

Master Thesis

# Facilitating the (social) workplace learning of healthcare professionals via the use of a learning platform

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## **Keywords**

Workplace Learning, Social Learning, Usability, UTAUT Model, Learning Platform, Healthcare Professionals, Extramural Care

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Hope you enjoy reading!

Myrthe

## Abstract

Conditions within the healthcare sector are constantly changing, thus increasing the importance of facilitating learning for both students and employees. Workplace learning (WPL), all learning related to the day-to-day work activities of employees, plays a fundamental role in this. Additionally, scientific literature calls for healthcare organizations to recognize the importance of the social context in which WPL can occur, where healthcare employees engage in WPL through cooperation and interaction. Technology can be used to facilitate (social) WPL, however introducing technology does not automatically lead to effective implementation. The UTAUT Model and ISO standard 9241-11 on the usability of human-system interaction provide insight into the use of technology. For this study, a learning platform implemented at an extramural healthcare organization in the Netherlands was chosen as a case to study this topic. This learning platform contains information in the form of documents, healthcare protocols, and e-learnings among others (learning items pages), the contact information of experts within the organization (colleagues' page), and a place where users can ask questions or join a discussion with fellow users (community page). During this study, user data, focus groups and a diary study were used to analyse which factors play a role in the use of a learning platform by healthcare professionals to facilitate (social) WPL. User data, corroborated by diary study data (n=49), showed that the learning platform was mainly used via its learning item pages (35.4% of the time). Additionally, on average, participants who use the learning platform on a certain day learn significantly more often by getting information and learn significantly less often with others compared to when they do not use the learning platform. Moreover, the results showed that participants were able to effectively use the learning platform 88.2 per cent of the time. Next, participants learned together with external experts outside the learning platform, possibly engaging in boundary-spanning. Lastly, most suggestions for improvements given by participants related to the performance expectancy of the learning platform. The results of this study can be used to further improve the usability of the learning platform to facilitate the (social) WPL of healthcare professionals.

## Samenvatting

Omstandigheden in de zorgsector veranderen continue, waardoor het belang van het faciliteren van leren voor zowel studenten als medewerkers toeneemt. Werkplekleren (WPL), al het leren gerelateerd aan de dagelijkse werkzaamheden van werknemers, speelt daarbij een fundamentele rol. Daarnaast roept de wetenschappelijke literatuur zorgorganisaties op om het belang van de sociale context waarin WPL plaats vindt, waarin zorgmedewerkers door samenwerking en interactie leren op de werkplek, te onderkennen. Technologie kan gebruik worden om (sociale) WPL te faciliteren, echter leidt het introduceren van een technologie niet automatisch tot een effectieve implementatie. Het UTAUT Model en ISO-norm 9241-11 over de bruikbaarheid van mens-systeem interactie geven inzicht in het gebruik van technologie. Voor dit onderzoek is gekozen voor een leerplatform geïmplementeerd bij een extramurale zorginstelling in Nederland als casus om dit onderwerp te onderzoeken. Dit leerplatform bevat onder meer informatie in de vorm van documenten, zorgprotocollen en e-learnings (leeritems pagina's), de contactgegevens van experts binnen de organisatie (collega's pagina) en een plek waar gebruikers vragen kunnen stellen of aan kunnen sluiten bij een discussie met medegebruikers (community pagina). Tijdens dit onderzoek is aan de hand van gebruikersdata, focusgroepen en een dagboekonderzoek geanalyseerd welke factoren een rol spelen bij het gebruik van een leerplatform door zorgprofessionals om (sociale) WPL te faciliteren. Gebruikersgegevens, bevestigd door dagboekstudiegegevens (n=49), toonden aan dat het leerplatform voornamelijk werd gebruikt via de leeritems pagina's (35,4% van de tijd). Daarnaast leren deelnemers die op een bepaalde dag gebruik maken van het leerplatform, gemiddeld, significant vaker door informatie te krijgen en significant minder vaak met anderen dan wanneer ze geen gebruik maken van het leerplatform. Bovendien toonden de resultaten aan dat deelnemers het leerplatform 88,2 procent van de tijd effectief konden gebruiken. Verder leerden de deelnemers samen met externe experts buiten het leerplatform om, mogelijk door middel van boundary-spanning. Ten slotte hadden de meeste suggesties voor verbeteringen die door deelnemers werden gegeven betrekking op de prestatieverwachtingen van het leerplatform. De resultaten van dit onderzoek kunnen worden gebruikt om de bruikbaarheid van het leerplatform voor het faciliteren van de (sociale) WPL van zorgprofessionals verder te verbeteren.

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## 1. Introduction

Conditions within healthcare are constantly changing (Anvik et al., 2019). According to van Houten-Schat et al. (2018), the pace with which medical science develops increases the importance of facilitating learning within healthcare for both students and employees. Anvik et al. (2019) further stress this importance by stating that “the ageing population is increasing alongside the demand for high-quality services” (p. 131). Therefore, the workplace should be seen as a site for learning (Ellström, 2010) for organizations to increase their competitive advantage (Cheng et al., 2014). More specifically, in the healthcare sector “workplace learning is fundamental to nurses’ contributions to safe, caring and effective healthcare” (Jantzen, 2019, p. 2566). Therefore, it is important that the workplace learning of healthcare professionals is sufficiently facilitated and supported.

Hicks et al. (2007) define workplace learning (WPL) as the “process whereby people, as a function of completing their organizational tasks and roles, acquire knowledge, skills, and attitudes that enhance individual and organizational performance” (p. 62). Furthermore, Eraut (2004) places all WPL activities on a continuum from formal learning to informal learning, differentiating between how planned, explicit, spontaneous and structured each activity is. Within the healthcare sector, WPL is positively associated with staff and patient safety (Eklöf et al., 2014), staff satisfaction and motivation, as well as reducing errors and patient care costs (Nisbet et al., 2013). Additionally, WPL can be necessary and effective for the process of gaining more expertise in one’s profession (Gijbels et al., 2010) and enhancing the application and relevance of learning (Nisbet et al., 2013), especially important in the healthcare sector where lives could be at stake. Thus, facilitating and supporting WPL in the healthcare sector has various advantages.

Most informal learning occurs in a social context (Boekaerts & Minnaert, 1999) with interaction and cooperation being very important in learning contexts (Kyndt et al., 2016). More specifically, Kyndt et al. (2016) urge healthcare organizations to recognize the importance of social learning since their study shows that cooperation between healthcare professionals especially contributes towards the acquisition of job-specific skills and generic competences like problem-solving and communication. In addition to that, healthcare employees supporting and cooperating with each other in the workplace is also crucial for good safety (Eklöf et al., 2014). Moreover, healthcare professionals who are known for providing outstanding patient care do so in part by going through a social process as a response to challenges “all facilitated by mentor-guides, workplace camaraderie and a highly functional team” (Jantzen, 2019, p. 2566). Therefore, the social aspect of WPL in the healthcare sector should also be considered.

Crouse et al. (2011) found technology resources to be a facilitating factor for WPL as well as for learning with and from others. However, it is not always possible for healthcare professionals to

conduct these (social) WPL activities through face-to-face interactions. Reasons for this consist of not only high work pressure but also the fact that a portion of the healthcare professionals only provides extramural care, travelling to a clients' home to provide medical assistance and often seeing colleagues for only a short time during their shift (personal communication with Educared, 2022). As stated before, improving performance and workplace learning is crucial for organizations (Cheng et al., 2014), and "mobile devices have become a vital tool in the workplace for learning and supporting work performance" (Alade et al., 2020, p. 198). Furthermore, Dennerlein et al. (2020) indicate that 'information and communication technology' offer WPL opportunities in various contexts. Consequently, technology could be used to facilitate and support (social) WPL in the healthcare sector.

Introducing a new learning technology in the workplace, however, does not automatically lead to an increase or improvement in (social) WPL. Especially in the case of extramural care where (face-to-face) interactions between healthcare professionals are limited, consequently leading to a higher dependency on technology. Thus far the combination of both WPL and social WPL being facilitated by technology has not been studied with previous studies focusing for instance, only on learning through social interaction via feedback (de Laat et al., 2020), only on social interaction in the specific context of paediatricians (Hult et al., 2020), and only on the usability of e-learning in the workplace (Lantu et al., 2023). In addition, there is no literature available on how learning can be facilitated in extramural healthcare through the use of a learning technology. There is literature that uses more general frameworks to study the usability of technology, for instance, the ISO standard 9241-11 (Constantinescu et al., 2019; De Silva et al., 2014; Georgsson & Staggers, 2016; Sari et al., 2015). The standard 9241-11 was developed by the International Organization for Standardization (ISO) and focuses on usability related to human-system interaction with a specific focus on effectiveness, efficiency and satisfaction (International Organization for Standardization, 2018). However, the previously mentioned studies focus primarily on quantitative data using set tasks and standardized questionnaires which give insight into how technology is used, but do not provide an answer to why it is used (Constantinescu et al., 2019; De Silva et al., 2014; Georgsson & Staggers, 2016; Sari et al., 2015).

To study and explore this gap in research a learning platform implemented at a healthcare organization focused on extramural care in the Netherlands was chosen as a case. Using a different methodology than previous studies, for instance a diary study, could provide more qualitative insights on the topic since a diary study allows for open questions to be asked on a daily basis, enabling researchers to study the (social) WPL behaviour of participants over time, taking the dynamic character of WPL (Tannenbaum et al., 2010) and the everyday work practices of healthcare professionals (Anvik et al., 2019) into consideration, while simultaneously decreasing the chances of



memory bias which often occurs when using retrospective measures (Rausch et al., 2022). Thus, an exploratory longitudinal study in the form of a diary study was conducted to collect data on the factors that play a role in the use of a learning platform by healthcare professionals to facilitate (social) WPL. Additionally, since, similar to standard 9241-11, the Unified Theory of Acceptance and Use of Technology (UTAUT) model is also used in literature to study the factors that could influence the acceptance and adoption of a technology (Alade et al., 2020), both will be used to conduct, analyse and report on this study.

## 2. Theoretical framework

This chapter will further elaborate on the theories introduced in chapter 1 and provide information for the consequent chapters to build upon. First workplace learning will be introduced before social workplace learning is discussed. Next, usability and the UTAUT model will be explained. Lastly, the research questions of this study will be stated.

### 2.1 Workplace learning

As stated previously, Hicks et al. (2007) define WPL as “a process whereby people, as a function of completing their organizational tasks and roles, acquire knowledge, skills, and attitudes that enhance individual and organizational performance” (p. 62). However, there are many ways in which WPL is defined in literature. First of all, WPL is defined on the formality of learning. Eraut (2004) defines formal and informal learning on a continuum of formality. The formal end of the continuum is characterized by explicit, intended, planned and structured learning and the presence of a teacher (Eraut, 2004). Conversely, characteristics of the informal end of the continuum include “implicit, unintended, opportunistic and unstructured learning and the absence of a teacher” (Eraut, 2004, p. 250). There are learning activities that fall somewhere in the middle of this continuum of formality, for example, mentoring and coaching. Both include the presence of a teacher and intended learning but exclude structured learning. However, coaching is likely to be planned and explicit, whereas mentoring is more likely to be opportunistic and implicit. Therefore, the categorization on the formality of learning is complex and few learning activities can be seen as completely formal or informal learning. Moving forward, learning activities with more informal than formal characteristics will be referred to as informal learning activities.

Although a characteristic of the formality continuum of Eraut (2004), some authors specifically mention whether learning is planned or intended in their definition of WPL (Clarke, 2005). As explained above, planned and intended learning does not necessarily have to be classified as formal learning. Additionally, even if it is classified as formal learning, it can still lead to informal learning. Eraut (2004) defines unplanned, unintended learning as implicit learning and defines reactive and deliberative learning as intended, unplanned learning and intended, planned learning, respectively. All three could result from formal learning and lead to informal learning, however, which type depends on the specific circumstances. For instance, one can observe the work practices of colleagues after a training on best work practices by scheduling a moment to do so (deliberative), doing so when an opportunity presents itself (reactive), or becoming aware of behaviours already observed in the past after having followed the training (implicit).

Within the scientific literature, some authors argue that WPL should be defined as informal learning (e.g., Cheng et al., 2014). However, others argue that formal learning is also important for WPL to occur (Crouse et al., 2011) since it can influence informal learning activities (Anvik et al., 2019). To illustrate, after following an e-learning an employee might ask their supervisor a question about the content of said e-learning related to their day-to-day work practices. Moreover, WPL is often defined as learning that takes place on the job (Clarke et al., 2005). Others use the term learning during day-to-day work practices to define WPL (Collin, 2009; Gijbels et al., 2010). Both terminologies can be used, however, in certain contexts such as the extramural care context of this study it is important to state in detail which activities are included in the WPL definition. In this case, all implicit, reactive and deliberative learning related to the care of clients and other day-to-day work practices, no matter the location where the learning occurs, through informal learning activities, and possibly resulting from formal learning activities, is defined as WPL.

## **2.2 Social workplace learning**

Next to the majority of WPL being of the informal kind, WPL involves a combination of learning from one's own experiences and learning with others, often both together (Eraut, 2004; Goldenberg & Lowe, 2018). Additionally, as stated before, interaction and cooperation are important in learning contexts (Kyndt et al., 2016) with most informal learning occurring in a social context (Boekaerts & Minnaert, 1999). Furthermore, the experiences and observations of colleagues shared in this social context can result in the construction of shared meaning and changing one's behaviour (Cook et al., 2016). Collin (2009) suggests that individual learning and social learning in the workplace are linked and that the influence of the organizational context on individual learning should therefore be considered to gain a better understanding of WPL.

Social WPL is a broad term, and a detailed definition is needed to conduct this study in an efficient manner. For instance, Clarke (2005) uses the term 'group on the job learning' to classify learning which involves social interaction. Collin (2009) goes into more detail by using the following definition in their study "social processes are approached as collegial and shared participatory practices which take place in teams and everyday collaboration at work" (p. 25). However, following this definition, external people visiting the workplace would not be included since they do not share day-to-day work practices with employees even though they might have expertise related to the day-to-day work practices. The research of Mertens et al. (2018) corroborates this, having found across 42 different studies that professionals can not only learn from each other when they have the same profession but also if they have different professions. Therefore, in this study, the definition of social WPL includes all people who have knowledge related to the day-to-day work practices of healthcare professionals and interact with them while they are conducting their own day-to-day work practices.

As stated in chapter 1, technology can be used to create a virtual collaboration space to facilitate knowledge sharing between healthcare professionals (Hult et al., 2020). Technology is seen as useful for the facilitation of learning in the healthcare sector (Treasure-Jones et al., 2019; Hult et al., 2016) and is widely implemented (Cheng et al., 2014). Specifically, opportunities for social learning are provided by interactive learning technologies and other online platforms (Anderson et al., 2020). This type of learning which uses technology to promote connections is also known as networked learning (Cook et al., 2016). Hybridity is central to networked learning in two ways. First, there is “a hybrid combination of formal and informal social structures” (Cook et al., 2016, p. 2) where an individual’s role may vary across learning situations depending on not only one’s work title but also one’s expertise. Second, there is “a hybrid combination of physical and digital tools” (Cook et al., 2016, p. 2) where one cannot only learn together face-to-face, supported by PowerPoint slides or a notebook to visualize an explanation, but also digitally through applications such as Google Meet. It is important to note that in some cases social media like Facebook are used for social WPL instead of a learning management system (LMS) or a learning experience platform (LXP) (Anderson et al., 2020; Lai & Lai, 2014).

An important distinction to make is that not all interactions through these learning technologies occur in real-time. One can differentiate between synchronous and asynchronous interactions, also known as same-time and different-time interactions respectively (Graves, 1997, as cited in Clouse & Evans, 2003). Ziegler (2016) expands upon this by further differentiating between synchronous computer-mediated communication and face-to-face interactions, which are always synchronous. Consequently, this study will differentiate between three categories, namely face-to-face interactions, synchronous technology-mediated interaction and asynchronous technology-mediated interaction. Whereas no significant differences were found between the two types of synchronous interactions (Ziegler, 2016), significant differences between synchronous and asynchronous interactions, in the context of e-learning methods, were found (Clouse & Evans, 2003). Considering that this might influence the use of technology, it is important to keep this in mind while studying the (social) WPL of healthcare professionals through the use of a learning platform. Lastly, for this study, social WPL will be defined as WPL occurring between at least two people having knowledge of and being involved in the same day-to-day work practices who engage in synchronous and/or asynchronous interaction.

### 2.3 Usability and the UTAUT model

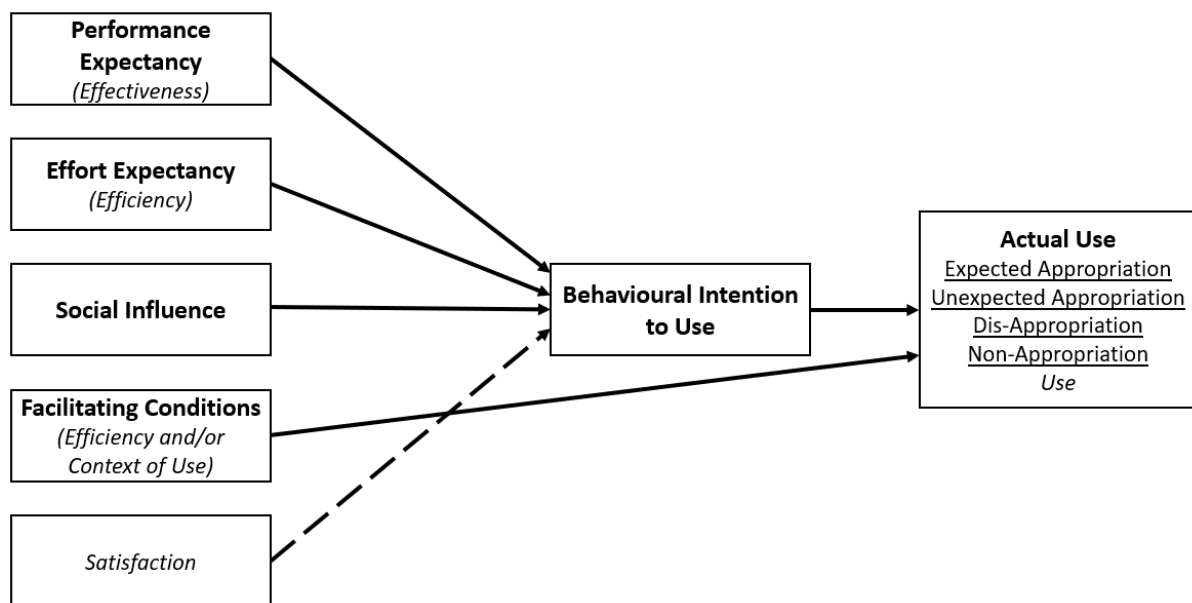
As stated in the previous chapter, ISO has developed a standard, 9241-11, to evaluate usability when it comes to human-system interaction (International Organization for Standardization, 2018). ISO (2018) defines usability as the “extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use” (para 1). More specifically, ISO defines effectiveness as the extent to which users can accurately and completely achieve a goal, efficiency as the extent to which users require resources such as effort and time to achieve a goal, and satisfaction as the extent to which users’ responses after using the system meet the users’ expectations and needs (International Organization for Standardization, 2018). Additionally, ISO (2018) also includes the context of use in which goals and tasks, resources, users and the environment are included. Lastly, ISO (2018) states that for usability, regular users, new users and infrequent users no matter their capabilities concerning the use of technology should be taken into consideration.

Next to the ISO standard 9241-11, the UTAUT model will also be used in this study since it gives insight into factors that influence the intention to use a learning technology (Alade et al., 2020). The UTAUT model has been used in various contexts such as mobile learning in the workplace (Alade et al., 2020) and social learning networks similar to an LMS (Muniandy et al., 2022). In comparison to the ISO standard, the UTAUT model specifies usability further by not only focusing on variables that influence use but also differentiating between the behavioural intention to use and the actual use of technology (Venkatesh et al., 2003). A UTAUT variable similar to effectiveness is performance expectancy which Venkatesh et al. (2003) define as how useful an individual perceives the technology to be for them to increase their job performance. The increase in job performance being the specific goal in this case. Similarly, effort expectancy of the UTAUT model can be linked to efficiency as it is defined as the perceived ease the individual associates with the use of the technology (Venkatesh et al., 2003). Next, the UTAUT model also includes facilitating conditions which concern the extent to which the infrastructure of both organization and technology are perceived by the individual as being able to provide support (Alade et al., 2020). Venkatesh et al. (2003) specifically mention the following facilitating conditions: the resources, knowledge and opportunities needed to use the system, compatibility with other systems in use and the way of working, and guidance, instruction and support for using the system (Venkatesh et al., 2003, p. 453). Thus, this UTAUT variable not only shows some similarities with efficiency but also with the context of use. Lastly, there is one UTAUT variable which shows no similarities with the ISO standard, namely social influence which concerns the extent to which the individual perceives others, that they deem important, to believe that the individual should use the technology (Venkatesh et al., 2003).

As stated before, Venkatesh et al. (2003) differentiate between behavioural intention to use and actual use of technology. Specifically, Venkatesh et al. (2003) specify that the facilitating conditions variable directly relates to the actual use of the technology (see Figure 1) whereas other studies relate all four variables to behavioural intention to use first (Alade et al., 2020; Holden & Karsh, 2010). This is because they found performance expectancy and effort expectancy to have a mediating effect on the facilitating conditions variable (Venkatesh et al., 2003). Additionally, Venkatesh et al. (2003) also included demographical variables in their model. However, this study will not focus on the effect these demographical variables may have during data collection. Instead, they will be considered while discussing the results of this study if needed.

**Figure 1.**

*UTAUT Model*



*Note.* This figure shows the UTAUT model adapted from Dennerlein et al. (2020) (underlined), ISO (2018) (in italics) and Venkatesh et al. (2003) (in bold). The relationship between satisfaction and behavioural intention to use is visualized with a dotted line since this relation has not been proven yet.

Furthermore, it is important to note that using a technology is not necessarily a positive thing. Namely, Dennerlein et al. (2020) issue caution against the design of technology for WPL since learning technology can, next to supporting individual and social learning, cause an information overload. Therefore, when it comes to the use of technology, Dennerlein et al. (2020) use a more elaborate terminology. Namely, expected appropriation, unexpected appropriation, dis-appropriation, and non-appropriation. Respectively, the technology worked and was used as

intended, the technology worked but was used in an unintended way, the technology worked but was not used due to the user not seeing the value of or not understanding the technology, and the technology did not work and was thus never used (Dennerlein et al., 2020). In short, only looking at the frequency with which technology is used gives limited insights into the usability of said technology.

## **2.4 The present study**

In summary, this study will use a combination of the ISO standard 9241-11 and the UTAUT model, including the four types of appropriation, as shown in Figure 1 to study the use and usability of the learning platform. More specifically, the frequency of use, how the use relates to the (social) WPL of healthcare professionals, and the effectiveness, efficiency and satisfaction with which the learning platform is used by healthcare professionals will be studied. Additionally, the four types of appropriation will be used to further specify how the learning platform is used. Moreover, it is important to note that in some cases within literature, the UTAUT model alone was not enough and other factors such as personal characteristics of students and workplace context were included as well (Anderson et al., 2020; Khechine & Augier, 2019). Therefore, this study will not exclude any emerging factors that do not directly relate to the previously mentioned standard, model and theory. To conclude, this study will focus on the following main and sub-questions:

*“Which factors play a role in the use of a learning platform by healthcare professionals to facilitate (social) workplace learning?”*

- How is the learning platform used by healthcare professionals?
- To what extent does the usage of the learning platform relate to the (social) workplace learning of healthcare professionals?
- To what extent do healthcare professionals perceive the learning platform to be effective to use?
- To what extent do healthcare professionals perceive the learning platform to be efficient to use?
- To what extent are healthcare professionals satisfied with the learning platform?

### 3. Method

This chapter will expand upon the research design briefly introduced in chapter 1 and introduce the case that was studied. Next, a description will be given of how data was collected through user data and a diary study. Lastly, it will be explained how the data was analysed to gain insights into the use, effectiveness, efficiency and satisfaction previously introduced in chapter 2.

#### 3.1 Research design

This study used a case-study design to explore which factors influence the use of the learning platform to facilitate (social) WPL. A case-study has a distinct advantage in this case since it allows for the use of the learning platform to be studied within its real-life context (Yin, 2003, p. 13). This is especially important since the exploratory character of this study means that it is difficult to define the extent to which contextual factors influence the (social) WPL that occurs via the learning platform (Yin, 2003). A single typical case is studied to “capture the circumstances and conditions of an everyday or commonplace situation” (Yin, 2003, p. 41), which this study related to (social) WPL and the use of the learning platform. As a result, insights can be gained about how (social) WPL occurs and how a learning platform is used for this in a healthcare setting.

To study this case, a combination of different types of data collection was used to increase the quality of the case study (Yin, 2003). Internal documents were used to gain an overview of the various functions of the learning platform which will be described in the next section. Next, user data was collected to gain initial insights into how the learning platform is used. Lastly, focus groups and a diary study were used to gather more in-depth information. Specifically, the focus groups were used for the design of the diary study which focused on the use, effectiveness, efficiency and satisfaction with the learning platform. Lastly, since human subjects were studied, ethical approval was requested and given before any data collection took place.

#### 3.2 The case

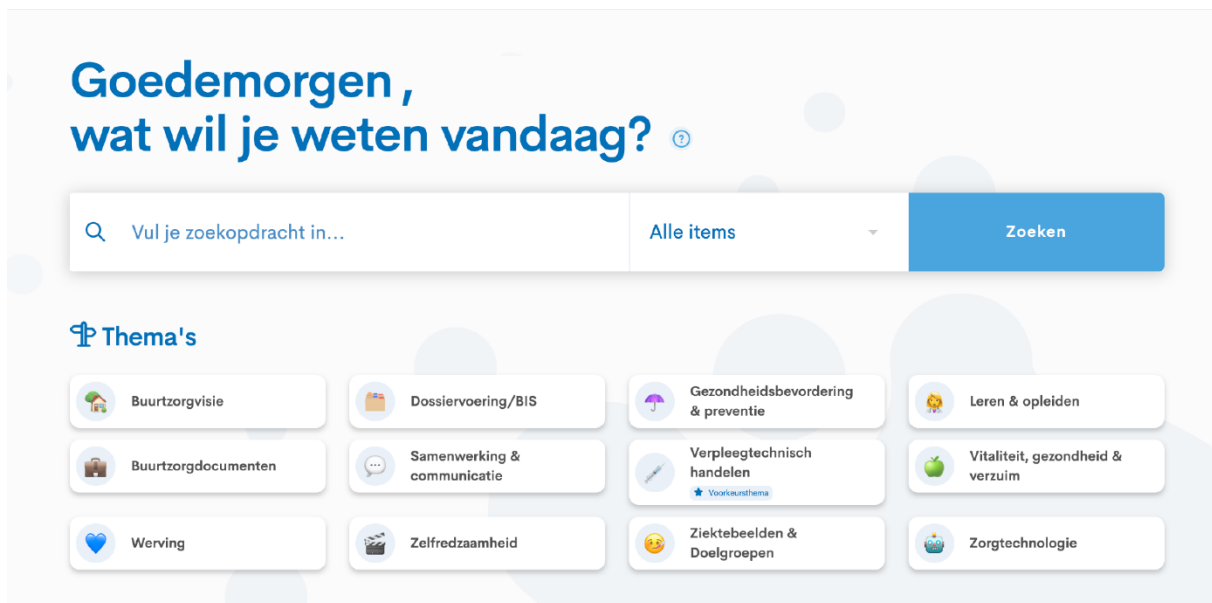
To study (social) WPL among healthcare professionals via the use of a learning platform, a learning platform implemented in a Dutch healthcare organization focused on delivering extramural care was chosen to focus on (see appendix A for full screenshots of the learning platform). Educared, a company that focuses on facilitating workplace learning in the healthcare sector in the Netherlands, has developed a learning platform to facilitate and support WPL through individual and social learning (internal document Educared, 2022). There are indications that the use of the learning platform could be improved, however, no specific areas of improvement are known (personal



communication with Educared, 2022). Figure 2 shows the homepage of the learning platform where users can enter search terms or explore suggested topics and themes.

**Figure 2.**

*Homepage of the Learning Platform*



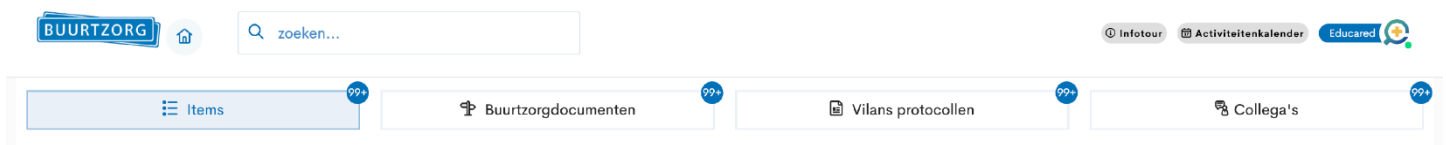
*Note.* This page shows the welcome message “Good morning, what do you want to know today?”. Users can enter search terms in the search bar or explore a specific theme. More exploration options are shown in Appendix A.

The learning platform has various pages that healthcare professionals can use after using the search engine or choosing a suggested topic. All content on the learning platform is related to healthcare and specific day-to-day work procedures (personal communication with Educared, 2022). Specifically, an items, internal documents, healthcare protocols and colleagues’ page are shown at the top of the screen (see Figure 3). For this study, the first three pages are all considered learning items pages since the items found under the internal documents and healthcare protocols pages are also shown on the items page. The items page includes e-learnings, micro-learnings and podcasts among others, with the internal documents including all documents related specifically to the healthcare organization and the healthcare protocols page including all official healthcare protocols, also known as ‘Vilans protocollen’ in Dutch. For the learning items pages, users can search for items related to a specific topic and use various filters to specify their search. Next, the colleagues' page allows users to look for experts within their organization, using filters and search options, and consequently gives the contact information of these experts. Additionally, users can indicate that they are an expert on a certain healthcare topic themselves, however, in some cases this is also done

by the healthcare organization (personal communication with Educared, 2022). In September 2022, 510 out of approximately 10.000 users were included as experts on this page (personal communication with Educared, 2022). Lastly, next to the learning items and colleagues page the learning platform also includes a community page connected to one specific learning trajectory. This page was developed to allow users the option to discuss, share knowledge and ask questions about the topic by subscribing to the learning trajectory. Users can not only follow learning items about the learning trajectory but can also share information, tips, videos etc. on the community page themselves. Currently, there is only one community page available on the learning platform which users can join, thus restricting them in the topics they can focus on in the community (personal communication with Educared, 2022).

**Figure 3.**

### *Page Overview of the Learning Platform*



*Note.* This figure shows the top of the page that users see when they start searching for information on the learning platform. From left to right they can choose to search among learning items (Items), internal documents (Buurtzorgdocumenten), healthcare protocols (Vilans protocollen) and colleagues (Collega's).

### **3.3 User data**

To gain insight into the use of the learning platform, the ICT department of Educared was approached to gain access to user data. Two sources of data were available, namely Google Analytics and the backend of the learning platform. The data from Google Analytics were collected by using filters to select the users of the healthcare organization and to differentiate between the different types of pages. As a result, it was possible to compare the usage of the items, colleagues and community pages with each other. Additionally, the data from the backend was exported into an Excel document and gave insight into the number of clicks for the users of the learning platform. Both types of data were gathered from the 1st of January up until the 14th of December 2022 and were anonymized if that was not yet the case upon retrieval.

### **3.4 Diary study**

Since WPL is highly dynamic, not always intentional (Tannenbaum et al., 2010) and employees might not perceive the professional development resulting from WPL as learning (Rausch et al., 2022) it was deemed important to avoid retrospective measurements as much as possible since they are prone to memory bias (Seifried & Rausch, 2022). Therefore, the choice for a longitudinal diary study was made since it would allow data to be captured as close as possible to the learning moments of participants. As stated by Rausch et al. (2022), “for many research questions on informal WPL, diary data is more valid than data gained from typical retrospective measures” (p. 65). Additionally, data was measured over a period of two weeks to consider the dynamic characteristic of WPL and capture various types of learning moments. This section describes how the diary study instrument was developed and tested before introducing the final instrument and the procedure.

#### **3.4.1 Development of instrument**

The ‘Twente Intervention and Interaction Machine’ (TIIM) of the BMS Lab of the University of Twente was chosen to develop the diary study and consequently conduct it because of its practical advantages (BMS Lab, n.d.). First of all, TIIM is a mobile app that participants can install on their phones which makes the daily questionnaires easily accessible to participants. Especially considering that participants are often travelling to and from clients to provide care and thus do not have easy access to a laptop or desktop. Secondly, there is the opportunity to add timing rules to a study in TIIM which allows for questionnaires to only be available within a certain time frame. In practice this means that participants cannot answer questionnaires on day two or four when they are on day three of the diary study, minimizing the number of retrospective data entries. Next, it is possible to add notifications to the study in TIIM. In practice, this means that participants will receive notifications at set times that remind them to fill in the daily questionnaire. Lastly, it is possible to add routing to questionnaires within TIIM which allows participants to skip irrelevant questions. For example, if participants answer that they have not learned on a certain day, consequent questions about how they learned will be skipped automatically. Considering that the healthcare sector is currently facing extra pressure due to Covid-19 this feature is especially important to ensure that participants do not spend unnecessary time on the diary study and possibly drop out of the study as a consequence.

To develop the diary study instrument, questions were separated into four types of questionnaires. Namely, a selection, demographic, daily and closing questionnaire. The first included questions about the selection criteria, giving informed consent and having access to the learning platform, and categorized participants in a ‘regular’ or ‘expert’ category. Expert participants are known as experts on the colleagues’ page of the learning platform and were therefore asked

additional questions each day. The demographics questionnaire collected personal information about the participants as well as their use of the learning platform. The latter question was asked once more to participants in the closing questionnaire. Lastly, the daily questionnaire consisted of questions to answer the research question. Since the literature on (social) workplace learning activities is extensive with differences not only in which type of activities are included but also in the terminology which is used (e.g. Berg & Chyung, 2008; Crouse et al., 2011; Gijbels et al., 2010; Hargreaves & Gijbels, 2012; Mertens et al., 2018; Moore & Klein, 2019; Wegner et al., 1987), the Structured Learning Report (SLR) of Endedijk et al. (2016) and a similar diary study about self-directed learning (Oomen, 2021) were used as a starting point.

To start, participants were asked whether they worked and/or learned each day with participants who did not learn being directed to the closing message immediately. In addition to the yes and no answer options, a hint option was added for participants to request more information on what a learning moment could look like. Next, participants were asked how they learned each day to let them focus on their specific learning moment(s) before continuing to more detailed questions. Consequently, questions about whether participants learned together and used the learning platform were asked to gain insight into use, with participants who answered 'yes' receiving additional questions on how they learned together and/or used the learning platform. The additional questions on why the learning platform was (not) used, how it helped participants and what could be improved were asked to gain insight into the effectiveness, efficiency and satisfaction with which the learning platform is used. Lastly, as stated before, expert participants received additional questions, namely whether they were contacted as an expert and, if applicable, how and about which topics and/or questions they were contacted. After incorporating the literary input, the first version of the daily questionnaire was tested first by the researcher and then through focus groups.

### **3.4.2 Testing of instrument**

To test the instrument, the researcher conducted some testing on their own before conducting 3 focus groups to gain insights from healthcare professionals about the instrument. Focus groups were chosen since participants stimulate ideas and opinions between each other and through the group discussion a collective opinion and perspective is formed which is more valuable than each opinion and perspective on its own (Maguire, 2001). In total, 3 focus groups of 4, 4 and 6 participants, all female between the ages of 23 and 62 (mean age = 39.79), were conducted. All focus group participants indicated afterwards that they were interested in also participating in the diary study. For more information on the focus group (design), see Appendix B, C, D and E. The main outcomes of the testing focus on timing, routing, answer options, improving questions and the device on which TIIM needs to be installed. Firstly, the timing of questions and notifications need to be on a fixed

time, therefore two starting moments were planned on which participants could start the diary study. Additionally, it was deemed acceptable by participants for the daily questionnaire to be available between 8:00 and 23:59, with reminder notifications at 8:00, 13:00, 17:00 and 22:00. Additionally, it was emphasized to participants that they would receive no more notifications after they had answered the questionnaire on a certain day. Secondly, the routing of questions was corrected where it was needed and in some cases questions were adjusted when routing was not possible. Next, for some multiple-choice questions, additional answer options were added and/or the order in which they were presented was changed. Furthermore, the phrasing and spelling of questions were improved to increase readability and remove mistakes. Lastly, it was decided to recommend participants to install TIIM on their private phones to also receive notifications on days that they do not work but could learn.

### **3.4.3 Final instrument**

The final instrument consisted of three selection (see Appendix F), eleven demographic and three closing questions (see Appendix G). Lastly, the daily questionnaire consisted of fourteen to sixteen daily questions as can be seen in Table 1 on the next page. Appendix H includes more details such as the routing of the questions and the specific answer options.

### **3.4.4 Procedure**

Participants were found by posting information on the internal messaging system of the healthcare organization including information on how to contact the researcher to sign up. Next to this, as mentioned before, several participants were found via the focus groups. After signing up participants received an introduction letter (see Appendix I) in which information was given about the study (see Appendix J). When signing up via TIIM participants were asked to give informed consent (see Appendix K) and answer the selection questions. Consequently, the researcher accepted the participant by assigning them to the regular or expert questionnaire (see Appendix L) or by rejecting them from the study if they did not meet the selection criteria (see Appendix M). After being assigned, participants could immediately answer the demographics questionnaire, however, the daily questionnaires could only be answered on a schedule set by the researcher, also known as time-based sampling (Rausch et al., 2022). After fourteen days of daily questionnaires, participants received the closing questionnaire and were thanked for their participation. Lastly, data was automatically pseudonymized via TIIM and participants were able to contact the researcher via e-mail or phone before, during and after the diary study.

**Table 1.***Overview of Daily Questions With Corresponding Answer Type and Variable(s)*

Question	Answer type	Variable(s)
1. Hello [user-firstname], did you work today?	MC	Use
2. Did you learn anything related to your work today?	MC	Use
3. Maybe you learned one of these ways: <i>list of examples</i>	MC	Use
4. What did you learn today?	OA	Introductory question
5. In which way(s) did you learn today?	MCO	WPL
6. Were other people involved in your learning moment(s) today?	MC	Use and social WPL
7. Who were involved in your learning moment(s) today?	MCO	Social WPL
8. In which way were they involved in your learning moment(s) today?	OA	Social WPL
9. Did you use the learning platform for your learning moment(s) today?	MC	Use
10. Why did you use the learning platform for your learning moment(s) today?	OA	Effectiveness and efficiency
11. Why did you not use the learning platform for your learning moment(s) today?	OA	Effectiveness and efficiency
12. How did the learning platform help you during your learning moment(s) today?	MCO	Effectiveness
13. In which way(s) could the learning platform have helped you (even better) during your learning moment(s) today?	OA	Effectiveness, efficiency and satisfaction
14. How will you continue your learning moment(s) of today?	MCO	Social WPL
EEV1. Were you approached as an expert via the learning platform today?	MCO	Social WPL
EEV2. In which way did you help the person who approached you today?	OA	Social WPL

*Note.* This table shows all 16 questions with the corresponding answer type and variable(s). Answer types consist of multiple choice (MC), open answer (OA) and multiple choice with an open answer option (MCO). EEV1 and EEV2 are questions only shown to participants who indicated that they are an expert.

### 3.4.5 Participants

At the start of the diary study, there were some technical issues with downloading the TIIM app causing two participants to drop out, causing the participant number to drop from 51 to 49 (see Table 2). These 49 participants consisted of 46 women (93.9%), 15 experts and 34 regulars participants, and had an average age of 46.6 years (minimum 21 years and maximum 66 years) (see Appendix N for more information on demographics). Next, there were some issues during the diary study causing two participants to switch to the second group which started a week later. The data entries of these two participants across the two groups were later manually merged for analysis. Of

the 49 participants who downloaded the app, 87.8 per cent answered the daily questionnaire more than 5 times with 28.8 per cent answering all daily questionnaires. Additionally, 3 participants failed to answer the closing questionnaire. Lastly, from now on each answered daily questionnaire will be referred to as a log with any unanswered daily questionnaire being referred to as a missing log.

**Table 2.**

*Overview of Responses (N) to Diary Study*

Diary study actions	N
Signing up for the study	51
Downloading the TIIM app	49
Answering the selection questions	49
Answering the demographical questions	49
Answering 0 to 5 daily questionnaires	6
Answering 6 to 9 daily questionnaires	4
Answering 10 to 13 daily questionnaires	25
Answering all 14 daily questionnaires	14
Answering the closing questions	46

### 3.5 Data analysis

As stated before, various types of data were collected during this study, making this a mixed-method study. The next section will shortly describe how the data was prepared for analysis, before explaining how the data was used to analyse use, effectiveness, efficiency and satisfaction.

#### 3.5.1 Preparation of data

The level of preparation required for analysis differed per data type. First of all, the user data gathered via the backend of the learning platform was already anonymized and thus required minimal preparation in the form of transferring the CSV file to a table in Microsoft Excel. Next, the user data gathered via Google Analytics only required the application of the correct filters before exporting the resulting tables to a PDF file. Finally, the data of the diary study needed to be exported to R and organized in R by for instance removing commas and labelling columns. Additionally, as mentioned before, the data entries of two participants needed to be merged and in some cases answers, that participants sent to the researcher outside TIIM due to technical difficulties, needed to be added manually. Lastly, after organizing the diary data in R, the data was also exported to Microsoft Excel to code the open questions of the diary study.

### **3.5.2 Analysing use**

To answer the questions *“How is the learning platform used by healthcare professionals?”* and *“To what extent does the usage of the learning platform relate to the (social) workplace learning of healthcare professionals?”* about the use of the learning platform, various types of data were analysed. Firstly, the number of times that the learning items page was used was inferred from the Excel file containing the backend data to gain insight into the concrete usage numbers. Next, the usage of the various pages of the learning platform was compared, using the PDF files exported from Google Analytics, to analyse which page is used most/least often. Moreover, it was tested with a Shapiro-Wilk and Two-Sided Wilcoxon Signed-Rank Test whether the frequency with which the participants used the learning platform changed after the diary study to include the possible effect of the study on the usage. To this end, data on the usage of participants collected in the demographics (Question 11) and closing questionnaire (Question 2) were compared. Furthermore, a Sankey Diagram was made to visualize the most important descriptive statistics including the routing of the questions (Questions 1, 2, 3, 5, 6, 9, 10, 11 and 12). Additionally, the influence of the learning platform usage was analysed by comparing the learning platform usage (Question 9) to how participants learned (Question 5) and whether they learned together with others (Question 6) using Chi-Square Tests of Independence and Proportion Tests. Lastly, to gain insight into the usage of the colleagues’ page the extra expert questions were analysed to gain insight from an expert perspective and question 12 was used to gain insight from a user perspective.

### **3.5.3 Analysing effectiveness, efficiency and satisfaction**

As stated before, coding was used to analyse the open questions of the diary study. Of the four open questions, questions 10, 11 and 13 relate to effectiveness, efficiency and satisfaction with question 8 relating to the social WPL of healthcare professionals. Question 8 was included in the coding process to gain insight into how participants learned together, with questions 10, 11 and 13 being used to answer the three sub-questions on the usability of the learning platform. For the analysis, a codebook was developed using a combination of open coding and using the UTAUT Model and the Structured Learning Report (SLR). More specifically, for question 8 the answers of participants showed overlap with the answer options given by the SLR on how participants learned. For questions 11 and 13, effort and performance expectancy of the UTAUT were found as fitting coding categories, as well as the facilitating conditions which in this codebook are stated as ‘threshold for use’. The definition of the latter code category is the same as mentioned for facilitating conditions in Chapter 2, however since most open answers were phrased in a negative light, threshold for use was chosen as a more fitting name considering that the aspects mentioned were in most cases doing the opposite of facilitating (social) WPL.



At the start of the coding process, all answers were read carefully while taking notes, as advised by Boeije (2010), which resulted in a list of preliminary codes. Then the preliminary codes were reviewed and grouped into bigger, more general categories before developing definitions and code names. This resulted in five, three, five and seven codes for questions 8, 10, 11 and 13 respectively (see Table 3). As stated in the table, the codes for question 10 were only used once per answer. However, for the other questions, it was sometimes the case that more than one code fit the answer, therefore for these questions multiple codes could be used per answer. Specific information on the definition of each code can be found in Appendix O.

**Table 3.**

*Codebook*

Main code	Sub code	Code per unit of analysis
Q8. How Involved	8.1 Doing/experiencing something together 8.2 Sharing information 8.3 Evaluating/reflecting together 8.4 Schooling purposes 8.5 Other	Multiple codes
Q10. Learning Platform Used	10.1 Found information 10.2 Used for schooling 10.3 Did not find information	One code
Q11. Learning Platform Not Used	11.1 Found information elsewhere 11.2 Practical reasons for not using it 11.3 Performance expectancy 11.4 Did not find information 11.5 Threshold for use	Multiple codes
Q13. Learning Platform Improvements	13.1 Effort expectancy 13.2 Threshold for use 13.3 Adjust information/content 13.4 Other information source 13.5 Performance expectancy 13.6 No improvements 13.7 I do not know	Multiple codes

Next, to test the reliability of the codebook, a minimum of ten per cent of the answers were coded by the researcher and a second coder (Lombard et al., 2004). The ten per cent was carefully selected to ensure that all codes within the codebook would be present and thus included in the intercoder reliability. Next, the agreement between the two coders was used to calculate Cohen's Kappa (Kurasaki, 2000). As can be seen in Table 4, the overall codebook has a Cohen's Kappa of 0.74, with the Cohen's Kappa for the code categories ranging between 0.70 and 0.83 (see Appendix P for more details). The codes for questions 8, 11 and 13 have a Cohen's Kappa that indicates a substantial

strength of agreement and the Cohen’s Kappa for the codes of question 10 indicates an almost perfect strength of agreement (Landis & Koch, 1977). To conclude, the reliability of the codebook is substantial, and the consequent conclusions of this study are validated.

**Table 4.**

*Cohen’s Kappa per Code Category and the Overall Codebook*

Code category	Cohen's Kappa
Q8	0.73
Q10	0.83
Q11	0.76
Q13	0.70
Overall	0.74

Lastly, to answer the sub-questions related to effectiveness, efficiency and satisfaction quotes from questions 10, 11 and 13 were selected to illustrate and give further insight into how participants experienced their use of the learning platform. During this selection, care was taken to include quotes from various participants in addition to making sure that the quotes gave as much detail as possible. Quotes resulting from questions 10 and 11 were only used to answer the sub-questions on effectiveness and efficiency whereas quotes resulting from question 13 were also used to answer the sub-question on satisfaction. Lastly, next to the open questions, multiple-choice question number 12 was also used to answer the question on effectiveness by giving an overview of how the learning platform helped the participants who indicated that they had used it.

## 4. Results

As explained in chapter 3, various types of analyses were used to gather information on use, effectiveness, efficiency and satisfaction to answer the research question, *“Which factors play a role in the use of a learning platform by healthcare professionals to facilitate (social) workplace learning?”*. This chapter will first discuss the usage of the learning platform, including the most important descriptives (see Appendix Q for a full overview). Next, how the learning platform is used for (social) WPL will be elaborated upon, including a separate section which highlights how experts played a role in social WPL via the learning platform. Next, more detail will be given on effectiveness and efficiency. And lastly, the satisfaction of the users will be discussed.

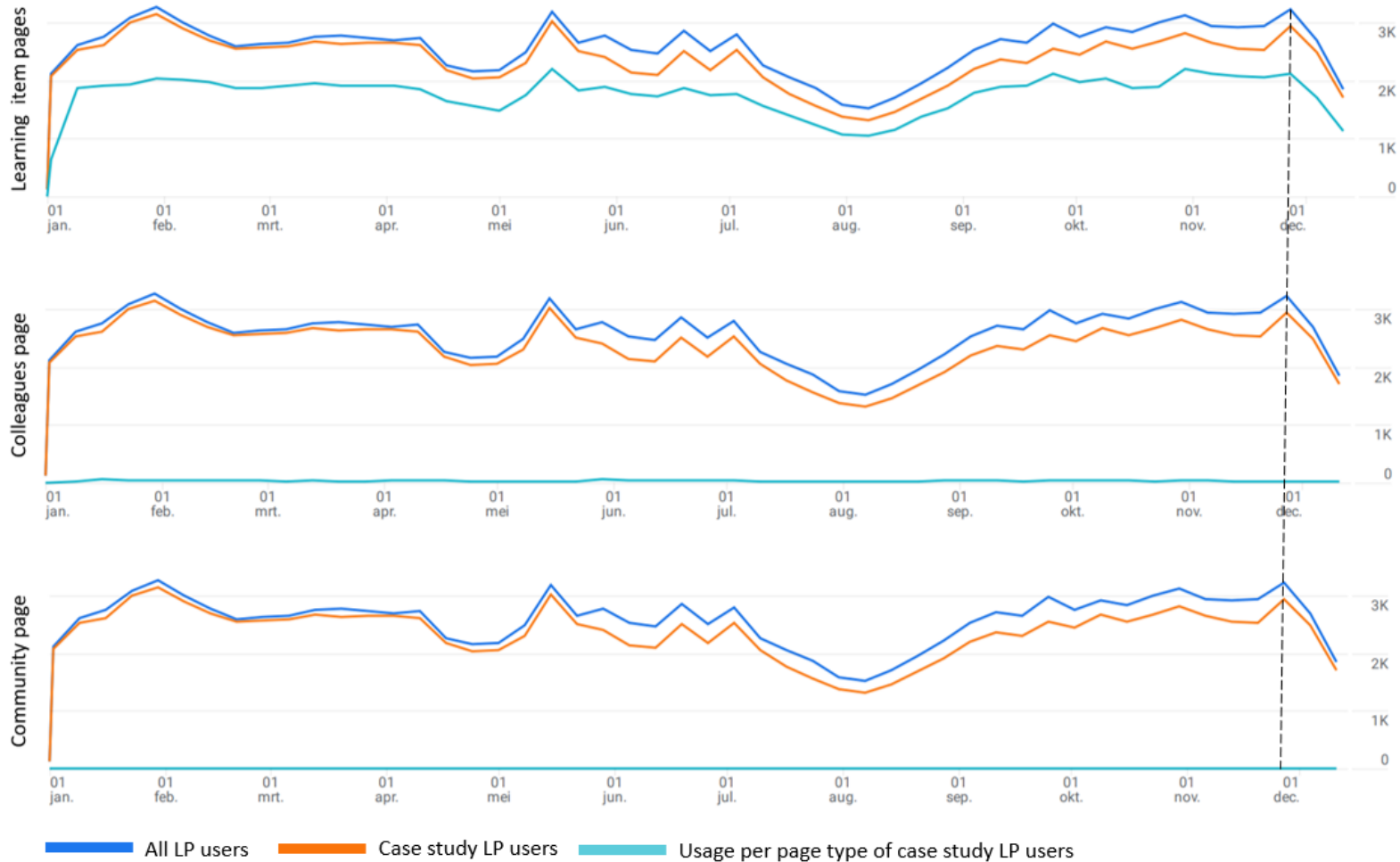
### 4.1 Usage of the learning platform

To answer the first sub-question *“How is the learning platform used by healthcare professionals?”*, several types of data on use were analysed. First of all, according to the user data gathered from the backend of the learning platform, there were 313.622 clicks on learning items between January 1<sup>st</sup> and December 14<sup>th</sup> of 2022 (ICT data from Educared, 2022). Additionally, graphs comparing the usage of the various pages on the learning platform could be generated using Google Analytics (see Figure 4 on the next page) with dark blue lines showing all users of the learning platform, orange lines showing the users of the chosen healthcare organization and light blue lines showing the usage per page for the users of the chosen healthcare organization. These graphs show that the learning items page is used most often with the colleagues and community page being used very little, while also showing a brief spike at the start of the diary study. However, combining the usage of the pages (light blue lines) does not add up to the total usage (orange line). Thus, it seems like the learning items page is used most, however, no clear conclusions can be drawn about what that means for the overall usage of the learning platform and to what extent the platform is used for other purposes.

Next, it was analysed whether there was a significant difference in how participants reported on their use of the learning platform before and after the diary study. Due to the small sample size, determining the distribution of the pre- and post-test was important to choose an appropriate statistical method. Consequently, a Shapiro-Wilk Test was performed and showed that the distribution of the pre-test ( $W = 0.82$ ,  $p < .001$ ) and post-test ( $W = 0.91$ ,  $p = .001$ ) deviated significantly from normality. Thus, neither of the variables are normally distributed and a non-parametric test needed to be conducted. Therefore, a Two-Sided Wilcoxon Signed-Rank Test was performed and showed that the mean post-test scores (2.70) were significantly lower than the mean pre-test scores (3.47),  $Z = 21$ ,  $p < .001$ . Thus, it can be concluded that participants scored their use of the learning platform during the diary study significantly lower than their usage before the diary study.

**Figure 4.**

*Google Analytics Graphs About Usage of the Learning Platform*



*Note.* This figure shows the usage of the three types of pages of the learning platform (LP) from 1 January up until 14 December 2022. The dark blue line shows all users of the learning platform, the orange line shows the users within the chosen healthcare organization of this case study and the light blue line shows how often the users of the chosen healthcare organization used a certain type of page. The dotted line indicates the day on which the diary study started.

Lastly, during the diary study data was collected on if and how participants learned together and/or used the learning platform. Figure 5 on the next page gives an overview of the most important descriptives. To understand this figure, it is important to know that not all questions were answered with the same frequency since routing was used in the instrument design to avoid participants having to answer unnecessary questions. Additionally, the frequencies shown in the figure do not always add up equally to the frequency of the previous data stream on the left since participants could choose multiple answers to a question (see note under Figure 5). Most important to know is that participants used the learning platform for 85 out of 240 logs (35.4%) in which they indicated to have learned. Before drawing any conclusions about this, the following sections will first provide more detail on the descriptives about social WPL and why the learning platform was (not) used in relation to effectiveness, efficiency, and satisfaction.

#### **4.2 Usage of the learning platform for (social) workplace learning**

To answer the second sub-question *“To what extent does the usage of the learning platform relate to the (social) workplace learning of healthcare professionals?”*, the use of the learning platform concerning the (social) WPL of participants was analysed. As can be seen in Appendix Q, out of 240 logs in which participants reported to have learned, in 157 logs (65.4%) participants indicated they learned by getting information and in 112 logs (46.7%) they learned by doing or experiencing something. Other learning activities in descending order are evaluating/reflecting on a work experience (79 logs, 32.9%), observing how others do something (61 logs, 25.4%), and experimenting/testing something (22 logs, 9.2%). Additionally, in 15 logs (6.3%) participants indicated to have learned in another way and for 2 logs (0.8%) they did not know how they learned.

Next, a Chi-Square Test of Independence was performed to assess the relationship between how participants learned and their usage of the learning platform. There was a significant relationship between the two variables,  $\chi^2(6, N = 448) = 22.15, p = .003$ . Next, proportion tests were performed to analyse which differences were significant. Since several statistical tests were performed simultaneously on a single data set, the p-value was adjusted using the Bonferroni correction. Because of the seven tests used, one for each category, the p-value needed to be below  $\frac{.05}{7} \approx .007$  for a difference to be significant. Ultimately, the proportion of participants who learned by getting information differs significantly by the usage of the learning platform,  $\chi^2(1, N = 157) = 19.59, p < .001$ . The proportion of participants who learned by doing/experiencing something, experimenting/testing, evaluating/reflecting, observing others, and those who learned in other ways or did not know how they learned did not differ by the usage of the learning platform. Thus, it can be concluded that, on average, participants who use the learning platform on a certain day learn more often by getting information compared to when they do not use the learning platform.



Furthermore, the relation between learning together and using the learning platform was analysed. As can be seen in Figure 5, for 169 out of 240 logs (70.4%) participants indicated to have learned socially. More specifically, for 46 out of 240 logs (19.2%), they also used the learning platform. A Chi-Square Test of Independence was performed to assess the relationship between participants learning together with others and their usage of the learning platform. There was a significant relationship between the two variables,  $X^2(1, N = 240) = 16.78, p < .001$ . Thus, it can be concluded that, on average, participants who use the learning platform on a certain day learn significantly less often with others compared to when they do not use the learning platform. Lastly, when asked how they planned to continue their learning moment(s) participants indicated that they wanted to share their learning moment(s) with others in 68 out of 240 logs (28.3%) of which in 2 logs participants indicated that they wanted to do this via the learning platform.

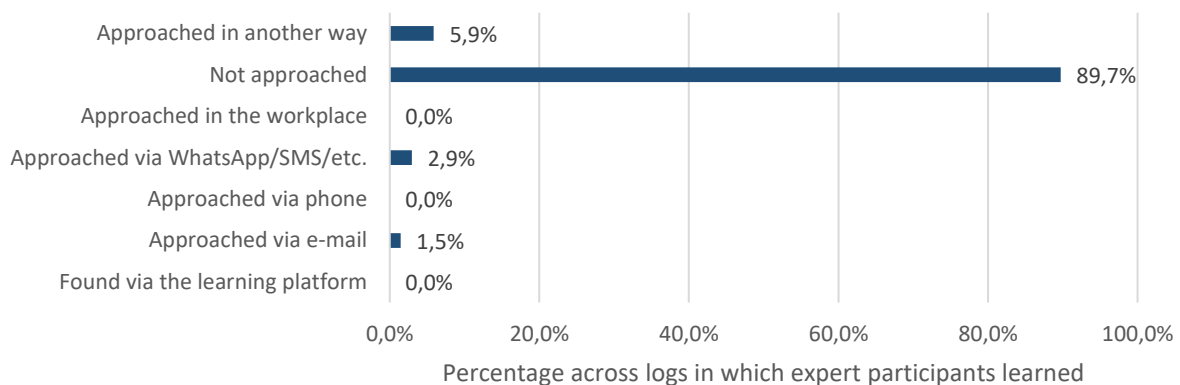
#### ***4.2.1 Experts and the learning platform***

Next to studying the general usage of the learning platform for (social) WPL, it was also studied how the colleagues' page specifically was used by focusing both on the 'expert' and the user perspective. Namely, as stated before, participants were asked to indicate at the start of the diary study whether they are known as an expert via the learning platform. Participants who indicated that they were an expert were asked additional questions on whether they were approached and how. For this question, only one answer was given per daily questionnaire by participants. From the 68 logs in which this question was answered expert participants indicated for 7 logs (11.3%) that they were approached as expert on that particular day (see Figure 6 on the next page). For those 7 logs, the medium that was used to approach the expert participant was WhatsApp, SMS, or something similar (2 logs, 2.9%), e-mail (1 log, 1.5%) or some other medium (4 logs, 5.9%). Since expert participants were only approached a total of 7 times throughout the 2-week diary study with variation across answers on why they were approached, no further insights can be gained on the type of moments in which experts are approached and the role that the learning platform possibly plays in this. However, it can be concluded that during the diary study no expert was (aware that they were) directly contacted via the learning platform. Additionally, it is important to note here that the colleagues' page of the learning platform does not offer a chat or call function for users to contact the experts directly. It only provides contact information, such as a phone number and email address, to users, thus experts would not know how users got their information to contact them. To conclude, from an expert perspective, experts were contacted for 11.3 per cent of the logs in which they were contacted all via other mediums than the learning platform, however, experts could not be aware of how their contact information was retrieved by users.

Next, to assess the use of the colleague’s page from a user perspective all participants were asked with whom they learned together and in 20 out of 169 logs (11.8%) on which they learned together they indicated to have learned together with an expert outside their organization. Additionally, participants learned together with an expert inside their organization in 17 out of 169 logs (10.1%) on which they indicated to have learned together. Furthermore, for 3 out of 85 logs (3.5%) on which participants used the learning platform it was indicated that the learning platform helped them by finding an expert colleague. To conclude, from the user perspective, participants learned together with experts for 21.9 per cent of the logs in which they reported learning together with others and the colleagues' page of the learning platform was used to get in touch with experts for 3.5 per cent of the logs in which participants used the learning platform.

**Figure 6.**

*Overview of how Participants Were Approached as Expert in Percentages*



*Note.* This figure shows the answers to the question “Were you approached as an expert via the learning platform today?” in percentages. The percentages are calculated by dividing the frequency of the answers across the number of logs in which expert participants learned (68 logs). Participants gave only one answer per log.

### **4.3 Effectiveness of the learning platform**

To answer the third sub-question “*To what extent do healthcare professionals perceive the learning platform to be effective to use?*”, this section will first focus on how and why participants did use the learning platform on a certain day before discussing the reasons that participants indicated for not using the learning platform related to effectiveness. First of all, when it comes to how participants used the learning platform, as can be seen in the previously shown Figure 5, participants used the platform to find a healthcare protocol in 31 out of 85 logs (36.5 %) in which they used the learning platform. Furthermore, the participants received suggestions for learning items (27.1%), found a form (21.2%), and found an expert colleague (3.5%). Moreover, the community page of the learning



platform was not used by the participants and 11.8 per cent of the time the learning platform did not help participants. Lastly, participants also indicated that they used the learning platform in other ways (22.4%). Of which for 7 out of those 20 logs (8.2%) in which participants used the learning platform in another way, the participant indicated to have used the learning platform for schooling, e.g., *“the study program is on there, via there I get information”* (participant 9782). To conclude, for 88.2 per cent of the 85 logs in which participants used the learning platform, participants were able to use the learning platform effectively via the learning items pages, the colleagues’ page and schooling via the learning platform.

Next, when asked why they used the learning platform, the answers of participants could be categorized into three categories. They either used the learning platform to find the information they were looking for, they used it for schooling, or they used it but could not find the information they were looking for. More specifically, participants indicated using the learning platform to look for a variety of topics, for example by *“verifying via the learning platform whether everything was arranged according to protocol”* (participant 9804) or by *“looking at what my own organization is writing about this”* (participant 9808). When used for schooling, participants indicated that their *“study program is on the learning platform”* (participant 9756). And lastly, a few participants indicated the reason that they could not find the information, namely *“I searched for the word but could not find anything. In the end I found it on the internet”* (participant 9767). In short, when using the learning platform on a particular day, participants either found information on a variety of topics, used it for schooling or did not find the information they were looking for.

Finally, for the logs in which participants were asked why they did not use the learning platform, they gave answers related to effectiveness 102 times, specifically related to performance expectancy, not finding the information, and practical reasons for not using the learning platform. For performance expectancy, participants indicated that *“it is not something where you need information from the learning platform for”* (participant 9820) and that they *“do not expect using the learning platform to be of added value”* (participant 9805). Additionally, factors related to performance expectancy were also present when participants were asked about improving the learning platform and consequently led to answers, sadly not providing any concrete improvements, like *“I could not use the learning platform for my learning moment”* (participant 9772) and *“I was already aware of the procedures that needed to be followed”* (participant 9778). Regarding information availability, participants answered that *“the learning platform did not have information about this specific case”* (participant 9824) and *“information was too specific to search for it on the learning platform”* (participant 9813). Regarding practical reasons for not using the learning platform, participants indicated *“for most devices, I can manage the settings without additional explanation”* (participant 9757) and *“it was not needed. The learning was unplanned [...] I did not*

*prepare myself for it*" (participant 9805). Thus, when it comes to reaching their learning goal(s) participants indicated that the learning platform was not the right tool, did not contain the sought-after information or was not needed (anymore) and therefore not used by them on that particular day.

#### **4.4 Efficiency of the learning platform**

To answer the fourth sub-question *"To what extent do healthcare professionals perceive the learning platform to be efficient to use?"*, this section will focus on the reasons participants gave for (not) using the learning platform on a certain day related to efficiency. First, for the logs in which participants were asked why they did not use the learning platform they gave answers related to efficiency 46 times, specifically related to finding information elsewhere and there being a threshold for use. For finding information elsewhere, participants responded *"I used Google, that works the fastest"* (participant 9805) and *"a colleague was sitting next to me and that went a lot faster"* (participant 9767). For the threshold for use, participants responded that *"I did not have my Chromebook nearby"* (participant 9814), *"it is faster to call a colleague when you are with a client"* (participant 9827) and *"it is not convenient during my route, and I did not have time after my route"* (participant 9781). In conclusion, on certain days it was more efficient for participants to use other sources to find information, or the context causes a threshold for participants to use the learning platform.

Furthermore, when asked about improving the learning platform participants gave answers related to efficiency a total of 65 times. Specifically, about effort expectancy, the threshold for use, the adjustment of information and using other sources. For effort expectancy, participants stated that *"the search engine is not optimal"* (participant 9775), that they *"would rather see a list of subjects than those space-consuming tiles"* (participant 9781) and that *"it is difficult to switch between the different pages"* (participant 9758). Additionally, participant 9805 proposed a solution of there *"being fewer steps to get information via the learning platform"*. Next, for the threshold for use, participants mentioned that *"using the learning platform costs time which I did not have"* (participant 9782) and that it would *"maybe be easier to use it without the token (multi-factor authentication)"* (participant 9813). Moreover, for the adjusting of information participant 9829 indicated that *"it is unclear, lengthy, and not to the point. I would prefer having a checklist to get a quick overview"*. Lastly, for the final category on using other sources, participants mentioned that they would prefer the *"combination of the convenience of Google and accuracy of information from the learning platform"* (participant 9818). To conclude, according to participants the search engine and functioning of the learning platform could be improved and the information could be displayed

more efficiently. Also, resources such as time and the token required to use the learning platform increase the threshold for use for participants and participants are missing the convenience of other information sources when using the learning platform.

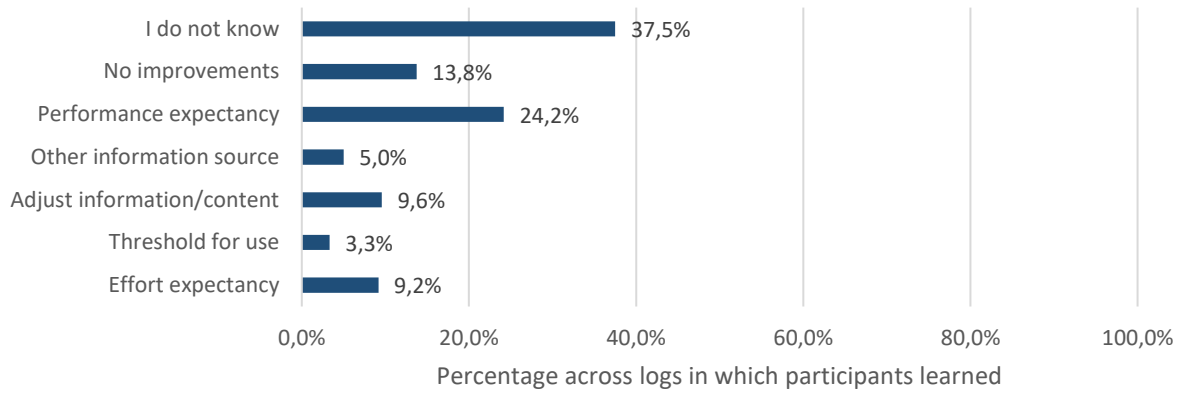
#### **4.5 Satisfaction with the learning platform**

To answer the final sub-question *“To what extent are healthcare professionals satisfied with the learning platform?”*, this section will focus on how the learning platform could be improved according to participants. First of all, participants indicated 33 times (13.8%) that the learning platform required no improvements, 90 times (37.5%) that they did not know how the learning platform could be improved, and 123 times (48.7%) participants mentioned how the learning platform could be (further) improved. When participants were satisfied with the learning platform, they mentioned that *“it is satisfactory for me, the learning platform could not have done more at this point”* (participant 9827) and *“all information was clear to me, the Vilans protocols are always up to date”* (participant 9829). When not sure about improvements, participants mainly answered that they had ‘no idea’ or ‘did not know’, with participants in some cases giving more explanation on an organizational level like participant 9810 who was not clearly satisfied or dissatisfied, *“I would not know, within [healthcare organization] there are rather large differences in working methods between teams. Sometimes that feels comfortable, sometimes I would like more central control”*. Thus, in 13.8 per cent of the logs in which participants learned they were satisfied with the learning platform, for instance, writing positively about the information being clear and up to date, and for 37.5 per cent of the logs in which participants learned they were not clearly satisfied but also not clearly dissatisfied.

Lastly, when it comes to the improvements related to effort expectancy, the threshold for use, adjusting information, using other information sources and performance expectancy discussed in the previous two sections, participants mentioned improvements related to performance expectancy (24.2%) most often (see Figure 7 on the next page). Next, in descending order improvements related to adjusting information (9.6%), effort expectancy (9.2%), using other information sources as inspiration for the learning platform (5.0%) and lowering the threshold for using the learning platform (3.3%) were named. Thus, participants mentioned improvements related to performance expectancy most often compared to the other categories.

**Figure 7.**

*Overview of How the Learning Platform can be Improved According to Participants in Percentages*



*Note.* This figure shows the answers to the question “In which way(s) could the learning platform have helped you (even better) during your learning moment(s) today?” in percentages. The percentages are calculated by dividing the frequency of the answer across the number of logs in which participants learned (240 logs). Since multiple answers could be given per log, the sum of all percentages exceeds 100.

## 5. Discussion

This study investigated which factors play a role in the use of a learning platform by healthcare professionals to facilitate (social) workplace learning, because performance and WPL are crucial for organizations for which mobile devices are a vital tool (Alade et al., 2020; Cheng et al., 2014). To do so, user data on the learning platform and internal documents were analysed, focus groups were conducted to develop the instrument and consequently, a diary study was conducted. This section will first discuss the results, then elaborate upon the theoretical and practical implications and finally present the limitations and suggestions for future research.

The answer to the question *“How is the learning platform used by healthcare professionals?”* is that the learning platform was used in 35.4 per cent of the logs in which participants indicated to have learned and that it is mainly used via its learning items page. This may be explained by the fact that the learning items pages were more visible to users (three separate tabs of items, protocols and documents) compared to the colleagues’ (one tab) and community page (only accessible via a learning trajectory). However, not all usage of the learning platform can be related to the learning items, colleagues’ and community pages. A reason for this could be that pages not directly related to learning, such as the homepage and profile pages of users, were not included in the data collection via Google Analytics (personal communication with Educared, 2023). Secondly, participants scored their use of the learning platform during the diary study significantly lower compared to before the diary study. This may be explained by treatment effects, which states that a diary study could lead to participants paying closer attention to their behaviour, in this case their usage of the learning platform, which could have led to more reflection on their learning behaviour in relation to the learning platform (Rausch et al., 2022; Wheeler & Reis, 1991).

The answer to the question *“To what extent does the usage of the learning platform relate to the (social) WPL of healthcare professionals?”* is that, on average, participants who use the learning platform on a certain day learn more often by getting information and learn significantly less often with others compared to when they do not use the learning platform. This may be explained by the before-mentioned result that the learning platform is mainly used via its learning items pages. These pages allow participants to gather all the information being presented but, for instance, do not allow for testing, evaluating or observing to occur. Moreover, Anderson et al. (2020) found in their study about MOOCs that their participants preferred content over opportunities for social learning and Hult et al. (2020) found that reflecting and/or evaluating is stimulated through collaboration. Thus, this could mean that the learning platform currently does not facilitate other types of learning which are closer connected to social learning, for instance, the observing of others. Secondly, when asked how they planned to continue their learning moment(s) participants indicated that they wanted to

share their learning moment(s) with others on 68 out of 240 logs (28.3%) in which participants indicated to have learned, of which in 2 logs participants indicated that they wanted to do this via the learning platform. This continuance of social learning mainly outside the learning platform could also be explained by the previous reasoning that participants prefer content over social learning when it comes to learning technologies (Anderson et al., 2020). Lastly, participants learned together with internal experts for 17 out of 169 logs (10.1%) in which they indicated to have learned together. They used the learning platform to do so for 3 of those 17 logs, meaning that the learning platform is not always used to contact internal experts. This may be explained by participants having to look up the contact information of a specific expert only once via the learning platform and using the saved contact information in their phone and/or laptop to contact this same expert in the future. Furthermore, participants learned together with external experts, who are not visible on the colleagues' page of the learning platform, for 20 out of those 169 logs (11.8%). An explanation for this may be that participants felt the need for external information and consequently gathered this information themselves since it is not facilitated by the learning platform. This process can be connected to boundary spanning, which is the case when boundary spanners (employees) reach out across boundaries, with boundaries not only being defined by organizations but also through other means such as people within a certain area of expertise, to exchange knowledge (Hansen & Baroody, 2018). "Accurate information from external areas is vital to the innovation process" (Tushman, 1977, p.587) and recently the demand and need for boundary spanning has been growing in the healthcare sector to further improve the healthcare system (Eljiz et al., 2020) and tackle complex healthcare problems (Cassidy et al., 2019).

The answer to the question *"To what extent do healthcare professionals perceive the learning platform to be effective to use?"* is that the learning platform helped participants reach their goal 88.2 per cent of the time. Goals were mostly reached using the learning items pages, however, the colleagues' page and schooling via the learning platform also helped participants reach their goals, albeit to a lesser extent. Similarly, participants indicated to have used the learning platform to either find information on a variety of topics or use it for schooling. This may be explained by the four types of appropriation by Dennerlein et al. (2020). Namely, participants appropriated the learning platform in an expected manner when using the learning items and colleagues' pages and did so in an unexpected manner when using the learning platform for schooling. However, for the latter, it could also be argued that using the learning platform for schooling was intended but overlooked during the initial analysis of the learning platform in this study. Furthermore, there were some cases where participants could not reach their goal(s) via the learning platform because they could not find the information, did not think that the learning platform was the right tool or did not need the learning platform (anymore). This could be explained through a combination of dis-appropriation and non-

appropriation, since it cannot be inferred from the data whether participants did not see the value of or understand the learning platform and therefore did not use it or whether the learning platform did not work and was therefore not used.

The answer to the question *“To what extent do healthcare professionals perceive the learning platform to be efficient to use?”* is that participants who did not use the learning platform indicated that contextual factors, such as not having a laptop nearby, increased the threshold to use the learning platform. This may be explained by the current pressure that Dutch healthcare professionals are facing with the percentage of professionals experiencing (way) too high of a work pressure rising above 50 per cent in 2022 (CBS, 2022). Therefore, increasing the importance of lowering the threshold for use to increase the ease with which the learning platform can be used by healthcare professionals in the limited time they have for learning. Moreover, other sources, such as Google, were mentioned by participants as being more efficient to use for finding information. Specifically, improvements related to the conciseness of information, the tiles on the learning platform interface and the removal of required resources such as time and a token to log in were proposed by participants. Similarly, De Silva et al. (2014) found that *“a user-friendly interface with an easy navigation scheme is necessary to increase the speed in getting and sharing information”* (p. 20), stating that the achievement of efficiency for a system will lead to the empowerment of users to use said system. Thus, improving the learning platform on the aforementioned points may lead to an increase in efficiency and usage.

Finally, the answer to the question *“To what extent are healthcare professionals satisfied with the learning platform?”* is that 13.8 per cent of the time participants indicated being satisfied with the learning platform, highlighting positive aspects such as clear and up-to-date information, 37.5 per cent of the time participants were not clearly satisfied or dissatisfied with the learning platform, and 48.7 per cent of the time participants mentioned how the learning platform could be (further) improved. Specifically, improvements pertaining to performance expectancy were mentioned most often by participants (24.2%). This could be explained by the fact that technology should first enable users to reach their goal(s) independently before further improving efficiency and satisfaction with studies like the one by Constantinescu et al. (2019) using the terms critical and non-critical changes respectively. However, in contrast, Alade et al. (2020) found effort expectancy, or the efficiency with which technology is used, to be the strongest predictor of behavioural intention to use and Da Silva et al. (2014) included efficiency as one of the variables to measure satisfaction. So, although improving effectiveness might be the most critical change to a technology, efficiency should also be considered to *“empower the user to use the system”* (De Silva et al., 2014, p. 20).

## **5.1 Theoretical implications**

This study is one of the first to measure WPL on a daily level in its natural life context (Ohly et al., 2010), especially important considering its dynamic character (Tannenbaum et al., 2010). This showed that, on average, participants who used the learning platform on a certain day learned significantly more often through gathering information and significantly less often with others compared to when they did not use the learning platform. It could therefore be stated that the learning platform is mainly used for WPL on an individual level, similar to performance support. Moreover, the fact that social WPL mainly occurred outside the learning platform, and potentially through boundary spanning, shows that technology might not be needed to facilitate all types of learning. Secondly, this study allowed for the usability of a technology to be studied on a daily level, as opposed to measuring effectiveness and efficiency via set tasks and satisfaction via standardized questionnaires (Constantinescu et al., 2019; De Silva et al., 2014; Georgsson & Staggers, 2016; Sari et al., 2015). This led to a more qualitative analysis by not only allowing participants to use the learning platform as they would normally, especially important considering the four types of appropriation of Dennerlein et al. (2020), but also by letting them answer questions using their own words. Although this might have made it more difficult to compare effectiveness, efficiency and satisfaction, it also allowed unexpected results, such as using the learning platform for schooling, to be captured. Thus, fitting the exploratory character of this study. Lastly, this study focused on the specific context of extramural care consequently providing insights into the (social) WPL of healthcare professionals who have limited (face-to-face) interactions with their colleagues. However, sadly, within the scope of this study no comparison can be made with other types of healthcare professionals.

## **5.2 Practical implications**

According to the results of this study, the learning platform is an effective tool in the healthcare sector, because, for 88.2 per cent of the logs in which participants used the learning platform, they were successful in reaching their goal. This was, on average, done significantly more often through the gathering of information and less often done together with others. As stated before, it could therefore be stated that the learning platform is used similarly to performance support. Building further upon this by considering previously mentioned improvements, such as combining the convenience of Google with the need for secure and trustful information in the healthcare sector (Hult et al., 2020), could further enhance the usability of the learning platform as performance support. Secondly, this study showed that healthcare professionals are also looking for knowledge outside their own organization, a process also known as boundary spanning (Hansen & Baroody, 2018). To facilitate this, it is important to create awareness on the location of external experts (Marques-Quinteiro et al., 2019). Further emphasizing this collaboration between various healthcare



organizations and/or professions can not only lead to more effective individual learning but also to more effective healthcare practices (Noble et al., 2017).

### 5.3 Limitations

This study has both its strengths and limitations, which will be discussed in the following section. First of all, the data of the diary study was collected in the natural work environment of participants over a period of two weeks, causing the data to be collected as close as possible to the learning moments to avoid the disadvantages of retrospective measures (Rausch et al., 2022) and consider the dynamic character of WPL (Tannenbaum et al., 2010). Additionally, the opinions and experiences of participants with the learning platform were partially captured by allowing participants to use their own words via open questions, leading to more qualitative insights over time as opposed to other studies, such as Muniandy et al. (2022), who only used a questionnaire with Likert Scale items to gain insight into the UTAUT variables. Lastly, 543 out of 686 expected logs were answered by participants, leading to a response rate of 79.2%, which is relatively high considering that Murray et al. (2001) consider their response rate of 68% to be reasonable and some studies having a response rate as low as 22% (Colombo & Landoni, 2014).

Conversely, a limitation of this study is that only one case, specifically related to the extramural healthcare sector, was studied. Thus, leading to less powerful conclusions compared to multi-case studies which allow for comparison and consequently more compelling evidence (Yin, 2003). Additionally, the contexts are likely to slightly differ between multiple cases, leading to more generalizable results as well (Yin, 2003). However, as Yin (2003) states “a multiple-case study may require extensive resources and time beyond the means of a single student” (p.47). By using a longitudinal design, this study managed to capture more data on the (social) WPL of healthcare professionals compared to other cross-sectional case studies.

Next, the results may not be completely generalizable since the sample population in this study consisted for 93.9 per cent of women, whereas the working population in this sector consisted for 88.5 per cent of women during the first quartile of 2022 (CBS, 2023). In addition, one could argue that those more interested in learning are more likely to sign up for a study like this, possibly leading to an increase in learning and the usage of the learning platform when compared to the average user, since convenience sampling was used by allowing any healthcare professional of the organization who was accessible and willing to participate (Palinkas et al., 2015; Teddlie & Yu, 2007). Other types of sampling such as random sampling or purposeful sampling have the advantage of minimizing bias and gaining information-rich data respectively (Palinkas et al., 2015). However, a sampling strategy should also be feasible (Palinkas et al., 2015; Teddlie & Yu, 2007) and considering

the burden that diary studies place on participants possibly leading to dropouts (Ohly et al., 2010), having participants interested in their learning might have had a positive effect on the data collection instead.

Lastly, the phrasing of questions related to social (WPL) and the use of the learning platform could be improved since it was not possible in this study to infer whether participants who learned together also used the learning platform for this. Similarly, next to the phrasing of these questions, the routing of questions could also be improved by making sure that expert participants who do not learn on a certain day still get asked whether they were approached as an expert. In this study, due to an oversight by the researcher, expert participants were only given this question if they had learned themselves. Thus, certain conclusions of this study could have been stronger.

#### **5.4 Future research**

Based on the results of this present study and considering the previously discussed limitations, various recommendations for future research will now be discussed. Firstly, a vast amount of data was collected and only a limited amount could be analysed to fit the scope of this thesis. Future research could therefore focus more extensively on how healthcare professionals learn together and how they plan to continue their learning for example using the data collected for this study. Also, more complex analyses focusing on the differences in (social) WPL and learning platforms over time could be conducted.

Secondly, results showed that the learning platform could be an effective tool for performance support in the healthcare sector. However, 48.7 per cent of the time participants indicated that the learning platform could be further improved. It could therefore be relevant for future research to focus in more detail on how and in which areas the effectiveness, efficiency and satisfaction with which the learning platform is used could be improved. For instance, by looking at the characteristics of the parts of the learning platform that are currently well-used by healthcare professionals such as the healthcare protocols and the internal documents. Also, extreme case, or outlier, sampling could be an option to find out which factors influence the use of technology by users who really do (not) like the learning platform (Palinkas et al., 2015; Teddlie & Yu, 2007), possibly combining both in a multiple-case study.

Lastly, the facilitation of social learning in the healthcare sector could be further explored concerning boundary spanning. This research has shown that healthcare professionals learn together with external experts without the facilitation of the learning platform. Additionally, previous research has shown that tools facilitating social learning can encourage knowledge sharing (Anderson et al., 2020) with facilitating conditions and attitude having a significant effect on the behavioural intention

to use social learning technology (Khechine & Augier, 2019). However, it is also important to consider the extent to which the performance-supporting aspects of the learning platform may be replacing moments of social interactions, for instance when healthcare professionals use the learning platform to look up the answer to a question instead of asking a colleague. Thus, future research could explore how and to what extent social learning can be facilitated by technologies such as the learning platform.

## 6. Conclusion

To conclude, the research question “*Which factors play a role in the use of a learning platform by healthcare professionals to facilitate (social) workplace learning?*” was studied using a combination of internal documents, user data, focus groups and a diary study while focusing on usage, effectiveness, efficiency and satisfaction. User data, corroborated by diary study data, showed that the learning platform was mainly used via its learning item pages (35.4% of the time). Additionally, on average, participants who use the learning platform on a certain day learn more often by getting information and learn significantly less often with others compared to when they do not use the learning platform. Thus, treating the learning platform similar to performance support. Moreover, participants were able to reach their learning goal(s) via the learning platform 88.2 per cent of the time. Next, participants learned together with external experts outside the learning platform, possibly engaging in boundary-spanning. Lastly, most suggestions for improvements given by participants related to the performance expectancy of the learning platform. Further building upon these improvements could lead to an increase in the effectiveness, efficiency and satisfaction with which the learning platform is used by healthcare professionals.

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## 8. Appendices

# Appendix A. Screenshots of Learning Platform

Figure A.1.

Home screen of learning platform

**BUURTZORG** Infotour Activiteitenkalender Educared

## Goedemorgen, wat wil je weten vandaag?

Vul je zoekopdracht in... Alle items Zoeken

### Thema's

- Buurtzorgvisie
- Dossiervoering/BIS
- Gezondheidsbevordering & preventie
- Leren & opleiden
- Buurtzorgdocumenten
- Samenwerking & communicatie
- Verpleegtechnisch handelen
- Vitaliteit, gezondheid & verzuim
- Werving
- Zelfredzaamheid
- Ziektebeelden & Doelgroepen
- Zorgtechnologie

### Voorgesteld door Buurtzorg

- campagne Keuringsdienst van Banen**  
Hier vind je alles over de landelijke Buurtzorg campagne...  
Informatieplaatje
- Kaders van Buurtzorg**  
In dit document worden de kaders van Buurtzorg anno...  
Informatieplaatje
- Buurtzorg Toekomstbestendig**  
Het complete leertraject Buurtzorg Toekomstbestendi...  
Leertraject
- Vitaliteitsplein**  
Vitale collega, vitaal team, vitale organisatie  
VITALITEITSPLEIN  
Informatieplaatje

### Laatst bekeken items

- Visiebijeenkomst**  
online visiebijeenkomst met Jos de Blok  
21 minuten geleden Acties
- Informatie personeelsadministratie**  
De informatie die een nieuwe medewerker bij indiensttreding van personeelszaken krijgt  
31 minuten geleden Acties
- FAQ BIS**  
Frequently Asked Questions BIS  
31 minuten geleden Acties
- Kwaliteitszorg in teams**  
Resultaten van het onderzoek naar kwaliteitszorg in de teams door deelnemers van de Leergang Wijkverpleging  
31 minuten geleden Acties

### Lopende activiteiten

- Palliatieve zorg

### Mijn komende afspraken

- Visiebijeenkomst** Ingeschreven  
Kantoor: Arendstraat 1, 1234AA Almelo  
Datum: 31-03-2023 | 09:00u - 09:30u

### Relevante groepen

Je hebt momenteel geen groepen behorend bij je voorkourthemas

### Laatste berichten in mijn community

Er zijn geen berichten gevonden!

**Buurtzorg Leeromgeving** Veel gestelde vragen Contact  
[Bekijk de FAQ](#) [Support formulier](#)

Figure A.2.

Learning items page of learning platform

The screenshot displays the 'Learning items page' of the Buurtzorg learning platform. At the top, there is a search bar with the text 'zoeken...' and navigation links for 'Infotour', 'Activiteitenkalender', and 'Educared'. Below the search bar, there are tabs for 'Items', 'Buurtzorgdocumenten', 'Vilans protocollen', and 'Collega's'. The main content area is titled 'Filter de resultaten' and 'Alle items'. On the left, there are filters for 'Categorie' (Korte items of verdiepend leren), 'Thema's' (Kies thema's), and 'Type' (Filter het type). The 'Categorie' filter includes options like 'Alle items', 'Snel iets weten', and 'Meer leren'. The 'Thema's' filter includes options like 'Buurtzorgdocumenten', 'Buurtzorgvisie', 'Dossiervoering/BIS', 'Gezondheidsbevordering & preventie', 'Leren & opleiden', 'Samenwerking & communicatie', 'Verpleegtechnisch handelen', 'Vitaliteit, gezondheid & verzuim', 'Werving', 'Zelfredzaamheid', 'Ziektebeelden & Doelgroepen', and 'Zorgtechnologie'. The 'Type' filter includes options like 'Alles', 'bijeenkomst', 'e-learning', 'informatief', 'informatieplein', 'leergang', 'leertraject', 'podcast', 'toets', 'VTH-scholing', and 'webinar'. The main grid of learning items includes: 'Salarisbetaling' (informatief), 'Registratierichtlijnen' (informatief), 'Aanpak' (informatief), 'Aanmelding nieuwe collega - mutatie' (informatief), 'campagne Keuringsdienst van Banen' (informatieplein), 'Leergang Wijkverpleging 2022/2023' (leertraject), 'Nieuwe collega en mutatie' (informatief), 'Wondzorg' (e-learning), 'Soorten wonden' (informatieplein), 'Declaratieformulier 2023' (informatief), 'Kaders van Buurtzorg' (informatief), and 'Scholing Integrale zorg dementie niveau 3 en 4' (leertraject). A pagination bar at the bottom shows '1 2 3 4 5 ... 70 Volgende' and a dropdown menu with '12'.

Figure A.3.

Internal documents page of learning platform

The screenshot displays the 'Internal documents page' of the Buurtzorg learning platform. At the top, there is a search bar with the text 'zoeken...' and navigation links for 'Infotour', 'Activiteitenkalender', and 'Educared'. Below the search bar, a horizontal menu contains 'Items', 'Buurtzorgdocumenten', 'Vilans protocollen', and 'Collega's'. The main content area is titled 'Filter de resultaten' and 'Alle items'. On the left, a 'Tags' section allows filtering by various categories such as 'Administratie en registratie', 'assessment', 'Buurtzorg Toekomstbestendig', etc. The main grid shows 12 document cards, each with a 'BUURTZORG' logo, a title, a 'Informatief' label, and a star rating. The documents include: 'Salarisbetaling' (1587 views), 'Registratierichtlijnen' (636 views), 'Aanmelding nieuwe collega - mutatie' (448 views), 'Nieuwe collega en mutatie' (398 views), 'Declaratieformulier 2023' (370 views), 'Kaders van Buurtzorg' (333 views), 'Declaratieformulier scholing / opleiding' (277 views), 'CAO VVT 2022' (273 views), 'Urenregistratie declaratie via het Web' (261 views), 'Missie Visie' (244 views), 'Zorgdossier' (236 views), and 'Richtlijn verlof' (228 views). At the bottom, there is a pagination control showing '1 2 3 4 5 ... 32 Volgende' and a dropdown menu set to '12'.

Figure A.4.

Healthcare protocols page of learning platform

The screenshot shows a web interface for healthcare protocols. At the top, there is a navigation bar with the logo 'BUURTZORG' and a search bar containing 'zoeken...'. To the right of the search bar are icons for 'Infotour', 'Activiteitenkalender', and 'Educared'. Below the navigation bar are four tabs: 'Items', 'Buurtzorgdocumenten', 'Vilans protocollen' (which is selected), and 'Collega's'. The main content area is titled 'Vilans protocollen' and includes a sub-header: 'In deze categorie vind je protocollen voor risicovolle en voorbehouden deskundigheden.' Below this is a grid of 12 protocol cards, each featuring the Vilans logo and a title. The titles of the cards are: 'Aan- en afkoppelen urineopvangzak bij een katheterventiel', 'Aan- en uitkleden', 'Aansluiten continue blaaspoeling via driewegverbljfskatheter', 'Actiq toedienen via slijmvlies mond', 'Ademhaling tellen', 'Ademhaling tellen kind', 'Adrenaline injecteren met de EpiPen', 'Afsluiten continue blaaspoeling via driewegverbljfskatheter', 'Agrafen verwijderen', 'Airstacken toepassen', 'Allergietest', and 'Antibiotica vernevelen'. Each card also includes a 'Vilans protocol' label. At the bottom of the grid, there is a pagination control showing '1 2 3 4 5 ... 33 Volgende' and a dropdown menu set to '12'. The footer of the page is a blue bar with the text 'Buurtzorg Leeromgeving', 'Veel gestelde vragen', and 'Contact', along with links for 'Bekijk de FAQ' and 'Support formulier'.



Figure A.5.

Colleagues page of learning platform

**BUURTZORG** zoeken...

Infotur Activiteitenkalender Educared

Items Buurtzorgdocumenten Vilans protocollen **Collega's**

**Filter de resultaten**

**Afstand**  
Vind collega's bij je in de buurt  
Max. afstand tot collega 200 km

**Kennisgebieden**  
Kies kennisgebieden

- Aandachtsvelders GWZ
- Aandachtsvelders vitaliteit ALS
- Beeldbellen Blaaskatheterisatie
- Bloedtransfusie, toediening bloedproducten
- Buurtzorg Toekomstbestendig
- Carescreen
- Contactpersoon pleisterplaats
- COPD

Meer tonen

**Beschikbaarheid**  
Kies hoe je contact wilt opnemen

- Alles
- Telefonisch
- Per mail
- Videobellen

**Collega's**  
510 collega's gevonden

Afstand 200 km

	<b>Marlin Mellema</b> <small>Eigen locatie</small> Wijkverpleegkundige <small>Dementie</small>	<a href="#">Bekijk</a>
	<b>Harry Hermans</b> <small>Eigen locatie</small> Onbekend <small>IT en Google workspace</small>	<a href="#">Bekijk</a>
	<b>Loretta Laars</b> <small>Eigen locatie</small> Wijkverpleegkundige <small>Infusietechnologie/pompen TPV VTH trainers</small>	<a href="#">Bekijk</a>
	<b>Dennis Dorster</b> <small>Eigen locatie</small> Wijkverpleegkundige <small>Palliatieve en terminale zorg Levensbeschouwing, spirituele zorg, zingeving Integratieve Nursing</small>	<a href="#">Bekijk</a>
	<b>Peter Paartman</b> <small>Eigen locatie</small> Wijkverpleegkundige <small>Dementie</small>	<a href="#">Bekijk</a>
	<b>Berend Baarslag</b> <small>Eigen locatie</small> Wijkverpleegkundige <small>Wondzorg</small>	<a href="#">Bekijk</a>
	<b>Sebastián Soto</b> <small>Eigen locatie</small> Verpleegkundige in de wijk <small>Wondzorg Diabetes</small>	<a href="#">Bekijk</a>
	<b>Elena Efymenko</b> <small>Eigen locatie</small> Verpleegkundige in de wijk <small>Wondzorg</small>	<a href="#">Bekijk</a>
	<b>Rosanne Roos</b> <small>Eigen locatie</small> Verpleegkundige in de wijk <small>VTH trainers</small>	<a href="#">Bekijk</a>
	<b>Rianne Rikkink</b> <small>Eigen locatie</small> Wijkverpleegkundige <small>Kwetsbare ouderen Ormha, ECD, Assessment PGS, PGS indiceren Stagebegeleiding</small>	<a href="#">Bekijk</a>
	<b>Kerem Kurt</b> <small>Organisatie locatie</small> Wijkverpleegkundige <small>Hartfalen</small>	<a href="#">Bekijk</a>
	<b>Violet ter Vandamme - Vandebek</b> <small>Eigen locatie</small> Wijkverpleegkundige <small>Oncologie Dementie</small>	<a href="#">Bekijk</a>

1 2 3 4 5 ... 43 Volgende

12

**Buurtzorg Leeromgeving**

Veel gestelde vragen  
Bekijk de FAQ

Contact  
Support formulier

Figure A.6.

Community page of learning platform

The screenshot displays the 'Vitale Community' page on a learning platform. At the top, there is a search bar with the text 'zoeken...' and a 'BUURTZORG' logo. The navigation menu on the left includes 'Mijn berichten', 'Groepen', and 'Mijn groepen' with a sub-menu for 'Vitale Community'. The main content area features a post titled 'Vitale Community' with 43 members, 3 questions, and 3 answers. The post text describes a platform for sharing ideas and experiences. Below this is a form to create a new post, with fields for title and content, and a '+ Plaatsen' button. A filter bar shows 'Geen filter'. Two posts are visible: one by Loretta Laars about a podcast, and another by Rosanne Rooz about a podcast by Richard de Leth. The footer contains 'Buurtzorg Leeromgeving', 'Veel gestelde vragen', 'Contact', 'Bekijk de FAQ', and 'Support formulier'.

## Appendix B. Introduction Letter Focus Groups

Onderwerp: Introductie van focusgroep werkpleklers Universiteit Twente

Hallo,

Je hebt aangegeven om mee te willen doen aan een onderzoek van de Universiteit Twente. In deze brief lees je wat het onderzoek praktisch inhoudt.

### **Praktisch**

De focusgroep zal online plaatsvinden via een Google Meet op [Datum en tijd]. De focusgroep zal ongeveer 60 minuten duren, waarin gevraagd zal worden om je mening te geven over de begrijpelijkheid van vragen die gesteld zullen worden in een dagboekonderzoek over werkpleklers. Daarnaast zal ook kort de praktische uitvoerbaarheid van dit dagboekonderzoek besproken worden. Tot slot zal er gevraagd worden naar je interesse om mee te doen aan het dagboekonderzoek. Weet dat deelname aan het dagboekonderzoek geen verplichting is om mee te doen aan de focusgroep.

### **Toestemming geven**

In de bijlage is een informatieblad en toestemmingsformulier over dit onderzoek toegevoegd.

**Belangrijk:** Lees dit document **vóór** de focusgroep goed door en neem contact op met de onderzoeksleider bij twijfels of vragen.

Ik zou je willen vragen om **voorafgaand** aan de focusgroep akkoord te gaan met de punten benoemd op de laatste pagina van dit document. Dit kun je doen via de volgende link:

[https://utwentebbs.eu.qualtrics.com/jfe/form/SV\\_57n53fOBFxwrOnk](https://utwentebbs.eu.qualtrics.com/jfe/form/SV_57n53fOBFxwrOnk)

Ga je **niet** akkoord met één of meerdere punten? Neem dan zo snel mogelijk contact op met mij.

### **Google Meet**

De link naar de Google Meet zul je via het opgegeven e-mailadres ontvangen. Heb je deze niet ontvangen? Neem dan contact op met mij.

Bij vragen of opmerkingen kun je mij altijd mailen of bellen via [m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl) of [telefoonnummer onderzoeker].

Bedankt dat je mij wilt helpen met afstuderen!

Met vriendelijke groet,

Myrthe Luttikhuis

Student Educational Science & Technology, Universiteit Twente

Bijlage:

- Informatieblad en toestemmingsformulier [toevoegen aan e-mail]

## **UNIVERSITEIT TWENTE.**

### **FACULTY OF BEHAVIOURAL, MANAGEMENT AND SOCIAL SCIENCES**

#### **Informatieblad & Toestemmingsformulier Onderzoek**

##### **Toestemming**

Voordat u mee kan doen aan dit onderzoek is het van belang dat u actief aangeeft dat u akkoord gaat met de onderstaande informatie. U zult gevraagd worden dit akkoord te geven aan het begin van de focusgroep. Zonder dit akkoord zult u niet door kunnen gaan met het onderzoek. Lees de informatie goed door, en neem bij twijfel of vragen contact op met de onderzoeksleider ([m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl)).

##### **Doel van het onderzoek**

Dit onderzoek wordt geleid door Myrthe Luttikhuis en begeleid door Nick Goossen (PhD kandidaat). Het doel van dit onderzoek is om inzicht te krijgen in (sociaal) werkplekieren, al dan niet met behulp van de leeromgeving, in de zorgsector. Hiermee hopen we meer kennis te krijgen over werkplekieren in de zorg. De onderzoeksgegevens zullen worden gebruikt voor de master thesis van de onderzoeksleider.

##### **Hoe gaan we te werk?**

U neemt deel aan een focusgroep (ongeveer 60 minuten) waarbij u vragen gesteld zullen worden over de begrijpelijkheid van vragen in een dagboekonderzoek. Ook zullen een aantal vragen gesteld worden over de praktische uitvoerbaarheid van dit dagboekonderzoek. Tot slot, zal u gevraagd worden of u deel zou willen nemen aan het dagboekonderzoek.

##### **Verwachtingen**

Er wordt van u verwacht dat u tijdens de focusgroep eerlijk en zo volledig mogelijk antwoord geeft op de gestelde vragen en actief deelneemt aan de groepsdiscussie. Het gaat puur om uw mening en ervaring, goede of foute antwoorden bestaan dus niet. Tijdens de focusgroep zal een opname worden gemaakt.

##### **Potentiële risico's en ongemakken**

Er zijn geen fysieke, juridische of economische risico's verbonden aan uw deelname aan deze studie. U hoeft geen vragen te beantwoorden die u niet wilt beantwoorden. Uw deelname is vrijwillig en u kunt uw deelname op elk gewenst moment stoppen.

##### **Vergoeding**

U ontvangt voor deelname aan dit onderzoek geen vergoeding.

##### **Vertrouwelijkheid van gegevens**

De onderzoeksleider (Myrthe Luttikhuis) zal samen met de begeleider (Nick Goossen, Universiteit Twente) toegang hebben in de onderzoeksgegevens. Wij zijn de enige twee personen die antwoorden kunnen koppelen aan specifieke personen. Echter, is een van de eerste stappen na het verzamelen van alle gegevens, het anonimiseren ervan. In rapportages of publicaties, zoals de masterscriptie, zullen gegevens dus niet herleidbaar zijn.

De opname die in het kader van deze studie wordt gemaakt, wordt opgeslagen op een beveiligde locatie bij de Universiteit Twente en op de beveiligde (versleutelde) gegevensdragers van de onderzoekers. Wij zijn verplicht om de onderzoeksgegevens voor een periode van 10 jaar te bewaren op deze beveiligde locatie. Uiterlijk na het verstrijken van deze termijn zullen de gegevens worden verwijderd of worden geanonimiseerd zodat ze niet meer te herleiden zijn tot een persoon.

Tot slot is dit onderzoek beoordeeld en goedgekeurd door de ethische commissie van de faculteit BMS, Universiteit Twente.

### **Vrijwilligheid**

Deelname aan dit onderzoek is geheel vrijwillig. U kunt als deelnemer uw medewerking aan het onderzoek te allen tijde stoppen, of weigeren dat uw gegevens voor het onderzoek mogen worden gebruikt, zonder opgave van redenen.

Als u tijdens het onderzoek besluit om uw medewerking te staken, zullen de gegevens die u reeds hebt verstrekt tot het moment van intrekking van de toestemming in het onderzoek gebruikt worden.

Wilt u stoppen met het onderzoek, of heeft u vragen en/of klachten? Neem dan contact op met de onderzoeksleider.

Myrthe Luttikhuis, [m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl).

Voor bezwaren met betrekking tot de opzet en of uitvoering van het onderzoek kunt u zich ook wenden tot de Secretaris van de Ethische Commissie van de faculteit Behavioural, Management and Social Sciences op de Universiteit Twente via [ethicscommittee-bms@utwente.nl](mailto:ethicscommittee-bms@utwente.nl). Dit onderzoek wordt uitgevoerd vanuit de Universiteit Twente, faculteit Behavioural, Management and Social Sciences. Indien u specifieke vragen hebt over de omgang met persoonsgegevens kunt u deze ook richten aan de Functionaris Gegevensbescherming van de UT door een mail te sturen naar [dpo@utwente.nl](mailto:dpo@utwente.nl).

Tot slot heeft u het recht een verzoek tot inzage, wijziging, verwijdering of aanpassing van uw gegevens te doen bij de Onderzoeksleider.

**Door dit toestemmingsformulier te ondertekenen erken ik het volgende:**

1. Ik ben voldoende geïnformeerd over het onderzoek door middel van een separaat informatieblad. Ik heb het informatieblad gelezen en heb daarna de mogelijkheid gehad vragen te kunnen stellen. Deze vragen zijn voldoende beantwoord.
2. Ik neem vrijwillig deel aan dit onderzoek. Er is geen expliciete of impliciete dwang voor mij om aan dit onderzoek deel te nemen. Het is mij duidelijk dat ik deelname aan het onderzoek op elk moment, zonder opgaaf van reden, kan beëindigen. Ik hoef een vraag niet te beantwoorden als ik dat niet wil.

Naast het bovenstaande is het hieronder mogelijk voor verschillende onderdelen van het onderzoek specifiek toestemming te geven. U kunt er per onderdeel voor kiezen wel of geen toestemming te geven. Indien u voor alles toestemming wil geven, is dat mogelijk via de aanvinkbox onderaan de stellingen.

	JA	NEE
3. Ik geef toestemming om de gegevens die gedurende het onderzoek bij mij worden verzameld te verwerken zoals is opgenomen in het bijgevoegde informatieblad.	<input type="checkbox"/>	<input type="checkbox"/>
4. Ik geef toestemming om tijdens het interview opnames (geluid / beeld) te maken en mijn antwoorden uit te werken in een transcript.	<input type="checkbox"/>	<input type="checkbox"/>
5. Ik geef toestemming om mijn antwoorden te gebruiken voor quotes in de onderzoekspublicaties onder een pseudoniem.	<input type="checkbox"/>	<input type="checkbox"/>
6. Ik geef toestemming om de bij mij verzamelde onderzoeksdata te bewaren en te gebruiken voor toekomstig onderzoek en voor onderwijsdoeleinden.	<input type="checkbox"/>	<input type="checkbox"/>
Ik geef toestemming voor alles dat hierboven beschreven staat.	<input type="checkbox"/>	

## Appendix D. Focus Group Design

**Met wie:** Buurtzorg teams in Twente (gecontacteerd via Educared)

**Waar:** Online (via Google Meet)

**Wanneer:** november 2022 (ongeveer 60 minuten)

**Met hoeveel:** 4-7 participanten per online focus groep, in totaal 2 tot 3 online focus groepen

**Benodigdheden:** opname via Google Meet, PowerPoint (met selectievragen, demografische vragen en dagelijkse vragenlijst), online survey (voor ethische toestemming).

**Table D.1.**

### *Inhoud van focus groep*

Tijd	Inhoud	Benodigd materiaal
0-5 minuten (5 min.)	Bevestiging digitaal ondertekenen toestemmingsformulier	Link naar online survey (ethische toestemming geven)
! Geluidsopname starten!	! Geluidsopname starten!	Google Meet
5-10 minuten (5 min.)	Begrijpelijkheid selectievragen	Selectievragen in PowerPoint
10-20 minuten (10 min.)	Begrijpelijkheid demografische vragen	Demografische vragen in PowerPoint
20-45 minuten (25 min.)	Begrijpelijkheid dagelijkse vragenlijst	Dagelijkse vragenlijst in PowerPoint
45-55 minuten (10 min.)	Beschikbaarheid van vragenlijsten en timing van notificaties	Informatie over timing en notificaties in PowerPoint
55-60 minuten (5 min.)	Tijd voor extra input participanten en vraag om mee te doen aan dagboekonderzoek	Pen en papier om eventuele deelname aan dagboekonderzoek te noteren
Afsluitend	Bedanken voor deelname	

## Appendix E. Informed Consent Focus Groups

Since the participants gave their informed consent on videorecording, the recordings cannot be included as appendix as they contain personal identifiable information. To verify that informed consent was given by all participants, access to the recordings can be requested by contacting the researcher at the following email address: [m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl).



## Appendix F. Selection Questionnaire Diary Study

**Table F.1.**

### *Informed consent questions diary study*

Blad/vraag nummer	Informatie/vragen met antwoorden
Welkom!	Dit dagboekonderzoek wordt afgenomen om inzicht te krijgen in het dagelijks sociaal werkplek leren (al dan niet met behulp van een online leeromgeving) in de zorgsector.  Bij vragen of twijfel tijdens het onderzoek kun je de onderzoeksleider contacteren via <a href="mailto:m.j.s.luttikhuis@student.utwente.nl">m.j.s.luttikhuis@student.utwente.nl</a> of [telefoonnummer onderzoeker]. Volgende
Belangrijk!	Op de volgende pagina krijg je een informatieblad en toestemmingsformulier te zien. Het is belangrijk dat je deze goed doorleest. Vervolgens zal je gevraagd worden om toestemming te geven voor deelname aan dit onderzoek met daarnaast nog een aantal andere selectievragen.  Heb je vragen of twijfels over het deelnemen aan dit onderzoek? Neem dan contact op met de onderzoeksleider en wacht met het invullen van de selectievragen. Volgende
Informatieblad & toestemmingsformulier	Zie appendix J.  Volgende
Q1	Heb je het <a href="#">informatieblad en toestemmingsformulier</a> gelezen en ga je akkoord met deelname aan dit onderzoek? <i>Bij 'nee' word je uitgesloten van deelname aan dit onderzoek.</i> Ja Nee
Q2	Heb je toegang tot de leeromgeving? <i>Bij 'nee' word je uitgesloten van deelname aan dit onderzoek.</i> Ja Nee
Q3	Sta je bekend als expert binnen de leeromgeving onder het tabblad 'collega's'? Ja Nee
Closing statement	Bedankt voor het beantwoorden van deze vragen! Bij vragen of opmerkingen kun je contact opnemen met de onderzoeksleider. <i>Druk op oke om de vragenlijst af te ronden.</i>

## Appendix G. Demographics and Closing Questionnaire Diary Study

**Table G.1.**

### Demographics questionnaire

Nr.	Vragen (met antwoorden)	Link naar
Q1	Wat is je geslacht? Man Vrouw Overig	Q2
Q2	Wat is je leeftijd?	Q3
Q3	Wat is je hoogst afgeronde opleiding? MBO 1 MBO 2 MBO 3 MBO 4 HBO HBO master WO Anders, namelijk...	Q4
Q4	Volg je momenteel een opleiding of cursus om je verder te ontwikkelen in de zorg? Ja Nee	Q5 Q6
Q5	Welke zorg-gerelateerde opleiding/cursus volg je momenteel en hoeveel uren in de week ben je hier mee bezig? <i>Geef een zo volledig mogelijke naam van de opleiding/cursus (eventueel met niveau erbij, bijvoorbeeld MBO 3) en antwoord het aantal uren dat je gemiddeld per week bezig bent met de opleiding/cursus (inclusief zelfstudie).</i>	Q6
Q6	Hoeveel jaren werkervaring heb je in de zorg? <i>Mocht je minder dan 1 jaar werkzaam zijn in de zorg, vul dan 1 jaar in.</i>	Q7
Q7	Hoeveel jaren werkervaring heb je bij Buurtzorg? <i>Mocht je minder dan 1 jaar werkzaam zijn bij Buurtzorg, vul dan 1 jaar in.</i>	Q8
Q8	Hoeveel uur werk je op papier (contract) per week?	Q9
Q9	Welke beschrijving past het beste bij jouw situatie? Ik werk... In de wijk Op kantoor Anders, namelijk...	Q10
Q10	Hoeveel dagen van de komende 14 dagen verwacht je te werken?	Q11
Q11	In welke mate maak je gemiddeld gebruik van de leeromgeving? <i>Kies het antwoord wat het beste bij jouw huidige situatie past.</i> Niet Nauwelijks Soms Regelmatig Vaak	Q12
Closing statement	Bedankt voor het beantwoorden van deze vragen! Je ontvangt een notificatie als de eerste vragenlijst beschikbaar is.	

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*Bij vragen of twijfels kun je contact opnemen met de onderzoeksleider.  
Druk op oké om de vragenlijst af te ronden.*

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**Table G.2.**

*Closing questionnaire*

Nr.	Vragen (met antwoorden)
Q1	[user-firstname], bedankt voor het deelnemen aan dit dagboekonderzoek! Er zijn nog twee laatste vragen om te beantwoorden. <i>Druk op volgende voor de twee laatste vragen.</i>
Q2	In welke mate heb je de afgelopen 14 dagen gemiddeld gebruik gemaakt van de leeromgeving? <i>Druk op het antwoord dat het beste bij jouw situatie past.</i> Niet Nauwelijks Soms Regelmatig Vaak
Q3	Wil je een samenvatting ontvangen van de resultaten van dit onderzoek? <i>Zo ja, vul het e-mailadres in waarop je de samenvatting wil ontvangen. Zo niet, vul in 'nee'.</i>
Closing statement	Nogmaals bedankt voor het deelnemen aan dit onderzoek! Bij vragen of twijfels kun je contact opnemen met de onderzoeksleider. <i>Druk op afsluiten om de vragenlijst af te ronden.</i>

## Appendix H. Daily Questionnaire Diary Study

**Table H.1.**

### Daily questionnaire

Nr.	Vragen (met antwoorden)	Link naar
Start notificatie	Vul de vragenlijst in na jouw dienst en/of leermomenten vandaag. Werk en leer je niet vandaag? Dan kun je de eerste twee vragen nu gelijk met 'nee' beantwoorden.	Q1
Q1	Hallo [user-firstname], heb je gewerkt vandaag? Ja Nee	Q2
Q2	Heb je iets geleerd met betrekking tot je werk vandaag? Ja Nee Ik weet het niet zeker, geef mij een hint	Q4 Q15 Q3
Q3	Misschien heb je iets geleerd op deze manier: Ging iets anders dan verwacht? Ben je iets nieuws te weten gekomen? Heb je hulp en/of advies gevraagd? Heb je iets opgezocht? Had je een gesprek met een collega? Heb je iets voor het eerst gedaan of toegepast? Ja Nee	Q4 Q15
Q4	Wat heb je geleerd vandaag? <i>Beschrijf hieronder zo eerlijk mogelijk wat je hebt geleerd vandaag, dit kan om meerdere leermomenten gaan. Er zijn geen goede of foute antwoorden.</i>	Q5
Q5	Op welke manier(en) heb jij geleerd vandaag? <i>Kies de beschrijving(en) die het beste bij jouw leermomenten van vandaag passen.</i> <i>Je kunt meerdere antwoorden kiezen.</i> Ik heb geleerd door... iets te doen/ervaren Te experimenteren/testen Te evalueren/reflecteren op een werkervaring Het verkrijgen van informatie Het observeren van anderen Weet ik eigenlijk niet Anders, namelijk...	Q6
Q6	Waren er andere mensen betrokken bij jouw leermomenten vandaag? <i>Denk aan collega's, inhoudsdeskundigen, medisch specialisten, cliënten, etc.</i> Ja Nee	Q7 Q9

Q7	<p>Wie waren er betrokken bij jouw leermomenten vandaag?</p> <p><i>Je kunt meerdere antwoorden kiezen.</i></p> <p>Een collega uit mijn eigen team  Een collega uit een ander team  Een expert binnen de organisatie  Een expert buiten de organisatie  Mijn coach  Een cliënt of betrokkene  Anders</p>	Q8
Q8	<p>Op welke manier waren zij betrokken bij jouw leermomenten vandaag?</p> <p><i>Beschrijf hieronder zo eerlijk mogelijk hoe de betrokkene(n) jou geholpen hebben bij jouw leermomenten vandaag. Er zijn geen goede of foute antwoorden.</i></p>	Q9
Q9	<p>Heb je de leeromgeving gebruikt bij jouw leermomenten vandaag?</p> <p>Ja  Nee</p>	Q10 Q11
Q10	<p>Waarom heb je de leeromgeving gebruikt bij jouw leermomenten vandaag?</p> <p><i>Beschrijf hieronder zo eerlijk mogelijk waarom je de leeromgeving gebruikt hebt tijdens jouw leermomenten vandaag. Er zijn geen goede of foute antwoorden.</i></p>	Q12
Q11	<p>Waarom heb je de leeromgeving niet gebruikt bij jouw leermomenten vandaag?</p> <p><i>Beschrijf hieronder zo eerlijk mogelijk waarom je de leeromgeving niet gebruikt hebt tijdens jouw leermomenten vandaag. Er zijn geen goede of foute antwoorden.</i></p>	Q13
Q12	<p>Hoe heeft de leeromgeving jou geholpen tijdens jouw leermomenten vandaag?</p> <p><i>Je kunt meerdere antwoorden kiezen.</i></p> <p>De leeromgeving heeft mij suggesties voor leeritems gegeven  Ik heb via de leeromgeving een collega kunnen vinden die expert is  Ik heb een vraag kunnen stellen aan collega's in de leertraject community  Ik heb via de leeromgeving een formulier opgezocht  Ik heb via de leeromgeving een (Vilans) protocol opgezocht  De leeromgeving heeft mij niet geholpen  Anders, namelijk...</p>	Q13
Q13	<p>Op welke manier had de leeromgeving jou (nog beter) kunnen helpen bij jouw leermomenten vandaag?</p> <p><i>Beschrijf hieronder zo eerlijk mogelijk hoe de leeromgeving jou (nog beter) had kunnen helpen bij jou leermomenten (al dan niet met betrokkenen) vandaag. Er zijn geen goede of foute antwoorden.</i></p>	Q14

Q14	<p>Hoe ga je nu verder met jouw leermomenten vandaag?  <i>Kies de beschrijving(en) die het beste bij jouw leermomenten passen.</i>  <i>Je kunt meerdere antwoorden kiezen.</i>  Het ging niet op de manier zoals ik wilde, dus ik ga het opnieuw proberen  Ik weet nu precies wat ik de volgende keer in een vergelijkbare situatie ga doen  Ik wil het geleerde vasthouden  Ik wil het geleerde verder ontwikkelen  Wat ik heb geleerd, wil ik in de praktijk gaan toepassen  Wat ik heb geleerd, wil ik gaan proberen in een andere situatie  Op basis van dit leermoment, stel ik nieuwe doelen op  Dit leermoment ga ik delen met anderen (via de leeromgeving)  Dit leermoment ga ik delen met anderen (op een andere manier)  Ik ga item(s) in de leeromgeving beoordelen  Ik heb geen nieuwe plannen  Anders, namelijk...</p>	Q15 of EEV1
Extra Expert Vraag 1	<p>Ben je vandaag benaderd als expert via de leeromgeving vandaag?  <i>Als diegene die jou benaderd heeft jouw informatie op de leeromgeving heeft gevonden, vink dan 'gevonden via de leeromgeving' aan EN de manier waarop je gecontacteerd bent aan</i>  Gevonden via de leeromgeving  Ja, via e-mail  Ja, telefonisch  Ja, via Whatsapp/SMS/etc.  Ja, via contact op de werkvloer  Nee, ik ben vandaag niet benaderd als expert  Anders, namelijk...</p>	EEV 2 EEV 2 EEV 2 EEV 2 Q15 EEV 2
Extra Expert Vraag 2	<p>Op welke manier heb je diegene die jou benaderd heeft geholpen vandaag? <i>Beschrijf hieronder zo eerlijk mogelijk hoe je diegene geholpen hebt na benaderd te zijn als expert. Er zijn geen goede of foute antwoorden.</i></p>	Q15
Q15	<p>Bedankt voor het invullen!  Nog een fijne dag en graag tot de volgende keer.</p>	

## Appendix I. Introduction Letter Diary Study

Onderwerp: Introductie van dagboekonderzoek werkplekleren Universiteit Twente

Hallo,

Wat fijn dat je je hebt aangemeld om mee te doen aan een onderzoek van de Universiteit Twente. In deze brief lees je wat het onderzoek praktisch inhoudt en lees je over de vijf stappen die we je vragen om te doen zodat je van start kunt gaan.

### **Praktisch**

Het onderzoek zal [startdatum] starten. Gedurende het onderzoek zul je verschillende vragenlijsten voorgelegt krijgen. Je zult eerst één vragenlijst over demografische gegevens invullen. Daarna ontvang je gedurende 14 dagen een dagelijkse vragenlijst om **na je dienst** in te vullen via een app op je smartphone. Dit duurt dagelijks maximaal 10 minuten en je wordt hieraan herinnerd via een push notificatie. Op dagen dat je niet werkt en niet geleerd hebt kun je de eerste 2 vragen beantwoorden met 'nee', waarna de vragenlijst automatisch wordt afgesloten. Tot slot zul je op de 15e dag een vragenlijst ontvangen met twee afsluitende vragen.

### **Smartphone**

Het is belangrijk dat je **na** elke dienst de TiiM app checkt op je smartphone om de vragenlijst voor die dag in te vullen. Werk je niet maar ben je wel van plan de leeromgeving te gebruiken? Vul de vragenlijst dan in na afloop van jouw leermomenten. Op dagen dat je niet werkt en niet geleerd hebt kun je de eerste twee vragen in de vragenlijst voor die dag, zoals uitgelegd bij 'praktisch', natuurlijk eerder beantwoorden.

Je zult een push notificatie ontvangen op je smartphone wanneer een vragenlijst 's ochtends beschikbaar wordt. Daarnaast zul je gedurende de dag maximaal drie push notificaties ontvangen als herinnering om de vragenlijst in te vullen. Zodra een dagelijkse vragenlijst is ingevuld zul je gedurende de dag geen notificaties meer ontvangen.

### **TiiM app op je smartphone**

De app die we in het onderzoek gebruiken heet 'TiiM'. Deze app moet je installeren op je smartphone, waarna je een account aan kan maken. Installeer deze app op je privé smartphone zodat je ook notificaties ontvangt wanneer je niet werkt en je werktelefoon misschien uit staat. Uitleg over het installeren van de app en het aanmaken van een account vind je in [deze video](#). Bekijk deze video alsjeblieft goed. De stappen staan hieronder nog eens uitgelegd.

#### Stap 1 – TiiM app downloaden

Voor het downloaden van de app kun je in de PlayStore (Android) of in de App Store (iPhone) zoeken op 'TiiM', zie *het TiiM logo in de bijlage*. Dit zie je ook in [de instructievideo](#). Installeer de TiiM app vervolgens op je smartphone.

#### Stap 2 – Account aanmaken

Bij het openen van de app zal je gevraagd worden om in te loggen. Als je nog geen account hebt kun je er één aanmaken door op 'account aanmaken' te drukken. Vul je gegevens in en druk op 'create account'. Onthoud de gegevens van je account goed!

#### Stap 3 – Abonneren op een onderzoek

Nadat je hebt ingelogd met je account gegevens kun je rechts bovenaan op de knop met het QR-code symbool drukken. Vervolgens krijg je een scherm te zien waar je een code kunt invullen. Dit zie je ook in [de instructievideo](#). Vul de volgende code in: **[code]**. Klik daarna op 'submit'.

Nadat je je hebt geabonneerd, is het belangrijk dat je de vragenlijst invult die hierna verschijnt. Dit duurt ongeveer 5 minuten.

Bij deze vragenlijst zal je gevraagd worden of je het informatieblad en toestemmingsformulier gelezen hebt en akkoord gaat met deelname aan het onderzoek. Daarnaast zal je gevraagd worden of je toegang hebt tot de leeromgeving binnen Buurtzorg. **Belangrijk:** als je één van deze vragen met 'nee' beantwoord wordt je uitgesloten van deelname aan dit onderzoek.

Weet je van te voren dat je bij één of beide vragen 'nee' zult antwoorden, maar wil je wel graag meedoen? Neem dan contact op met de onderzoeksleider.

#### Stap 4 – Instellingen aanpassen

Nadat je je hebt geabonneerd is het belangrijk dat je de app toestaat om (push) notificaties te versturen. Hoe je dit kunt doen zie je ook in [de instructievideo](#). Ga in de app linksboven naar het menu. Klik op instellingen. Zet een vinkje bij 'Push-Notificatie' en bij 'Email-Notificaties'. In de video wordt genoemd dat je ook een vinkje moet zetten bij 'Activeer biometrische data verzameling'. Dit is voor deze studie echter niet nodig, dus dit kun je zo laten staan. In de bijlage zie je een screenshot met de juiste instellingen. Klik op Opslaan. De instellingen zijn nu juist ingesteld.

Zorg dat je stappen 1 t/m 4 **voór [startdatum]** uitvoert!

Lukt het niet om de app te installeren of heb je vragen? Laat het mij gerust weten, ik help je graag verder. Je kunt mij gedurende het onderzoek altijd mailen of bellen via [m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl) of [telefoonnummer onderzoeker].

#### Stap 5 – Start onderzoek

Als je de vorige stappen juist hebt uitgevoerd, en je toestemming hebt gegeven voor deelname aan het onderzoek, krijg je een vragenlijst over je demografische gegevens toegewezen. **Vul deze vragenlijst zo snel mogelijk in!**

Toestemming voor deelname kun je aangeven bij het abonneren op het onderzoek (stap 3). In de bijlage is een uitgebreide versie te vinden van deze toestemming. Zodra de eerste dagelijkse vragenlijst beschikbaar is zul je een push notificatie ontvangen.

Bij vragen of opmerkingen kun je mij altijd mailen of bellen via [m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl) of [telefoonnummer onderzoeker].

Bedankt dat je mij wilt helpen met afstuderen!

Met vriendelijke groet,  
Myrthe Luttikhuis  
Student Educational Science & Technology, Universiteit Twente

Bijlage van de mail:

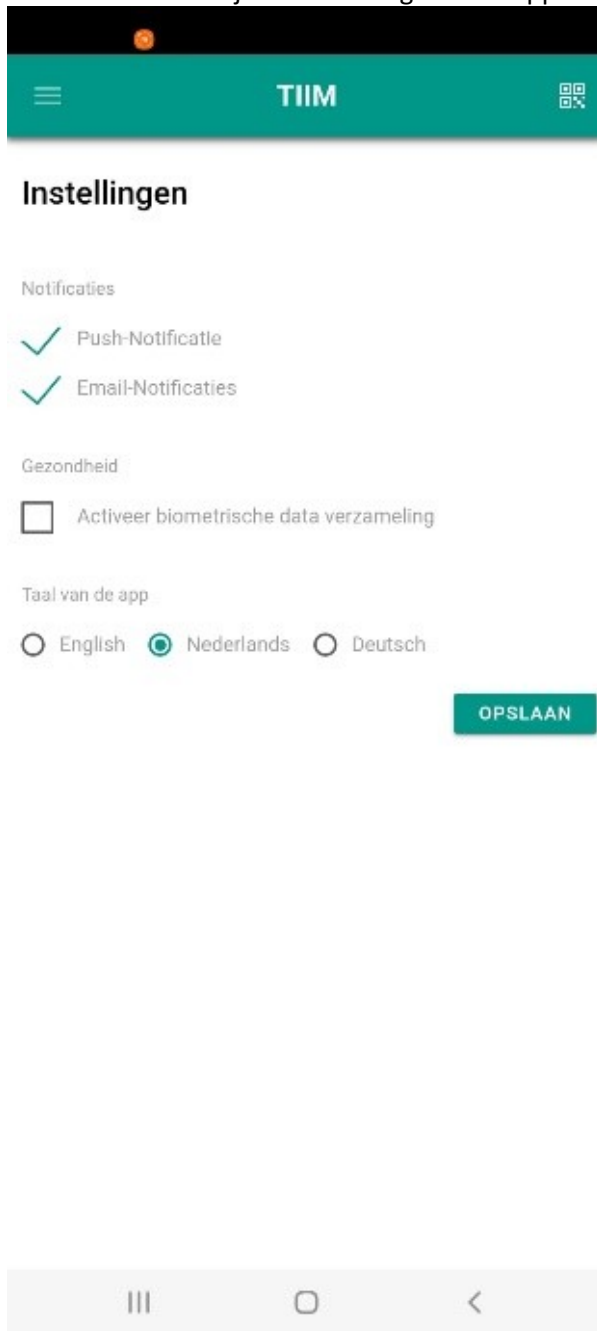
1. Logo:



TIIM  
BMSLab/UTwente



2. Voorbeeld juiste instellingen TiiM-applicatie:



3. Informatieblad en toestemmingsformulier onderzoek (zie appendix J).

### **Informatieblad & Toestemmingsformulier Onderzoek**

#### **Toestemming**

Voordat u mee kan doen aan dit onderzoek is het van belang dat u actief aangeeft dat u akkoord gaat met de onderstaande informatie. Dit kunt u bij het aanmelden voor het onderzoek aangeven in de TiiM-applicatie. Zonder dit akkoord zult u niet door kunnen gaan met het onderzoek. Lees de informatie goed door, en neem bij twijfel of vragen contact op met de onderzoeksleider ([m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl)).

#### **Doel van het onderzoek**

Dit onderzoek wordt geleid door Myrthe Luttikhuis en begeleid door Nick Goossen (PhD kandidaat). Het doel van dit onderzoek is om inzicht te krijgen in (sociaal) werkplekieren, al dan niet met behulp van de leeromgeving, in de zorgsector. Hiermee hopen we meer kennis te krijgen over werkplekieren in de zorg. De onderzoeksgegevens zullen worden gebruikt voor de master thesis van de onderzoeksleider.

#### **Hoe gaan we te werk?**

U neemt deel aan een onderzoek waarbij we u gedurende het onderzoek verschillende vragenlijsten voorleggen. U zult eerst één vragenlijst invullen over demografische gegevens. Vervolgens krijgt u veertien dagen lang een dagelijkse vragenlijst om in te vullen na uw dienst. Deze vragenlijst zal maximaal tien minuten tijd in beslag nemen. Op dagen dat u niet gewerkt en geleerd heeft kunt u de eerste 2 vragen beantwoorden met 'nee', waarna de vragenlijst automatisch zal worden afgesloten. Tot slot zult u op de 15e dag een vragenlijst ontvangen met twee afsluitende vragen. De vragenlijsten kunt u via een mobiele applicatie invullen.

#### **Verwachtingen**

Er wordt van u verwacht dat u de vragenlijsten in dit onderzoek eerlijk en zo volledig mogelijk invult. Het gaat puur om uw mening en ervaring, goede of foute antwoorden bestaan dus niet. Daarnaast hoop ik dat u het onderzoek volledig zou willen afronden, zodat ik uw gegevens mee kan nemen in mijn onderzoek.

#### **Potentiële risico's en ongemakken**

Er zijn geen fysieke, juridische of economische risico's verbonden aan uw deelname aan deze studie. U hoeft geen vragen te beantwoorden die u niet wilt beantwoorden. Uw deelname is vrijwillig en u kunt uw deelname op elk gewenst moment stoppen.

#### **Vergoeding**

U ontvangt voor deelname aan dit onderzoek geen vergoeding.

#### **Vertrouwelijkheid van gegevens**

De onderzoeksleider (Myrthe Luttikhuis) zal samen met de begeleider (Nick Goossen, Universiteit Twente) inzage hebben in de onderzoeksgegevens. Wij zijn de enige twee personen die antwoorden kunnen koppelen aan specifieke personen. Echter, is een van de eerste stappen na het verzamelen van alle gegevens, het anonimiseren ervan. In rapportages of publicaties, zoals de masterscriptie, zullen gegevens dus niet herleidbaar zijn.

De antwoorden op de vragenlijsten die in het kader van deze studie worden verzameld, worden opgeslagen op een beveiligde locatie bij de Universiteit Twente en op de beveiligde (versleutelde) gegevensdragers van de onderzoekers. Wij zijn verplicht om de onderzoeksgegevens voor een

periode van 10 jaar te bewaren op deze beveiligde locatie. Uiterlijk na het verstrijken van deze termijn zullen de gegevens worden verwijderd of worden geanonimiseerd zodat ze niet meer te herleiden zijn tot een persoon.

Tot slot is dit onderzoek beoordeeld en goedgekeurd door de ethische commissie van de faculteit BMS, Universiteit Twente.

### **Vrijwilligheid**

Deelname aan dit onderzoek is geheel vrijwillig. U kunt als deelnemer uw medewerking aan het onderzoek te allen tijde stoppen, of weigeren dat uw gegevens voor het onderzoek mogen worden gebruikt, zonder opgave van redenen.

Als u tijdens het onderzoek besluit om uw medewerking te staken, zullen de gegevens die u reeds hebt verstrekt tot het moment van intrekking van de toestemming in het onderzoek gebruikt worden.

Wilt u stoppen met het onderzoek, of heeft u vragen en/of klachten? Neem dan contact op met de onderzoeksleider.

Myrthe Luttikhuis, [m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl).

Voor bezwaren met betrekking tot de opzet en of uitvoering van het onderzoek kunt u zich ook wenden tot de Secretaris van de Ethische Commissie van de faculteit Behavioural, Management and Social Sciences op de Universiteit Twente via [ethicscommittee-bms@utwente.nl](mailto:ethicscommittee-bms@utwente.nl). Dit onderzoek wordt uitgevoerd vanuit de Universiteit Twente, faculteit Behavioural, Management and Social Sciences. Indien u specifieke vragen hebt over de omgang met persoonsgegevens kunt u deze ook richten aan de Functionaris Gegevensbescherming van de UT door een mail te sturen naar [dpo@utwente.nl](mailto:dpo@utwente.nl).

Tot slot heeft u het recht een verzoek tot inzage, wijziging, verwijdering of aanpassing van uw gegevens te doen bij de Onderzoeksleider.

## Appendix K. Informed Consent Diary Study

Since the participants gave their informed consent via the TIIM application, the records of informed consent cannot be included as appendix as they contain personal identifiable information. To verify that informed consent was given by all participants, access to the records can be requested by contacting the researcher at the following email address: [m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl).

## Appendix L. Acceptance E-mail Diary Study

### Toelatings e-mail

Subject: Start dagboekonderzoek

Hallo,

Je hebt je opgegeven om mee te doen aan een onderzoek van de Universiteit Twente. Ondertussen heb je via de TiiM app de selectievragen beantwoord. Op basis van de gegeven antwoorden ben je geschikt om mee te doen aan het dagboekonderzoek.

Dit dagboekonderzoek gaat vanaf [startdatum] van start. Voor deze datum is er een vragenlijst over demografische gegevens beschikbaar. Vul deze alsjeblieft zo snel mogelijk in. Vanaf [startdatum] zul je met behulp van push-notificaties op de hoogte gehouden worden wanneer er een vragenlijst beschikbaar is om in te vullen. Vul de vragenlijsten zo eerlijk en volledig mogelijk in. Er zijn geen goede of foute antwoorden.

Het is belangrijk dat je **na** elke dienst de TiiM app checkt op je smartphone om de vragenlijst voor die dag in te vullen. Werk je niet maar ben je wel van plan de leeromgeving te gebruiken? Vul de vragenlijst dan in na afloop van jouw leermomenten. Op dagen dat je niet werkt en niet geleerd hebt kun je de eerste twee vragen in de vragenlijst voor die dag natuurlijk eerder met 'nee' beantwoorden.

Bij vragen of opmerkingen kun je mij altijd mailen of bellen via [m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl) of [telefoonnummer onderzoeker].

Bedankt dat je mij wilt helpen met afstuderen!

Met vriendelijke groet,

Myrthe Luttikhuis

Student Educational Science & Technology, Universiteit Twente

## Appendix M. Rejection E-mail Diary Study

### **Afwijzings e-mail**

Subject: uitsluiting van deelname

Hallo,

Je hebt je opgegeven om mee te doen aan een onderzoek van de Universiteit Twente. Ondertussen heb je via de TiiM app de selectievragen beantwoord. Helaas ben je op basis van de gegeven antwoorden niet geschikt om mee te doen aan het dagboekonderzoek.

Mocht je nog vragen of opmerkingen hebben, dan kun je mij altijd mailen of bellen via [m.j.s.luttikhuis@student.utwente.nl](mailto:m.j.s.luttikhuis@student.utwente.nl) of [telefoonnummer onderzoeker].

Met vriendelijke groet,

Myrthe Luttikhuis

Student Educational Science & Technology, Universiteit Twente

## Appendix N. Results Demographics Diary Study

**Table N.1.**

*Overview answers Q1 gender*

Answer	n	%
Men	3	6,1%
Women	46	93,9%
Total	49	100,0%

**Table N.2.**

*Overview answers Q2 age*

Category	n
Nbr.val	49
Nbr.null	0
Nbr.na	0
Min	21
Max	66
Range	45
Sum	2281
Median	51
Mean	46,6
SE.mean	1,9
Cl.mean	3,9
Var	182,9
Std.dev	13,5
Coef.var	0,3

**Table N.3.**

*Overview answers Q3 finished education*

Answer	n	%
MBO3	4	8,2%
MBO4	17	34,7%
HBO	22	44,9%
HBO Master	1	2,0%
WO	3	6,1%
Other	2	4,1%
Total	49	100,0%

**Table N.4.**

*Overview answers Q4 current education*

Answer	n	%
Yes	21	42,9%
No	28	57,1%
Total	49	100,0%

**Table N.5.**

*Overview answers Q6 work experience healthcare in general*

Category	n
Nbr.val	49
Nbr.null	0
Nbr.na	0
Min	1
Max	44
Range	43
Sum	942
Median	20
Mean	19,2
SE.mean	1,9
Cl.mean	3,8
Var	178,4
Std.dev	13,4
Coef.var	0,7



**Table N.6.**

*Overview answers Q7 work experience healthcare organization case study*

Category	n
Nbr.val	49
Nbr.null	0
Nbr.na	0
Min	1
Max	30
Range	29
Sum	363
Median	6
Mean	7,4
SE.mean	0,8
CI.mean	1,6
Var	32,9
Std.dev	5,7
Coef.var	0,8

**Table N.7.**

*Overview answers Q8 working hours*

Category	n
Nbr.val	49
Nbr.null	0
Nbr.na	0
Min	16
Max	36
Range	20
Sum	1256
Median	24
Mean	25,6
SE.mean	0,7
CI.mean	1,3
Var	21,3
Std.dev	4,6
Coef.var	0,2

**Table N.8.***Overview answers Q9 work location*

Answer	n	%
Neighbourhood	44	89,8%
Office	1	2,0%
Both	4	8,2%
Total	49	100,0%

**Table N.9.***Overview answers Q10 days expected to work*

Category	n
Nbr.val	49
Nbr.null	0
Nbr.na	0
Min	4
Max	11
Range	7
Sum	390
Median	8
Mean	8,0
SE.mean	0,3
CI.mean	0,5
Var	3,1
Std.dev	1,8
Coef.var	0,2

**Table N.10.***Overview answers Q11 usage learning platform before*

Answer	n	%
Not	0	0,0%
Rarely	3	6,1%
Sometimes	22	44,9%
Regularly	22	44,9%
Often	2	4,1%
Total	49	100,0%

**Table N.11.**

*Overview answers Q12 usage learning platform after*

Answer	n	%
Not	6	13,0%
Rarely	14	30,4%
Sometimes	15	32,6%
Regularly	10	21,7%
Often	1	2,2%
Total	46	100,0%

*Note.* Three participants did not answer this question.

## Appendix O. Codebook

**Table O.1.**

### Codebook

Main code + unit of analysis	Sub code	Definition
Q8. How Involved → multiple codes per unit of analysis possible	8.1 Doing/experiencing something together	Participant did and/or experienced something together with someone else, this someone can be both actively and passively involved. Observing others or being observed by others is also included in this. The answer does not explicitly mention that information, advice and/or feedback are shared with each other.
	8.2 Sharing information	Participant shared information with someone else and/or someone else shared information with the participant. The act of sharing information can be done through both direct and indirect communication. E.g., a face-to-face conversation and sharing an article via e-mail. The information being shared can include advice and/or feedback, as long as the act of sharing is one-sided such as answering a question or receiving an answer to a question you asked.
	8.3 Evaluating/reflecting together	Participant evaluates/reflect in interaction with someone else, during this interaction resulting advice, feedback and/or information is shared back and forth (two-sided communication).
	8.4 Schooling purposes	Participant learned together with others for schooling purposes, this includes both following and giving schooling. The answer should explicitly mention the schooling type (e.g., learning trajectory, course, webinar, study group etc.)
	8.5 Other	All other answers that do not belong to at least one of the categories mentioned above.
Q10. Learning Platform Yes → one code per unit of analysis	10.1 Found information	Participant found information/learning items on the learning platform that he/she was specifically looking for.
	10.2 Used for schooling	Participant used the learning platform for schooling and/or onboarding.
	10.3 Did not find information	Participant attempted to use the learning platform but could not find the information that he/she was looking for.
Q11. Learning Platform No → multiple codes per unit of analysis possible	11.1 Found information elsewhere	Participant found the information they were looking for elsewhere instead of using the learning platform.
	11.2 Practical reasons for not using it	Participant indicated practical reasons for not using the learning platform.
	11.3 Performance expectancy	Any answers concerning how useful a participant perceives the learning platform to be for them to increase their job performance. For instance, participants indicating not needing the learning platform and/or the learning platform not fitting their learning moment(s) (UTAUT, performance expectancy).
	11.4 Did not find information	Participant attempted to use the learning platform but could not find the information that he/she was looking for.

	11.5 Threshold for use	Any answers concerning the resources, knowledge and opportunities needed to use the learning platform (UTAUT, facilitating conditions).
Q13. Learning Platform Improvements → multiple codes per unit of analysis possible	13.1 Effort expectancy	Any answers concerning the perceived ease the participant associates with the use of the learning platform (such as the search engine, on-screen buttons, etc.) (UTAUT, effort expectancy).
	13.2 Threshold for use	Any answers concerning the resources, knowledge and opportunities needed to use the learning platform (UTAUT, facilitating conditions).
	13.3 Adjust information/content	Participant is of the opinion that the information and/or content on the learning platform should be adjusted by adding, expanding and/or simplifying information/content.
	13.4 Other information source	Participant used another information source to find the information they were looking for.
	13.5 Performance expectancy	Any answers concerning how useful a participant perceives the learning platform to be for them to increase their job performance. For instance, participants indicating not needing the learning platform and/or the learning platform not fitting their learning moment(s) (UTAUT, performance expectancy).
	13.6 No improvements	Participant indicated that the learning platform does not have any points for improvement and/or helped them sufficiently with their learning moments.
	13.7 I do not know	Participant indicates that he/she does not know how the learning platform could be improved. Only apply this code if none of the other codes in this category apply.

## Appendix P. Inter-coder Reliability Tables

**Table P.1.**

*Inter-coder reliability for Q8*

	8.1	8.2	8.3	8.4	8.5	Nothing	Total
8.1	4				1		5
8.2	2	3					5
8.3			5				5
8.4		1		4			5
8.5			1		2		3
Nothing							0
Total	6	4	6	4	3	0	23

*Note.* Cohen's Kappa is 0.73.

**Table P.2.**

*Inter-coder reliability for Q10*

	10.1	10.2	10.3	Nothing	Total
10.1	2		1		3
10.2		3			3
10.3			3		3
Nothing					0
Total	2	3	4	0	9

*Note.* Cohen's Kappa is 0.83.

**Table P.3.**

*Inter-coder reliability for Q11*

	11.1	11.2	11.3	11.4	11.5	Nothing	Total
11.1	3						3
11.2		3	1				4
11.3			2		1		3
11.4				3			3
11.5		1			2		3
Nothing							0
Total	3	4	3	3	3	0	16

*Note.* Cohen's Kappa is 0.76.

**Table P.4.**

*Intercoder reliability for Q13*

	13.1	13.2	13.3	13.4	13.5	13.6	13.7	Nothing	Total
13.1	3	1							4
13.2		3			1				4
13.3			4						4
13.4		1		3					4
13.5					3		1		4
13.6			1			1			2
13.7						1	1		2
Nothing								0	0
Total	3	5	5	3	4	2	2	0	24

*Note.* Cohen's Kappa is 0.70.

Appendix Q. Full Overview of Descriptive Statistics Diary Study

**Table Q.1.**

*Overview answers Q1 worked*

Answer	n	%
Yes	307	65,4%
No	236	34,6%
NA	143	20,8%
Total	543	100,0%

**Table Q.2.**

*Overview answers Q2 learned*

Answer	n	%
Yes	206	37,9%
No	285	52,5%
Hint	52	9,6%
Total	543	100,0%

**Table Q.3.**

*Overview answers Q3 hint*

Answer	n	%
Yes	34	65,4%
No	18	34,6%
Total	52	100,0%

**Table Q.4.**

*Overview answers Q5 learned how*

Answer	N	%	%/log
Doing/experiencing something	112	25,0%	46,7%
Experimenting/testing something	22	4,9%	9,2%
Evaluating/reflecting on a work experience	79	17,6%	32,9%
Getting information	157	35,0%	65,4%
Observing of others	61	13,6%	25,4%
I don't know	2	0,4%	0,8%
Other	15	3,3%	6,3%
Total	448	100,0%	186,7%

*Note.* Percentage per log is calculated over the 240 logs in which participants indicated to have learned.



**Table Q.5.***Overview answers Q6 learned together*

Answer	n	%
Yes	169	70,4%
No	71	29,6%
Total	240	100,0%

**Table Q.6.***Overview answers Q7 learned with whom*

Answer	N	%	%/log
Colleague from own team	109	45,2%	64,5%
Colleague from another team	28	11,6%	16,6%
Expert within the organisation	17	7,1%	10,1%
Expert outside the organisation	20	8,3%	11,8%
My coach	4	1,7%	2,4%
A client or someone else involved	51	21,2%	30,2%
Other	12	5,0%	7,1%
Total	241	100,0%	142,6%

*Note.* Percentage per log is calculated over the 169 logs in which participants indicated to have learned together with others.

**Table Q.7.***Overview answers Q8 learned together how*

Answer	N	%	%/log
Doing/experiencing something together	38	21,6%	22,5%
Sharing information	58	33,0%	34,3%
Evaluating/reflecting together	53	30,1%	31,4%
Schooling purposes	23	13,1%	13,6%
Other	4	2,3%	2,4%
Total	176	100,0%	104,1%

*Note.* Percentage per log is calculated over the 169 logs in which participants indicated to have learned together with others.

**Table Q.8.***Overview answers Q9 learning platform*

Answer	n	%
Yes	85	35,4%
No	155	64,6%
Total	240	100,0%

**Table Q.9.***Overview answers Q10 learning platform yes*

Answer	N	%
Found information	67	78,8%
Used for schooling	11	12,9%
Did not find information	7	8,2%
Total	85	100,0%

*Note.* The percentage calculated is the percentage per log since participants gave one answer per log to this question.

**Table Q.10.***Overview answers Q11 learning platform no*

Answer	N	%	%/log
Found information elsewhere	33	19,4%	21,3%
Practical reasons for not using it	70	41,2%	45,2%
Performance expectancy	32	18,8%	20,6%
Did not find information	22	12,9%	14,2%
Threshold for use	13	7,6%	8,4%
Total	170	100,0%	109,7%

*Note.* Percentage per log is calculated over the 155 logs in which participants indicated to not have used the learning platform.

**Table Q.11.***Overview answers Q12 how did it help*

Answer	N	%	%/log
Received suggestions for learning items	23	22,1%	27,1%
Found an expert colleague	3	2,9%	3,5%
Asked a question in the community	0	0,0%	0,0%
Found a form	18	17,3%	21,2%
Found a healthcare protocol	31	29,8%	36,5%
The learning platform did not help me	10	9,6%	11,8%
Other	19	18,3%	22,4%
Total	104	100,0%	122,4%

*Note.* Percentage per log is calculated over the 85 logs in which participants indicated to have used the learning platform.

**Table Q.12.***Overview answers Q13 improvements learning platform*

Answer	N	%	%/log
Effort expectancy	22	8,9%	9,2%
Threshold for use	8	3,3%	3,3%
Adjust information/content	23	9,3%	9,6%
Other information source	12	4,9%	5,0%
Performance expectancy	58	23,6%	24,2%
No improvements	33	13,4%	13,8%
I do not know	90	36,6%	37,5%
Total	246	100,0%	102,5%

*Note.* Percentage per log is calculated over the 240 logs in which participants indicated to have learned.

**Table Q.13.***Overview answers Q14 continue learning*

Answer	N	%	%/log
No new plans	21	4,0%	8,8%
Did not work out, I am going to try again	11	2,1%	4,6%
Know what to do next time in a comparable situation	53	10,1%	22,1%
Consolidate what I have learned	113	21,4%	47,1%
Improve further what I have learned	85	16,1%	35,4%
Apply in practice what I have learned	97	18,4%	40,4%
Try out what I have learned in a different situation	35	6,6%	14,6%
Formulated a new learning goal for myself	30	5,7%	12,5%
Share my learning moment (via the learning platform)	2	0,4%	0,8%
Share my learning moment (via another way)	66	12,5%	27,5%
Rate content items on the learning platform	3	0,6%	1,3%
Other	11	2,1%	4,6%
Total	527	100,0%	219,6%

*Note.* Percentage per log is calculated over the 240 logs in which participants indicated to have learned.

**Table Q.14.**

*Overview answers EEV1 approached*

Answer	N	%
Found via the learning platform	0	0,0%
Approached via e-mail	1	1,5%
Approached via phone	0	0,0%
Approached via WhatsApp/SMS/etc.	2	2,9%
Approached in the workplace	0	0,0%
Not approached	61	89,7%
Approached in another way	4	5,9%
Total	68	100,0%

*Note.* The percentage calculated is the percentage per log since participants gave one answer per log to this question.