Handelshøyskolen BI

GRA 19703 Master Thesis

Thesis Master of Science 100% - W

Predefinert informasjon

Startdato:	16-01-2022 09:00	**Termin:**	202210
Sluttdato:	01-07-2022 12:00	**Vurderingsform:**	Norsk 6-trinns skala (A-F)
Eksamensform:	T		
Flowkode:	202210||10936||IN00||W||T		
Intern sensor:	(Anonymisert)		

Deltaker

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Informasjon fra deltaker

Tittel *:	Employees as self-regulated learners: a case study of employees' upskilling through internal microlearning platforms
Navn på veileder *:	Jan Terje Karlsen

Inneholder besvarelsen konfidensielt materiale?:	Nei	**Kan besvarelsen offentliggjøres?:**	Ja

Gruppe

Gruppenavn:	(Anonymisert)
Gruppenummer:	103
Andre medlemmer i gruppen:	

Master Thesis

Employees as self-regulated learners: a case study of employees' upskilling through internal microlearning platforms

Hand-in date:
14.06.2022

Campus:
BI Oslo

Examination code and name:
GRA 19703 Thesis Master of Science

Supervisor:
Jan-Terje Karlsen

Programme:
Master of Science in Business, Major in Leadership & Change

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Acknowledgements

This thesis marks the completion of our Master of Science in Business with a major in Leadership and Change at BI Norwegian Business School. The work on this thesis was done during the spring semester of 2022. The motivation behind this thesis was to learn more about individual learning and the concept of microlearning which goes hand in hand with the increasing need for new skills in the workforce. We wanted to explore what factors affect employees own learning initiatives when given an opportunity to learn through an internal microlearning platform. This study was done with the cooperation of thirteen employees from a Scandinavian retail group.

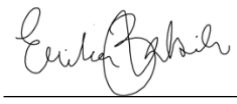
First and foremost, we would like to thank all informants who contributed with honest thoughts, wise reflections, and shared their experiences during the interview process. Also, we would like to thank those who enabled us to get in contact with the participants and the studied organization. The study would not have been possible without you.

Second, we would like to express gratitude to our supervisor Jan Terje Karlsen for all the support, insights, and words of encouragement during this period. His guidance, feedback, and eye for detail were highly appreciated and contributed immensely to our research.

Last, but not least, we would like to thank our families and loved ones for all the encouragement throughout the process. You reminded us that we are capable of extraordinary things, especially at times when we forgot ourselves.

Thank you.

Stockholm/Oslo, 14.06.22



Erika Balsvik Marie Rønnevik

Abstract

Purpose – The purpose of this study was to investigate which factors affect employees' self-regulated microlearning processes. Furthermore, to explore in what way these factors affect the utilization of internal microlearning platforms in organizations.

Design/methodology/approach – A single-case study was conducted on a Swedish retail group with an internal microlearning platform. The data was collected through semi-structured interviews with 13 informants.

Findings – The main findings suggest that there are a total of eight factors affecting employees´ self-regulated microlearning processes. The findings indicate that these, with an expectation of one factor, also affect the utilization of microlearning platforms. In addition to five factors from previous research, this study found evidence suggesting that there are three additional factors that have a significant effect on the self-regulated learning.

Practical implication – The practical implication of this study is extended knowledge about how to create and maintain internal microlearning platforms in organizations. If an organization wants to succeed with the utilization of a microlearning platform, these factors need to be considered.

Research limitations and future research – This study is inherently limited by the chosen research design being a case study. The relatively small sample limits the findings to be generalized to a larger population. Further studies with a larger sample are encouraged. Future studies should also consider studying the correlation between factors in the proposed updated triadic reciprocal causation model.

Originality – The research is uniquely focusing on what factors affect employees' self-regulated learning strategies, and in what way these factors affect the utilization of microlearning platforms. The research topic and questions have received limited previous research.

Keywords – Microlearning, Upskilling, Lifelong learning, Self-regulated learning, Digital Learning, Triadic reciprocal causation, Individual Learning, Organizational Learning.

1. Introduction

The rapid technical and digital development in the world has an unprecedented impact on the world of work (World Economic Forum, 2019). A majority of the global workforce needs significant upskilling in the next years to be able to stay relevant in the job market (Brende, 2019). In addition to learning new things, the half-life of skills is decreasing; a skill learned today will have half of its' value in five years (Lager, 2021).

Changes in contemporary workplaces impacts what and how people learn (Maddox, 2019). New approaches to learning have grown in popularity in organizations. Companies seek effective learning methods that allow employees to utilize and master relevant skills on the job (Emerson & Berge, 2018; Fox, 2016). One of these trends is microlearning platforms, which in recent years has been deemed a promising tool in work-based learning (Leong et al., 2021). Microlearning incorporates delivering digital learning content in small and specific bursts of information, which employees can access at any time (Fox, 2016).

Microlearning takes place in a non-physical environment, making it a form of independent study (Serdyukov & Hill, 2013). It puts the employee in greater control of what and how they learn, increasing engagement to find the solutions necessary to improve skills and productivity (Fox, 2016). Within the academic field of learning, self-regulated learning incorporates which factors affect how individuals take responsibility for learning processes (Nilson, 2013). Self-regulated learners personally initiate and direct their efforts to acquire skills and knowledge. Therefore, microlearning promotes self-regulated learning by its nature (Serdyukov & Hill, 2013).

The factors affecting self-regulated learning have been empirically validated to enhance learning in traditional learning settings such as classroom learning (Wan et al., 2012). While research has been conducted on self-regulated learning in digital learning environments (e.g., Gravill & Compeau, 2008; Santhanam et al., 2008), a limited number of studies have directly connected self-regulated learning to microlearning (Wan et al., 2012). Microlearning itself is an emerging field of academic research, and its relevance is growing (Leong et al., 2021). From 2006 to

2019, the number of publications related to “microlearning” increased by a factor of 47. In a recent review of microlearning, Leong (2021) invites additional research to understand how to increase utilization of microlearning platforms.

While organizations are investing resources to increase the speed of learning with microlearning platforms, there is no consensus in how the potential of the platforms are maximized (Dolasinski & Reynolds, 2020). Together, the increasing prevalence of microlearning platforms and lack of theoretical research on how employees learn through these platforms motivate further studies. There is a need to better understand which self-regulated factors affect learning in a microlearning setting. Further, it is necessary to understand in what way self-regulated learning factors affect the utilization of microlearning platforms. Thus, this thesis sets out to answer the following research questions:

(1) Which factors affect employees’ self-regulated microlearning processes?
(2) In what way do these factors affect the utilization of internal microlearning platforms in organizations?

To answer these questions, a qualitative case study on a Scandinavian retail company focused on food and health will be presented and discussed. By answering these questions, this paper sets out to extend the body of academic literature joining self-regulated learning and microlearning. The aim is to better understand which factors affect individuals to utilize microlearning platforms in an organizational setting. The goal is to help organizations maximize the potential of internal microlearning platforms by providing insights into what factors affect the employees' self-regulated learning strategies.

2. Theoretical background

The purpose of this section is to introduce the theory, models, and previous research relevant to the research question. It starts by presenting learning as a measure to understand the concept of microlearning. Then, it argues why microlearning is applicable to self-regulated learning. Last, it presents the triadic reciprocal model and dive deeper into the personal, behavioral, and environmental factors that makes up the model.

2.1 Learning

When exploring learning theories, there are many definitions, and one is seldom enough to fully cover its complexity (Nagel & Scholes, 2016). The word 'learning' itself has various meanings depending on the context in which it is used. Indeed, learning is often a multi-layered venture involving more than the capacity to acquire information or isolated as receiving a grade on a test (Nagel & Scholes, 2016). According to the Center of Learning and Teaching at the University of California (n.d.), learning is an active process that builds on prior knowledge and occurs in a complex social environment. Moreover, learning is situated in an authentic context and requires learners' motivation and cognitive engagement to be sustained. Within the field of educational psychology, learning is defined as "a relatively permanent change in behavior, knowledge, and thinking skills as a result of experience" (Nagel & Scholes, 2016, p.11).

Building on the definition of learning as a change, several approaches emphasize learning as a product (Harasim, 2017). This product is generally measured through a test score, assuming that a higher score, is the result of a greater learning outcome. However, this assumption can be problematic because it presumes that a person must produce something for learning to occur. Educational Phycologist Professor Roger Saljo changed the concept of learning by suggesting that learning is also a process (Nagel & Scholes, 2016). The process includes the changes in the way people understand, experience, or conceptualize the world around them. Moreover, learning can occur because of an incident or something a person is actively doing to understand the world (Pierrakos et al., 2013). In other words, learning can occur as both planned and unplanned events in organizations, and this is often referred to as formal and informal learning (Laal, 2011).

Formal learning is intended as learning and occurs within an organized and structured context, such as school education or in-company training (Laal, 2011). This form of learning often results in formal recognition, such as a diploma or certificate. In comparison, non-formal learning is embedded in planned activities that are not explicitly designed as learning but contain important learning elements, such as job-related skills acquired at the workplace. The third is informal learning, which results from daily life activities related to family, work, or leisure (Nagel & Scholes, 2016).

Looking at how formal, non-formal, and informal learning occurs in an organizational setting, the different models and theoretical frameworks have taken varying learning approaches. The two most used today are individual and organizational learning (Casey, 2005). According to Casey (2005), the construct of organizational learning emerged in the 1950s with the work of Dearborn and Simon. Definitions of organizational learning are numerous, usually focusing on a change in behavior or cognition or the 'range of potential behaviors' of an organization. Moreover, organizations learn through individuals who act as agents to create knowledge (Akella, 2020). Building on this, individual learning is described as how individuals acquire, interpret, reorganize, change, or assimilate related collections of information, skills, and feelings (London, 2021). Since there is a link between the two approaches, organizations invest in individual learning to increase organizational learning. In other words, individual learning can be seen as a method of organizational learning (Akella, 2020).

2.2 Lifelong learning

Digital innovation and societal changes have profoundly affected how learning is understood during the last decades. Lifelong learning focuses on the constant development of an individual's potential and capacity to continuously acquire new knowledge (Davies & Longworth, 2014). The term lifelong learning indicates that learning should permeate all stages of life; be lifelong (Laal, 2011). In a professional context, lifelong learning is defined as a pattern of informal and formal activities that individuals sustain over time for the benefit of professional development (London, 2011).

Considering the definition of lifelong learning, the learner is at the core of the process (Colardyn & Bjornavold, 2005). Subsequently, a lifelong learner can be identified as someone who acquires new capabilities and skills beyond their formal education (Keating, 2020). A life-long learner looks for opportunities to expand their knowledge and understanding. It involves studying new topics and developing an open-minded, positive attitude about the dynamic nature of the world.

The lifelong learning of individuals is dependent on organizations creating a learning environment that increases the capacity of employees so that they can perform and work to achieve goals (Somaskandan et al., 2022). When looking for new talent, organizations today tend to value skills such as problem-solving and attitudes such as curiosity more than knowledge about a specific topic (Keating, 2020). Instead of filling a specific role, organizations look for individuals who will adapt and stay agile in an ever-changing environment. The half-life of knowledge is, on average, five years, meaning that what you learn today will have half the value in five years (Lager, 2021). Suppose an individual gives up learning after becoming an expert in one thing. In that case, she is likely to see herself surpassed by colleagues and lose relevance as the organization develops (Keating, 2020). It is, therefore, in the organization's best interest to create continuous learning opportunities for their employees. The continuing life of the organization depends on the lifelong learning of its members (Somaskandan et al., 2022).

Expressing how organizations provide lifelong learning for their employees," upskilling" has become a commonly used term. The multi-national audit firm PwC (2020) defines upskilling as: "an organization's clear intent to develop its employees' capabilities and employability and to advance and progress the knowledge, skills, and attitude required to enhance business and individual performance" (p. 3). Connected to this definition is also that upskilling, as a part of lifelong learning, is about providing chances to update basic skills and offering learning opportunities on more advanced levels (Laal, 2011). Upskilling requires establishing the right training programs and incentivizing people to participate (World Economic Forum, 2021).

2.3 Defining and understanding macro vs. microlearning

To stay relevant, organizations in all industries must focus on lifelong learning and adapt their ways of providing employees with learning opportunities (Dolasinski & Reynolds, 2020). Most traditional formal training approaches utilize a single training mode, often lecture-based or over a prolonged period, like seminars or longer courses. One can refer to these approaches as macrolearning, which can be defined as more extended pieces of training that cover broad areas and require considerable investment of time (Hug et al., 2005). Indeed, macrolearning is what most of us refer to as traditional learning. However, in recent years, organizations have found that the learning methods have not kept pace with the rapid change and increasing complexity of jobs in today's work environment. Consequently, new learning methods have emerged, and one is microlearning (Dolasinski & Reynolds, 2020).

2.4 Microlearning

Microlearning is an emerging form of learning, especially in the corporate environment, due to traditional learning activities and theoretical concepts becoming more ineffective (Lau et al., 2019; in Dolasinski & Reynolds, 2020). Compared to traditional scheduled learning activities, employees today expect to learn whenever they want (Leong et al., 2021). In the workplace, people are used to having information at their fingertips finding the answers they need within minutes. Thus, there have been changes in how people view their time and develop their skillset. According to Madden and Govender (2020), businesses' learning and development departments are focusing on concepts of microlearning to support the emergence of fast-paced, multitask-oriented, and digitally savvy employees. From the work-based learning perspective, microlearning has been considered one of the critical topics in talent development (Moore, 2017; in Leong et al., 2021).

Microlearning can be defined as "an approach to learning that conveys information about a single, specific idea in a compact and focused manner" (Maddox, 2019, para. 4). Moreover, microlearning can be seen as a small portion of the traditional macrolearning approach. Therefore, all versions of microlearning correspond with specific versions of macro-learning (Hug et al., 2005). For example, if single letters are part of the micro-level, one can define linguistic communication as the macro level. One distinct difference between macro- and microlearning is where it occurs

(Lynch, 2019). While traditional learning approaches have conventionally had their home in a meeting room or conference center, microlearning appears almost homeless. This informality and flexibility, which are the hallmarks of much microlearning, can make it seem dangerously unanchored. To deal with this, many organizations have invested resources in creating microlearning platforms to control the content and use of this emerging form of learning (Leong et al., 2021).

According to Emerson & Berge (2018), microlearning can facilitate knowledge acquisition in the workplace by engaging and motivating employees to communicate and apply learnings. Microlearning is not just digital learning of short duration but also action-oriented learning with immediate relevance (Beste, 2021). Furthermore, it is a learning technique that operates within the learner's working memory capacity and attention span, providing just enough information to achieve a specific, actionable goal (Maddox, 2019). Moreover, Wertz (2018) argues that instant gratification has become an expectation since the emergence of the Internet and with the immense growth of social media in the big data age (Leong et al., 2021). Also, more and more employees are preferred to take control of their learning process. A previous survey suggests that 80% of employees learn when needed (Leong et al., 2021). Indeed, the need for on-demand training or just-in-time learning is growing, facilitating the development of microlearning.

Microlearning is designed to attract all types of learners to allow them to learn when, where, and what they want (Beste, 2021). Although there are many versions of microlearning, the standard criteria of microlearning focus on a single definable idea or topic and a short learning time, no longer than 15 minutes (Leong et al., 2021). Moreover, the curriculum must be part of the curricular setting, split into modules, and include informal learning elements. Building on that, the microlearning must be made in fragments or episodes, with skill elements or "knowledge nuggets" (Beste, 2021). Moreover, microlearning is usually comparably inexpensive and easy to customize for the respective business. Also, making changes and updates is uncomplicated, ensuring that microlearning lessons are up to date (Paul, 2016; in Beste, 2021).

Research has been conducted on what benefits there are to using microlearning. Dolasinski & Reynolds (2020) argue that the benefit of this approach is to shorten,

focus, and increase the availability of training. According to Leong et al. (2021), the key benefits of using microlearning are (1) better retention of concepts, (2) better engagement for learners, (3) improving learners' motivation, (4) engaging in collaborative learning, and (5) improving learning ability and performance. However, a disadvantage is that microlearning is not suitable for deep learning due to the limited amount of knowledge conveyed (Beste, 2021). Therefore, it works best in contextual settings already familiar to the learner or supplements what employees already know.

While there is an increasing interest in microlearning and many attempts providing upskilling in company settings, relatively modest academic research has been completed (Dolasinski & Reynolds, 2020). Indeed, more studies are necessary to extend the body of research.

2.5 Self-regulated learning

Microlearning takes place in a non-physical environment, making it a form of independent study. Therefore, this form of learning promotes self-regulated learning by its nature (Serdyukov & Hill, 2013). The theory concerning self-regulated learning is a part of social learning theory first presented by Albert Bandura (Edinyang, 2016). Bandura's widely recognized social learning theory highlights that behavioral patterns are acquired and continuously regulated by the interplay of self-generated and external influences (Nabavi, 2012). The term self-regulation refers to the self-directive process through which learners transform their mental abilities into task-related skills (Zimmerman & Schunk, 2001).

Self-regulated learners perform better than non-self-regulated learners in traditional academic and organizational training settings (Gravill & Compeau, 2008; Santhanam et al., 2008). Self-regulated learners view learning as a controllable and systematic process and are prepared to take responsibility for their learning. Instead of relying on various instruction agents, self-regulated learners personally initiate and direct their efforts to acquire skills and knowledge (Nilson, 2013). Indeed, individuals need to view learning as an activity that they do for themselves proactively, rather than as a covert event that happens to them because of instruction (Zimmerman & Schunk, 2001). In an organization, the employees who understand the need and are motivated to learn new skills are arguably self-regulated learners.

2.5.1 Triadic reciprocity model

Self-regulated learning assumes reciprocal causation among three influences: personal, behavioral, and environmental (Nilson, 2013). Personal influences refer to the processes that improve personal functioning, such as setting goals (Goradia & Bugarcic, 2017). Behavioral influences refer to the way learners respond to their performance, such as evaluating one's actions. Last, environmental influences refer to external support, such as the learning culture. Based on these three influences, Zimmerman (1989) presented a triadic reciprocal causation model. Reciprocally does not mean symmetry in the strength of the bidirectional influence of these factors. In some contexts, environmental influences may be stronger than behavior, and personal influences triumph in others. A recent version of the triadic reciprocity causation model is visualized in the figure below.

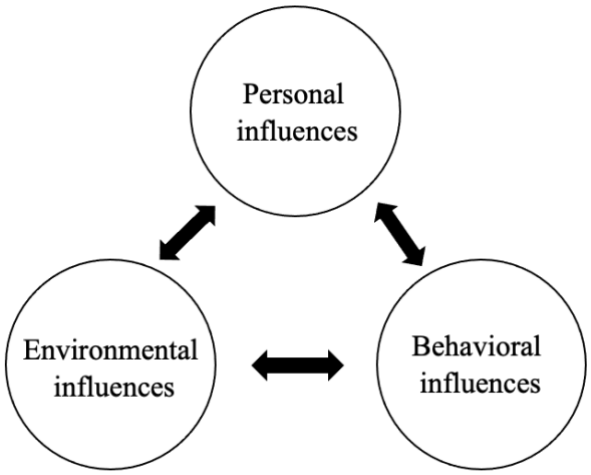


Figure 1. *Triadic Reciprocal Model.* Adapted from Goradia & Bugarcic (2017).

2.5.2 Personal influences:

Educational phycologists have long acknowledged the importance of individual differences in learning (Wan et al., 2012). In connection to e-learning, research identifies personal characteristics such as virtual competence as a significant factor that influences the individual's learning (Wan & Fang, 2006). In a study on microlearning, Wan et al. (2012) argues that virtual competence is a relevant personal factor since microlearning is set in a virtual context. Moreover, basic individual motivational factors are described to influence adult learners' behavior and participation in learning activities (Kozlowski et al., 2001). Motivation and goal orientation has been central to the personal influences in the triadic reciprocal model (Legault, 2016), which is why it is chosen to study in relation to the research questions.

Virtual competence:

As aforementioned, microlearning is often set in a digital, virtual environment. Thus, individual performance in microlearning is likely to depend on virtual competence (Wan et al., 2012). Virtual competence refers to an individual's ability to leverage virtual settings to their maximum potential and the knowledge, skills, and abilities individuals possess to perform in any virtual environment (Sharda et al., 2004). Previous studies have shown that virtual competence positively affects digital learning effectiveness and learner satisfaction (Wang & Haggerty, 2011). Individuals with a high virtual competence are more comfortable with and capable of applying self-regulated learning strategies that involve only virtual interactions (Wan et al., 2012). The level of virtual competence also impacts the degree of an individual's willingness to overcome challenges within the virtual environment.

Motivation and goal orientation

For learning to be successful, one must be motivated to imitate the behavior that has been modeled (Legault, 2016). A common distinction is made between intrinsic and external motivation. Intrinsic motivation can be defined as "the doing of an activity for its inherent satisfactions rather than for some separable consequence" (Ryan & Deci, 2000, p.56). In contrast, external motivation emphasizes external rewards received for completing a task (Schmidt et al., 2012).

When intrinsically motivated, a person will learn for the learning outcome or the learning process itself (Legault, 2016). Goal orientation is described to influence adult learners' behavior and participation in learning activities (Kozlowski et al., 2001). A learning goal orientation indicates a desire to perform challenging work, learn new skills, and develop new strategies when working on complex tasks (Wan et al., 2012). Individuals with this orientation often have more positive attitudes toward learning and training (Klein et al., 2006). These goals are set for intrinsic reasons, such as improving their understanding or taking on a specific challenge. Previous studies have shown that learning goal orientation positively influences individuals' self-regulated strategies in virtual learning settings (Gravill & Compeau, 2008).

On the other hand, performance goal orientation is extrinsically motivated and focuses on attaining a constructive judgment of competence (Wan et al., 2012). Extrinsic motivation refers to the performance of behavior motivated by achieving an outcome that is separable from the learning itself (Legault, 2016). Learners who have a performance goal orientation set standards of success based on external assessment, such as test scores, external rewards, or recognition for their learning. Compared to individuals with a learning goal orientation, these learners do not enjoy the learning experience as much (Wan et al., 2012). Likewise, they are less likely to use self-regulated learning processes to improve the overall learning.

2.5.3 Behavioral influences

Compared to the more internalized personal influences, behavior in the triadic reciprocal model represent actions taken by the individual to enhance learning. Within social learning theory, Bandura stresses the fact that behaviors are highly interdependent (Edinyang, 2016). One key component of behavioral influences in self-regulated learning is self-observation (Schunk & Usher, 2011). Moreover, studies have shown that self-evaluation impacts learners' effectiveness and quality of learning (Panadero et al., 2017). It is interesting to study these behavioral factors in the organizational setting and where microlearning is present to extend the body of research on the topic.

Self-observation

Self-observation is a strategy used when employees focus on their behavior and why that behavior exists; employees can then change their behavior to fit their work environment and improve their performance (Breevaart et al., 2014). It refers to being able to monitor one's performance by, for example, keeping a report or record of one's actions, and hence gaining information of how well one is progressing towards one's goals. In the digital microlearning environment, gamification has become a common element in the platforms (Buchem et al., 2020). Gamification elements help self-regulated learners to self-observe while engaging with the platform. When using microlearning platforms, employees can observe their own progress, which could suggest will improve self-regulating behaviors.

Self-evaluation and direct feedback

Compared to self-observation, self-evaluation concerns taking action to make adjustments to ones' learning performance (Panadero et al., 2017). Direct feedback is a kind of self-evaluation that individuals receive from the microlearning platform, especially through gamification (Buchem et al., 2020). It could, for example, be a green checkmark after each correct answer in a learning module, a gold star after a finished level, or a red flag showing that something is missing from an answer. This is a form of direct feedback that help employees learn and perhaps make minor or major modification in their learning behavior (Mone, 2021). According to Dolasinski & Reynolds (2020), feedback is an important element in digital microlearning. In connection with self-regulated learning, self-evaluation is thought to contribute to learning by enhancing the clarity for the learning goals, involving learners in monitoring the learning process, and facilitating reflection about the final product or learning outcome (Mone, 2021).

2.5.4 Environmental influences

In his original model, Zimmerman argued that self-regulated learners must be aware of how their environment affect their learning (Goradia & Bugarcic, 2017). Individuals' learning is dependent on organizations creating and sustaining a culture of learning (Walker, 2001). The fact that an organization has invested in a microlearning platform suggest that there is a learning environment around the individual (Tanyaovalaksna & Li, 2013). Moreover, Wan et al. (2012) studied e-learning in an organizational context and found that intellectual demands affect the individual's learning environment, however, more research is necessary.

Intellectual demands:

Intellectual demands reflect how challenging and complex an individual perceives the job tasks (Gray & Meister, 2004). Since job tasks form the environment around an individual, it is an environmental factor that affects self-regulated learning (Wan et al., 2012). A previous study shows that individuals with more intellectually demanding jobs are required to upgrade their skills to more extent than others (Fila et al., 2017). By definition, intellectually refers to the ability to think and understand things, especially complicated ideas (Cambridge Dictionary, n.d.). If a job is intellectually demanding, it encourages individuals to challenge themselves by

solving problems and analyzing information (Indeed, 2021). It could, for example, include working with data and analyzing information to make decisions, interacting with other people, or working with specific tools that require you to shift between tasks to understand how things work. Individuals who initiate learning to meet their immediate job requirements are more motivated to acquire new skills and are more likely to use self-regulated learning strategies (Wan et al., 2012). Further, the purpose of learning is to obtain job-related knowledge and skills relevant to finishing a specific task and/or improve overall job performance.

Learning culture in organizations:

A learning culture is the values held and adopted behaviors towards learning in an organization (Gil & Mataveli, 2016). A more specific definition is offered by van Breda-Verdujin and Heijboer (2016) as "a collective, dynamic system of basic assumptions, values and norms which direct the learning of people within an organization" (p.124). Organizational culture is traditionally categorized into three levels: artifacts, imposed values, and assumptions (Schein, 2010). Translated to a learning culture: the artifacts include how learning is organized and, for example, if there are obligated curricula (van Breda-Verduijn & Heijboer, 2016). For values, it includes the mission statement of the organization and the values stated in the vision of learning. For the assumptions, the real beliefs related to how people can develop themselves, if there is an assumption that the individuals are innately lazy or by nature motivated and hard-working.

If the organization provides learning opportunities to employees, they will be more committed to organizational learning and self-development (Gil & Mataveli, 2016). Arguably, individuals' work environment will affect their learning. Although organizational culture and self-regulated learning are two extensive researched topics, there is still a need to connect these two areas to learn how organizational culture affects the self-regulated learning of individuals.

3. Research Methodology

This chapter aims to present and describe the research method selected in this thesis. First, the research design and method choice are discussed and argued in detail. Then, the case selection, data collection, data analysis, and data evaluation are further explained and discussed. Lastly, ethical considerations associated with the method is presented.

3.1 Research design and method

When choosing a research approach, the nature of the research area must be considered (Bryman et al., 2019). This study aims to understand which factors affect employees' self-regulated microlearning processes and in what way these factors affect utilization of internal microlearning platforms. This thesis does not test hypotheses or analyze predefined variables but rather explore people's thoughts and opinions regarding microlearning and the factors influencing their relationship with it. Therefore, a qualitative research approach was chosen. Qualitative research has an inductive view of the relationship between theory and research and is concerned with generating theory explaining phenomenon rather than testing it (Bryman et al., 2019).

This study was conducted as a case study design because it is the preferred strategy when answering research questions with "how" and "why" aspects (Yin, 2018). The case study approach is a widely used research design in business research (Bell et al., 2019). A case study, also known as intensive qualitative study, is mainly referred to as a location, such as a workplace or an organization (Bukve, 2016). A case study distinguish from other research designs focusing on a bounded situation or system, an entity with a purpose and functioning parts (Yin, 2018). Although many research methods could be applied to case study design, qualitative methods are the most common (Bryman et al., 2019). The qualitative methods allowed for unstructured interviews, which was helpful in the generation of an intensive and detailed examination of the case (Yin, 2018).

3.2 Case selection

The case selection for this thesis were based on purposive sampling, which implies that the case selected were able to provide sufficient relevance to the research question (Bell et al., 2019). Following the research questions there was a wish to study employees with access to an internal digital microlearning platform. Therefore, the first criterion was that the organization had its own internal microlearning platform. Also, we wanted to study an organization that worked strategically with a learning platform. Moreover, there was a desire to have access to different parts of the organization to cover the different occupations and get diversity in the informants.

3.3 Data collection

Interviews were the primary technique for collecting and analyzing data in this thesis. Overall, interviewing as a data collection method enabled the informants to express understanding and opinions, as well as emphasize what was considered important (Bryman et al., 2019). Secondary data was gathered through an initial meeting with the Head of Learning in the studied organization. This gave us valuable information on how the organization work with learning and its' strategies for increasing employees learning through their microlearning platform.

The interviews were of semi-structured nature, as they followed a pre-determined interview guide. Moreover, the semi-structured nature of our interview guide allowed for flexibility throughout the data collection process (Bryman et al., 2019). The interview guide was tested before the actual data collection began to ensure that it would provide relevant data to answer the research questions. During the data collection process, questions, the structure of the interview, and framing of questions where iterated and adapted to ensure that the conversation flowed unimpeded. If there was a topic we wanted to dive deeper into or gain a further understanding of, this method allowed us to ask follow-up questions or ask interview objects to expand on specific questions. Another strength of our method was that it allowed for clarification and limited derailing interpretations of questions during the interviews, which strengthened the validity of the data collected (Yin, 2018).

One disadvantage of this data collection is that the data became dependent on the interaction between the interviewer and the interview objects (Kvale & Brinkmann, 2009). As a way to minimize this risk, both author of this thesis attended all interviews. Moreover, by creating a non-formal setting it allowed for the interview object to be more comfortable, which enhanced their willingness to share opinions more genuinely (Bryman et al., 2019).

Lastly, data collection through interviews was time-consuming, both in terms of collecting, transcribing, and analyzing the data. In the research process, the aim was to collect and transcribe data as efficiently as possible to give enough time to thoroughly analyze the data. After the first meeting (informant 0), where secondary data was gathered, a total of 12 informants were interviewed over roughly a two-week period in February and March 2022. The number of interviews was dependent on the quality, detail, and depth of the data collected. The goal was to reach saturation in the data collection process, which would imply that each additional interview would not increase the margin of quality of the data collected (Guest et al., 2006). All interviews were held digitally and lasted on average 40 minutes. Audio recordings were used to record the interviews both as a tool to transcribe the interviews but also to hold the conversation as natural as possible for the informant. Initially, a list of 18 employees who had volunteered to participate in the study was received. After conducting interviews with thirteen informants, it was considered that the study had reached the saturation goal of the data collection.

3.4 Informants

The informants where chosen based initially on purposeful sampling, and later voluntary sampling. Purposeful sampling because we wrote an introduction of our thesis which was sent out to employees in the organization with the help from the HR-department. The e-mail stated that the thesis was directed towards their own experience with digital learning. This was purposive sampling because we wanted to sample participants that would be relevant to our research question (Bryman et al., 2019). Followingly, voluntary sampling was used as the informants volunteered to participate in the study by replying to the mail from the HR-department (Bell et al., 2019). We received a list of voluntary informants with information about their occupation. This allowed us to prioritize the informants who gave us the most diversity in occupation and department. The sample had an even gender division of

seven females and six males. All informants were at the time of the interviews full-time employees at the organization, so-called “knowledge workers”, and based at the headquarters of the studied organization.

Table 1. Informants

Informant no.	Department and role	Date
0	Human Resources – Head of Learning	2022.02.16
1	Marketing – Project Leader	2022.03.09
2	Marketing – Event Manager	2022.03.15
3	Human Resources – Agile Coach	2022.03.15
4	Marketing – Content Manager	2022.03.16
5	Human Resources – Project Leader	2022.03.17
6	Human Resources – Strategic Planning	2022.03.18
7	Human Resources – Learning Partner	2022.03.18
8	Human Resources – Process Specialist	2022.03.18
9	Strategy & Information – E-commerce Director	2022.03.21
10	Strategy & Information – Product Manager	2022.03.21
11	IT – Business Analyst	2022.03.21
12	Strategy & Information – Automation Manager	2022.03.30

3.5 Data analysis

A significant challenge in qualitative research is the lack of well-established and widely accepted rules for the analysis of qualitative data (Bryman et al., 2019). In the data analysis, we applied grounded theory because the method provides a set of procedures for shaping and processing rich quantities of data (Bell et al., 2019). Grounded theory has become a widely used framework for analyzing qualitative data and recognized by the simultaneous process of combining the research process with theoretical development (Suddaby, 2006). The benefit from grounded theory is that it enabled us to better understand the subjective world of the individual by collecting rich personal data and construct theories regarding these elaborate data sources (Walker & Myrick, 2006).

The collected data was analyzed through three analysis steps: preparing and organizing the data, reducing the data into themes through coding, and presenting data in discussion (Creswell & Poth, 2016). In the first stage, all interviews were transcribed in the language in which they were held. This allowed for an accurate understanding of the content and minimized the loss or bias by translation of data (Bell et al., 2019). In this first step, we also made sure to have sorted the secondary data collected from the Head of Learning. The use of supplementary data ensured triangulation in our data collection, to strengthen the results and be able to better understand the informants' answers (Dubé & Paré, 2003).

In the second stage, we coded the transcribed data with regards to grounded theory (Walker & Myrick, 2006). When coding, we applied both open coding and axial coding (Vollstedt & Rezat, 2019). Open coding involves breaking down the data and provide new insights by comparing similarities or differences across the transcripts, while axial coding breaks down categories into subcategories and test these concepts against additional data. These two types of coding were relevant for our data analysis as it proved useful insights and made it easy to break down common aspects across the transcripts. This enabled us to compare the factors from our theoretical framework with the data collected, while at the same time develop new factors outside our existing framework.

Beforehand, the interview guide was created with subcategories, to organize the data collection. These subcategories were used as categories in the axial coding phase. However, to capture the factors outside these categories, we chose to create one category for new factors which consisted of everything the informants said which did not fit into our existing factors, see Table 2 on the next page. Then, the code names used in the open coding stage were used further in the axial coding step. Here, subcategories were based on similarities across these code names.

Table 2. Coding categories

Personal influences	**Behavioral factors**	**Environmental factors**	**New factors**
Virtual competence	Self-observation when learning	Intellectual demanding role	Prioritization
Motivation and goal orientation	Self-evaluation of learning	Learning culture	Other learning platforms
	Feedback in learning		Relevant content

3.6 Data evaluation

Reliability and validity are two common approaches when evaluating data quality in case studies (Dubé & Paré, 2003). Researchers have discussed the relevance of both validity and reliability (Yin, 2018). An alternative approach has been brought forth, suggesting that trustworthiness and authenticity are more relevant in qualitative research design using case studies (Bell et al., 2019). Trustworthiness incorporates four criteria: credibility, transferability, dependability, and confirmability (Bryman et al., 2019), which are closely linked to validity and reliability in research (Bell et al., 2019).

Credibility

Credibility is closely related to internal validity and concerns how believable the findings are (Yin, 2018). In this thesis, several actions have been taken to test the credibility of the findings. First, the informants were chosen based on interest to participate, and being currently employed at the studied organization. For instance, our study did not distinguish between gender, age, and job title when interpreting the findings, which may be factors that could impact self-regulated learning strategies. Instead, we thoroughly discussed findings, sought patterns, and argued for what to include and exclude from the study, to strengthen the credibility (Bell et al., 2019). Second, the interview guide was tested prior to the data collection to ensure that the questions and structure enabled rich and detailed data collection. Further, it was also a test to ensure that given responses helped answer the proposed

research question (Elo et al., 2014). Third, all interviews were recorded and transcribed independently to make it possible to go back to the raw material for further interpretation and review of the data. A potential drawback of audio recording is that interviewees become self-aware and uncomfortable, thus giving less accurate responses (Bell et al., 2019). However, we argue that only note-taking during interviews may be as equally distracting. Further, not audio recording could potentially jeopardize the objectivity and accuracy of the data collection. All informants were offered the transcript of their interview to control citations and phrasing in the final thesis. When presenting findings, we include complete quotes from the informants to not present data out of context. However, since interviews were not held in English, some idiomatic expressions have not been translated literally for apparent reasons.

Transferability

Transferability is related to external validity and concerns if the findings are generalizable and applicable in other situations and contexts (Bell et al., 2019). In general, the discussion concerning transferability in case studies has been extensive. Case studies and small sample sizes make generalizing beyond the specific case difficult (Yin, 2018). Noteworthy is that the purpose of this study is not to generate results applicable to an entire population, but instead increase the theoretical ground on self-regulated learning in a microlearning setting for future research. To increase the transferability, it is important to be transparent with the criteria by which informants were chosen to participate (Bensing et al., 2011).

Dependability

Paralleling reliability, dependability concerns if the findings are probable to be consistent in a replicated study (Bell et al., 2019). High dependability is ensured by describing the research process in detail as well as appropriately processing the data (Elo et al., 2014). This chapter presents and argues for the chosen methods as well as depicts how the study has been conducted. The interview guide is attached in the appendix; however, all interviews were semi-structured. Hence, both the setting and follow-up questions will be difficult to replicate by future researchers. By being transparent in the choices of research design, strategy, and methods, we argue that enough measures have been taken to improve the dependability of this research to a feasible degree (Bell et al., 2019; Yin, 2018).

Confirmability

Conformability concerns if the findings accurately reflect the informants' voices and the limitation of the researchers' biases during the data collection. Conformability is closely related to objectivity, and while full objectivity is unrealistic, certain actions can be taken to limit potential biases (Bell et al., 2019). During the data collection process, conscious choices have been made not to let personal opinions or prejudice have an immediate or purposeful influence on the study. Transcriptions have been made without correction to limit the researchers' biases and perspectives of what was said in the data collection process. All informants were given opportunity to read through their transcription which further strengthens the conformability of the study (Yin, 2018).

3.7 Ethical considerations

When doing research, one is responsible for ensuring that the design of a project and data collection is being carried out with high reasonable and ethical quality. Brinkmann & Kvale (2009) define four ethical guidelines to follow when doing research through interviews: the role of the researcher, informed consent, confidentiality, and consequences.

The role of the researcher

One critical factor for ensuring the quality of research material is the role of the researcher (Kvale & Brinkmann, 2009). A qualitative interview places strict demands on the researcher's integrity because the researcher works as an essential tool for data collection. One potential bias when using interviews is that the researcher's prejudice and personal opinions can affect the results or potential tension between a professional distance and personal friendship (Kvale & Brinkmann, 2009). Consequently, there has been a focus on acting professional throughout the data collection, and we have taken into account to not let our prejudices or personal opinions influence the interview process.

Confidentiality

As a researcher, one also has the responsibility of ensuring the confidentiality of the informants (Kvale & Brinkmann, 2009). In other words, one must protect the informant's integrity. To ensure that the data collected cannot be linked to the

informants, precautions have been made. First, no information was provided to other people than the informants themselves to keep the information confidential internally in the organization. Second, information about the informants and data collected from the interviews have been stored separately. Third, each informant has been given a codename in the thesis to ensure the anonymity of the informants.

Informed consent

Informed consent involves informing the research participants about the purpose of the study and the advantages and disadvantages of being involved voluntarily (Kvale & Brinkmann, 2009). Additionally, it entails informing participants of their right to withdraw at any given time. To stick to the guidelines, an explanation of the purpose of our study, as well as the anonymization of data, was presented to the informants. Moreover, they were also informed before the interviews started that they could choose at any given time to withdraw from the case study. However, none of the informants decided to do so.

The Norwegian National Research Ethics Committees (NNREC) stresses the importance of ethical guidelines in qualitative research. Moreover, they have outlined the informant's confidentiality, integrity, and informed consent principles. We keep the organization and informants confidential to adhere to these guidelines and the organization and informants' requests. Also, we mustn't provide any information that might be traced back to the organization or informants. All informants were asked to sign an Informed Consent Form before or after the interviews. Before starting to collect data, we applied to The Norwegian Centre for Research Data (NSD) and got approval for the research project.

Consequences

Consequences refer to the potential harm the participants might suffer by participating in a research project (Kvale & Brinkmann, 2009). When researching a topic such as factors affecting their learning, they might fear that the answers can be used against them and therefore not provide an honest answer. Consequently, we are responsible for reflecting on the possible consequences for the informants and group they represent. However, our assessment of the aim for our research and the questions we ask is that there is little risk for consequences. Therefore, we have chosen to keep direct citations in our paper.

4. Research context

The studied organization is a Scandinavian retail group established in the early 1900s, referred to as the "Organization". Today, it has grown into multiple subsidiaries with different focuses, and most of its' operations and customers are in Sweden. In 2021, the group showed a revenue of 128 billion SEK and had about 23 000 employees.

To attract and keep valuable talent in the organization, a new people strategy took form in 2017. It included an exploration of what learning arena employees found attractive, combined with an assessment of the skills needed in an organization of modern learning. What followed was an internally built learning platform, referred to as the "Platform".

The Human Resources Department in the Organization is responsible for the Platform, including leading the development, filling it with content, and communicating it to the rest of the Organization. All employees with an Office 365 license have access to the Platform through the intranet, and the Platform had over 8000 unique visits in 2021. The Platform contains a handful "Learning Areas": Mindset, Ways of Working, Team and Leadership, and Data, which covers the general direction of upskilling chosen by the Organization. Each area contains courses that dives deeper in the Learning Area, includes gamification elements, and is built like a "learning journey", including text, videos, and short quizzes. The content is built inhouse using existing knowledge within the Organization. The total length of a learning journey varies; however, each module takes maximum 15 minutes to complete.

Besides from the Platform, there are other digital learning tools in the Organization. The Organization also encourages employees to form informal groups and meet, either physical or digital, to learn from failures, talk about specific subjects and create sub-communities within the Organization. In 2022-2023, a new coherent solution for learning in the Organization will be launched. The goal is to create a complete digital eco-system of learning where all tools are integrated and where employees can share and co-create learning.

5. Findings

In this part, the findings from the data analysis are presented. The chapter begins with presenting the personal influences, then moving to behavioral influences, third environmental influences. At last, additional factors that influences employee's self-regulated microlearning processes in the studied organization which was encountered during the data collection. Each section is divided in subcategories, mirroring how the factors are described previously in the thesis.

5.1 Personal influences

5.1.1 Virtual competence

Virtual competence is important in a digital learning environment because users need to find and feel comfortable in the system. Most informants mentioned that they had a broad understanding of how to utilize the internal digital information platforms (1, 2, 3, 4, 5, 6, 7, 8, 10). In extension, the same informants indicated that they felt comfortable in a digital learning environment. Some informants highlighted that the recent period of working from home during the COVID-19 pandemic had increased their virtual competence (5, 10). Moreover, that virtual competence has become more of a hygiene factor to survive at the workplace today.

> *"The period of working from home has really forced me to teach myself and others all the digital tools available. It has been a revolution. To survive in this evolving world - you must be a cork floating in the water – adjusting to the new circumstances. "(5)*

Although most informant felt comfortable in a virtual learning environment, only some highlighted the easy access to learning opportunities when they are available digitally. These informants mentioned that it enabled them to access learning when it suited them, which had increased the utilization (2, 7, 10, 12).

> *"One advantage is that I can learn when and where I want." (2)*

> *"I think digital learning works really well because [the learning content] becomes more accessible." (10)*

Instead, many informants were quick to compare the digital learning platform to physical, traditional, learning. Informants mentioned that overcoming challenges of virtual learning were difficult. Informants missed the social dimension when learning digitally, compared to traditional learning (1, 2, 3, 4, 5, 12).

> "*Normally, I learn less than in the physical environment. Comparing with conferences or seminars, I miss the personal aspect and the casual dialogue by the coffee machine. You get more interaction in a room than sitting in front of a screen. For me, the physical learning is much better." (12)*

Further, informants particularly mentioned that it is more difficult to ask questions, and that digital learning felt lonelier (2, 4). One informant mentioned how the distance between theory and practice feels greater when learning digitally (4).

> *"On the platform, I must interpret and reflect in my own way and cannot ask questions. I get tools and methods, but the practical application that is missing in the digital format." (4)*

Moreover, informants indicated another challenge with the virtual learning environment, namely that it is harder to concentrate when learning in front of a screen (1, 4, 8), and that other work that is waiting were a distraction (2, 5, 8, 12).

> *"When I'm learning digitally, I start doing other things because my time is a scarce resource. Especially when the material is recorded, my direct attention doesn't matter, I can press pause and do something else". (12)*

> *"When you sit physically you have set aside time. Then you can focus on that. When I just sit and read, people come all the time. I get disturbed and read the same page 7 times." (8)*

5.1.2 Motivation and goal orientation

Intrinsic motivation and learning goal orientation

A general tendency from the data collection was that informants felt intrinsically motivated to learn in their workplace. Multiple informants explained that they learn to have the competence which make them excel in their work (2, 3, 7, 11, 12). Moreover, that they learned to stay relevant for their role.

> *"Yes, not stop developing and learning. That's my role. If not, I would I do not become as relevant in my role - and I love my role." (7)*

Informants mentioned that learning makes it more fun to go to work (2, 11, 12). Some informants highlighted that their age made them feel more motivated to learn, as well as the security they feel when they manage to keep learning and continuously develop their competence (2, 11).

> *"It's important for me to still think it's fun to go to work when I'm as old as I am. And it is important to me that the Organization also appears as someone who keeps up. Then I must learn what we need for it to be the best possible. That's super important, I think. And for my own part, that it should be fun to work". (2)*

Digital learning was often considered a part of the informants own personal development. Incorporated in a strive for personal development, multiple informants highlighted their use of personal goal setting (3, 6, 7, 8, 10, 11). Moreover, how the goal setting positively affected their learning both in terms of learning outcome and time spent on learning activities.

> *"Having goals creates a focus. Then I have a clear picture of what I want to learn and how to do it. I think it's great. Everyone should have it. It's very important." (6)*

In contrast, other informants did not have a concrete personal goal for their learning and did not mention this as something they consider an important factor for learning. However, based on indirect questions, it become clear that they still have a goal orientation which was mainly driven by intrinsic motivation (1, 4, 5, 8, 12).

In contrast to some of the other informants, they had a more general desire to be challenged or develop their career rather than goals set for concrete learning outcomes.

> *"I do not set a goal. My goal is to have fun at work. That I should know I get challenges. That I have been able to go to different places and my superiors have supported it." (8)*

Extrinsic motivation and performance goal orientation

A general tendency from the data collected was that the informants did not feel that the external motivation was the main driver for learning new things at work. However, many of the informants highlighted their own perception of the outcomes of their learning such as being more successful, make more money or have arguments in wage negotiations (1, 6, 8, 10, 11, 12). Moreover, the informants highlighted that having more external rewards when learning will increase their willingness to use the microlearning platform.

> *"Yes, the external motivation is present. To be able to say in wage negotiations etc. that now I'm doing this etc. It's every day you have to learn something new, it's exciting". (10)*

In contrast, some of the informants also highlighted that they don't feel extrinsically motivated to learn with the use of the platform (1,4). Moreover, some informants highlight that they rarely experience the achievement of recognition from others.

> *It is not the case that people at [company] talk about it, like «Yay, I have also taken this course». There is no one sitting and chatting about using the platform. (1)*

Looking at the relation between the informants internal and external motivation, most of the informants expressed that the internal motivation was the main driver for learning. However, some highlighted that the external motivation was bigger than the internal (6, 8, 11).

"I would say a lot. because there are several different motivating factors. After all, it is mainly a higher salary, but also having more fun at work and get more responsibility. That motivates me to learn more." (11)

5.2 Behavioral influences

5.2.1 Self-observation

During the data collection, we conceptualized self-observation by the degree to which the informants believed it significant to track their progress on the digital learning platform. Many of the informants highlighted the importance of visualizing progress and keeping track of one's achievement (1, 2, 4, 6, 7, 11).

"I guess it's some achievement thing. That it is fun that it is rewarding to see that something is completed. it's like checking the to do list. It is quite weird really but is probably quite manly". (1)

"I think it's very important indeed. especially when you sit with things where you do not have a course - because when you have a course you pass the course, 1 2 3 you get a grade or similar. but when you sit and learn things at work, it becomes difficult to keep track of it." (11)

However, there are indications that this is not utilized in the platform they have access to today. Some informants questioned the platform's ability to self-observe, and also said that *if* the platform was clearer on showing progress, one's motivation would increase (2, 4, 6, 7, 11). Moreover, when talking about the importance of being able to track one´s progress, some informants highlighted other digital platforms which incorporate gamification elements that support them in their learning (1, 10, 11).

"Like the SATS app where you have a rating of how many times you have been there and get medals if you have trained twice a week for two weeks and eight weeks. I like to get that medal and something like that might make it feel more motivated". (1)

5.2.2 Self-evaluation and feedback

A general tendency from the data is that feedback and the possibility for self-evaluation is significantly affecting their learning while using the microlearning platform (1, 2, 3, 4, 5, 7, 8, 10, 11, 12). Moreover, it is essential to ensure that the learning potential is maximized and that the informants have understood the content right.

> *"[Feedback] is very important. Otherwise, I don't know that I've learned the right thing. I believe it is very important with feedback, especially if I have not done right." (2)*

Multiple informants highlighted that the platform is not inviting enough to self-evaluation, which affects their utilization of the digital learning platform. Some mention that the feedback is not clear enough, and that self-evaluation elements does not become significant when they use the platform (4, 7).

> *"If [self-evaluation] was clearer on the platform I would put more pressure on myself when doing a course and pay more attention." (4)*

Other informants have not yet experienced that the platform gives feedback (1, 3, 5, 6, 11). These informants even question the presence of feedback opportunities entirely on the platform.

> *"I haven't experienced that [the platform] gives feedback. I wonder if it does it at all?" (6)*

5.3 Environmental influences

5.3.1 Intellectual demands

Although no informant had the exact same role, we saw that the individual's role affected utilization of digital learning platforms. All informants described their roles as everchanging and that they encounter learning opportunities in their day-to-day tasks, which indicated an intellectual demanding job.

> *"In my role, nothing gets boring. I have never been interested in searching for new jobs." (5)*

Looking into how the informants with the most specialized jobs utilize the platform, we see indications that the platform becomes less utilized the more specialized one need to be. Moreover, the content on such a platform becomes too general in relation to what they need to learn. According to our informants, the platform becomes irrelevant for them when needing to learn new things related to their job (1, 2, 7, 8, 9, 11, 12). These informants instead seek out knowledge from other sources.

> *Yes, and courses are very difficult. I have tried to find courses that is relevant for my job, but it is almost impossible at [company]. Therefore, I need to learn that outside the [company], and not on [the platform]. (2)*

Furthermore, the data collection suggests that the informants with more general job tasks are more likely to utilize the microlearning platform. Some of these informants highlight the fact that the content is more relevant to their jobs and there are indications that these informants also find more use of other content on the platform (5, 6, 7, 11).

> *"I have an extremely flexible role. I am expected to take responsibility to control it myself. That's the benefit of it and why it is fun." (5)*

5.3.2 Learning culture:

In the studied organization, there was many indications of a strong learning culture. The informants had multiple examples of how the individual's learning was affected by this learning culture. In general, they all explained how important it is for the informant's own initiative to learn that the organizational culture supports learning (1, 2, 3, 4, 5, 6, 7, 8, 9, 11). For some, the drive for learning even comes from just hearing that it is a learning organization (1, 7). Moreover, it is highlighted that it important that the focus on learning came from different parts of the organization (1, 7).

> *"In [the organization] learning comes from different directions. [...] There is an incredible drive for learning." (7)*

Also, there were indications that the intended learning culture must reach the employees everyday life to be effectful (1). If the culture only becomes words communicated at their website, it will most likely not affect their learning. However, based on our data it is unclear if such a feeling affects their learning.

> *"It is easy for an organization to say that it is a learning organization, and that learning is available from the platform, but my experience is that it is more in theory than present in practice. I feel that [the learning culture] is far from me, personally". (1)*

In connection to how the culture is communicated in the organization, different subcultures could be found. The diversity of occupations within our group of informants gave us a picture of how learning culture can be perceived differently based on where in the organization one work. Moreover, there seems to be a link between where one work in the organization and how well one perceives the learning culture. One informant indeed highlighted that the perceived learning culture depend on where you work in the organization (12).

> *"It depends on where you are, some functions are more rigid in their structure, while others are more flowable and flexible. I think it depend on where you are, what you work with, and your mindset. If there is a lot of other things taking up space, you can't focus on learning new things. You do what you know needs to get done – which is not learning". (12)*

It is not only the communication of the culture that affect learning in the organizations. The informants also expressed how the different aspects of the culture affect their learning process. Three of the informants highlight the importance of having a culture where it is acceptable to fail (2,7, 8, 9).

> *"Few things are about what is right and wrong, but more that the organization is an arena for trial and error. For me, that is the foundation of the learning culture". (7)*

When asked about how the learning culture in affect their learning in general, the data indicated a positive tendency. Looking more concrete into how the learning culture affect their learning through the microlearning platform, it became evident that it is important that the learning platform were embedded in the learning culture (1, 4, 10). One informant highlighted the importance of feeling a sense of community when using such a platform, which in turn is provided from the culture.

> *"If it was more controlled that the last Friday of the month we work with [the platform] and you are required to choose some courses there that suit you. If it were the case that the whole department should take this course and do it together in one room." (1)*

Informants highlighted that there is a lack of information and knowledge about the platform. That there is insecurity about what the platform is supposed to give them, when to use it, and how it compares to other forms of learning available in the organization (1, 2, 5, 7, 8, 10). One informant captured the full extent of the matter:

> *"I don't know what is on the platform and what it can give me. It feels unfamiliar and demands that I know that there is something there that will help me. Why I don't use it... It is difficult, I have to cross an ocean to get to [the platform]". (10)*

5.4 New factors

5.4.1 Prioritizing learning

One topic repeated by the informants was how lack of time and prioritizing affected usage of the learning platform. Most informants witnessed that a busy work schedule did not allow for extensive digital learning on the platform. Many witnessed that learning on the platform were not prioritized since other tasks, more directly connected to their role, were more important (1, 2, 4, 5, 7, 8, 9, 10, 11, 12).

> *"With my role today, the ordinary work hours are not enough to get everything done. I'm in a lot of meetings, sometimes 30-40 meetings per week. And then I also must do all the things I've promised to do in the meetings. I simply don't have room to schedule digital learning [on the platform]". (6)*

> *"I sat aside learning time every Wednesday last year and it did not happen a single time. There are other issues to prioritize, so then learning becomes downgraded." (4)*

In contrast, some of the informants claimed that there *is* enough time to spend time on the learning platform. However, since the learning platform was disconnected from their everyday routines, they did not utilize it (1, 2, 9, 10). The data collection reveled a general lack of learning habits connected to the digital learning platform. In fact, no informant expressed that they had habits directly connected to the learning platform. Moreover, it was clear that learning on the platform was not prioritized, even when they did have enough time to do so (1, 2, 4, 6, 7, 10, 11, 12).

> *"My perception is that you don't take enough time. There is time and you are allowed by your manager, but you must make it a part of your everyday routines". (9)*

> *"I don't really have a direct habit connected to digital learning. I do it when I have time for it. It is more that I learn continuously in my role, by meeting people, and preparing for projects". (4)*

In relation to informants feeling expressing their difficulties with prioritizing using their internal microlearning platform, some of the informants gave examples where they had prioritized learning. These informants emphasized how it becomes easier to prioritize learning on the when it is a direct message from employer that this course is done within a specific timeframe (1, 10, 7). In these situations, informants feel a sense of urgency which makes them prioritize it.

> *"You get e-mails about small courses you must take, for example about data and IT security and then they are very straightforward and clear, so they get by that you go in and do because you are reminded and there is a deadline. Even if it is digital, you need to be told to do so." (1)*

5.4.2 Access to other forms of learning

During the data collection, it became apparent that other forms of learning was more appealing than the digital learning platform. Hence, there were indications that access to other forms of learning affected the informants use of the microlearning platform. During the interviews, other forms of digital learning were often mentioned as preferable learning methods (1, 3, 6, 7, 8, 9, 11).

> *"If I search for something at [the Platform] I'll get one or two hits. If I search the same topic on Google, I will get more than 100 000 – it's not even a race – it feels so much more natural to search for learning at Google and then look at a YouTube-video, rather than go on [the Platform]." (3)*

Moreover, informants mentioned interpersonal learning among colleagues, and utilizing social networks within in the organization (1, 6, 11, 12).

> *"I've worked for many years in the organization, and I have built a network for learning. If I want to know anything, I know who contact for a meeting or a lunch. I have so many sources so [the platform] is not necessary." (6)*

Some of the informants highlighted the positive aspect of having a variety of learning sources available (1, 11). Moreover, that it is not a question of this or that, instead a question about when or where. These informants saw the microlearning platform as one of many tools they access when in need of new competence or skills.

> *"I believe in variety. So, it's good that things are going to happen that keep you interested. I would learn better from a lecture than a video - but variety I think is best." (1)*

5.4.3 Relevant content

During the data collection, many of the informants highlighted the importance of the learning platform having relevant content. A sense that the platform did not contain relevant content for them was one of the main reasons for why the

informants had not utilized the platform much (3, 6, 8, 9, 10). Moreover, the impression of irrelevant content made them not even bother to search for content on the platform.

> *"They do not have the content that I need. They do not have lectures on relevant topics. They have some safety lectures. And those I go through. But that's because they say that it is the focus, and everyone need to take this." (8)*

The same informants also highlight that if the relevant content were to be found on the platform, they would have to be the ones to create the content (3,6,8,9,10). These informants all have jobs where they are the only experts on a narrow topic, making it hard to search for knowledge inside the organization.

> *There is no course about what I need to learn [on the platform]. If it should be included, I think I would be the one responsible for developing that course (3)*

Some of the informants emphasized how they struggle to find the relevant content due to the lack of clear learning outcomes on the platform. Further, the findings suggest that for the informants to know if something is relevant, they must know what the outcome of the course will be and how the content relates to their everyday tasks. (1, 2, 5, 6, 8, 9)

> *"I think that you do not get so many chances. If, after 3-4 times, people feel that they have not yet found what they are looking for – they think that the platform must not have it." (6)*

6. Discussion

This chapter sets out to discuss the findings in relation to prior research. The structure of this chapter will follow as preceding sections: starting with personal factors, moving on to behavioral, and then environmental. Moreover, new factors affecting utilization of microlearning that was discovered during our data analysis will be discussed. Each section will be addressing the thesis' research questions, which factors affect employees' self-regulated microlearning processes, and in what way these factors affect the utilization of internal microlearning platforms.

6.1 Personal factors

Virtual competence

Early in the data analysis there was indications that individuals with high virtual competence were more comfortable in a digital learning setting. Almost all informants highlighted that they knew how to find the learning platform within the digital eco-system of the Organization and understood how to utilize the tools within courses. This supports Wan et al. (2012) who suggests that the level of virtual competence will affect how comfortable individuals feel in a digital environment. None of the collected data showed a reluctance to use the digital learning platform because of lack of virtual competence. As one of the informants (5) highlighted, this can be explained by the recent period of working from home during the COVID-19 pandemic, forcing people to become more comfortable working in a virtual environment. This indeed resonates with recent research suggesting that digitalization in organizations has accelerated due to the pandemic (Pinzaru et al., 2020). Thus, this study finds that virtual competence enables employees to apply self-regulating strategies in their learning process.

Although the findings suggest that there was a high level of virtual competence in the Organization, there was no indication that this affected in what way individuals utilize self-regulatory strategies on the Platform. This opposes previous research suggesting that individuals with a higher virtual competence are more capable of applying self-regulated learning strategies that involve only virtual interactions (Wan et al., 2012). Likewise, the data analysis showed that despite the high virtual competence, individuals had difficulty overcoming the challenges of the virtual learning Platform. According to several informants, challenges with digital

learning, like finding it difficult to concentrate and a lack of a social interactions, was difficult to overcome. This also contradicts previous research saying that individuals with a high virtual competence are more capable to overcome these challenges (Wan et al., 2012). Perhaps a similar COVID-19 explanation as above is applicable here. The study suggests that the recent period of working from home has limited the psychical encounters among colleagues. Individuals in organizations have a desire to engage with each other in a physical environment, thus are less motivated to overcome the challenges of virtual learning. While the study finds that individuals have a high virtual competence, it does not seem that it affects the utilization of the microlearning platform. Instead, having virtual competence is viewed as a fundamental and neutral factor; necessary to engage with digital microlearning, but will not affect in what way the platform is utilized.

Motivation and goal orientation

Like expected, the data analysis showed that individuals are motivated by different things. It is not surprising since motivation in general consists of a mix of internal and external factors (Legault, 2016). The study strongly suggest that individuals are highly motivated by the feeling of having life-long learning interwoven in their role. As one informant (7) expressed, the fear of *not* learning is a motivator itself to utilize the microlearning platform. Further, many informants highlighted a desire to learn for the sake of learning, regardless of the specific learning content. This supports previous studies showing that learning goal orientation positively influences individuals' self-regulated strategies in virtual learning settings (Gravill & Compeau, 2008). Connecting to utilization of the microlearning platform, the data analysis showed that the Platform become an important tool in continuous learning among other forms of learning. This is also supported by previous research saying that individuals with a learning goal orientation often have more positive attitudes toward learning and training in general (Klein et al., 2006). Thus, it seems like intrinsic motivation and learning goal orientation positively affects self-regulating microlearning processes and utilization of internal microlearning platforms.

The data analysis also contained evidence that extrinsic motivation affected employees' application of self-regulated learning strategies on a microlearning platform. As one informant highlighted, being able to negotiate a higher salary was

a motivation to learn through the Platform. This contrasts previous studies suggesting that individuals with performance goal orientation are less likely to use self-regulated learning processes to improve the overall learning (Wan et al., 2012). Connected, during the data analysis we found no evidence to support that a performance goal orientation implied less enjoyment of the learning itself, such as suggested by Wan et al. (2012). It seems, regardless of the motivation to learn through the microlearning platform, making progress towards a goal, will make it an enjoyable experience. Thus, the study suggest that extrinsic motivation and performance goal orientation also affect self-regulating microlearning processes and positively affects utilization of internal microlearning platforms.

6.2 Behavioral influences

Self-observation

In the data analysis there was indications that individuals applied self-observation behaviors while utilizing the Platform. Informants mentioned having had reflected on their learning behaviors, which is in line with previous research stating that this is fundamental for self-observation (Breevaart et al., 2014). The data analysis further suggested that self-observation affected their willingness to self-regulate their learning behavior, because being able to observe oneself while utilizing the Platform was described by an informant (1) “as a way to see progress”. Being able to see progress is considered a key element for gamification in microlearning (Buchem et al., 2020). Thus, self-observation is a factor which affects application of self-regulating strategies on digital microlearning platforms.

Yet, some of the findings suggest that the self-observation element on the Platform was not sufficient in inviting to self-observation. In the data analysis there was indications that individuals had not reflected on the self-observation elements of the Platform. Instead, some of the informants drew parallels to other, non-organizational, microlearning platforms that indeed facilitated for self-observation, which increased self-regulated learning better than the Platform. Returning to gamification, the data analysis suggest that it is an important element to enhance self-observation. Recent research on microlearning emphasizes gamification elements as a crucial factor when building microlearning platforms (Buchem et al.,

2020). This study supports this research, if gamification elements are interwoven in the platform, self-observation will increase utilization of microlearning platform.

Self-evaluation and direct feedback

The findings indicate that employees' self-regulated learning strategies were affected by self-evaluation and direct feedback. The data analysis suggested that direct feedback from the Platform positively affected self-regulatory learning strategies. As highlighted by an informant (2), feedback from the Platform ensured that they were doing something right. This is consistent with previous research suggesting that self-evaluation and direct feedback allows for individuals to make adjustments in one's learning performance (Panadero et al., 2017). At the Platform, self-evaluation is enabled through gamification elements which provides direct feedback, such as quizzes at the end of a course module. This adds to previous research stating that feedback is an important component of microlearning (Dolasinski & Reynolds, 2020). Thus, this study suggest that self-evaluation and direct feedback affects self-regulation strategies on digital microlearning platforms.

Other informants mentioned that the feedback provided by the Platform was not substantial enough, and that it reduced willingness to utilize the platform. Some informants were unsure if the Platform gave feedback at all, implying that the feedback elements of the Platform did not affect them. This strengthens the argument that self-evaluation and direct feedback affects self-regulation strategies in digital microlearning. As an informant (4) highlighted, *if* the feedback was richer and more personal, he/she would utilize the Platform more. This is in line with previous research stating that self-evaluation and feedback will increase the self-regulated learning behaviors (Mone, 2021). Consequently, this study suggest that self-evaluation and direct feedback have a positive effect on utilization of microlearning platforms.

6.3 Environmental influences

Intellectual demands

Intellectual demands reflect how challenging and complex an individual perceives the job tasks (Gray & Meister, 2004). Early in the data analysis there was patterns showing that the informants had intellectually demanding jobs and that self-

regulatory strategies were used to stay relevant in their roles. This supports previous research stating that individuals with more intellectually demanding jobs are more motivated to upgrade their skills (Fila et al., 2017). These findings are also consistent with previous research that employees are more likely to apply self-regulated learning strategies to meet these job requirements (Wan et al., 2012).

The findings also suggest that employees with high intellectual demanding jobs does not consider the Platform the most appealing tool to obtain new knowledge. When in need of new knowledge, the informants instead seek learning sources such as colleagues, specific interest forums, and various internet sources. Indeed, the findings suggest that the content on the internal digital learning platform simply is not enough to drench the knowledge thirst created by their intellectually demanding job. Moreover, there are indications that this factor does not affect the application of self-regulated learning strategies in a microlearning setting. If you have an intellectually demanding job, the study's findings indicate that individuals are less likely to turn to the internal microlearning platform to obtain necessary knowledge. However, there are no indication that a less intellectually demanding job would increase the utilization of the internal digital learning platform. This study suggest that intellectual demand does not affect the application of self-regulated learning strategies and should not be considered a factor that affects learning in a digital microlearning setting.

Learning culture in organizations

The findings strongly suggest that learning culture is a significant factor affecting self-regulated learning. Throughout the data analysis, there was multiple examples of how the individuals' learning was affected by the Organization's culture. One informant (7) articulated that there is an incredible drive for learning throughout the Organization, and that the feeling of being part of a learning organization was reason enough to utilize the Platform. This support previous research stating that if the organization provides learning opportunities to employees, they will be more committed to organizational learning and self-development (Gil & Mataveli, 2016). Moreover, having a shared belief that it is acceptable to fail was mentioned by multiple informants as a foundation to the learning culture. Van Breda-Verdujin and Heijboer (2016) argue that those kinds of shared beliefs is what defines a

learning culture. This leads this study to argue that learning culture clearly affects self-regulated microlearning processes.

Still, the question remains in what way it affects the utilization of the microlearning platform. The findings imply the importance of the Platform being integrated into the larger learning culture of the organization. One informant (1) mentioned that the communicated learning culture felt distant to her, thus having little effect on his/her efforts to utilize the Platform. Related was also that informants mentioned an insecurity of what was expected of them in relation to the Platform. This contradicts previous research by Gil and Hataveli (2016), stating that providing leaning opportunities will increase organizational learning and self-development. Simply providing a platform for learning is not enough. This study suggests that learning culture positively affects utilization of a digital microlearning platform, yet it needs to be connected to the entire ecosystem of learning in the organization to reach its full potential.

6.4 New factors

Prioritizing learning

The data analysis showed a strong indication that individuals struggle to prioritize learning on the microlearning platform. This is contradicting to the inherent design of microlearning, constructed to minimize necessary time consumption (Leong et al., 2021). Comparing to traditional learning, where one must set of a limited time to a seminar or course, microlearning is always available. The logic assumption would be that it is easier to prioritize utilization of the microlearning platform since it is short and not bound to physical locations and a specific time. Paradoxically, the opposite seems to apply according to the findings. One informant (6) highlighted how work weeks were filled with meetings and project work, and that in between this, he/she simply did not have the energy to engage with the Platform. Thinking about how society has developed over the last few years, where many witness a higher tempo in the workplace, could explain that there is simply not enough time to also include microlearning in the everyday flow of work.

However, the findings also suggest that even if there was time in work schedules, informants did not prioritize utilizing the Platform. Instead, the spare time was filled by reading the news and talking with colleagues. This indicates that it is not the

time itself that is the problem, but a challenge to prioritize learning. However, the data analysis showed that when informants got a deadline from a manager to conduct a certain course at the Platform, informants indeed did it. This external push is a contradiction to employees being self-regulated learners (Zimmerman & Schunk, 2001), and illustrates the difficulties with making employees prioritize learning through a microlearning platform. Individuals need an agent of instruction to learn, as they are not able to fully apply self-regulation strategies.

Looking at the three different influences from the triadic reciprocal model: personal, behavioral, and environmental, one could argue that prioritization is an environmental factor since the time one has at work is set by the employer. However, as argued earlier, there is indeed a difference between having time and taking the time to learn. Consequently, this study argue that prioritizing learning is a behavioral factor because it is up to the individual to take deliberate action to utilize the platform. Hence, prioritizing is a behavioral factor affecting the application of self-regulated learning on digital microlearning platforms. When employees prioritize learning, it indeed affects the utilization of the platform in a positive way.

Access to other forms of learning

The data analysis found that the Platform competes over attention with other forms of learning. Indeed, informants highlighted that they were more inclined to seek learning from colleagues or other people in their professional network. Further, internal chat forums where information could be found just-in-time were an attractive option compared to the Platform. Other external sources such as YouTube and Google were also mentioned as appealing when looking to learn something new.

Access to other forms of learning indeed affects the employee's utilization of the Platform. On one hand, having multiple options to choose when learning can be good for the overall learning outcome. On the other hand, research have found that having too many choices affect other situations in one's life negatively. This is often referred to as the paradox of choice. Schwartz (2004) argues that choosing between a set of 30 options is more difficult than having only six. Given that the learning

one seeks can be found at an almost indefinite number of sources, it is not surprising that our findings point the same way. The number of options to where to find knowledge, will impact an individual's choice to use the internal microlearning platform. Thus, this study suggests that having many sources of learning will arguably in fact decrease utilization of the internal microlearning platform.

Looking at how competition with other forms of learnings fit into the three influences in the triadic reciprocity model, one can arguably say that this is an environmental influence. This competition is neither something that improves the employees personal functioning nor affecting the way learners respond to their performance. Instead, the competition from other learning sources is a part of the environment which the employees find themselves in when initiating learning behaviors. Therefore, this study argues that that this is an environmental factor affecting employee's application of self-regulated learning strategies on microlearning platforms.

Relevant content

Based on the data analysis, there were indicators that having relevant content on the Platform affect employees self-regulated learning strategies. Indeed, informants highlighted a struggle to find the relevant content on the Platform when needed. Moreover, the employee's perception of not finding relevant content on the digital microlearning platform in fact reduces their likelihood to use the Platform. This is supported by previous research stating that finding relevant meaningful training at the time of need is daunting to the learner (Dolasinski & Reynolds, 2020) As one informant (6) highlighted, the Platform does not get many chances; if an employee has visited the Platform 3-4 times and failed to find relevant content, the search for learning will continue elsewhere. This is also supported by Dolasinski & Reynolds (2020), arguing that that the possibility to access each microlearning module when the learner needs it is critical for long-term performance support. Thus, this study suggests that having relevant content on the Platform affect the application of self-regulated learning strategies, and positively affect the utilization of microlearning platforms.

Looking at how relevance of content fits into the triadic reciprocal causation model, having the relevant content on the Platform is not a part of the employees personal functioning, thus not being a personal factor. Moreover, it is not directly affecting the way learners respond to their performance and is arguably not a part of the behavioral influences. Instead, the content on the Platform is a part of the environment which the employees find themselves in when initiating learning behaviors. Thus, this study argues that having relevant content on the digital microlearning platform is an environmental factor affecting employee's self-regulated learning strategies on microlearning platforms.

6.5 Updated version of the triadic reciprocal causation model

The discussion above establishes that all but one of the studied factors somehow affect self-regulated learning behaviors on the organization's microlearning Platform. Following previous studies on self-regulated learning (Goradia & Bugarcic, 2017; Nilson, 2013; Zimmerman & Schunk, 2001) we argue a reciprocal relationship between the factors in the updated model. For example, if the employees increase their self-observational behavior, then the goal orientation will increase because of this behavioral change. Also, if the learning culture encourages employees to take time to learn on the platform, it will be prioritized. In the model on the next page (see Figure 2), this reciprocity is illustrated like the original triadic reciprocity model, focusing on a relation between the three influences.

The study suggest that the triadic reciprocal causation model needs to be extended with new factors (see Figure 2). The model below incorporates the additional factors the study has found to affect self-regulation in a digital microlearning setting. These new factors are placed in categories based on the discussion above. Moreover, intellectual demand is removed from the model as it was found not to affect the application of self-regulated learning strategies.

Figure 2 on the next page also illustrates in what way each factor affects the utilization. The factors which affect the utilization positively is illustrated with (+), and the factor with a negative influence is symbolized with (-). Further, the one factor that arguably is a fundamental factor not affecting in one way or another is symbolized with (0).

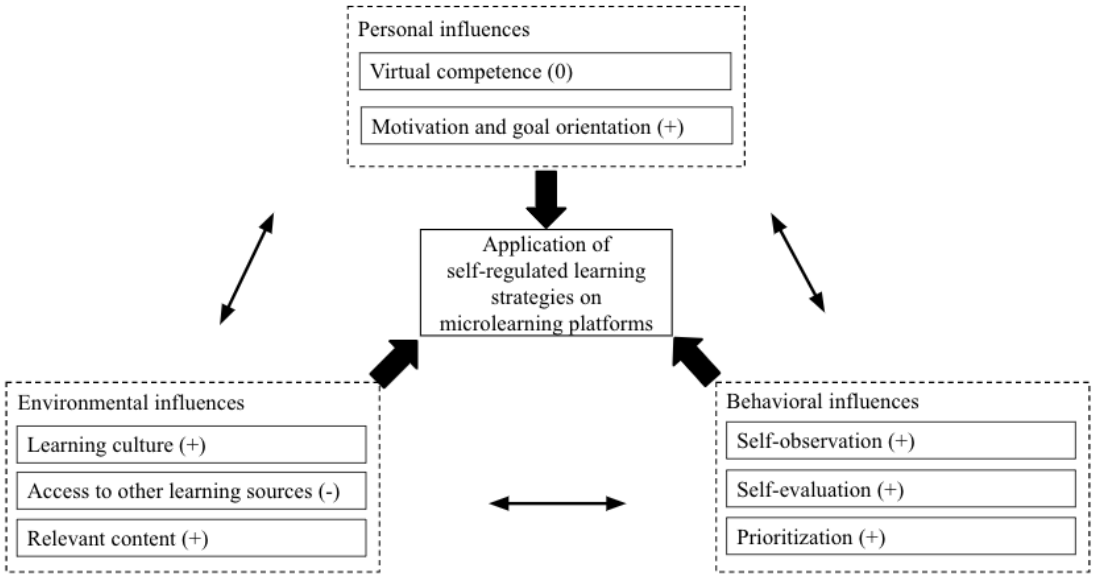


Figure 2. Updated triadic reciprocal model with new factors.

7. Conclusion

The purpose of this thesis was to understand which factors affect employees' self-regulated microlearning processes and in what way these factors affect utilization of internal microlearning platforms. Through a single case study of a large Swedish retail organization this study found eight factors which affect utilization of internal microlearning platforms. The study supports previous research suggesting that virtual competence, goal orientation and feedback, self-observation, self-evaluation, and feedback, and learning culture affect individual's self-regulating processes. Interestingly, intellectual demands did not affect self-regulation and utilization of internal microlearning platforms. Furthermore, this study suggest that three additional factors affect utilization: prioritization, relevant content, and access to other learning sources. This study concludes that intellectual demands should be removed from the triadic reciprocal model and that the three new factors should be added to the model.

The study found that self-observation, self-evaluation, prioritization, learning culture, relevant content, and employees` motivation and goal orientation affect utilization of internal microlearning factors in a positive way and should be empathized when encouraging employees to utilize internal microlearning platforms to obtain new skills. In contrast, the access to other learning sources decreases the utilization of internal microlearning platforms. Further, the study found that virtual competence affects microlearning in a neutral way and could be considered as a foundational element of digital microlearning platforms.

Finally, this study supports the trend that employees and organizations must accelerate the pace of upskilling to be able to meet the demands of the future work force. This study shows that employees have a desire to learn new skills and want to be lifelong learners if given the chance. The challenge for organizations is to develop tools that leverage the motivation to learn and maximize the potential of the microlearning platform. Also, organizations need to continuously update the content to ensure that employees will use the platform and regulate what the employees learn. Hopefully, by suggesting which factors affect utilization of microlearning platforms, this study provides guidance on how to succeed with the mission to upskill employees in organizations.

8. Implication, limitations, and future research

8.1 Implication

Theoretical implications

Being a case study, this thesis aims to enriching the theoretical body in the helm of digital learning on microlearning platforms. The study found evidence supporting previous research on which factors affecting the application of self-regulated learning strategies in a microlearning setting; Virtual competence, motivation and goal orientation, self-observation, self-evaluation, learning culture, and intellectual demand. Further, the study found three new factors also affecting employees´ application of self-regulated learning strategies in a microlearning setting: prioritization, access to other learning sources, and relevant content. These new factors extend the theoretical body of research connecting self-regulated learning and digital microlearning. The eight factors affecting utilization of microlearning processes either in a positive, neutral, or negative way. In addition, we found indications suggesting that the three influences also have a reciprocal causation between them.

Practical implications

The findings showed that the environmental influences; learning culture, intellectual demand, access to other learning sources, and relevant content, affect employees self-regulated learning strategies in a microlearning setting. This suggests that the utilization of microlearning platforms in organizations could be improved by measures taken by the organization on the environmental influences. In the studied Organization, employees emphasized how the strong learning culture increased the utilization of the platform. Moreover, that the platform indeed needs to be interwoven in the organizations own learning culture. If an organization wants to succeed with the utilization of a microlearning platform, it is also important to ensure that the content available on the platform is considered relevant for the employees in the target group of the platform. In connection to this, having an active focus on other learning sources available for the employees and help them navigate this landscape will be important to optimize a microlearning platform.

The results of this study also suggest how the individual and behavioral influences affect the application of self-regulated learning strategies. The virtual competence of employees was evidently a fundamental factor; necessary to engage with digital microlearning but will not affect in what way the platform is utilized. In contrast, the motivation and goal orientation of employees are shown to positively affect employees´ utilization. Therefore, organizations and employees need to put emphasis on measures to improve both intrinsic and extrinsic motivation to improve the utilization of microlearning platform. The findings also show that employee´ self-observation, self-evaluation, and direct feedback, as well as prioritizing behaviors positively affect the utilization. Thus, organizations need to include elements, such as gamification, in microlearning platforms to enable these behaviors.

8.2 Limitations and future research

Although confident that this study is of high quality, we still recognize its' limitations. Being a single case study, the transferability is at risk. The study is limited in generalizing findings beyond its specific case (Yin, 2018). The study's dependability is also at risk because the microlearning platform is unique for the studied organization. Replicating a similar internal microlearning platform will be challenging due to lack of transparency across organizations. However, the ecological validity of this study is high because it was conducted in a real-life context, meaning that findings could be generalized to other real-life settings (Bell et al., 2019).

Moreover, the study had a relatively small sample of 13 informants, which cannot be considered enough to generalize findings across an entire population. The selection of informants could also impose a limitation because each department of the studied organization was not included in the sample. Future studies with a larger sample are encouraged since it allows our findings to be tested on a larger population.

This study did not include ranking the importance of each factor affecting utilization of internal microlearning platform which limits the possibilities of identifying the most important factor. Future studies should consider this additional approach to deepen the understanding of how the factors impacts learning.

How different factors correlate in the triadic reciprocal causation was not sufficiently explored in this study. Neither was how that relationship affected utilization of internal learning platforms. This could potentially be an essential element of the utilization of microlearning since Organizations could leverage different factors against another. Future research should investigate in what way each of the different factors affect each other, thus focusing on the reciprocal causation found in previous studies. The actual effect of this causation between each of the factors in our model is uncertain and yet to be discovered.

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Appendix

Appendix 1: Interview guide

Part:	Purpose/intention	Questions:
Introduction	Microlearning	Presentation of study. OK to record? Consent form.
Environmental factors	Intellectual demanding job Does the individual have one? Does he/she go to the platform for answers?	How does your current job encourage you to learn new things?
		Please describe a situation where you have sought answers to a job challenge at the microlearning platform? If you haven't, why not?
	Learning culture Does the person agree that ICA has a learning culture or not? How the individual sees themselves as a part of that culture	Please describe in your own words how you experience ICA's culture of learning?
		In what way do you believe that ICA supports you on your learning journey?
		Please give an example where you saw ICAs Learning Culture in practice.
	Other factors	Do you have anything to add? More factors? Leading them to more factors that can have an impact.
Behavioral factors	Self-observation Does the individual track his/her progress?	How can you know that you have learned anything through the platform?
		How do you think your learning would be impacted if you were able to track your progress?
	Self-evaluation – feedback	In what way do you experience that you get feedback from the platform?
		How does it affect your learning?
	Other factors	Do you have anything to add? More factors? Leading them to more factors that can have an impact.

Personal factors	Virtual competence How do you believe it is to learn online?	What technical challenges have you stumbled across while learning on the digital platform?
		How comfortable are you with the digital learning environment?
	Motivation and Goal orientation	Do you have a goal with your learning at the platform? Why? Why not?
		How did you come up with that goal?
		How does the goal help you to actually use the microlearning platform?
		Please describe your own desire to learn new things in the workplace. Why do you want to learn through the platform?
	Other factors	Do you have anything to add? More factors? Leading them to more factors that can have an impact.

Appendix 2: Consent form

Are you interested in taking part in the research project "*Utilization of Microlearning platforms*"?

This is an inquiry about participation in a research project where the main purpose is to understand what factors affect employees' utilization of microlearning platforms in organizations. In this letter we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project

This project is a master's thesis, and the purpose is to expand research in the emerging field of microlearning as a tool to learn at the workplace. The objective is to first: Identify which factors affects the employees` self-regulated microlearning processes. Second, explore in what way these factors utilization of the microlearning platform. Thus, this master's thesis sets out to answer the following research questions:

(1) Which factors affect employees' self-regulated microlearning processes?

(2) In what way do these factors affect the utilization of internal microlearning platforms in organizations?

Who is responsible for the research project?

BI Norwegian Business School is the institution responsible for the project.

Why are you being asked to participate?

You have been selected to participate in this project since you are an employee at a Norwegian organization that has an internal microlearning platform. The sample consists of 12-14 employees at your organization. We have been granted permission by your organization to conduct this data collection, and your contact details have been shared with us from our contact person in your organization.

What does participation involve for you?

If you chose to take part in the project, this will involve a digital interview, approx. 30 minutes. The interview includes questions about your utilization of the internal microlearning platform in your company. The interview will be recorded and transcribed electronically.

Participation is voluntary

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

The data collection will not be shared with anyone else in your organization and will not affect your place or work or your employer.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

We will replace your name and contact details with a code. The list of names, contact details and respective codes will be stored separately from the rest of the collected data on an encrypted server. Only the two members of the project group will have access to your personal data.

In the final thesis paper, we will not include any personal information that can be recognizable for participants in this study, such as name, age, occupation.

What will happen to your personal data at the end of the research project?

The project is scheduled to end 2022-07-01. At the end of the project, all personal data, including any digital recordings, will be deleted.

Your rights

So long as you can be identified in the collected data, you have the right to:

- Access the personal data that is being processed about you
- Request that your personal data is deleted
- Request that incorrect personal data about you is corrected/rectified
- Receive a copy of your personal data (data portability), and
- Send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent.

Based on an agreement with BI Norwegian Business School, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?

If you have questions about the project, or want to exercise your rights, contact:

- BI Norwegian Business School via Professor Jan Terje Karlsen at jan.t.karlsen@bi.no
- Erika Balsvik, s2011439@bi.no and Marie Rønnevik, s2012579@bi.no.
- Our Data Protection Officer: Vibeke Nesbakken, vibeke.nesbakken@bi.no
- NSD – The Norwegian Centre for Research Data AS, by email: (personverntjenester@nsd.no) or by telephone: +47 53 21 15 00.

Yours sincerely,

Erika Balsvik and Marie Rønnevik (students)
Jan Terje Karlsen (supervisor)

Consent form

I have received and understood information about the project *Utilization of Microlearning platforms* and have been given the opportunity to ask questions. I give consent:

☐ to participate in a digital interview

I give consent for my personal data to be processed until the end date of the project, approx. July 1st 2022.

(Signed by participant, date)