interaction is an essential enabler for employees' sense of self-determination to be fulfilled in learning situations. Overall, the findings show that the basic psychological needs of self-determination can be fulfilled in learning situations in which employees participate in social interactions with colleagues (Billett, 2014). Thus, social and contextual conditions in collegial learning that either enhance or diminish employees' sense of self-determination are essential (Ryan & Deci, 2000).

The study found that the three needs of self-determination (Ryan & Deci, 2000) are highly overlapping and intertwined; thus, they are different features of the same phenomenon in both organizations. In recent years, the role of autonomy in the context of learning at work has been emphasized unilaterally (Noe & Ellingson, 2017) but has also been criticized. This study confirms the previous proposition that emphasis should be placed on relatedness and sociocultural factors, in addition to self-determination (Lemmetty, 2020). Individual activities emphasizing autonomy and freedom do not exclude the need for collegiality and social interaction in learning. Hence, the SDT utilized in this study was a suitable starting point, as it took into account not only autonomy but also the two other psychological needs (competence and relatedness) for employees' optimal development and learning (Ryan & Deci, 2000).

Through this study, we contribute to filling the need to explore self-determination in different learning environments (Hsu et al., 2019) and different work contexts (Gagné & Deci, 2005). The comparative research strategy (Greckhamer et al., 2018) produced interesting findings on self-determination in two organizations differing in industry and hierarchy. In general, the findings on self-determination in collegial learning situations were similar in both the central hospital and the ICT organization. In both organizations, autonomy as conscious choices and actions was seen as the choice to ask for help and to share work-related information that might help others. In the context of learning at work, autonomy does not refer to independence, solitude, or selfishness, but rather to feelings that may be included in collegial action (Ryan & Deci, 2000). Alternatively, in both organizations, competence was linked to the knowledge of one's own

competence and intentions to develop competence, as well as to the feeling of control over one's own work. Competence and competence development are required to complete daily tasks; individuals need to express their competence concerning work and gain new knowledge to develop their competence (Rigby & Ryan, 2018). In both organizations, more experienced colleagues play a major role in guiding and supporting competence development (Billett, 2014). Relatedness emerged in collegial learning situations as the strongest need for self-determination in both organizations. Essential to the fulfillment of relatedness in both organizations is the ability to lean on colleagues and get help from members of the work community, develop a positive atmosphere for learning, and have the opportunity to interact with members of the community. In both organizations, the sense of relatedness offers individuals meaningfulness in their work in the community (Rigby & Ryan, 2018).

The similar emergences of self-determination in both organizations are interesting, considering the previous perspectives on the relationship between self-determination and hierarchy (Lee & Edmondson, 2017) and the contextuality of learning (Collin, 2008). This offered the opportunity to consider the factors and practices that are shared between ICT organizations and hospitals, rather than the differences between them. Based on the findings, the forms and practices of learning are similar in both organizations, which indicates the fundamentally similar nature of expert work. It is perhaps possible that expert work—regardless of hierarchy or industry—provides opportunities for fulfilling basic psychological needs and, thus, for self-determination and motivation to emerge.

However, this study's findings also show a few differences in how self-determination occurs, particularly with regard to the different ways in which the three needs are emphasized and the needs are expressed. First, in the ICT organization, autonomy is emphasized as a prerequisite to participating in and forming collegial learning situations at work, as the nature of work is based on self-direction and autonomous work (Ha, 2015; Lemmetty, 2020). In the hospital, individual autonomy is not so strongly emphasized, but autonomy is targeted toward the idea that colleagues' sharing of information and asking for help are important and valuable practices in the community. Second, in terms of competence, in the ICT organization, individuals' own responsibility and activity are emphasized, while in the hospital, the community plays an important role in both identifying and developing competence. Third, in the hospital, the sense of relatedness relies on a work culture marked by multiprofessionalism, collaboration, and consulting (Pimmer et al., 2013; Stabel et al., 2022); therefore, mentoring, teaching younger colleagues, and providing support are inherent parts of the work culture. In contrast, in the ICT organization, a strong sense of relatedness

seems to be based on an organizational culture that consciously creates and builds communality.

This study does not consider self-determination as an entirely collective phenomenon but demonstrates the collegial and socially shared nature of self-determination in the context of learning at work. In the future, a focus on studying self-determination directly as a collective group-level phenomenon would be important. As the responsibility for learning has shifted from the organization to teams (Ellinger, 2005), collective and team-level learning is emphasized, especially in expert work. Therefore, exploring how group-level self-determination is constructed is important, as it could increase the understanding of collective self-determination in the context of learning in expert work. As certain studies have shown that self-determination has positive effects on people's well-being (Gomez-Baya & Lucia-Casademunt, 2018) and learning (Bauer & Mulder, 2006), in the future, it would be beneficial to study the individual and group situations in which all three basic psychological needs are fulfilled at the same time. In addition, it would be interesting to explore employees' and supervisors' self-determination separately and compare whether the illustrations of self-determination differ between these groups. Future research could also focus on which social and cultural factors in the social context of organizations, such as leadership, may enhance or hinder both individual- and group-level self-determination and, thus, learning at work.

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The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS

All three authors have participated in the data collection process as well as research design process. Keronen has made the analysis of the study as well as wrote the result section. Keronen and Lemmetty have put together the theory and discussion sections. In all phases during the

research process the authors have discussed and shared their ideas collectively.

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