Australian Journal of Adult Learning
Volume 63, Number 3, November 2023

Adult learners in police and technology work in Finland: Andragogical features behind learning at work

Soila Lemmetty
University of Eastern Finland

Kaisu Hämäläinen
Kaija Collin
University of Jyväskylä

As the learning needs of adults grow in the workplace and society, there is a need to understand the specificities of adult learning and how to support and guide adult learning at work. This article explores the applicability of andragogical theory to learning at work. The research seeks answers to the following question: What are the (individual and social) andragogical features behind learning at work? Two organisations – Finnish police and a technology organisation - participated in this study. Thematic interviews (n = 54) were analysed using thematic analysis. The findings showed that all the assumptions of andragogy were reflected in the data, but a substantial overlap existed in workplace learning situations. We identified three main themes describing the key andragogical features behind learning at work: benefit orientation, self-direction and experientiality. All the described key features showed both individual and social dimensions. The article presents these features in relation to different learning

situations at work, as well, as showing the contributions of the study for andragogical theory.

***Keywords**: andragogy, adult learning, workplace learning, police organisation, technology organisation, qualitative research*

Introduction

In contemporary society and the modern workplace, various social and technological transformations necessitate the acquisition of new competences and knowledge at a fast pace across both public and private sectors. There remains a need to comprehensively comprehend the distinctive characteristics of adult learners and how to effectively support and guide their learning processes within the workplace. Andragogy, which encompasses the theory of adult learning, offers an intriguing and pertinent foundation for apprehending adult learning within the framework of today's working environment. Although it is an established theory (Knowles, 1975), andragogy accentuates and develops contemporary facets of adult learning. It views adult learning as a functional, goal-oriented and self-directed process involving the ongoing construction of an individual's knowledge. This approach actively engages learners in diverse ways (Knowles et al., 2012; Kolb, 1984).

Since the early days of the development of the concept of andragogy, different schools of thought have developed around it, and andragogy has had different emphases at different times. Various scholars have taken a stand on andragogy and considered, even criticised, its applicability to adult learning theory. Merriam (2001) pointed out that andragogy has been described as a theory of both adult education and adult learning, a method of adult learning and a set of assumptions about the adult learner. This debate on what andragogy ultimately is continues and requires further clarification. At the same time, andragogy has been criticised for being individualistic and ignoring the sociocultural perspective. Indeed, in several publications on the subject, andragogy and the self-directed learning attached to it have been equated with, for example, autonomous learning in which individuals are responsible, autonomous and even robot-like in their own learning processes (Holec, 1981; Merriam & Caffarella, 2012).

Such criticism has led to improvements of the theory, but various

researchers have continued to describe the lack of empirical, especially qualitative, research in the field of andragogy (Knowles et al., 2020). This is because the studies that have been carried out have focused on quantitative methods and the examination of individual characteristics. At the same time, many theoretical papers and reviews have been written on this theme. The studies that have been conducted on the andragogical framework have focused on examining the applicability of andragogical methods to teaching and formal guidance situations (e.g., Birzer, 2003; Chan, 2010; Dirani, 2017; Tessier et al., 2021), although research from different learning contexts and environments can provide interesting insights into andragogy (Knowles et al., 2020). The current study responds to these perceived research gaps by examining the andragogical assumptions in two different work contexts: police work and technology work.

Workplace learning (Billett, 2014; Tynjälä, 2013) is a pivotal component for facilitating the adaptation to working life changes, upholding a competitive advantage and fostering skill development. While the study of workplace learning spans several decades (Tynjälä, 2013), andragogy has received relatively limited attention in the literature and research on workplace learning and workplace pedagogy, while in andragogy research, workplaces have been partly neglected. Considering the growing transition in workplace learning research from traditional on-the-job training to the examination of everyday workplaces, there is a broad consensus among researchers that relying solely on established formal training for skills development is no longer adequate for addressing the dynamic demands of the evolving work environment (Billett, 2020; Dochy et al., 2022). This study recognises the workplace learning framework, combined with the andragogical approach, as a valuable and comprehensive perspective for investigating the learning experiences of adult employees.

The study aims to provide insights into the effectiveness of andragogical theory in the context of workplace learning, making visible the individual and social dimensions of andragogy's assumptions about adult learners, particularly in workplace learning contexts. The study seeks to respond to the critique of the individualistic nature of andragogy research by asking the following question: What are the (individual and social) andragogical features behind learning at work? The research was conducted as a qualitative study in which thematic

analysis (Braun & Clarke, 2006) was used to examine descriptions of learning from interviews (N = 54) with employees and supervisors from Finnish police and technology organisation. We first describe andragogy's underlying assumptions about adult learners and adults' orientation to learning. We then present an understanding of learning situations at work based on previous research. Then, we present the research aims, questions, methods and findings. Finally, we discuss our findings in relation to the previous literature on andragogy and demonstrate the practical value of this study for organisations.

Andragogy

Andragogy is based on views about the characteristics of adult learners that distinguish them from children (Knowles, 1975; Merriam & Caffarella, 2012). From this perspective, andragogy has been described as a theory and a practice aimed at helping adults learn, whereas pedagogy focuses on describing the teaching and learning of children (Knowles, 1980). The focus of andragogy is largely based on the psychological definition of adulthood, which holds that adulthood is defined by the extent to which a person takes responsibility for their own life (Mezirow, 1990). Hence, andragogy is premised on the idea that adults who take responsibility for their lives can take responsibility for and control of their own learning (Knowles et al., 2012). Originally, andragogy posited that, unlike children, adults are motivated to learn through experiences, needs and personal interests; adults' orientation to learning is based on life domains in a broad sense; experience is the richest resource in adult learning; adults have a deep need for self-direction; and individual differences between people increase with age (Lindeman, 1926). Since then, the description of the relationship between andragogy and pedagogy has evolved: in later descriptions, andragogy and pedagogy have been seen not as opposites but as forming a continuum from teacher-centred guidance towards learner-centredness, (Canning, 2010; Knowles et al., 1998; Merriam, 2001). For example, Zmeyoy (1998) argued that andragogical perspectives can be used (regardless of the age of the learner) when short-term educational goals are to be achieved and learners have sufficient practical and social experience, are aware of their goals and can apply their existing skills and abilities and have a sufficiently strong background in the subject matter to be taught.

Over the years, Knowles and his research team have formulated and developed an andragogical model based on six assumptions about adult learners (Knowles, 1975, 1980, 1989; Knowles et al., 1998; Knowles et al., 2020, pp. 43–46), which are:

1. **Need to know.** Adults want to know why they need to learn something before they learn it. When adults commit to learning something, they invest a lot of energy in exploring the benefits of learning.
2. **The learner's self-concept.** Adults have a self-concept that they are responsible for their decisions and their lives. Once they have achieved this self-concept, they develop a deep psychological need to be treated by others as capable of self-direction.
3. **The role of the learner's experiences.** Adults have a wider range of experiences than adolescents or children simply because they have lived longer. The quality of their experiences is also different from those of children. There are also large individual differences in the experiences of adults.
4. **Readiness to learn.** Adults are prepared to learn the things they need to know to cope effectively with real-life situations. Developmental tasks that move from one stage of development to another are a particularly rich source of learning readiness. The key here is that the learning situation is temporally consistent with the learner's stage of development (i.e., the learner has already developed sufficient skills to learn the subject at hand).
5. **Orientation to learning.** Adults are oriented towards learning in a task- or problem-based (commonly called life-based) way. Adults are motivated to learn when they understand that learning will help them complete tasks or solve problems that they will encounter in life.
6. **(Internal) motivation.** Adults are motivated by some external motivators (e.g., a better job, benefits, a higher salary), but the motivators with the utmost potential are intrinsic (e.g., improving quality of life, increasing job satisfaction, and developing self-esteem).

While the assumptions of andragogy have garnered some acceptance among researchers, they have also faced substantial criticism from

experts and scholars (Holton et al., 2001). Notably, a major point of contention revolves around the criticism that andragogy, especially in its emphasis on self-direction, fails to adequately account for contextual and situational factors that influence individual learning processes. In some publications, andragogy-based adult learning has been equated with autonomous learning, where individuals are perceived as solely responsible, autonomous and almost robotic in their learning endeavours (Holec, 1981; Merriam & Caffarella, 2012). However, critiques of andragogy and adult learning as overly autonomous and individualistic (Baskett, 1993; Boucouvalas, 2009; Hiemstra & Brockett, 2012; Merriam, 2001) have prompted an increasing emphasis on sociocultural elements in research. This shift acknowledges the importance of the learning environment, the broader context, interactions and the roles played by various actors in adult learning (Lemmetty, 2020; Baskett, 1993; Bell, 2017; Hiemstra & Brockett, 2012; Foucher, 1995; Kessels & Poell, 2004).

Thus, there is a growing recognition of the sociocultural nature of andragogy, which is increasingly regarded as a holistic approach that combines individual factors and actions with environmental and interactional elements (Author, 2020). It is also worth noting that Knowles did not perceive andragogy as an entirely individualistic phenomenon. Boucouvalas (2009) pointed out that Knowles's book (1975) may inadvertently convey such an image, as it does not present a critique of individualism. According to Boucouvalas, Knowles's (1975) descriptions of self-directed adult learning have been misconstrued. Nevertheless, the individualistic perspective has been reinforced by scholars such as Noe and Ellingson (2017), who argued that self-directed learning by adults in the context of work-based learning should be voluntary rather than managed or guided by formal HR rules or organisational policies. Scholars have also posited that employees engage in learning not because of predetermined objectives but due to their active participation and desire to learn (Garaus et al., 2016). However, individualistic perspective contradicts the idea that learning – especially in the context of work - is framed by many structural and cultural elements and it is fundamentally collaborative and interactive (Dochy et al., 2022). The absence of a social perspective becomes particularly apparent when considering andragogy in the context of workplace learning.

Workplace learning

The examination of andragogy together with the theoretical framework of workplace learning has been limited in previous studies, although it could be an appropriate way to strengthen our sociocultural understanding of the assumptions of andragogy. Workplace learning has been referred to learning that takes place at work and during or for work (Billett, 2014). Typically, it has been seen as a practice-based activity which emerges when individuals engage and participate in different occupational practices in the community (Billett 2020). It is thus seen as an activity directly derived from the characteristics of the work processes and their inherent social interaction (Poell, 2014) as well as the agency of the learners themselves. In this context, workplace learning can be conscious or unconscious learning that arises from the needs of the job, involving not only the acquisition of skills and knowledge but also their application (Leslie et al., 1998). Equally, learning in everyday work can be unintentional and highly contextual, and its outputs are often not known in advance (Tynjälä, 2013). Therefore, it is thought that learning at work is not guided by systematic, organised support (Hoekstra et al., 2009). However, Billett (2014, 2020) has pointed out that the different learning experiences that emerge in the context of work practices may contain pedagogically relevant features that can be guided and organised. Several studies have described workplace learning as related to problem solving situations, everyday developmental work and other (collaborative) daily activities (Janssens et al., 2017; Kyndt et al., 2009; see also e.g., Brockman & Dirkx, 2006).

As a practice, workplace learning has been often approached by looking at individual or collective learning practices which emerge in multiple daily situations. For example, Jeong et al. (2018) approached workplace learning in their study as an individual learning process that is strongly embedded in everyday work activities, based on tacit knowledge, spontaneous and unconscious, intentional, goal-oriented, and planned or unplanned. Individual learning practices include experimentation, reflection, making mistakes and acquiring knowledge (Carbonell et al., 2014; Schei & Nerbo, 2015). By contrast, collective or interactive practices have been described as, for example, discussion in which experiences and views are exchanged with others (Margaryan,

2019; Schei & Nerbo, 2015). Asking for help while problem solving and observing someone else's work and applying what is observed to one's own work are also seen as collective learning processes (Brandi & Christensen, 2019; Schei & Nerbo, 2015), as are various guidance and coaching situations, either between members of the work community or with an external expert (Lemmetty, 2020; Janssens et al., 2017; Kyndt et al., 2009; Schei & Nerbo, 2015).

Learning at work is thus a multidimensional phenomenon that can be viewed as individual and social practices emerging in different work situations. Studies have typically approached workplace learning by looking at the factors that facilitate learning, the learning processes and practices, or the outcomes and consequences of learning (e.g., Tynjälä, 2013). This study focuses on workplace learning situations as contexts for adult learning – as processes or spaces in which individual and collective learning practices occur. In locating learning situations, this study draws on above mentioned notions of workplace learning, where learning is seen as based on, for example, problem solving, collaboration and developmental work.

Research aim and questions

This study responds to the lack of empirical and qualitative analyses on andragogy by examining the assumptions about the adult learner in the context of work. It also responds to the critique of the individualistic nature of andragogy research. The study examines the learning experiences of police and technology workers from the perspectives of andragogy and the workplace learning framework. The study aims to provide insights into the effectiveness of andragogical theory in the context of work, making visible the individual and social dimensions of andragogy's assumptions about adult learners in workplace learning contexts. The main research question for the study is as follows:

- What are the (individual and social) andragogical features behind learning at work?

In addition, we formed two underlying questions to guide the preliminary analysis of the data: What kinds of workplace learning situations are described in the learning experiences of the participating employees? What kinds of assumptions about adult learners are reflected in the learning experiences of the participating employees?

Methods

The study employed a qualitative research approach through interviews. The choice of qualitative interview research as the methodological strategy was driven by the objective to elucidate the nature of the phenomenon under investigation within a specific context (Hammersley & Atkinson, 2007). Qualitative research places a strong emphasis on capturing various descriptions and narratives related to the phenomenon under examination. As Bodgan and Biklen (1997, p. 6) articulated, the qualitative research approach operates on the assumption that nothing is inconsequential, as every piece of information has the potential to offer valuable insights for a more comprehensive understanding of the subject under investigation.

Participating organisations

Two different Finnish organisations were chosen as the target organisations for this study: a technology organisation and a police organisation. The selected organisations are exposed to changes in working life and society, which can be seen as generating continuous work-based learning needs for the personnel. Working and achieving high-quality results in both sectors require strong skills and expertise that need to be maintained through daily learning at work.

In the technology organisation involved in this study, about 450 people are employed in various expert positions, such as software developers, IT experts, knowledge management specialists, and supervisors. The organisation specialises in industrial solutions, software development, BI services, cloud services, IT services, and related support and maintenance services. In recent years, it has grown rapidly in terms of operating profit and the number of employees. In the technology field, digitalisation is causing numerous changes in the uses of technology. Furthermore, because of the organisation's continuous growth, changes in the organisation's structures have been widely discussed.

The second target organisation of the study is a police organisation, specifically the Preventive Policing Unit in Finland. In total, there are 30 senior police officers and their supervisors working in this unit. Preventive police work aims to proactively deter criminal activities, enhance security and build public trust in law enforcement. Unlike

emergency response and certain other areas of police work, preventive policing places less emphasis on the traditional chain-of-command guiding structure. In this context, it is vital to view preventive policing as expert work in which self-direction among police officers, interdisciplinary collaboration, and situational problem solving, whether individually or within a team, hold paramount importance.

Data

Interview data (n = 54) were collected from the participating organisations. The interviews were individual thematic interviews in which the themes were as follows: learning at work, organisational support for learning, self-direction and problem solving. The interviews were carried out during autumn 2020 and spring 2021 and they lasted from 30 to 60 minutes. In the police organisation, the interviews took place at the police station. In the technology organisation, the interviews were conducted remotely using Teams software. The interviews were carried out as part of a larger leading sustainable learning (JOKO) research project (Unversity of Jyväskylä, 2023) by four different interviewers, two of whom are the authors of this article.

The interview framework was designed to guide the different interviewers in going through the themes relevant to the study. During the interviews, the participants were asked to tell about their own work, their educational and work history, the learning and problem-solving situations they encountered at work and the factors that were relevant to them in these situations, as well as their own and others' roles and responsibilities in these situations. In addition to their general views, we asked the interviewees to share their experiences using as concrete examples as possible. The audio-recorded interview data were transcribed verbatim.

Analysis

The analysis of the research data was carried out in three stages. Thematic analysis (Braun & Clarke, 2006) was used as the analytical method. Prior to the analysis phases, all the interviews were read through by all of the three researchers who are the authors of this article. In the next phase, two of these researchers focused on a deeper and more specific reading of the data: one researcher focused on the

police interviews (n = 26), while the other focused on the interviews collected from the technology organisation (n = 28).

In the first step of the preliminary analysis, each interview was carefully reviewed while locating all the learning-related situations described by the interviewee. In locating the learning situations in the data, the characteristics describing learning practices and contexts previously identified in the workplace learning research (Dochy et al., 2022; Carbonell et al., 2014; Kyndt et al., 2009; Schei & Nerbo, 2015) were used. In this phase, we used the following question to guide our examination: what kinds of workplace learning situations are described in the learning experiences of the participating employees? In the next phase, these situations were again examined for descriptions that could be interpreted as assumptions about adult learners. To support this phase, we used the six assumptions presented by the theory of andragogy (Knowles et al., 2020), the expressions of lwhich we looked for in the interviewees' descriptions of their experiences. The guiding question for this phase was as follows: what kinds of assumptions about adult learners are reflected in the learning experiences of the participating employees? The descriptions found were separated from the overall data into a separate table and categorised according to the six theory-based assumptions.

Once all the interviews had been preliminarily gone through and the expressions that emerged had been tabulated (43 pages), the analysis moved to the next stage. In this stage of the main analysis, we used data-driven thematic analysis (Braun & Clarke, 2006) to answer the main research question of the study (Table 1).

Table 1: Examples of the thematic analysis process of the study

Quotation (description of the learning experience)	Andragogical assumptions (subtheme)	Descriptive feature (main theme)	Workplace learning situation (background context)
"If you jump into a project with new technologies, it is likely that you will have to learn something new [in order to carry it out]."	Need to know	Benefit orientation	Problem-solving situations, new claims, and unexpected challenges
"I find myself facing a new challenge or problem [at work]. Planning [and solving] them is a good way to learn through work."	Problem-based learning orientation		

The descriptions entered into the table were examined in more detail, looking for what kinds of similarities and differences could be observed from the assumptions appearing in the descriptions. We combined assumption descriptions expressing a similar underlying orientation towards learning under a more general theme that made visible the central feature describing the emerged assumptions. Thus, we acquired three different main themes that made visible the most central features that guide and support learning at work. After that, we went through the individual and social dimensions of the descriptions within each main theme, which allowed us to describe the contents of the theme in more detail. Finally, we looked at which specific workplace learning situation in each theme was most typically contextualised in the experiences of the participants.

Findings

Five different situational contexts were identified from the participants' workplace learning experiences: new projects and the changing claims of work, problem solving and challenges, guiding oneself and others, networking and teamwork, and role changes. All six assumptions about the adult learner described in andragogy theory (Knowles et al., 2020) were strongly reflected in the data of our study. However, the empirical data from the technology and police organisations showed that the assumptions strongly overlapped in the above-mentioned workplace learning situations. Thus, through the analysis, we were able to form three main themes describing the andragogical features behind learning at work. According to this research, in workplace learning situations in the police and technology fields, adult learning was guided, directed and supported by benefit orientation, self-directedness and experientiality. All of these appeared not only as individual but also as social starting points for learning. Next, we present these main themes and their

individual and social dimensions as well as the workplace learning situations in which they were typically reflected in the data (Figure 1).

Benefit orientation

The andragogical assumptions related to the *need to know* and *problem-based* orientation appeared empirically as interconnected, which can be called the benefit orientation of the adult learner. It means that learning is driven, guided or initiated by a real need, and through it, an understanding of the benefits of the learning situation.

From the point of view of benefit orientation, learning at the workplace was described in the data primarily through its occurrence in everyday work scenarios. It was closely related to various problem-solving situations, challenges and demands that arose in working life, which were necessary for the efficient performance of work. From this perspective, problem-based orientation and the need for knowledge seemed to overlap and co-occur in the data: the descriptions of the learners' approaches to the learning situations as problem-oriented also illustrated actors' possibility to see the reasons and consequences of learning. The benefit orientation appeared in the work context as a built-in feature of problem-based and unexpected learning situations:

> *There are always some unexpected situations. I find myself facing a new challenge or problem pretty much every month, if not every week. Planning them beforehand and then making the best possible decision is definitely a good way to learn through work. (Technology Specialist 2, man, director, senior).*

At the individual level, the benefit orientation towards learning was reflected in the concrete, practical and immediate benefits of what was learned in current work and projects. At the individual level, it was seen in terms of coping with work situations and, for example, developing one's own skills. At the social level of benefit orientation, benefit was seen as broader, communal: the creation of wider value, such as high-quality products, practices or outcomes, whose impact extends beyond the individual to the organisation, colleagues or customers:

> *It's through learning that we try different things [to solve the problems], and if they work and are good, they become practices and they are used; they can even become national practices.*

(Police Officer, 6, woman, senior police officer, senior).

For example, the police officers described preventive policing as being problem solving itself: they ended up in problem-solving situations when they participated in unexpected social debates, received tips for their investigations and prepared for different events. In the police officers' descriptions, preventive work was constantly evolving, which automatically provided a reason for learning. In addition, the police officers described their desire to see the results of their work to reinforce the feeling that the development process was producing the intended effects and outcomes. The following police interview quote shows that learning is based on a real future situation. As such, its benefits and significance are already foreseeable and serve as an orientation for learning:

> *Actually, [learning takes place] by looking ahead: that next month, there will be a demonstration, so you start to build it from small pieces. (Police Officer15, man, senior constable, senior).*

In the technology sector, new software, platforms, techniques and technologies inherently generate real-life learning situations with clear benefits. At a general level, the technology experts also described their work as a continuous learning process involving development tasks and organisational changes in which theory must be combined with practice and new challenges were often unexpected.

> *Every time you jump into the unknown [in the workplace], how you . . . learn from it how to deal with the customer in the best way is quite interesting learning. (Technology Specialist, 7, man, project manager, senior).*

> *If you jump into a project with new technologies, it is likely that you will have to learn something new [to carry it out]. (Technology Specialist, 5, man, team leader, senior).*

Self-direction

Similarly, *self-concept* and *intrinsic motivation* are strongly linked, as motivation is both a prerequisite for the realisation of self-concept and its outcome. Based on the data, self-concept and intrinsic motivation

described the employee's ability for self-direction (i.e., the ability to make decisions in everyday life while being active and taking responsibility). Thus, self-direction in this context seemed to be an approach as adults in the workplace actively engage and participate in learning situations when they are motivated and have a strong self-concept.

Self-direction is especially attached to problem-oriented situations of learning at work, but it also relates to independent and communal learning situations in which the learning practice involves guiding one's own or others' work and helping with it. These seem to be fundamental starting points for taking responsibility and being active, which can be referred to as an adult learner's self-direction. Strong self-direction, by contrast, appeared to increase engagement, commitment and individual-driven motivation for learning situations. Learning was thus necessary to overcome problems, but it became engaging and productive if it was personally meaningful to the individual:

> *Learning [at work] depends very much on what interests you or what you want to invest in. (Police Officer, 21, woman, senior constable, senior).*

> *You need to plan and think for yourself what issues you want to tackle and what issues you want to solve . . ., how I want to present things, so I can pretty well decide for myself what I think is good, and that is motivating. (Police Officer, 17, man, senior constable, senior).*

Especially police officers were unanimous, for example, in their belief that personal motivation and interest were necessary to their job and that motivation was primarily based on a desire to help people and influence society. Particularly in relation to preventive policing, the respondents were motivated by opportunities for development work and trying new things. By contrast, the job was also described as requiring responsibility, critical examination of alternatives and the courage to make decisions that they considered right. Preventive policing provided opportunities for development and learning through independent decision-making:

> *[It motivates you when] you get to play with your own ideas, try different things and develop. It's fun in its own way. (Police*

Officer, 6, woman, senior constable, senior).

However, also people working in the technology sector talked about motivation in terms of personal desire, interest and even passion for learning, realisation and deep thinking. They stated that learning provided inspiration, experiences of success, a sense of accomplishment and, more generally, a "good feeling," which made it intrinsically motivating.

Self-direction also appeared to have a social dimension. In this case, the motivation behind self-direction was not only personal meaningfulness but also the feeling of being part of a group. In particular, collaborating with colleagues and experiencing a sense of community were viewed as valuable and motivating factors for learning:

> *Every person needs the same things: to belong to a group and feel valued. These are basic needs. (Technology Specialist, 22, woman, HR-director, senior).*

> *The work community [motivates]. We certainly feed off each other, even if we don't initially see things in the same way. (Police Officer, 20, man, constable, junior).*

Both in the technology sector and the police, the need to belong to a group and be appreciated by others was regarded as a fundamental human need that work was expected to fulfil.

Experientiality

Experiences and *readiness to learn* also seemed to be related. Experiences were described as a key factor in creating learning readiness. Thus, *experientiality* can be seen as a characteristic of an adult that includes both elements: experiences and readiness to learn. Experientiality therefore means a starting point for learning, where previous experience can be used and applied, but where work also provides suitable learning experiences through which employees' readiness for new things is built.

The various work scenarios were interconnected and consequently formed learning paths and contexts, equipping individuals with experiences and enhancing their abilities. The desire to enhance one's own actions, career and performance in the workplace or to gain

a deeper understanding fostered the preparedness to acquire new knowledge. However, this readiness was closely tied to acknowledging one's own gaps in learning, such as seeking assistance from a colleague when uncertain and recognising the need for external expertise. In both instances, the typical real-life situations that triggered the learning process involved career advancement or transitioning to a different role, as well as adapting to changes and updates in job responsibilities or work practices. The professionals in the technology sector also highlighted a readiness to transition between jobs that may arise with age and experience. Furthermore, this eagerness to learn was fostered by shifts in employees' personal interests:

> *If I was here at the age of 25, I would not have been ready for it . . . If I was under 30, I would not have been ready to be a manager! (Technology Specialist, 16, man, project manager, senior).*

While the professionals in the technology field emphasised the integration of past experiences with newfound knowledge, individuals within the police organisation highlighted the importance of personal interpretation to discern relevant information from the irrelevant. Those in the technology sector sometimes described learning interactions as debates in which differing perspectives were exchanged. By contrast, the police officers elaborated more on their experiences and discussions, emphasising the significance of their encounters in the learning process. Both the police officers and the technology experts recognised the value of previous experiences gained from studies, work and general life as valuable resources for learning. However, the police officers specifically emphasised the significance of personal life experiences and their application as a learning resource. Personal experiences were regarded as a form of cumulative learning, drawing upon knowledge acquired from foundational training, professional experiences, and hobbies, as well as both work and personal life situations. This learning process involved learning from mistakes, engaging in self-reflection and repeating tasks. By contrast, the professionals in the technology sector also acknowledged the potential drawbacks of experience, such as falling into routines and repeating familiar patterns, as well as the difficulty of deriving new insights from them. As Technology Specialist 11 noted, "it is really hard for people to learn from something they have been doing for a long time." The significance of becoming familiar with new concepts and

persisting in the learning process through experience was also evident in the descriptions provided by the police officers:

> *I have been involved in various national groups, [...], and cooperation groups – a lot of them. And through that, I have gained a broad view of how these things work, and that is where the greatest lessons are learned today. (Police Officer, 12, woman, chief inspector, senior).*

The social dimension of experientiality was particularly evident as shared experiences, which were regarded as beneficial, facilitating a comfortable environment for seeking assistance and support. Working in isolation was deemed impractical, while cooperation was deemed essential. The experiences of others were described as being utilised in both target organisations through joint problem solving, discussion and assistance, as well as by following the examples of others. Asking a more experienced colleague in everyday situations as well as at learning events was mentioned very often, and networking was perceived as essential for learning on the job and developing one's own expertise.

> *We try to have both more experienced designers and junior-level people in the teams so that knowledge is shared in everyday life. (Technology Specialist, 15, customer manager, senior).*

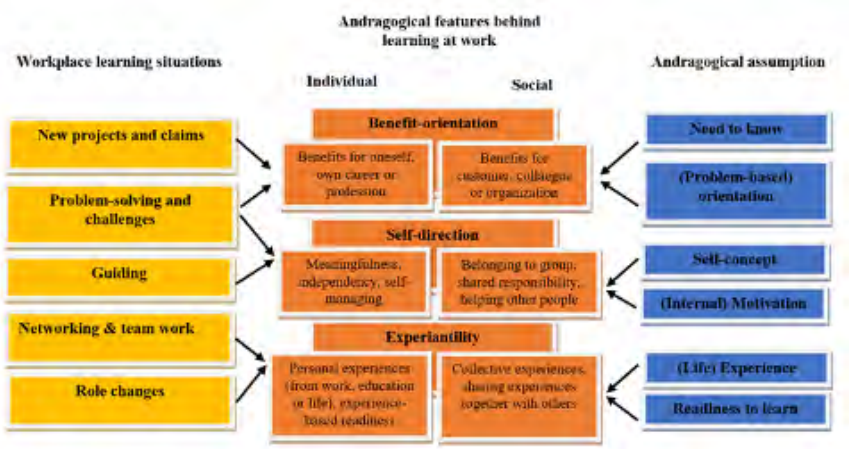
> *It [knowledge] does come from everyone's experience and familiarity; some of it comes from certain sources. (Police Officer, 25, man, senior constable, senior).*

Consequently, in the context of experientiality, learning became an inherent and inevitable outcome of work interactions, often occurring subconsciously. The value of being part of a group and collaborating actively engaged individuals in the learning processes.

Summary of the findings

In this research, we looked at the andragogical features behind learning at work. We found three main themes describing the key features: benefit orientation, self-direction and experientiality. The findings of the study are presented in Figure 1.

Figure 1. Andragogical features behind learning at work.



The andragogical assumptions related to the need to know and problem-based orientation appeared empirically as interconnected, which can be called the benefit orientation of the adult learner. This starting point was particularly evident in the experiences of the interviewees regarding learning situations related to problem solving and new kinds of claims, projects and challenges. Similarly, self-concept and intrinsic motivation were strongly linked, as motivation was both a prerequisite for the realisation of self-concept and its outcome. These seemed to be fundamental starting points for taking responsibility and being active, which can be referred to as the adult learner's self-direction. Self-directedness was emphasised not only in problem-solving situations but also in learning situations where the focus was on guiding and helping one's own work or that of others. Experiences and readiness to learn also seemed to be related. Experience was described as a key factor in creating learning readiness. Thus, experientiality can be seen as a characteristic of an adult that includes both elements: experiences and readiness to learn. In the interviews, experientiality particularly came to the fore in learning situations where the focus was on teamwork or networking, as well as in various role changes. All the described key features revealed both individual and social dimensions.

Discussion

When the assumptions of andragogy are examined in the context of

work, andragogy theory aligns closely with the theory of workplace learning. Moreover, based on our study, connecting these two frameworks – andragogy and workplace learning – it was possible to construct a picture of andragogy more as sociocultural rather than individualistic, as the theory's social and communal dimensions become apparent. This empirical research contributes new insights to the field of workplace learning by highlighting three andragogy-based principles that guide the actions of adult learners: benefit orientation, self-direction and experientiality in learning.

However, the primary contribution of this research is directed towards the field of andragogy research and literature. First, the study highlights the overlapping nature of andragogy's assumptions (Knowles et al., 2020) in the context of workplace learning, consolidating our theoretical understanding. From the interview data, it was possible to locate these overlaps and, on this basis, to describe the assumptions outlined earlier more concisely through three key themes (Figure 1). The three themes provide a more appropriate structure for examining the characteristics of the adult learner at work and for exploring and developing pedagogical practices that reflect these characteristics. Second, according to this research, the assumptions of andragogy theory emerge as empirically central to the context of workplace learning, reinforcing the role of andragogy even in situations detached from adult education. Third, the study's identification of the social dimensions of andragogical features, a facet previously absent from andragogy's assumptions, underscores earlier criticisms that accused andragogy of overlooking sociocultural, interactional and environmental contexts (Holec, 1981; Merriam & Caffarella, 2012). This research sheds light on the social dimensions within andragogy, thus bridging the gap concerning prior studies that have emphasised sociocultural perspectives and have contributed insights into sociocultural aspects. These social aspects encompass the significance of the learning environment, the broader context, interaction and the involvement of various actors in adult learning (e.g., Lemmetty, 2020; Baskett, 1993; Bell, 2017; Hiemstra & Brockett, 2012; Foucher, 1995; Kessels & Poell, 2004). This study underscores that the role of sociality as a guiding and orienting force in adult learning should not be dismissed in andragogical approach.

While in education it would be important to build andragogical starting points for experientialism, self-direction, and benefit orientation, in

workplace pedagogy these seem to occur almost naturally in the contexts of this study. Technology work and preventive police work are perceived by interviewees as meaningful and as work that benefits others (such as clients), with opportunities for taking responsibility and actively guiding one's own learning. Moreover, by embedding the learning process in concrete problems and project situations, the benefits are clear. In addition to the practical experience gained, the interviewees felt that they could also draw on their other life experiences. To understand the social dimensions of andragogy, it is essential to understand the role of others (colleagues and clients) in motivation development. Similarly, experientiality in andragogy should be understood not only as an individual's personal experience but also as a group experience, where sharing experiences is more central than having them. Based on the identified three key themes that provide a concise framework for understanding adult learners in the workplace, this study suggests that organisations can utilise andragogical principles to design effective learning programs that leverage existing knowledge and foster problem-based learning. While Noe and Ellingson (2017) argued that self-directed learning for adults should be voluntary and not managed or guided by the organisation's formal HR rules or policies, our study emphasises the need for organisations to consider the use of individuals' experiences, understanding the individual and social factors behind self-direction and motivation as well as to make the benefits of learning visible for employees.

Given the inherent characteristics of qualitative research, the present study does not aim to generalise information; instead, it endeavours to provide descriptions of individuals' actions within a particular context (cf. Hammersley & Atkinson, 2007; Levitt et al., 2017). The current research was carried out in two organisations to maximise the comprehensiveness and depth of the interview data. However, it is important to note that the findings are based on the data only from two contexts, which raises questions about their applicability to other types of organisations or those operating in different sectors. Additionally, it is worth mentioning that the study included participants with diverse job titles. However, their descriptions were not filtered through their specific roles, leading to a partial oversight in terms of the roles of job tasks in relation to learning. However, we attempted to increase the trustworthiness of this research by, for example, considering research

ethics and factors related to the study's reliability at every phase and in every decision made. We have emphasised the thorough description of the data collection and analysis processes in the reporting of this study, as well as providing data-based quotes and excerpts in the text to validate the interpretation of the findings (cf. Lincoln and Guba, 1985). The findings are presented clearly, and we have paid attention to the scientific and topical relevance of our sources. At the outset of the study, the participants were thoroughly informed about the research and gave their voluntary consent to participate. We anonymised the identification of the target organisations and individual respondent data to ensure that the respondents cannot be identified in this research report.

In further research, it would be interesting to explore the ways in which people working in different industries experience these andragogical features. An approach that also asks directly about the lack of features, for example where learning situations lack self-direction, where benefits are difficult to perceive or where experientiality is not present, would be key to providing a more comprehensive picture of workplaces as andragogical environments and also their shortcomings. It is important to investigate andragogy from the perspectives of individuals in various roles, considering the potential differences among them. In essence, further research is needed to explore the application of andragogy in different work contexts and to examine the effectiveness of andragogical guidance and teaching methods.

Acknowledgements

This work was supported by the Finnish Work Environment

Fund (grant number: 200324) and Foundation for Economic Education (grant number 210159).

References

Baskett, H. K. M. (1993). *Workplace factors which enhance self-directed learning*. 7th International Symposium on Self-Directed Learning, West Palm Beach, FL, United States, January 21–23. Retrieved from https://files.eric.ed.gov/fulltext/ED359354.pdf

Bell, B. (2017). Strategies for supporting self-regulation during self-directed learning in the workplace. In R. A. Noe & J. E. Ellingson (Eds.), *Autonomous learning in the workplace* (pp. 117–134). Routledge. https://doi.

org/10.4324/9781315674131

Billett, S. (2014). Mimesis: Learning through everyday activities and interactions at work. *Human Resource Development Review, 13*(4), 462–482. https://doi.org/10.1177/1534484314548275

Billett, S. (2020). *Learning in the workplace: Strategies for effective practice*. Routledge.

Birzer, M. L. (2003). The theory of andragogy applied to police training. *Policing: An International Journal, 26*(1), 29–42. https://doi.org/10.1108/13639510310460288

Boucouvalas, M. (2009). Revisiting the concept of self in self-directed learning: Toward a more robust construct for research and practice in a global context. *International Journal of Self-Directed Learning, 6*(1), 1–11.

Brandi, U., & Christensen, P. (2018). Sustainable organisational learning: A lite tool for implementing learning in enterprises. *Industrial and Commercial Training, 50*(6), 356–362.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brockman, J. L., & Dirkx, J. M. (2006). Learning to become a machine operator: The dialogical relationship between context, self, and content. *Human Resource Development Quarterly, 17*(2), 19–221.

Canning, N. (2010). Playing with heutagogy: Exploring strategies to empower mature learners in higher education. *Journal of Further and Higher Education, 34*(1), 59–71. https://doi.org/10.1080/03098770903477102

Carbonell, K.B., Stalmeijer, R.E., Könings, K.D., Segers, M. van Merriënboer, J.J.G. (2014). How experts deal with novel situations: A review of adaptive expertise. *Educational Research Review, 12*, 14-29.

Chan, S. (2010). Applications of andragogy in multi-disciplined teaching and learning. *Journal of Adult Education, 39*(2), 25–35.

Dirani, K. (2017). Understanding the process of transfer of training in a military context: Marching into new roles. *Advances in Developing Human Resources, 19*(1), 101–112. https://doi.org/10.1177/1523422316682929

Dochy, F., Gijbels, D., Segers, M. & Van den Bossche, P. (2022). *Theories of workplace learning in changing times*. Second edition. Routledge.

Foucher, R. (1995). *Enhancing self-directed learning in the workplace: A model and a research agenda*. University of Quebec Press.

Garaus, C., Furtmuller, G., & Guttell, W. H. (2016). The hidden power of small rewards on autonomous motivation to learn. *Academy of Management Learning & Education, 15*(1), 45–59.

Hammersley, M., & Atkinson, P. (2007). *Ethnography: Principles in practice*. Routledge.

Hiemstra, R., & Brockett, R. G. (2012). *Reframing the meaning of self-directed learning: An updated model.* Proceedings of the 54th Annual Adult Education Research Conference, Saratoga Springs, NY, United States (pp. 155–161).

Hoekstra, A., Beijaard, D., Brekelmans, M. & Korthagen, Fred. (2007). Experienced teachers' informal learning from classroom teaching. *Teachers and Teaching 13*(2), 191 – 208.

Holec, H. (1981). *Autonomy and foreign language learning*. Pergamon.

Holton, E. F., Swanson, R. A., & Naquin, S. S. (2001). Andragogy in practice: Clarifying the andragogical model of adult learning. *Performance Improvement Quarterly, 14*(1), 118–143. https://doi.org/10.1111/j.1937-8327.2001.tb00204.x

Janssens, L., Smet, S., Onghena, P., & Kyndt, E. (2017). The relationship between learning conditions in the workplace and informal learning outcomes: A study among police inspectors. *International Journal of Training and Development, 28*(2), 92–112. doi.org/10.1111/ijtd.12095

Jeong, S., Han, S. J., Lee, J., Sunalai, S., & Yoon, S. W. (2018). Integrative literature review on informal learning: Antecedents, conceptualizations, and future directions. *Human Resource Development Review, 17*(2), 128–152. https://doi.org/10.1177/1534484318772242

Kessels, J. W. M., & Poell, R. F. (2004). Andragogy and social capital theory: The implications for human resource development. *Advances in HRD, 6*(2), 146–157.

Knowles, M. (1975). *Self-directed learning*. Follet.

Knowles, M. (1980). *The modern practice of adult education: From pedagogy to andragogy*. Cambridge Books.

Knowles, M. (1989). *The making of an adult educator: An autobiographical journey*. Jossey-Bass.

Knowles, M., Holton, E. F., & Swanson, R. A. (2012). *The adult learner: The definitive classic in adult education and human resource development.* Routledge.

Knowles, M., Holton, E., & Swanson, R. (1998). *The adult learner*. Gulf Publishing.

Knowles, M., Holton, E., Swanson, R., & Robinson, P. (2020). *The adult learner: The definitive classic in adult education and human resource development.* Routledge.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall.

Kyndt, E., Dochy, F., & Nijs, H. (2009). Learning conditions for non-formal and informal workplace learning. *Journal of Workplace Learning, 21*(5), 369–383. https://doi.org/10.1108/13665620910966785

Lemmetty, S. (2020). *Self-directed workplace learning in technology-based work*. Q4 Ph.D.dissertation, Jyväskylän yliopisto, Jyväskylä,Finland.

Leslie, B., Aring, M. K., Brand, B. (1998). *Informal learning: The new frontier of employee & organizational development*. Economic Development Review, 15, 12-18.

Levitt, H. M., Bamberg, M., Creswell, J. W., Frost, D. M., Josselson, R., & Suárez-Orozco, C. (2018). Journal article reporting standards for qualitative primary, qualitative meta-analytic, and mixed methods research in psychology: The APA Publications and Communications Board task force report. *American Psychologist, 73*(1), 26–46. http://dx.doi.org/10.1037/amp0000151

Lincoln Y. S., & Guba E. G. (1985). *Naturalistic inquiry*. SAGE Publications.

Lindeman, E. (1926). *The meaning of adult education*. New Republic Inc.

Loeng, S. (2017). Alexander Kapp: The first known user of the andragogy concept. *International Journal of Lifelong Education, 36*(6), 629–643.

Margaryan, A. (2019). Workplace learning in crowdwork: Comparing microworkers' and online freelancers' practices. *Journal of Workplace Learning, 31*(4), 250–273. https://doi.org/10.1108/JWL-10-2018-0126

Marsick, V. J., & Watkins, K. E. (1990). *Informal and incidental learning in the workplace*. Routledge.

Merriam, S. (2001). Andragogy and self-directed learning: Pillars of adult learning theory. *New Directions for Adult and Continuing Education, 89*, 3–13. https://doi.org/10.1002/ace.3

Merriam, S., & Caffarella, R. S. (2012). *Learning in adulthood*. Jossey-Bass.

Mezirow, J. E. (1990). *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning*. Jossey-Bass.

Noe, R. A., & Ellingson, J. E. (2017). Autonomous learning in the workplace: An introduction. In J. E. Ellingson & R. A. Noe (Eds.), *Autonomous learning in the workplace* (pp. 1–12). Routledge. https://doi.org/10.4324/9781315674131

Poell, R. (2014). Workplace learning theories and practices. In J. Walton & C. Valentin (Eds.), *Human resource development: Practices and orthodoxies* (pp. 19–32.). Palgrave MacMillan.

Schei, V., & Nerbø, I. (2015). The invisible learning ceiling: Informal learning among preschool teachers and assistants in a Norwegian kindergarten. *Human Resource Development Quarterly, 26*, 299–328. https://doi.org/10.1002/hrdq.21213

Tessier, A., Croteau, C., & Voyer, B. (2021). Exploring the usability of the andragogical process model for learning for designing, delivering and evaluating a workplace communication partner training. *Journal of Workplace Learning, 33*(8), 577–590.

Tynjälä, P. (2013). Toward a 3-P model of workplace learning: A literature review. *Vocations and Learning, 6*(1), 11–36. doi.org/10.1007/s12186-012-9091-z

University of Jyväskylä (2023). Leading sustainable learning-project page. Retrieved from https://www.jyu.fi/en/projects/leading-sustainable-learning-at-work

About the authors

Soila Lemmetty, PhD, is a postdoctoral researcher at University of Eastern Finland, School of Educational Sciences and Psychology. She led her Postdoctoral Research project Employee-Driven Learning and Innovation (EDLI) funded by the Academy of Finland. Her research focuses on the areas of learning, innovation and wellbeing at work. She has also the title of docent (in the field of workplace learning and innovations) in the University of Jyväskylä.

Kaisu Hämäläinen, M.A. (Education) worked at the University of Jyväskylä as a research assistant. Her master's thesis, completed in 2023, deals with the construction of compassionate interaction between members of the work community. Her areas of interest are compassion, communication and interaction of the work community and well-being at work.

Kaija Collin, PhD, works as an associate professor at the University of Jyväskylä, Department of Education Sciences. Since 2000, she has been studying learning at work and has subsequently expanded her research activities to include professional identity and agency, human resource management, creativity, sustainable learning, and well-being.

Contact details

Email: *soila.lemmetty@uef.fi*

Email: *hamalainen.kaisu.m@gmail.com*

Email: *kaija.m.collin@jyu.fi*