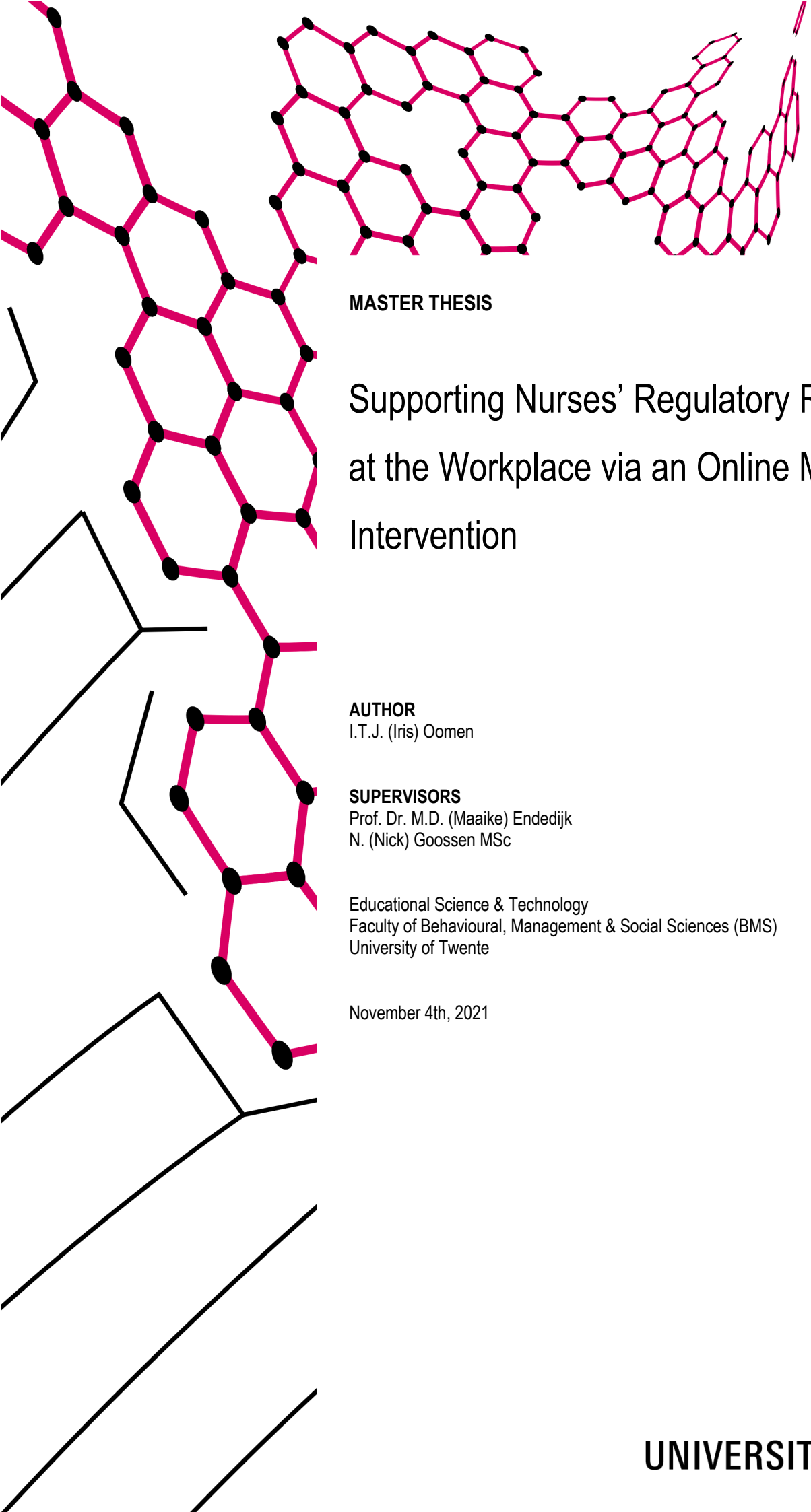

MASTER THESIS

Supporting Nurses' Regulatory Readiness at the Workplace via an Online Micro-Intervention

AUTHOR
I.T.J. (Iris) Oomen

SUPERVISORS
Prof. Dr. M.D. (Maaike) Endedijk
N. (Nick) Goossen MSc

Educational Science & Technology
Faculty of Behavioural, Management & Social Sciences (BMS)
University of Twente

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UNIVERSITY OF TWENTE.

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Summary

Nurses working in home care are expected to be self-directed in their learning to cope with their complex working profession. However, not all employees in healthcare manage to direct their own learning. Self-directed learning (SDL) is a complex process and current literature about supporting SDL is focused on formal educational settings, and not on workplace settings in healthcare. Regulatory readiness is a new component that derives from SDL and consists of SDL-strategies that are conditional for the successful engagement in the SDL process. Therefore, support must be provided to nurses on the SDL-strategies of regulatory readiness, for which online micro-interventions that use prompting seem to be an effective way. This study identified the effect of an online micro-intervention on the regulatory readiness at the workplace of nurses working in home care. The intervention used prompting, in which supporting messages regarding regulatory readiness were presented to nurses via a mobile application. Participants were 6 nurses from an organization for home care in The Netherlands. In a multiple baseline design across individuals, nurses' regulatory readiness before, during, and after the intervention was measured with the use of self-report questionnaires. Every workday, nurses entered the daily questionnaire via the mobile application. During the intervention phase, nurses also received a prompt every day. In addition, a pre- and post-test were conducted before and at the end of the study. Statistical analyses and visual inspection analyses were conducted to measure the effects of the intervention. The results showed differences in favour of the online micro-intervention on the awareness of learning opportunities, awareness of learning needs, and recognized affordances of nurses at the workplace. However, these differences were not large enough to say with confidence that this was due to the online micro-intervention. Besides, there was no difference found in the two phases regarding the self-directedness of the learning moments. There was also no effect found of the intervention on the general perceived regulatory readiness of nurses. Thus, the online micro-intervention using prompting did not have an effect on nurses' regulatory readiness at the workplace. Despite the non-significance of these findings, the positive differences are promising and therefore call for more research on the development of interventions that support SDL at the workplace. The current study also contributes to the extension of literature about regulatory readiness and online micro-interventions.

Keywords: workplace learning, self-directed learning, regulatory readiness, online micro-interventions, nursing, multiple baseline design.

Table of Contents

Acknowledgement 2

Summary 3

Table of Contents 4

Introduction 6

Theoretical framework 7

Self-Directed Learning 8

Regulatory Readiness 9

Online Micro-Interventions 11

Prompting 12

Questioning and hints 12

Exampling and modeling 13

The Present Study 13

Method 14

Design 14

Participants 15

Instrumentation 15

Background variables 16

Daily measurements 16

Online micro-intervention 18

General perceived regulatory readiness 19

Procedure 19

Data Analysis 20

Daily level measures 20

Person level measures 21

Results 21

Descriptive analysis 21

What is the effect of the online micro-intervention on nurses' awareness of how and when? 22

Visual inspection analysis of the daily level perceived awareness of how and when 22

Effect size analysis of the daily level perceived awareness of how and when 23

What is the effect of the online micro-intervention on nurses' awareness of learning needs? 24

Visual inspection analysis of the awareness of learning needs 24

Effect size analysis of awareness of learning needs 25

What is the effect of the online micro-intervention on nurses' recognizing affordances? ... 26

Visual inspection analysis of the recognized affordances 26

Effect size analysis of the recognized affordances 27

Self-directedness of the learning moments 28

What is the effect of the online micro-intervention on nurses' general perceived regulatory readiness? 29

Discussion 29

Limitations and Practical Implications 31

Conclusion 33

References 34

Appendix A 41

Appendix B 1

Appendix C 1

Appendix D 4

Appendix E 5

Appendix F 7

Introduction

Home care nursing is a challenging profession, due to constant changes and its complexity, which requires high knowledge, skills and competency levels of nurses (Lundgren, 2011). Besides, nurses are responsible for the quality of care they give to patients, which requires them to always have the right and current knowledge and skills ready ("Beroepscode van Verpleegkundigen en Verzorgenden," 2015; Charles, 1982). A solution to these challenges is continuing education and the development of staff (Stolee et al., 2005), for which the workplace is an accessible and effective setting (Billett, 1995). Nurses are responsible to continue their education themselves (Charles, 1982), which makes it important for nurses to become self-directed learners (Cadorin et al., 2012). Self-directed learning (SDL) is a process in which individuals plan, implement, and evaluate their own learning (O'Shea, 2003). However, healthcare workers do not always manage to direct their own learning (e.g., Aagten, 2016). An explanation for this could be that the SDL-process is complex (van Houten-Schat et al., 2018). Therefore, SDL in a healthcare context should be supported. But most existing models are developed to integrate SDL in formal academic settings and not in workplace settings (Ellinger, 2004) or in a healthcare context (Cuyvers, 2019). This study will therefore focus on supporting self-directed workplace learning in a healthcare context.

Sitzmann and Ely (2011) categorized SDL-components that they found from various theories about SDL "that initiate, set forward, and evaluate the process of SDL" (Cuyvers, 2019, p. 141). These categories are *regulatory agents*, *regulatory mechanisms*, and *regulatory appraisals*, which all consist of different SDL-strategies. Cuyvers (2019) added *regulatory readiness* to these classifications, which is new to the research field, but is of great potential since it has proven to be conditional for engaging in the SDL process in the clinical environment (Cuyvers, 2019). The SDL-strategies of regulatory readiness are *being alert*, *wondering*, *awareness of how and when*, *awareness of learning needs*, and *recognizing affordances*. It is fundamental to support the SDL-strategies of regulatory readiness in order to initiate, advance, or evaluate a learning process (Cuyvers, 2019). This support can, for example, take the form of a technological tool that facilitates, prompts, and explains the engagement in the SDL-strategies of regulatory readiness (Cuyvers, 2019), such as an online micro-intervention. Online micro-interventions are small messages offered by specific technology tools that help people to change their experiences and behaviours and help them to maintain this behaviour (Stieger et al., 2020). Online micro-interventions seem to be effective ways of interventions (e.g., Lokman et al., 2017; Stieger et al., 2020) and thus may have the

potential to support the SDL-strategies of regulatory readiness. However, little is known about online micro-interventions for supporting regulatory readiness in a healthcare context.

Despite the fact that SDL and its relevance is widely discussed and acknowledged in the literature, regulatory readiness is new in the research field and therefore needs more research to find out its relevance and potential. This study therefore aims to contribute to the extension of literature about regulatory readiness. Besides, previous research on SDL discussed the need that SDL at the workplace should be supported because professionals demonstrate low SDL behaviour (e.g., Aagten, 2016; Littlejohn et al., 2016). Endedijk and Cuyvers (2020) stated that different studies acknowledge this need for support (e.g., van Houten-Schat et al., 2018), but the actual development of interventions on supporting SDL is often not realised. Endedijk and Cuyvers (2020) suggest a future research avenue to start developing and testing interventions to support SDL at the workplace. This study aims to contribute to this research avenue by focussing on one of the components of the SDL-process, namely regulatory readiness. It then investigates the effect of a newly designed online micro-intervention on the regulatory readiness of nurses working in home care. This study will contribute to the development of interventions to support regulatory readiness at the workplace and therefore to the continuing professional development of nurses.

Theoretical framework

Workplace Learning

The clinical environment offers a lot of opportunities for learning at the workplace (Dornan, 2012). Workplace learning refers to the development of knowledge, skills, and attitudes in situations at or near the workplace with the main aim of qualitative execution and progress of work (Baert et al., 2008). Workplace learning can be formal and informal. Formal learning is planned, explicit, and structured learning with predictable outcomes and is classroom-based (Tynjälä, 2008; Van Der Heijden et al., 2009). In healthcare, most workplace learning is informal (Van de Wiel et al., 2011). Informal learning is unintended, unstructured, and with the absence of a teacher (Eraut, 2004b). This makes employees responsible for acquiring knowledge and skills because these are no longer provided by others (Noe et al., 2013). Informal learning can be distinguished into three types, based on the intentionality level; implicit, reactive, and deliberative informal learning (Eraut, 2004b). Implicit learning refers to learning that is unconscious and not recognized as learning. Reactive learning is more conscious and occurs in the middle of an action with little time to think. Deliberative

learning refers to learning with defined learning goals and for which time is set aside but is still part of work (Cuyvers, 2019; Eraut, 2004b; Tynjälä, 2008).

Since healthcare workers are responsible for their own workplace learning to keep up with new knowledge and skills required by the challenges faced in healthcare, it is important for them to be self-directed learning in their learning at the workplace (Cuyvers, 2019).

Self-Directed Learning

Self-directed learning (SDL) in a healthcare environment is a complex process that plays an important role in the professional development of medical professionals (van Houten-Schat et al., 2018). This is because nurses themselves are responsible for continuing their education to promote their own professional development (Charles, 1982), and being self-directed in learning is essential for this (Berkhout et al., 2015). The most widely used definition of SDL is the one described by Knowles:

> a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes (Knowles, 1975, p. 18).

SDL is a cyclical process that takes place before, during, and after a learning experience (Puustinen & Pulkkinen, 2001). These phases are respectively called, the forethought phase, performance phase, and the self-reflection phase (Zimmerman & Schunk, 2011). In their studies, Puustinen and Pulkkinen (2001) and Zimmerman and Schunk (2011) use the term self-regulated learning (SRL) instead of SDL. In the literature, SRL and SDL are often used interchangeably. The two concepts have roughly the same meaning but have different origins (Endedijk & Cuyvers, 2020). SRL stems from traditional school settings, while SDL stems from adult education outside the school environment (Loyens et al., 2008). Although there are studies that use SRL in an adult educational context (e.g., Cuyvers, 2019), the current study will use the term SDL to fit in with the appropriate origin.

In the cyclical SDL-process, the *forethought phase* includes activities of task analysis and self-motivation beliefs (Zimmerman & Schunk, 2011). The aspects of task analysis are setting learning goals, in which learners set goals for their learning, and strategic planning, in which learners select strategies for learning. The aspects of task analysis are influenced by the self-motivation beliefs of learners, such as outcome expectations and goal orientation (Zimmerman, 2002). Goal orientation refers to the learner's motivations or reasons to get involved in the process of learning (Pintrich, 2000; Zimmerman, 2002). Learners can have intrinsic motivations to learn, such as curiosity or a desire to improve something, or external

motivations, such as directives from others or grades (Covington & Müeller, 2001; Deci & Ryan, 1981). Intrinsic motivations to learn are considered as more self-directed than externally directed motivations for learning (Deci & Ryan, 1981). In the second phase, the *performance phase*, self-control and self-observation activities take place. Self-control refers to applying the learning strategies as selected during the forethought phase (Zimmerman, 2002). Commonly used control methods are imagery, self-instruction, attention focusing, and task strategies. With the use of self-observation, learners record themselves and experiment with possible learning strategies. As a result, they can change or adapt their learning strategies. The *self-reflection phase* includes self-judgment and self-reaction (Zimmerman, 2002). Self-judgment implies that learners evaluate their own learning results and outcomes and make causal beliefs according to these results. Self-reaction refers to self-satisfaction and affect a learner feels regarding one's performance. Based on these self-judgments and self-reactions, learners make plans for future learning. This makes the phases of SDL cyclical because self-reflections from previous learning experiences are used to adjust the forethought phase of later learning experiences. However, to engage in this cyclical process successfully, regulatory readiness is crucial (Cuyvers, 2019).

Regulatory Readiness

Sitzmann and Ely (2011) categorized SDL-components they found from various theories about SDL that "initiate, set forward, and evaluate the process of SDL" (Cuyvers, 2019, p. 141). These components originally originate from SRL, but will in the current study be referred to as SDL-components. The components are *regulatory agents*, which is linked to the forethought phase of Zimmerman and Schunk (2011) and includes goal-setting; *regulatory mechanisms*, which is linked to the performance phase and includes metacognition and strategies for efficient progress; and *regulatory appraisals*, which is linked to the self-reflection phase and includes self-evaluation and self-efficacy judgments (Sitzmann & Ely, 2011). The three components all consist of different SDL-strategies (Cuyvers, 2019). However, another SDL-component consisting of five SDL-strategies was found that has a reciprocity relation with the three components as found by Sitzmann and Ely (2011). In her study conducted in a healthcare environment, Cuyvers (2019) identified these SDL-strategies and classified these into a new component, named *regulatory readiness.* The SDL-strategies of regulatory readiness are conditional before one can successfully engage in the cyclical SDL-process and therefore required a new component. Regulatory readiness includes SDL-strategies regarding the consciousness of learning that take place around the learner. These strategies are *being alert*, *wondering*, *awareness of how and when*, *awareness of learning*

needs, and *recognizing affordances* (Cuyvers, 2019; see Table 1). The SDL-strategy *being alert* is about always being aware and observant of challenges that may arise at the workplace and for the danger of falling into routines. The SDL-strategy *wondering* entails the questioning of oneself and others, and therefore not taking everything for granted. *Awareness of how and when* (AHW) is about the consciousness of learning opportunities that may arise at the workplace and the ability to describe these possible learning situations. *Awareness of learning needs* (ALN) is about the consciousness of the learning needs one experiences at the workplace. It arises from the realization of one's strengths and weaknesses, leading to possible needs for learning. Finally, the SLD-strategy *recognizing affordances* (RA) is about expressing opportunities for learning and possible learning invitations that are found in situations at the workplace, such as cases, tasks or communication with others.

These strategies are necessary before something can be seen as a potential learning situation, learning goals can be set, or before an SDL-process can start (Cuyvers, 2019). Because the SDL-strategies of regulatory readiness influence the success of the start of the SDL-process, it is fundamental to support these strategies. A possible way of doing this is by an intervention using facilitation or prompting, for example in technological tools that facilitate the engagement in the SDL-strategies of regulatory readiness (Cuyvers, 2019). However, since the strategies *being alert* and *wondering* are hard to measure in quantitative research, the current study will focus on the development of support for the SDL-strategies *awareness of how and when*, *awareness of learning needs*, and *recognizing affordances*.

Table 1

Description of the SDL-Strategies of Regulatory Readiness Conditional for SDL

SDL-strategies	Description
Being alert	Not walking around thoughtless and keeping your eyes and brain open for challenges and the danger of routine
Wondering	Questioning oneself, ones competences, and what others claim
Awareness of how & when	Description of situations in which learning could take place
Awareness of learning needs	Realizing what one knows and can, and what not, which procedures and techniques one is able to perform, and which not, realizing that one is better in diagnosing certain pathologies than in diagnosing other
Recognizing affordances	Expressions about chances and invitations for learning seen in cases, tasks, or situations, and interactions

Note. Retrieved and adjusted from Cuyvers (2019, p. 150).

Online Micro-Interventions

Online micro-interventions have been considered as effective ways of interventions (e.g., Lokman et al., 2017; Stieger et al., 2020). Online micro-interventions are small messages provided by specific technologies that include tools and techniques to help people to change their experiences and behaviours, and help them to maintain this behaviour (Stieger et al., 2020). They can be offered via different hardware, such as smartphones or tablets (Bolier & Abello, 2014). Online micro-interventions are often self-paced, interactive, and tailored to the user (Ritterband et al., 2003).

Compared to traditional face-to-face studies, online micro-interventions delivered via smartphones are easily accessible and of short duration, due to relatively high doses of interventions per day (Bunge et al., 2017; Stieger et al., 2020). Besides, online micro-interventions can be used repeatedly without much cost and without losing their effects, in contrast to consumable interventions that lose their effects once used (Muñoz, 2010).

A distinction is made between just-in-time adaptive interventions and ecological momentary interventions (Fuller-Tyszkiewicz et al., 2019). Just-in-time interventions provide the right type or amount of support at the right time, by adapting to an individual's context (Nahum-Shani et al., 2018). Ecological momentary interventions use mobile technology to provide support during individuals' everyday lives and in their natural environment (Heron & Smyth, 2010). The current study will make use of a combination of just-in-time and ecological momentary interventions, as the intervention will be provided just-in-time in nurses natural environment, via a mobile application, according to nurses work schedule, and at the time they are at the workplace.

Prompting

Prompting is an instructional method in which prompts are used as an aid to support learners in a concept or process (Bannert, 2009; Ifenthaler, 2012). Prompts do not necessarily contain new information but help learners to recall the needed concepts or processes (Bannert & Mengelkamp, 2013). Learners are thus already familiar with the process, but do not execute it autonomously (Bannert, 2009).

Prompting is a promising approach for supporting SDL (e.g., Daumiller & Dresel, 2019; Ifenthaler, 2012; Jansen et al., 2019; Schmidt et al., 2012). Previous research showed that healthcare professionals struggle with SDL behaviour (e.g., Aagten, 2016). Prompting can help learners to succeed in applying SDL-activities or strategies by providing the right prompts at the right time (Daumiller & Dresel, 2019; Ifenthaler, 2012; Thillmann et al., 2009). Presenting prompts just-in-time, when the learner needs the support, is important to prevent cognitive overload (Thillmann et al., 2009). Therefore, prompting can be combined well with online micro-interventions that also rely on presenting information just-in-time.

The mode of prompts can take many forms, such as questions, instructions or hints (García-Rodicio, 2014; Ifenthaler, 2012). Van de Pol et al. (2010) described 6 means that support learners, originally developed for scaffolding. These means are *feeding back*, *giving hints*, *instructing*, *explaining*, *modeling*, and *questioning*. In the current study, the means *hints*, *example*, *modelling,* and *questioning* are used because these are best transferable to a workplace context. Combinations of these means will be made, so the prompts will have more value considering the relatively low amount of intervention days in the current study.

Questioning and hints

Questioning is defined as asking questions that stimulate the learner cognitively to think about an answer (Van de Pol et al., 2010). In this way, learners are forced to think about the question which allows for a deeper level of processing the prompt, which may lead to

better retention (Andre, 1979). Giving hints is defined as providing clues or suggestions that help the learner continue, without providing a desired solution or complete instruction (Van de Pol et al., 2010). Thus, giving hints can complement questioning well when a learner cannot come up with an answer to the question and will therefore be combined in one prompt.

Exampling and modeling

Exampling derives from explaining, defined as providing more detailed information or clarification (Van de Pol et al., 2010). This can be accomplished by providing clear and detailed examples. Modeling is defined as the demonstration of the desired behaviour (Van de Pol et al., 2010). Examples and modeling can be combined well, by extending an example with a demonstration of the desired behaviour, and will therefore be combined.

The Present Study

Regulatory readiness is new to the research field and is of great importance for a successful start of the SDL-process. Besides, most research into SDL has focused on traditional school settings rather than on workplace settings or the healthcare context. Therefore, this study aimed for the development of a new way to support regulatory readiness at the workplace in a healthcare environment. An online micro-intervention using prompting was used as a tool to support this. If regulatory readiness could be supported, this may help nurses to successfully engage in self-directed learning processes, which benefits their continuing professional development. Because various studies found positive effects of prompting interventions on SDL (e.g., Daumiller & Dresel, 2019; Ifenthaler, 2012; Schmidt et al., 2012), it was expected that the online micro-intervention using prompting would positively affect the regulatory readiness of nurses at the workplace.

To examine this effect, a daily diary study was conducted consisting of a baseline phase without the online micro-intervention, and an intervention phase. During the intervention phase, an online micro-intervention using prompting was introduced to support nurses' regulatory readiness at the workplace. A daily questionnaire was used to measure nurses' regulatory readiness on a daily basis. In addition to the daily diary study, a pre- and post-test were conducted respectively at the start and end of the study. Since both the pre- and post-test were based on self-report data, the outcomes of these questionnaires were referred to as the *general perceived regulatory readiness*.

More specifically, the research question of this study was as follows: *What is the effect of an online micro-intervention using prompting on the regulatory readiness at the workplace of nurses working in home care?* In addition, four sub-questions were aimed for related to the

three SDL-strategies of regulatory readiness that the current study is focusing on, and to the general perceived regulatory readiness as was found from the pre- and post-test questionnaires.

1. *What is the effect of an online micro-intervention using prompting on the awareness of how and when at the workplace of nurses working in home care?*
2. *What is the effect of an online micro-intervention using prompting on the awareness of learning needs at the workplace of nurses working in home care?*
3. *What is the effect of an online micro-intervention using prompting on the recognized affordances at the workplace of nurses working in home care?*
4. *What is the effect of an online micro-intervention using prompting on the general perceived regulatory readiness of nurses working in home care?*

Method

Design

In order to investigate the effect of the online micro-intervention on nurses' regulatory readiness at the workplace, a single-case multiple baseline design across individuals was used in this study. The design was a within-subject design since no control group was used and was based on self-report data of the participants.

The multiple baseline designs consisted of a baseline phase and an intervention phase for every participant, in which measurements were repeated over participants on a daily basis. Every participant started the baseline phase on a different day, which ensured a randomization component to foster the internal validity of the study (Kratochwill & Levin, 2010). The intervention phase also started at different points in time to all participants, to randomize the design and to limit internal validity threats (Kratochwill & Levin, 2010). This means that the length of the baseline phase and of the intervention phase varied across participants (see Table 2). The effect of the intervention can be proven by determining a change in the data pattern within participants at the moment that the intervention phase launches (Hedges et al., 2013). Therefore, multiple baseline designs are very suitable for measuring intervention effects (Hawkins et al., 2007), and compared to other single-case designs, they strengthen the internal validity, replication and generalization of the design (Koehler & Levin, 1998; Kratochwill & Levin, 2010).

To better understand the effects of the intervention and to control the effects and stability of the intervention, a pre- and post-test were also used in the study, as recommended by Panadero et al. (2016).

Table 2

Overview of the Randomized Multiple-Baseline Design With 6 Participants and Two Within-Series Conditions

Participant	Design
1	AAAAABBBBBBB
2	AAAAAABBBBBB
3	AAAAAABBBBB
4	AAAAAABBBBB
5	AAAAAAABBBBB
6	AAAAAAABBBBB

Note. A = baseline phase, B = intervention phase

Participants

Participants in this study were nurses of an organization for community care that provides nursing and personal care to clients at home. They work within small community teams consisting of nurses and assistant nurses. 3 teams participated in this study. Initially, 11 nurses started the study, but only 6 completed the study (54.5%). This is in line with the number of participants required for reliable intervention effects (Bouwmeester & Jongerling, 2020).

All nurses were women. The age ranged from 22 to 45 years (M = 28.83, SD = 8.13). The average years of working experience in healthcare of the nurses was 8.83 (SD = 8.28). The average working hours a week was 28.67 (SD = 4.68). Five nurses finished a higher vocational education level (HBO), and 1 nurse finished secondary vocational education (MBO-4). In total, nurses did 72 entries of the daily questionnaire during the study. However, 2 entries were determined as invalid, since these entries were completed two days after the actual day and were thus removed from the data. Thus, 70 valid entries were included in the study, with a mean of 11.67 entries per person.

Instrumentation

Three different questionnaires and an online micro-intervention were used in the study. To complete these, participants used The Incredible Intervention Machine (TiiM-application), a mobile application for longitudinal research studies (BMS Lab, n.d.). This application was developed by the BMS Lab of the University of Twente.

Background variables

To gain more insight into the participants, a questionnaire regarding the general background variables was conducted via the TiiM-application. The questionnaire was based on previous research in the same context (Aagten, 2016) and consisted of 7 questions about gender, age, educational level, relevant work experience, organization, function, and working hours. This questionnaire was asked as part of the screening questions that appeared immediately after participants signed up for the TiiM-application, together with the perceived readiness pretest questionnaire. The items used in this questionnaire are listed in Appendix A.

Daily measurements

To measure nurses' regulatory readiness at the workplace, a daily questionnaire was used in the form of a digital structured learning log. The SDL-strategies *awareness of how and when* (AHW)*, awareness of learning needs* (ALN)*,* and *recognizing affordances* (RA) were incorporated into this questionnaire. The questionnaire consisted of 12 items, of which 7 items with a 1-100 scale, 4 closed-ended questions and 1 open question. The questionnaire had different routes, depending on the answers given on previous items. This caused different durations for answering this questionnaire. See Appendix B for the complete questionnaire and routing.

Awareness of how and when. To measure nurses' AHW, 3 items were asked (items 1, 3, and 4), of which item 1 focussed on learning opportunities in general, item 3 focussed on *awareness of when*, and item 4 on *awareness of how*. All items were measured on a 1-100 scale (1 = *strongly disagree*, 100 = *strongly agree*). Before calculating the outcome scores, a reliability analysis was performed to examine the internal consistency of the items.

Reliability analysis. The reliability estimate was calculated for the AHW scale (items 1, 3, and 4). Since the data of diary studies are nested within days, nested within participants, multilevel model (MLM) analyses were performed, followed by daily- and person-level reliability estimates (Bonito et al., 2012; Nezlek, 2012). In these analyses, the item responses were the level 1 unit of analysis, days were the level 2 units, and participants were the level 3 units.

The MLM analyses for the AHW scale showed $\sigma^2_{item} = 920.89$, $p < .001$; $\sigma^2_{days} = 135.28$, $p = 0.100$; and $\sigma^2_{participants} = 84.34$, $p = .194$. The estimated variances of the MLM analyses were then used for the calculation of the reliability estimate for the AHW at the daily and the individual level. By doing this, the formulas presented by Bonito et al. (2012, p. 449) were used. Here, p (number of items in the scale) was 3. For the individual level, n was interpreted as the average number of measurements per participant, which was 11.67. The

calculations found a reliability estimate of the AHW scale on the daily level of .31 and on the individual level of .69. Using standard assessment criteria, the reliability on the daily level would be considered as low. However, considering the very low amount of items in the scale, which is usual for diary studies, more relaxed criteria can be applied (Nezlek, 2017). Besides, the reliabilities on the individual level can both be considered as reliable, and it is not yet clear what has to be done when only one level of a scale is considered as reliable and the other level is not (Bonito et al., 2012). Therefore, the AHW scale was considered as reliable.

After the reliability analysis, outcome scores were calculated per participant per day for AHW, by calculating the mean score for items 1, 3, and 4, with higher scores indicating more awareness of how and when.

Awareness of learning needs. To measure nurses' ALN, 2 items were asked (items 2 and 5), of which item 2 focused on the current need to learn and item 5 on future learning needs. Both items were measured on a 1-100 scale (1 = *strongly disagree*, 100 = *strongly agree*). Before calculating the outcome scores, a reliability analysis was performed to examine the internal consistency of the items.

Reliability analysis. The reliability estimate was calculated for the ALN scale (items 2 and 5) using a MLM analysis followed by daily- and person-level reliability estimates for the same reason as for the AHW scale. The MLM analysis showed $\sigma^2_{item} = 714.27$, $p < .001$; $\sigma^2_{days} = 53.72$, $p = .274$; and $\sigma^2_{participants} = 48.50$, $p = .289$. The estimated variances of the MLM analyses were then used for the calculation of the reliability estimate for the ALN scale at the daily and the individual level, using the formulas presented by Bonito et al. (2012, p. 449). Here, p (number of items in the scale) was 2. For the individual level, n was 11.67. The calculations found a reliability estimate of the ALN scale on the daily level of .13 and on the individual level of .58. Using standard assessment criteria, the reliability on the daily level would be considered as low. However, for the same reasons as for the AHW scale, the ALN scale was considered as reliable.

After the reliability analyses, outcome scores were calculated per participant per day for ALN by calculating the mean score for items 2 and 5, with higher scores indicating more awareness of learning needs.

Recognized affordances. Nurses' recognized affordances were measured using items 6, 7, and 8 of the daily questionnaire based on Bloemendal (2019). Nurses were asked if they learned something during the day. Answers were coded as no learning moments recognized (0), one learning moment recognized (1), or two learning moments recognized (2). No one

reported more than two learning moments a day. A hint was given after nurses entered that they recognized no learning moments, after which the question was repeated.

Self-directedness of the learning moments. If nurses reported a recognized learning moment that day, the reason to engage in that learning moment and thus the self-directedness of it was examined. This was measured by one item based on Bloemendal (2019): *What was the most important reason to learn this?* (item 14). This item was measured by a closed-ended question with 6 answers including an 'Other, please specify' option. The answers were categorized into two categories: 'Self-directed' and 'Externally directed'. Answers *b*, *c,* and *d* were considered to be self-directed reasons to learn, and answers *a* and *e* were considered to be externally directed reasons to learn. Two times, nurses used the 'Other, please specify' option. Both entries were considered as externally directed ("*It was needed in the client situation*" and "*I must be sufficiently skilled to perform a procedure*").

Online micro-intervention

During the intervention phase of the study, an online micro-intervention using prompting was introduced next to the daily questionnaire. The online micro-intervention included in total 7 prompts to support nurses' regulatory readiness at the workplace.

The content of every prompt was focused on either AHW or ALN and on the work of Berings (2006). Berings (2006) found learning activities that nurses engage in during their work. These learning activities are organized into six domains, namely *learning by doing one's regular job*, *learning by applying something new in the job*, *learning by social interaction with colleagues*, *learning by theory or supervision*, and *learning by reflection*. Based on these activities, the mode of the prompts was developed in the form of introduction prompts that introduced the concepts of ALN (prompt 1) and AHW (prompt 2), *questioning and hints* (prompt 3, 6 and 7), and *examples and modeling* (prompt 4 and 5). See Appendix C for all 7 prompts.

The prompts were then assigned to an intervention day based on the content of the prompt. In this way, every participant received the same prompt on the relatively same day of the intervention phase. In the assignment of prompts to days, it was made sure that the first two intervention days contained an introduction prompt, and that on the following intervention days the variables AHW and ALN alternated. In this way, the two variables were as equally prompted as possible. See Table 3 for the assignment of prompts per intervention day.

Table 3

Assignment of Prompts per Intervention Day

Intervention day	Prompt type
1	Introduction AHW
2	Introduction ALN
3	Q+H AHW
4	E+M ALN
5	E+M AHW
6	Q+H ALN
7	Q+H AHW

Note. Q+H = questioning and hints, E+M = example + modeling.

General perceived regulatory readiness

To measure the general perceived regulatory readiness of nurses before the study (pretest) and after the study (posttest), the Self-Directed Learning Readiness Scale for Nursing Education (SDLRSNE) developed by Fisher and King (2010) was used. This scale consisted of 29 items, divided over 3 subscales: 'Self-management' (10 items), 'Desire for learning' (9 items), and 'Self-control' (10 items). The Cronbach's alpha coefficient was .76 for the pretest and .73 for the posttest.

Originally, all items were measured on a 5-point Likert scale. However, due to non-significant effects in a similar study (Gerrits, 2021), the scale was adapted to a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). The items were translated from English to Dutch to adapt the questionnaire to the language of the participants, see Appendix D.

Before analysing the pre- and post-test, three items were reversed because these were negatively scaled items (*I am disorganised*, *I do not enjoy studying*, and *I am not in control of my life*). Thereafter, the mean score was calculated per participant for both the pre- and post-test which represented the outcome score. Higher scores indicated higher general perceived regulatory readiness.

Procedure

First, approval for this study was requested at the Ethical Committee of the Behavioural, Management and Social Sciences Department of the University of Twente. Next, a contact person of the participating healthcare organization found 3 teams that were willing to participate. The manager of each team asked the nurses if they wanted to participate voluntarily. Next, the work schedules for the participating nurses were asked via the team

manager of every team, since this was necessary for the planning of the multiple baseline design. Participating nurses received an email containing necessary information about the study, an extensive informed consent letter, and instructions on how to install the TiiM-application (see Appendix E and F). Via a link in this email, nurses could register themselves for the study in the TiiM-application. Immediately after registering in the application, *active informed consent* was asked via the screening questions. This included the information that participating in the study was voluntary, that participation could stop at any moment without explanation, that given answers would remain confidential and would be encrypted and stored safely, and that the employer would not be given insights in personal answers. Only after having agreed upon this consent, nurses could continue and were asked to complete the screening questions, consisting of the background variables questionnaire and the pretest questionnaire.

During the study, nurses received at least one push notification from the TiiM-application on days that they were working. These notifications were sent out by the researcher via the TiiM web application at predetermined times, according to the work schedule of the nurses. These push notifications referred to either a questionnaire or prompt. The daily questionnaire was made available one hour before the end of the work shift ("*Some new questions are waiting for you. Complete them now!*"). When nurses had not completed the daily questionnaire after one hour, they were reminded via another push notification ("*Would you please complete today's questionnaire? Thank you!*"). The daily questionnaire covered 1-5 minutes to complete. During the intervention phase, an extra push notification was sent out, referring to the prompt of the online micro-intervention of that day. The prompts were made available halfway through the working shift. ("*A new learning tip is waiting for you. Check it out in the app now!*"). Again, when nurses had not completed the prompt yet, a reminder was sent after one hour ("*Please don't forget to check out today's learning tip!*"). The prompts covered 1-2 minutes to complete.

On the last day of the study, nurses also received a push notification referring to the posttest. This notification was sent out after nurses' working shift ("*The final questionnaire is waiting for you. Complete it now!"*). After finishing the posttest, nurses were thanked for participating in the study.

Data Analysis

Daily level measures

The daily level data was analysed using the scdhlm (single-case design hierarchical linear model) web application (Pustejovsky et al., 2021). This is an application developed for

analysing data of single case-designs, such as multiple baseline designs (Valentine et al., 2016). Data in a multiple baseline design across individuals are nested within days, nested within participants, and therefore undergoes some statistical complexity. The scdhlm web application takes this complexity into account and provides a between-case standardized mean difference (BC-SMD) effect size estimation and a graphical presentation of the data, which can be analysed using visual inspection. In the graphical presentation, a best-fit trend line is provided that represents the Empirical Bayes estimates of the specific levels of each participant within each phase, which can be used to assess the adequacy of the model (Valentine et al., 2016). However, as visual inspection analyses are prone to subjectivity, these were complemented with effect size analyses, as recommended in the literature (Bouwmeester & Jongerling, 2020; Hedges et al., 2012). Therefore, sub-questions 1-3, and thus the effect of the online micro-intervention on the daily level measurements, were examined using visual inspection analyses and BC-SMD effect size analyses.

For *recognizing affordances*, a chi-square analysis was performed in addition to the visual inspection and BC-SMD effect size analyses, to examine the difference in self-directedness of the recognized learning moments as a result of the online micro-intervention. For this, item 14 was analysed via IBM SPSS Statistics (Version 27) using the categories 'self-directed' and 'externally directed'. Only the entries in which a recognized learning moment was reported were included in this analysis.

Person level measures

The data on the personal level, nurses' general perceived regulatory readiness, was measured before and after the study using a pre- and post-test. A two-tailed, paired samples t-test was performed via IBM SPSS Statistics (Version 27) using the outcome scores of the pre- and post-test per participant to answer sub-question 4. This investigated a possible difference between the pre- and post-test and therefore an effect of the online micro-intervention on nurses general perceived regulatory readiness at the workplace.

Results

Descriptive analysis

In total, the 6 participants completed 72 entries of the daily questionnaire. 2 of these entries were considered invalid, so in total 70 entries were included in the study. 37 of these entries were part of the baseline phase (52.9%) and 33 of the intervention phase (47.1%; see Table 4). Each participant had at least 5 baseline or intervention days and a maximum of 7

baseline or intervention days. The duration of the study for participants ranged from 11 to 13 days, of which not all days were included in the analyses due to the validity of these days.

Table 4

Distribution of Baseline and Intervention Days among Participants

Participant	Days					
	Baseline phase		Intervention phase		Total study	
	n	%	*n*	%	*n*	%
1	5	41.7	7	58.3	12	100
2	6	54.5	5	45.5	11	100
3	6	50.0	6	50.0	12	100
4	6	54.5	5	45.5	11	100
5	7	58.3	5	41.7	12	100
6	7	58.3	5	41.7	12	100
Total entries	37	52.9	33	47.1	70	100

What is the effect of the online micro-intervention on nurses' awareness of how and when?

To answer sub-question 1, a visual inspection analysis and a BC-SMD effect size analysis were performed using the scdhlm web application.

Visual inspection analysis of the daily level perceived awareness of how and when

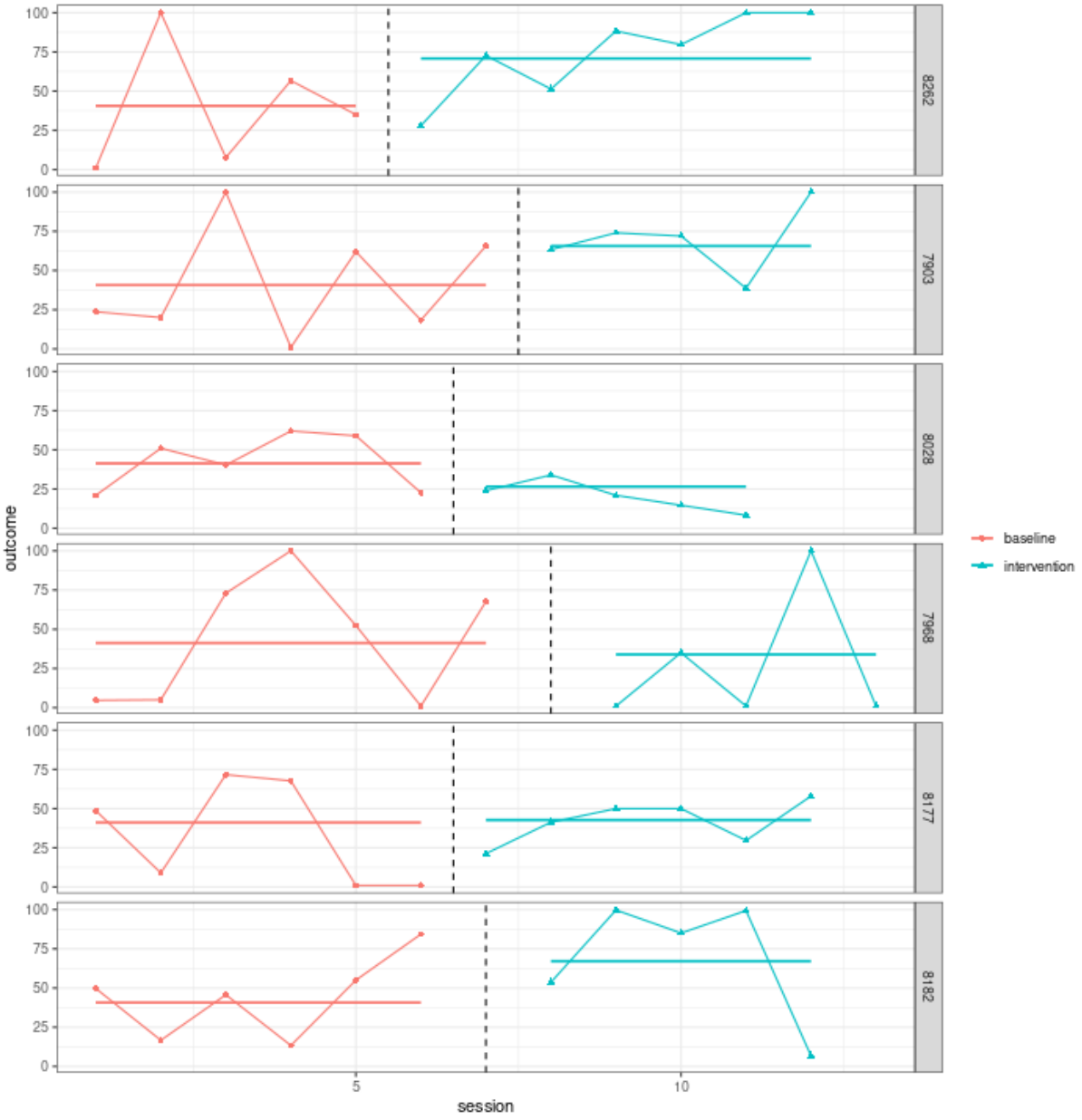
Graph 1 shows the visual inspection analysis for AHW for the 6 participants, in which 'session' represents the day of the study, and each smaller graph represents a participant. Each data point represents the outcome score of that day and connected to each other, these form the pattern of the data within that phase, within that person. Red represents the baseline phase and blue the intervention phase. The horizontal lines represent the best-fit trend line for each phase.

As seen in Graph 1, the daily outcome scores per participant fluctuate a lot. A large variation in awareness of how and when is demonstrated, thus no clear pattern can be discovered. However, for 3 participants, the best-fit trend lines are clearly higher in the intervention phase compared to the baseline phase. For 1 participant, the best-fit trend lines of the baseline and intervention phase are almost the same, and for 2 participants, these are slightly lower in the intervention phase. Thus, the positive differences seem bigger than the negative differences. This indicates a small positive effect of the online micro-intervention on

nurses' awareness of how and when. However, an effect size analysis was used to complement these findings.

Graph 1

Visual Inspection Analysis for Daily Level Perceived Awareness of How and When



Effect size analysis of the daily level perceived awareness of how and when

To complement the results of the visual inspection analysis, the BC-SMD estimate was calculated to examine the effect of the online micro-intervention on the awareness of how and when. BC-SMD estimate = 0.34, 95% CI [-0.39, 1.08], $N = 6$. As seen in the visual inspection analysis, this shows a small difference in favour of the intervention phase. However, this difference is not large enough to say with confidence that this was due to the

online micro-intervention. It can therefore not be stated that nurses were more aware of the learning opportunities at the workplace during the intervention phase compared to the baseline phase as a result of the online micro-intervention.

What is the effect of the online micro-intervention on nurses' awareness of learning needs?

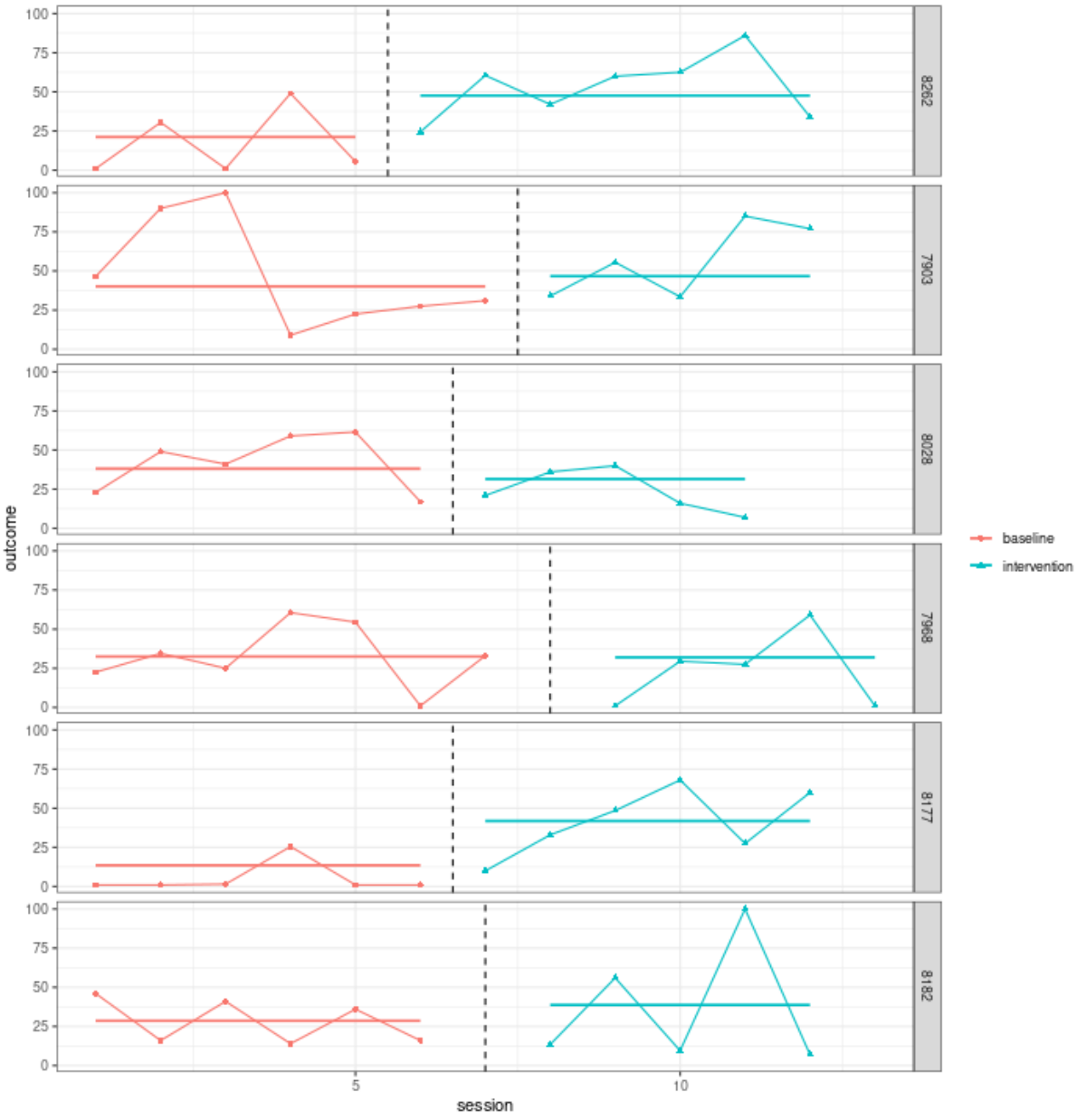
To answer sub-question 2, a visual inspection analysis and a BC-SMD effect size analysis were performed using the scdhlm web application.

Visual inspection analysis of the awareness of learning needs

Graph 2 shows the visual inspection analysis for ALN for the 6 participants. As seen in Graph 2, the daily outcome scores per participant fluctuate a lot. A large variation in awareness of learning needs is demonstrated, thus no clear pattern can be discovered. However, for 3 participants, the best-fit trend lines for the intervention phase seem clearly higher than for the baseline phase. For the other 3 participants, the differences are very small. Thus, the positive differences seem bigger than the negative differences. This indicates a positive effect of the online micro-intervention on nurses' awareness of learning needs. However, an effect size analysis was used to complement these findings.

Graph 2

Visual Inspection Analysis for Daily Level Perceived Awareness of Learning Needs



Effect size analysis of awareness of learning needs

To complement the results of the visual inspection analysis, the BC-SMD estimate was calculated to examine the effect of the online micro-intervention on the awareness of learning needs. BC-SMD estimate = 0.40, 95% CI [-0.31, 1.11], $N = 6$. As was seen from the visual inspection analysis, this shows a medium difference in favour of the intervention phase. However, this difference was not large enough to say with confidence that this was due to the online micro-intervention. It can therefore not be stated that nurses were more aware of their

learning needs at the workplace during the intervention phase compared to the baseline phase as a result of the online micro-intervention.

What is the effect of the online micro-intervention on nurses' recognizing affordances?

To answer sub-question 3, a descriptive analysis and a visual inspection analysis complemented by a BC-SMD effect size analysis were performed. In total, nurses reported 70 times if they had recognized a learning moment that day or not (see Table 5). Of those, nurses reported 29 times (41.4%) that they did not learn anything that day, of which 16 times (43.2%) during the baseline phase and 13 times (39.4%) during the intervention phase. Nurses reported 33 times (47.1%) that they recognized one learning moment that day, of which 18 times (48.6%) during the baseline phase, and 15 times (45.5%) during the intervention phase. 3 times, a learning moment was recognized after receiving the hint first, which was 2 times during the baseline phase and 1 time during the intervention phase. Furthermore, nurses reported 8 times (11.4%) that they recognized 2 learning moments that day, of which 3 times (8.1%) during the baseline phase and 5 times (15.2%) during the intervention phase. In total, 49 learning moments were reported, $M = 0.62$ for the baseline phase and $M = 0.76$ for the intervention phase. A visual inspection analysis and an effect size analysis were used to examine if the number of learning moments during the intervention phase differed compared to the baseline phase.

Table 5

Descriptive Statistics of Recognized Learning Moments per Phase

Learning moments	Baseline phase		Intervention phase	
	n	%	*n*	%
No learning moment recognized	16	43.2	13	39.4
Total recognized learning moments	24	64.9	25	75.8
1 learning moment recognized	18	48.6	15	45.5
2 learning moments recognized	3	8.1	5	15.2
Total entries	**37**	**100**	**33**	**100**

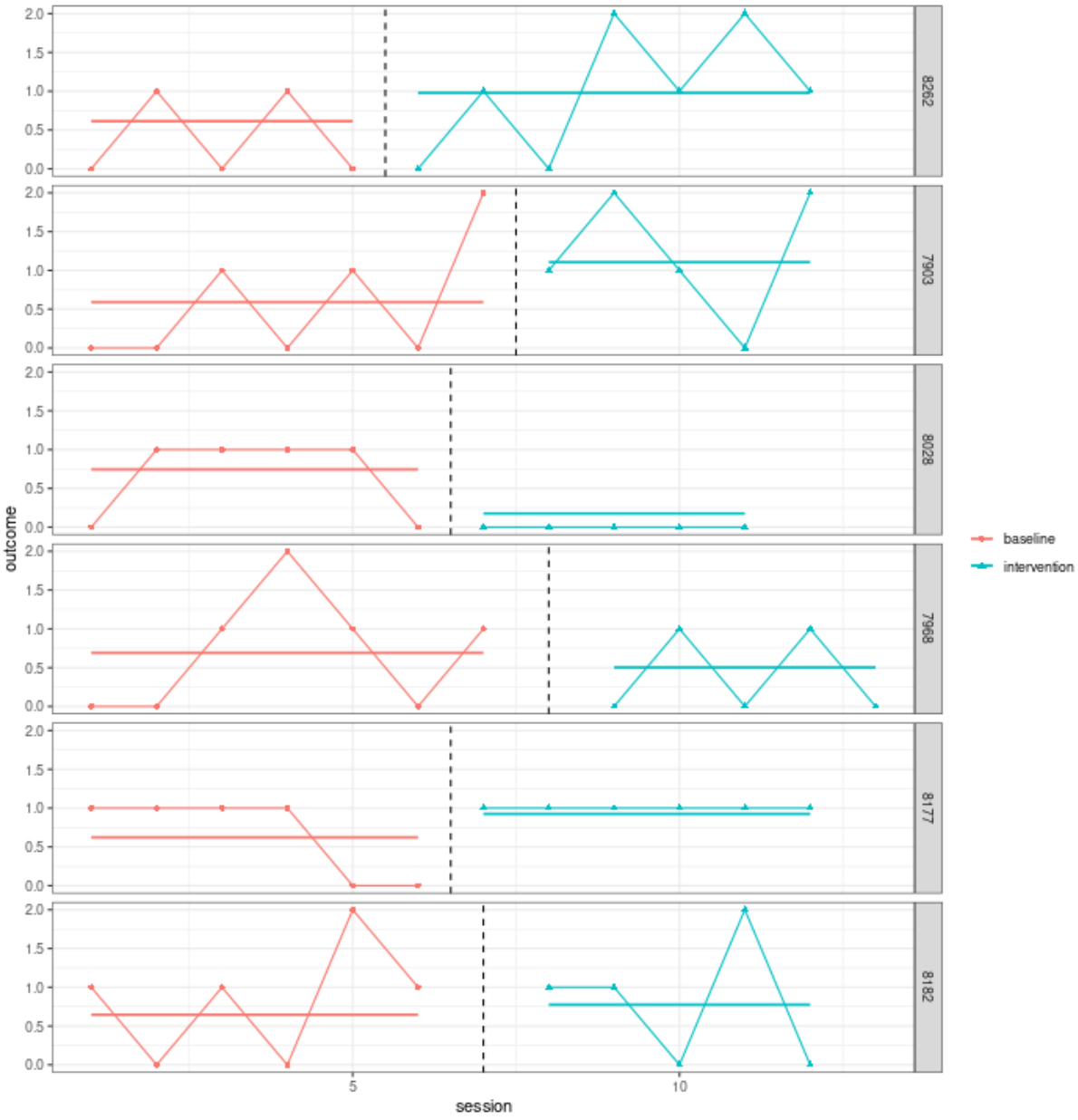
Visual inspection analysis of the recognized affordances

A visual inspection analysis was performed for the 6 participants to investigate the effect of the online micro-intervention on nurses' recognized affordances, see Graph 3. As seen in the graph, the number of learning moments fluctuates a lot for most participants. A large variation in learning moments per day is demonstrated in the graph, thus no clear pattern

can be discovered. However, for 4 participants, the best-fit trend lines for the intervention phase are slightly higher compared to the baseline phase. For only 2 participants, the best-fit trend lines are higher in the baseline phase compared to the intervention phase. This indicates a small positive effect of the online micro-intervention on nurses' recognized affordances. However, an effect size analysis was used to complement these findings.

Graph 3

Visual Inspection Analysis for Daily Level Recognized Learning



Effect size analysis of the recognized affordances

To complement the results of the visual inspection analysis, the BC-SMD effect size estimate was calculated to examine the effect of the online micro-intervention on nurses'

recognizing affordances. BC-SMD estimate = 0.14, 95% CI [-0.58, 0.87], $N = 6$. As was seen from the visual inspection analysis, this shows a small difference in favour of the intervention phase. However, this difference was not large enough to say with confidence that this was due to the online micro-intervention. It can therefore not be stated that nurses recognized more learning moments at the workplace during the intervention phase compared to the baseline phase as a result of the online micro-intervention.

Self-directedness of the learning moments

Nurses' reason to learn and therefore the self-directedness of the learning moments was examined using the daily entries in which a learning moment was recognized. It was found that 58.5% of the total recognized learning moments was self-directed. An increase was found in self-directedness of the learning moments during the intervention phase (65.0%) compared to the baseline phase (52.4%). Simultaneously, the number of externally directed reasons to learn decreased during the intervention phase (35%) compared to the baseline phase (47.6%). However, a chi-square analysis showed no difference in the self-directedness of the learning moments during the intervention phase compared to the baseline phase, $\chi^2(1, N = 41) = 0.67$, $p = .41$. Thus, nurses do not learn significantly more self-directed during the intervention phase compared to the baseline phase. An overview of the descriptive statistics can be found in Table 6.

Table 6

Descriptive Statistics of the Self-Directedness of the Learning Moments

	Baseline phase		Intervention phase	
	n	%	*n*	%
Self-directed	**11**	**52.4**	**13**	**65.0**
Wanted to improve something	2	9.5	3	15.0
Out of curiosity	4	19.0	5	25.0
Wanted to develop myself in this area	5	23.8	5	25.0
Externally directed	**10**	**47.6**	**7**	**35%**
Needed for my role in the team	6	28.6	3	15.0
Stimulated by others to develop myself	3	14.3	3	15.0
Needed in situation with client	1	4.8	0	0.0
Must be sufficiently skilled to perform a procedure	0	0.00	1	5.0
Total	**21**	**100**	**20**	**100**

What is the effect of the online micro-intervention on nurses' general perceived regulatory readiness?

To answer sub-question 4, a two-tailed, paired samples t-test (alpha level .05) was performed to compare the pretest (M = 5.33, SD = 0.64) with the posttest (M = 5.59, SD = 0.42) for the 6 participants. On average, nurses' posttest scores were 0.26 points higher than their pretest scores. However, this difference was not statistically significant, $t(5) = -0.82$, p = .450. The difference was not large enough to say with confidence that this was due to the online micro-intervention. It can therefore not be stated that nurses showed more regulatory readiness after the online micro-intervention compared to before the online micro-intervention.

Discussion

This study investigated the effect of an online micro-intervention using prompting on nurses' regulatory readiness at the workplace because supporting regulatory readiness is crucial for the successful engagement in the self-directed learning process (Cuyvers, 2019). To do so, a daily diary study in the form of a multiple baseline design was conducted, in which nurses completed a self-report questionnaire every day. An intervention phase, including an online micro-intervention that used prompting to support nurses' regulatory readiness at the workplace, was compared to a baseline phase without an intervention. A positive effect of the online micro-intervention on nurses' regulatory readiness was expected, because the information in the prompts was aimed to help nurses to induce in the SDL-strategies of regulatory readiness and because the online micro-intervention was provided to nurses just-in-time in their natural environment when they were at the workplace, and according to their work schedule.

The visual inspection analyses indeed showed positive differences in favour of the online micro-intervention. However, effect size analyses showed that these differences were not significant. It can therefore not be stated that the positive differences are due to the online micro-intervention. The online micro-intervention did not significantly support nurses' regulatory readiness at the workplace. Nurses were not more aware of their learning needs and the learning opportunities at the workplace as a result of the online micro-intervention. Besides, nurses did not recognize more learning moments during the intervention phase and these recognized learning moments were not more self-directed compared to the learning moments of the baseline phase. In addition, nurses' general perceived regulatory readiness before and after the study did not differ significantly.

Although the effect size analyses showed non-significant results, the visual inspection analyses showed that four out of the six nurses benefited from the online micro-intervention, or showed at least similar results during the two phases, for all three SDL-strategies. The other 2 nurses did not show positive results due to the online-micro intervention in any of the three SDL-strategies. It is striking that for all analyses, the same four nurses showed an increase in all three SDL-strategies during the time that support was provided, and that the two other nurses showed no difference or a decrease in the SDL-strategies during the intervention phase. This may be explained by the concept of scaffolding. Scaffolding is a widely used method to support learners in SDL (e.g., Azevedo, 2005; Dabbagh & Kitsantas, 2005; Siadaty et al., 2016). Scaffolding can be defined as the temporary support for a task or process that a learner cannot achieve without this support (Van de Pol et al., 2010). The current study used four scaffolding means to support nurses' regulatory readiness at the workplace. According to the scaffolding principle, the given support is context-dependent and should match the level of the learner (Roll et al., 2014; Van de Pol et al., 2010). This is important because not everyone benefits from the same amount or level of support. Some need more or different support than others do. Too little support for novice learners can for example result in cognitive overload and therefore work ineffective (Kalyuga, 2007). At the same time, too much support for advanced learners can also work counterproductive. This is called the 'expertise reversal effect', where support becomes unnecessary and is therefore ineffective (Kalyuga, 2007). Therefore, the scaffolding principle suggests to match the type and amount of support with the prior knowledge of learners. It may be that in the current study, the level and amount of support did not match with the level of the two nurses and as a result, they did not show a difference in regulatory readiness. At the same time, the level and amount of support may have matched with the level of the four nurses that showed an increase in regulatory readiness during the online micro-intervention. Accordingly, this shows the importance of matching the support with the individual learner, which is in line with the recommendation of Azevedo (2005) to use scaffolding methods adapted to the individual level and prior knowledge of the learner.

The non-significance of the effects may be explained by the context of nurses' work. Earlier studies in the same context found that most nurses do not plan their learning (Aagten, 2016; Bloemendal, 2019; Kattenberg, 2021). Learning experiences arise from doing one's regular job, by applying something new in the job, by social interaction with colleagues, by theory or supervision, and by reflection (Berings, 2006). However, it depends on the daily situations if nurses encounter the above-mentioned learning opportunities. Especially in home

care, the work is more solitary compared to nursing work in hospitals, which may lead to fewer opportunities for learning from and with others (Lundgren, 2011). In addition, the workload in healthcare is high, so not every day there is time for workplace learning (CBS, 2020; Coventry et al., 2015; Lloyd et al., 2014). This may explain the large fluctuation in the visual inspection analysis of *recognizing affordances*. On some days, nurses may for example encounter several learning opportunities and also engage in these, and on other days, their day schedule is too busy to take advantage of the encountered learning opportunities. This may have resulted in the fluctuation in recognized learning moments per day.

The difference in nurses' work days as described above also raises the question about the usefulness of reliability analyses for daily diary studies. According to reliability analyses, low variance in the data indicates higher reliability, which is considered as a requirement for reliable and meaningful research methods (Nezlek, 2017). However, in data from diary studies such as the current study, it seems usual that data varies over days, according to the context of work in healthcare as described above. It can therefore be questioned if a high variance in the daily data is indeed unreliable and meaningless as assumed so far. However, the discussion about the usefulness of reliability analyses for daily diary research is beyond the scope of the current study, but could perhaps be elaborated on in future research.

Taken together, the results indicate that an effective way of supporting nurses' regulatory readiness has not yet been found in the current study. However, the positive but not significant differences as shown in the visual inspection analyses also indicate that supporting regulatory readiness via online micro-interventions using prompting is promising, if scaffolding principles are met. There is still room for improvement of nurses' regulatory readiness. This study therefore shows the importance of further developing the support for regulatory readiness.

Limitations and Practical Implications

This study has several strengths. First, the method and design of the study made it possible to study nurses' regulatory readiness at the workplace on a daily basis, which allowed for capturing short-term progress of nurses (Ohly et al., 2010). In doing this, the data was collected close to the events, which reduces the retrospective bias of the study (Reis et al., 2014). Deformations due to the recall of experiences were reduced. Besides, the data was collected in nurses' natural work environment, so that the situational context was taken into account (Reis et al., 2014). Moreover, a multiple baseline design was used, in which an intervention was introduced in a sequential manner across time which allowed for measuring

the intervention effects and strengthened the internal validity of the design (Hawkins et al., 2007; Kratochwill & Levin, 2010). Furthermore, a pre- and post-test were used to control the intervention effects captured in the multiple baseline design, and their stability (Panadero et al., 2016).

Second, the current study used visual inspection analyses complemented with statistical effect size analyses to examine the data. In many other studies using single-case designs, no statistical analysis is used to measure intervention effects because of the tradition to only use visual inspection analysis, and because of the complexity of the data within repeated measures (Hedges et al., 2013). However, visual inspection analyses are prone to subjectivity (Matyas & Greenwood, 1990). At the same time, statistical analyses do not give insights into the data patterns within participants. Therefore, the combination of visual inspection and statistical analyses is used in this study is considered as a strength.

Besides these strengths, the study also has some limitations along with some recommendations for future research. First of all, there was little contact with the healthcare organization and participants, which could have resulted in participants dropping out, while this could have been prevented. The little contact is mainly the result of the COVID-19 situation during the time this study was carried out, which made it impossible to have live meetings and visitations. This also made it hard to engage participants in the study, which is important for longitudinal studies (Park et al., 2019). For future longitudinal research, it is therefore recommended to engage participants more in the study, for example by also meeting participants face-to-face during the study, in which participants' progress is discussed, feelings and experiences are shared, and in which participants are encouraged to finish the study.

Second, this study used self-report questionnaires to capture nurses' regulatory readiness at the workplace. However, self-report data is prone to be biased because of the possible inaccurateness (under- or overestimation) of participants' responses (Boekaerts & Corno, 2005). Often, learners' self-reports on their SDL-behaviour does not align with their actual SDL-behaviour (Hadwin et al., 2007). It is therefore recommended to not only use self-report data but to use a combination of self-report and more objective data collection methods, such as trace-based methodologies (Hadwin et al., 2007; Siadaty et al., 2016).

Third, this study used the classification of regulatory readiness as found by Cuyvers (2019). Cuyvers found the SDL-strategies of this classification as a result of qualitative research and did not intend to make these strategies measurable for quantitative research. However, the current study aimed to measure the SDL-strategies in a quantitative way, which

resulted in a more behavioural measure of the SDL-strategies, while Cuyvers described the strategies on a thought level. This may have resulted in a gap between the original definitions of the strategies as captured by Cuyvers (2019) and what in the current study was measured. This is especially the case for the SDL-strategy *recognizing affordances*, which was originally found from the expressions that participants made about chances and invitations for learning as seen in situations at the workplace (Cuyvers, 2019). In the current study, this was measured quantitatively by counting the learning moments that nurses experienced and reported on a daily level. Although this has been carefully thought through by the researcher, it is worth mentioning so that future research is aware of this gap.

Fourth, the generalizability of the current study was low because of three reasons. First, all participants were women, which is not representative of the total employed working population of nurses in The Netherlands, in which 87.3% are women and 12.7% are men (CBS, 2021). Second, the sample size of the current study was very low. 11 nurses started the study and only 6 finished it. This low amount of participants may also have resulted in the non-significant results since the sample size was insufficient to consider the results significant (Hedges et al., 2012). Third, because participating in the current study was voluntary, it is likely that the participating nurses were already more curious and eager to learn than nurses that did not sign up for participation. This is not a good representation of the total population of nurses. It is therefore recommended for future research to include larger and more representative sample sizes.

Conclusion

This study used a diary study in the form of a multiple baseline design to investigate the effect of an online micro-intervention on nurses' regulatory readiness at the workplace. The online micro-intervention used prompting to support nurses in being more aware of the learning opportunities and their learning needs at the workplace. It was found from the results that the online micro-intervention showed positive, but non-significant differences on nurses' regulatory readiness. It is therefore expected that when future research develops prompting according to the principles of scaffolding and when larger sample sizes are used, an online micro-intervention has the potential to effectively support nurses' regulatory readiness at the workplace.

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Appendix A

Background variables questionnaire

1. Wat is je geslacht?
    a. Man
    b. Vrouw
    c. Overig
2. Wat is je leeftijd?
3. Wat is je hoogst afgeronde opleiding?
    a. MBO 1
    b. MBO 2
    c. MBO 3
    d. MBO 4
    e. HBO
    f. HBO master
    g. WO
    h. Anders…
4. Hoeveel jaren werkervaring heb je in de zorg?
5. Bij welke zorgorganisatie ben je werkzaam?
6. Wat is je huidige functie?
7. Hoeveel uur werk je op papier (contract) per week?

Appendix B

Daily questionnaire

Variable	Item	Categories	Next item
Awareness of how and when	1. Vandaag heb ik tijdens mijn werkdienst kansen gezien om te leren.	Helemaal niet (1) - Helemaal wel (100)	2
Awareness of learning needs	2. Vandaag had ik een sterke behoefte om iets te leren.	Helemaal niet (1) - Helemaal wel (100)	3
Awareness of when	3. Vandaag heb ik tijdens mijn werkdienst momenten gezien waarop ik kon leren.	Helemaal niet (1) - Helemaal wel (100)	4
Awareness of how	4. Vandaag heb ik tijdens mijn werkdienst een manier gezien waarop ik kon leren.	Helemaal niet (1) - Helemaal wel (100)	5
Awareness of learning needs	5. Vandaag was ik mij tijdens mijn werk bewust van wat ik nog wil leren.	Helemaal niet (1) - Helemaal wel (100)	6
	6. Heb je vandaag iets geleerd tijdens of van je werk?	a) Nee, ik heb vandaag niets geleerd	7
		b) Ja, ik heb vandaag één keer iets geleerd	9
		c) Ja, ik heb vandaag meerdere keren iets geleerd	8
		d) Ik weet het niet zeker, geef me een hint	7
	7. Hint: Ging iets anders dan verwacht? Heb je hulp gevraagd of iets opgezocht? Had je een *aha-moment*? Heb je iets voor het eerst gedaan of toegepast? Ben je iets nieuws te weten gekomen?	a) Nee	16
		b) Ja	9
Awareness of how and when	8. Hoeveel leerervaringen heb je vandaag gehad? Voer het aantal in cijfers in.	(Open question)	10
	9. Neem nu voor de volgende vragen deze leerervaring in gedachte.	OK	11
	10. Neem nu voor de volgende vragen de voor jou belangrijkste leerervaring in gedachte.	OK	11
Context	11. In welke categorie past wat jij geleerd hebt het beste?	a) Ik weet nu iets wat ik nog niet wist	12
		b) Ik kan nu iets wat ik nog niet goed kon	12
		c) Ik ben ergens anders over gaan nadenken	12

		d) Anders, namelijk…	12
Awareness of learning needs	12. Was je je bewust van je leerbehoeftes voordat je deze leerervaring aanging?	Helemaal niet (1) - Helemaal wel (100)	13
Context	13. Welke situatie beschrijft de context van jouw leerervaring het beste? Mijn leerervaring vond plaats door…	a) Iets te doen of te ervaren	14
		b) Te experimenteren of iets nieuws te testen	14
		c) Op een ervaring te reflecteren	14
		d) Informatie op te zoeken (boek, internet etc.)	14
		e) Te observeren hoe anderen iets aanpakken	14
		f) Met anderen over iets te discussiëren	14
		g) Feedback van anderen te krijgen	14
		h) Hulp of informatie van anderen te zoeken	14
		i) Een workshop, training of cursus te volgen	14
		j) Anders, namelijk ….	14
Context	14. Wat was de belangrijkste reden om dit te leren?	a) Het was nodig voor mijn rol in het team	15
		b) Ik wilde iets verbeteren	15
		c) Uit nieuwsgierigheid	15
		d) Ik wilde mezelf verder ontwikkelen op dit gebied	15
		e) Ik werd door anderen aangemoedigd mezelf hierin te ontwikkelen	15
			15
		f) Anders, namelijk…	15
Awareness of ho wand when	15. Van te voren had ik zelf door dat deze situatie een mogelijke leerkans zou zijn.	Helemaal niet (1) - Helemaal wel (100)	16
	16. Bedankt voor het invullen! Kom op jouw volgende werkdag terug naar de app voor een nieuwe vragenlijst.		

Appendix C

Prompts

Prompt no.	Prompt type	Content
1	Instruction AHW	Om op en van je werk te kunnen leren, helpt het als je je bewust van verschillende leerkansen: de manieren en momenten waarop je kunt leren op de werkplek. Waarschijnlijk zijn er op een werkdag meer leerkansen dan dat jij je bewust van bent, omdat veel leerervaringen onbewust plaatsvinden. Als je er op gaat letten, zal je steeds meer leerkansen gaan herkennen.
2	Instruction ALN	Om op en van je werk te kunnen leren, helpt het als je je bewust bent van je leerbehoeftes. Leerbehoeftes zijn de dingen die jij graag nog zou willen leren, of waarin je je nog meer kan en wilt ontwikkelen. Bewust zijn van je leerbehoeftes betekent dat je weet van jezelf wat je al wel en niet weet, wat je al wel en niet kan, en in welke procedures en technieken je goed of juist niet goed bent. Vanaf vandaag krijg je elke dag een leer tip om je bewuster te maken van het leren op de werkplek!
3	Q+H AHW	Ben je je bewust van de momenten wanneer je iets kunt leren op de werkplek? Ja > Heel goed! Denk even na: is er vandaag een moment tijdens je werkdienst waarin het mogelijk is om iets te leren? Ja > Heel goed! Maak hier vandaag gebruik van! Nee > Misschien heb je er wel eens aan gedacht wat een goed moment om iets te leren is: ga je vandaag bijvoorbeeld iets nieuws doen? Nee > Er zijn verschillende momenten om op je werk te leren, bijvoorbeeld wanneer je iets nieuws gaat doen, of iets wat je niet zo vaak doet in je werk. Nu je dit weet, is er vandaag een moment tijdens je werkdienst waarin het mogelijk is om iets te leren? Ja > Heel goed. Maak hier gebruik van! Nee > Wie weet kom je vandaag wel een ander moment tegen waarop je iets kan leren.
4	E+M ALN	Een leerbehoefte kan bijvoorbeeld een nieuwe taak of handeling zijn die je graag zou willen leren of beter zou willen kunnen. Zo worden er op de afdeling van verpleegkundige Amber de laatste tijd Covid-19 vaccins gezet. Ze is hier bevoegd voor, en ze weet ook wel hoe het moet, maar ze vind deze nieuwe handeling toch best spannend. Als je iets spannend vindt, kan dit een indicatie zijn voor het herkennen van een leerbehoefte. Doordat Amber deze handeling spannend vindt, realiseert ze zich, dat ze de behoefte heeft om meer routine op te bouwen in deze handeling. Is er iets in jouw werk wat je vaak spannend vindt? Ja > Kun je hier een leerbehoefte uit formuleren? Ja > Heel goed! Probeer vandaag aan deze leerbehoefte te werken.

Nee > Denk aan datgene dat je spannend vindt. Misschien wil je hier meer vanaf weten, of misschien zou je dit beter willen kunnen. Dit zijn allemaal leerbehoeftes. Probeer vandaag met je leerbehoefte aan de slag te gaan!

Nee > Het kan ook zijn dat je niets spannend vindt, maar wel lastig. Is er iets in je werk wat je lastig vindt? Kun je hier een leerbehoefte uit formuleren?
Ja > Heel goed! Probeer vandaag aan deze leerbehoefte te werken.
Nee > Denk aan datgene dat je lastig vindt. Misschien wil je hier meer vanaf weten, of misschien zou je dit beter willen kunnen. Dit zijn allemaal leerbehoeftes. Probeer vandaag met je leerbehoefte aan de slag te gaan!

5 E+M AHW Een manier om te leren kan ook zijn door een gesprek met een collega te voeren. Zo had verzorgende Laura laatst een moeilijke situatie met een agressieve cliënt. Ze sprak hierover met een collega, die haar vervolgens wat tips gaf hoe ze de volgende keer met zo'n situatie om kan gaan. De situatie die Laura tegenkwam was een goede situatie om te kunnen leren. De manier waarop ze heeft geleerd, is door hierover met een collega te praten.
Weet jij wanneer iets een mogelijke leerkans is?

Ja > Heel goed! Probeer in het geval van een leerkans, deze goed te gebruiken. Weet jij geschikte manieren om met een leerkans om te gaan?
Ja > Heel goed! Heb je er ook wel eens aan gedacht om op de werkplek te leren door te observeren, iemand iets te vragen, informatie op te zoeken, te reflecteren, of over een onderwerp te discussiëren? Probeer dit vandaag eens uit!
Nee > Heb je er wel eens aan gedacht om op de werkplek te leren door te observeren, iemand iets te vragen, informatie op te zoeken, te reflecteren, of over een onderwerp te discussiëren? Probeer dit vandaag eens uit!

Nee > Een leerkans kan zich voordoen wanneer je bijvoorbeeld iets nieuws moet doen, of wanneer iets verandert. Of wanneer je iets gaat doen wat je nog niet zo goed kan. Het kan ook zijn dat je nog te weinig weet over iets. Als zo'n moment zich voordoet tijdens jouw werk, weet je dan geschikte manieren om met deze leerkans om te gaan?
Ja > Heel goed! Heb je er ook wel eens aan gedacht om op de werkplek te leren door te observeren, iemand iets te vragen, informatie op te zoeken, te reflecteren, of over een onderwerp te discussiëren? Probeer dit vandaag eens uit!
Nee > Heb je er wel eens aan gedacht om op de werkplek te leren door te observeren, iemand iets te vragen, informatie op te zoeken, te reflecteren, of over een onderwerp te discussiëren? Probeer dit vandaag eens uit!

6	Q+H ALN	In je werk ben je nooit uitgeleerd. Dingen veranderen, en er komt altijd wel iets nieuws in je vakgebied. Het kan natuurlijk ook zo zijn dat je meer uitdaging zoekt, of dat je je ergens in wilt gaan verdiepen. Ben jij je bewust van iets in je vakgebied waarvan je meer zou willen weten? Ja > Heel goed! Denk even na. Weet je al hoe en wanneer je hier aan gaat werken? Ja > Heel goed. Probeer hier mee aan de slag te gaan! Nee > Je kunt op verschillende manieren informatie over een onderwerp opzoeken. Heb je er bijvoorbeeld wel eens aan gedacht om een collega die al veel van het onderwerp af weet te vragen. Probeer dit eens uit! Nee > Denk eens aan iets dat je nog lastig vindt of wat nog nieuw is in je werk. Schiet je nu wel iets te binnen? Ja > Heel goed! Weet je al hoe en wanneer je hier aan gaat werken? Ja > Heel goed. Probeer hier mee aan de slag te gaan! Nee > Je kunt op verschillende manieren informatie over een onderwerp opzoeken. Heb je er bijvoorbeeld wel eens aan gedacht om een collega die al veel van het onderwerp af weet te vragen. Probeer dit eens uit! Nee > Probeer vandaag eens na te denken over waar jij graag meer van zou willen weten uit je vakgebied.
7	Q+H AHW	Op de werkplek zijn er veel situaties en manieren waarop je iets kunt leren. Ben jij je bewust van de manieren waarop je iets kunt leren op de werkplek? Ja > Heel goed! Is er vandaag een gelegenheid om op een van deze manieren iets te leren? Ja > Probeer hiervan gebruik te maken! Heb je er ook wel eens aan gedacht om op de werkplek te leren door te observeren, iemand iets te vragen, informatie op te zoeken, te reflecteren, of over een onderwerp te discussiëren? Probeer dit vandaag eens uit! Nee > Dat is jammer. Heb je er ook wel eens aan gedacht om op de werkplek te leren door te observeren, iemand iets te vragen, informatie op te zoeken, te reflecteren, of over een onderwerp te discussiëren? Probeer dit vandaag eens uit! Nee > Je kunt op verschillende manieren leren op de werkplek. Heb je er wel eens aan gedacht om collega's te observeren en te kijken hoe zij een handeling uitvoeren? Of om te reflecteren op een handeling die je hebt uitgevoerd? Probeer dit vandaag eens uit!

Appendix D

SDLRSNE questionnaire

Subscale	Original English item	Dutch translation
Self-management	1. I am self disciplined	Ik heb zelfdiscipline
	2. I am disorganised	Ik ben ongeorganiseerd
	3. I set strict time frames	Ik zet strikte tijdschema's
	4. I have good management skills	Ik heb goede management vaardigheden
	5. I am methodical	Ik ben methodisch
	6. I am systematic in my learning	Ik ben systematisch in mijn leren
	7. I set specific times for my study	Ik stel specifieke tijden vast voor mijn studie
	8. I prioritise my work	Ik prioriteer wat ik moet doen
	9. I can be trusted to persue my own learning	Ik kan erop vertrouwen dat ik mijn eigen leerproces voortzet
	10. I am confient in my ability to search out new information	Ik heb er vertrouwen in dat ik nieuwe informatie kan opzoeken
Desire for learning	11. I want to learn new information	Ik wil nieuwe informatie leren
	12. I enjoy learning new information	Ik vind het leuk om nieuwe informatie te leren
	13. I have a need to learn	Ik voel de behoefte om te leren
	14. I enjoy a challenge	Ik houd van een uitdaging
	15. I do not enjoy studying	Ik houd niet van studeren
	16. I critically evaluate new ideas	Ik evalueer nieuwe ideeën kritisch
	17. I learn from my mistakes	Ik leer van mijn fouten
	18. I need to know why	Ik moet weten waarom
	19. When presented with a problem I cannot resolve, I will ask for assistance	Als ik een probleem tegenkom dat ik niet kan oplossen, vraag ik om hulp
Self-control	20. I am responsible for my own decisions/actions	Ik ben verantwoordelijk voor mijn eigen beslissingen/acties
	21. I am not in control of my life	Ik heb geen controle over mijn leven
	22. I have high personal standards	Ik heb hoge persoonlijke normen
	23. I prefer to set my own learning goals	Ik stel het liefst mijn eigen leerdoelen
	24. I evaluate my performance	Ik evalueer mijn eigen prestaties
	25. I am responsible	Ik voel mij verantwoordelijk
	26. I am able to focus on a problem	Ik kan me concentreren op een probleem
	27. I am aware of my own limitations	Ik ben me bewust van mijn eigen beperkingen
	28. I can find out information for myself	Ik kan voor mezelf informatie vinden
	29. I have high beliefs in my abilities	Ik geloof sterk in mijn capaciteiten

Note. All questions were measured using a 7-point Likert-scale (strongly disagree, disagree, slightly disagree, neutral, slightly agree, agree, strongly agree)

Appendix E

Introduction e-mail participants

Subject: Introductie van onderzoek werkplekleren Universiteit Twente

Hallo,

Je hebt je via Buurtzorg Nederland opgegeven 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 vier stappen die we je vragen om te doen zodat je van start kunt gaan.

Praktisch
Het onderzoek zal [datum] starten. Het onderzoek duurt ongeveer 12 werkdagen. Tijdens het onderzoek ga je een app gebruiken op je smartphone. Je wordt elke dag tijdens of net na je werk gevraagd om in de app een paar vragen te beantwoorden (minimaal 2 keer per dag), je wordt hier aan herinnerd via een push notificatie. We willen voorkomen dat je lastig wordt gevallen met deze meldingen op je vrije dagen, daarom hebben we van je collega je werkrooster ontvangen. De studie is hierop aangepast, dus je zult geen notificaties krijgen op dagen dat je niet aan het werk bent

Als je werkrooster in de tussentijd verandert, is het fijn als je dit laat weten. Hiervoor kun je mij altijd mailen of bellen.

Smartphone
Daarnaast is het belangrijk dat je, gedurende het onderzoek, je smartphone op de werkvloer bij je hebt. Het is niet erg als je niet meteen op je smartphone kunt kijken als je een notificatie krijgt, het werk wat je doet gaat voor. Maar het zou fijn zijn als je zo snel als mogelijk nadat de notificatie binnenkomt, de TiiM app checkt.

TiiM app op je smartphone
De app die we in het onderzoek gebruiken heet ‘TiiM’. Voor deze app heb je een account nodig, en daarnaast moet je de app installeren op je smartphone. Uitleg over het maken van een account en het installeren van de app vind je in deze video. Bekijk deze video alsjeblieft goed. De stappen staan hieronder nog eens uitgelegd:

Stap 1 – Account aanmaken
De inschrijflink voor jou is: [persoonlijke inschrijflink]. Klik op de link, of kopieer en plak deze in de adresbalk. Via deze link kun je een account aanmaken, zoals je ook in de instructievideo kunt zien. Onthoud de gegevens van je account goed! Nadat je je account hebt aangemaakt, is het belangrijk dat je de vragenlijsten invult die hierna verschijnen. Dit duurt maar ongeveer 5 minuten. Nadat je je antwoorden hebt opgeslagen, kun je doorgaan met stap 2.

Stap 2 – TiiM app downloaden
Voor het downloaden van de app kun je in de PlayStore (Android) of in de App Store (iPhone) zoeken op ‘TiiM’. Dit zie je ook in de instructievideo. Installeer de TiiM app vervolgens op je smartphone.

Stap 3 – TiiM app juist installeren

Als je de app hebt gedownload, 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 app is nu juist geïnstalleerd.

Zorg dat je stappen 1 t/m 3 **vóór [datum]** uitvoert!

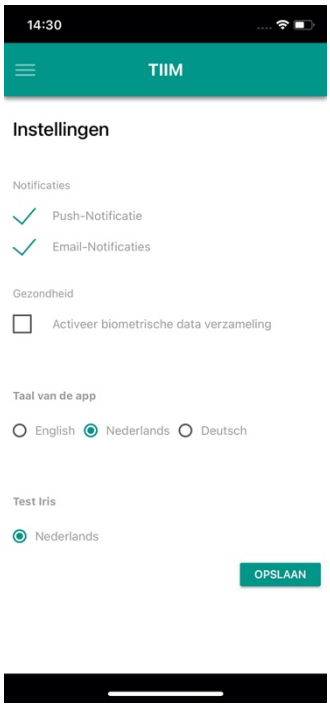
Lukt het niet om de app te installeren of heb je vragen? Laat het mij gerust weten, ik help je graag verder. Je kunt mij gedurende het onderzoek altijd mailen of bellen.

Stap 4 – Start onderzoek
Als je de vorige stappen juist hebt uitgevoerd, en je toestemming geeft voor deelname aan het onderzoek, dan krijg je op de eerste dag van het onderzoek de eerste push notificatie. Toestemming voor deelname kun je aangeven bij het aanmelden voor het onderzoek (stap 1). In de bijlage is een uitgebreide versie te vinden van deze toestemming.

Bij vragen of opmerkingen kun je mij altijd mailen of bellen via i.t.j.oomen@student.utwente.nl of [mobile phone number researcher].

Bedankt dat je mij wilt helpen met afstuderen!

Met vriendelijke groet,
Iris Oomen
Student Educational Science & Technology, Universiteit Twente



Bijlage van de mail: voorbeeld juiste instellingen TiiM-applicatie

Appendix F

Informed Consent Letter

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. 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 (i.t.j.oomen@student.utwente.nl).

Doel van het onderzoek
Dit onderzoek wordt geleid door Iris Oomen, en begeleid door Prof. Dr. Maaike Endedijk. Het doel van dit onderzoek is om te onderzoeken of een bepaalde interventie een manier van ondersteuning kan zijn voor de *regulatory readiness* op de werkplek, van zorgverleners in de langdurige gezondheidszorg. Hiermee hopen we meer kennis te krijgen over werkplekleren 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. Deze 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 (Iris Oomen) zal samen met de begeleider (prof. Dr. Maaike Endedijk, 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 master scriptie, zullen gegevens dus niet herleidbaar zijn.

De antwoorden op de vragenlijsten die in het kader van deze studie worden gemaakt of 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 opgaaf 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.

Iris Oomen, i.t.j.oomen@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. Dit onderzoek wordt uitgevoerd vanuit de Universiteit Twente, faculteit Behavioural, Management and Social Sciences. Indien u specifieke vragen hebt over de omgang met persoonsgegevens kun u deze ook richten aan de Functionaris Gegevensbescherming van de UT door een mail te sturen naar 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.