Healthcare professionals' self-directed learning at the workplace

MASTER THESIS

D. Aagten

Faculty of Behavioural Sciences, Master Educational Science and Technology. University of Twente, Enschede, the Netherlands.

Examination Committee

Dr. M.D. Endedijk

T. Hirschler

Enschede, Februari 2016

UNIVERSITY OF TWENTE.

Healthcare professionals' self-directed learning at the workplace.

– ***"Education is the most powerful weapon which you can use to change the world" – N. Mandela***

D. Aagten

Abstract Self-directed learning is a well-known concept that is widely accepted as a pre-requisite for the life-long learning skills employees' need nowadays. The same applies for healthcare professionals, since the healthcare sector is a constantly changing environment. Self-directed learning skills enhance motivation and autonomy, which subsequently improve employees' professional performance at the workplace. Research revealed that workplace learning experiences mostly consists of multiple learning strategies, where employees direct their learning process in advance, during, or after their learning experience. Although workplace learning is often unintentional, it seems that people can still direct their learning process in a retrospective way. In this study the actual self-directed learning (SDL) behaviour of healthcare employees is examined, in which a distinction is made between fully and no SDL behaviour. To explore specific SDL behaviour of healthcare employees, two different measurement instruments are used. First, employees' SDL attitude in relation to some demographic factors are measured, which in earlier research revealed to be an influencing factor on employees' SDL behaviour at the workplace. Second, a structured learning log, which is a multiple-event measurement tool, measured the concrete SDL behaviour of healthcare employees. Results showed a significant relation between employees' employment, occupational category and someone's SDL attitude. Healthcare professionals who worked more hours, and were in the occupational category of *nurses* possessed a more positive attitude towards SDL than employees' working less hours and in other occupational categories. Overall, employees had an above average positive attitude regarding SDL. For that reason, it was expected that employees would show a high degree of SDL behaviour at the workplace. However, no significant relation is found between employees' SDL attitude and their actual SDL behaviour. Meaning that there is no evidence to assume that someone's attitude regarding SDL predicts the extent to which employees direct their learning at the workplace. Nevertheless, in this study employees showed above average monitoring and future planning behaviour. As a result, outcomes revealed that people who learn in a reactive and non-deliberative way, can still direct their learning process, which is in line with previous research. In addition, results showed significant relations between certain SDL behaviour and specific learning strategies and learning outcomes. For example, in planned learning experiences, strategies like experimenting and information searching were deployed significantly more often than other strategies. These results gave more empirical grounding for specific workplace-related SDL behaviour, and underlying patterns in learning processes. Further research is recommended to get more insight into the relation between people's SDL attitude and their actual SDL behaviour at the workplace. In depth interviews and observations might add value to the underlying processes and relationships in SDL in the work context.

Keywords self-directed learning · healthcare · self-directed learning attitude · learning behaviour

Preface (Dutch)

Het avontuur van mijn afstuderen begon in de zomer van 2015. Na onze zeer welkome verassing, Jort onze zoon, was het tijd om de draad weer op te pakken. Heerlijk voelde dat, maar ook raar. Ik was nu niet alleen meer student en partner, maar ook moeder. Verantwoordelijk voor mijn gezin, maar ook voor het uiteindelijk slagen van mijn master studie. Waar moest ik beginnen? Dat was de eerste twijfel, maar zeker niet de laatste. Het afstudeer avontuur heeft mij meerdere malen aan het denken gezet waarin twijfel, onzekerheid en een wirwar aan gedachten een vast terugkomend onderdeel waren. Het combineren van wetenschap en praktijk is een hele uitdaging, soms lastig, maar ook zeker leuk. Gedurende het proces heeft mijn onuitputtelijke energie me doen verbazen. Zo blijkt maar weer, dat wanneer je iets doet wat je leuk vindt dit ook energie geeft en niet alleen energie kost. Daarnaast verleg ik mijn grenzen en ga ik er voor de volle 100% voor als ik iets heel graag wil.

Dit spannende en waardevolle avontuur had ik alleen niet kunnen volbrengen zonder de steun van sommige anderen. Om die reden zou ik daarom graag verschillende personen willen bedanken. Allereerst Maaike, ontzettend bedankt voor jouw goede en fijne begeleiding. Jouw altijd kritische maar ook nuchtere houding, waarbij je vaak geen blad voor de mond neemt. Ik houd ervan! Jouw expertise, gedrevenheid en enthousiasme heeft het beste uit mij naar boven gehaald. Tim, jij ook heel erg bedankt. Jouw ervaringen als pasafgestudeerde en kersverse docent heeft mij geholpen in praktische zaken, maar ook vooral in het geloof van mijn kunnen. De geruststellende en complimenterende houding heeft mij tijdens het proces erg goed gedaan. Daarnaast, de intervisie groep, in wisselende samenstelling, dank jullie wel voor jullie feedback en input tijdens waardevolle discussies. Medewerkers van Carintreggeland, in het speciaal afdeling ‘opleidingen’, bedankt voor de mogelijkheid die jullie mij hebben geboden om mijn onderzoek uit te voeren binnen jullie organisatie, maar ook vooral de kans om mee te kijken in het leer- en werkproces van zorg professionals. Daarbij wil ik zeggen dat ik mij enorm gewaardeerd heb gevoeld en als collega heb genoten van zowel formeel als informeel samenzijn. Met name Corina, bedankt voor de vrijheid die je me hebt gegeven en je open- en vriendelijkheid. Serieuze, maar ook gezellige gesprekken maakte onze samenwerking zeer prettig.

Daarnaast wil ik graag de studenten / alumnus Saskia Dannenberg, Ilse Jolij, en Marit Hoekman bedanken voor hun input betrekkend op mijn onderzoek. Zij waren erg open over hun afstudeerproject wat mij op sommige punten erg heeft voort geholpen. Ook mijn medestudenten en vrienden wil ik bedanken voor de steun, hulp en interesse tijdens mijn studie. Elke & Daan, en Merijn & Annelot, bedankt voor de oppasmomentjes, aangeboden studieruimte en jullie luisterend oor. Vriendinnen en medestudenten, bedankt voor jullie gezelligheid en ondersteuning. Ook al was ik soms weinig bereikbaar en had ik vaak geen tijd, ik ben jullie zeker niet vergeten! Tijd om wat in te halen. In het speciaal, Maria, wie als mijn zwangerschapsbuddy veel vertrouwen in mij had. *(Maria, thanks for being my pregnancy buddy and for the faith you had in me).*

Als laatst wil ik mijn familie heel erg bedanken voor alles. Mam, heel erg bedankt voor het oppassen op Jort, maar ook dat je mijn moeder bent. Je vertrouwen, complimenten, luisterende oor en liefde heeft mij erg gesteund. Ook de rest, Ton, Tom, Laura, Joep, Kees en Liesbeth, bedankt voor jullie vertrouwen en positiviteit. En als allerlaatst, Daan, bedankt voor jouw geduld, vertrouwen, liefde, het meedenken, discussiëren en vooral bedankt voor de momenten dat ik mijn verhaal bij jou kwijt kon. Niet te vergeten, ook bedankt voor het stofzuigen, dweilen, schoonmaken en het soms volledig zorgen voor Jort, ik moet zeggen: dit deed je erg goed ;-)!

Contents

1. Introduction

In modern healthcare organizations the world of work is continuously in motion because of rapidly changing aspects (Cadorin et al., 2012). For example, healthcare organizations are required to provide more insight into care content and processes, in which a certain associated responsibility has to be taken (Dalen, 2006). Moreover, they face deregulation accompanied by market forces, privatization, competition, and self-regulation of the society (Dalen, 2006; REGERINGSBELEID, 2004). As a consequence, the care question and therefore care processes have changed. Clients become more self-conscious, and have different needs and wishes nowadays. In addition, clients' independent functioning received much attention recently, in which they need to be autonomous to manage their own care processes. In other words, working in healthcare has become more demand-driven and client-centred (Berings, Gelissen, & Poell, 2005). As a result, it is expected that work content becomes more complex, varied and diverse for healthcare professionals (Schober, 2007).

To be able to adapt to and anticipate on these rapid developments, healthcare professionals need to be flexible, capable to acquire, develop, and share knowledge (Lundgren, 2011), resulting in employees who maintain competent through lifelong learning. Moreover, they need to have a proactive approach, which will prepare them for organizational changes (Cadorin et al., 2012). People who take initiative in learning, learn more, better and more purposeful (Knowles, 1975). Hence, taking responsibility for their own professional development is required from healthcare employees, in which a certain self-directedness in learning is indispensable (Cadorin et al., 2012). Knowles (1975) defines self-directed learning (SDL) as:

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 (p.18).

In recent years, the workplace is increasingly seen as a potential place for self-directed learning (Gijbels, Raemdonck, & Vervecken, 2010). Nevertheless, research into SDL at the workplace is still scarce. Scholars state that more research is needed to explore SDL in the work context, especially on the micro-level where insight into specific learning activities and behaviour can be given (Endedijk, Brekelmans, Sleegers, & Vermunt, 2015; Endedijk & Vermunt, 2013; Jolij, 2014). However, some studies do provide understanding of workplace learning processes on the micro-level. For example, the study of Lisman, Natte, and Poell (2007) has contributed to insights in learning activities and outcomes of hospital staff, but provides no understanding of their used self-directed learning behaviour. Additionally, there are studies that examined people's self-directed learning behaviour in relation to learning activities and outcomes, but are conducted in another research field (Dannenberg, 2015; Endedijk & Bronkhorst, 2014; Endedijk, Hoekman, & Sleegers, 2014).

Based on the current gap in literature, the purpose of this study is to contribute to a better understanding of SDL at the workplace in healthcare, focusing on the micro-level. The research will be conducted at a large healthcare organization (Carintreggeland), more precisely in residential care, where the whole transformation and ongoing changes also had, and still have a significant impact. Their employees are struggling with the constantly changing expectations, and find it hard to recognize learning opportunities beneficial for their work process. In addition, the organization acknowledges the importance of self-directed learning at the workplace, but have minimum information on the current learning behaviour of their employees. Results of this study can contribute to a better understanding of employees' self-directed learning process at the workplace, which can give them the opportunity to respond to potential challenges and possibilities for workplace learning.

2. Conceptual framework

2.1 self-directed learning at the workplace

Research revealed that being able to direct your own learning is not only important and a prerequisite for academic performance but also for employees' professional development (Onstenk, 1999). Moreover, According to O'shea (2003) self-directed learning enhances motivation, confidence, autonomy, and increases the development of lifelong learning skills, which are essential nowadays when you work in healthcare.

In order to understand SDL at the workplace, hereafter the main features are discussed. First, when employees have a certain level of self-directedness in learning they are able to recognize opportunities in the environment, are persistent in overcoming barriers to reach their goals, and use self-initiated, deliberate and sustained learning activities (Raemdonck, 2006). In other words, they are actively engaged in shaping and controlling their learning process. Second, someone can show SDL to varying degrees, depending on the context. For example, an employee can be very self-directed in personal situations but less self-directed in workplace settings (Raemdonck, 2006). Third, SDL refers to the ability to react on and anticipate to future difficulties and opportunities (Raemdonck, 2006). Fourth, the process of self-directing encompasses constant adaptation to the environment in order to function properly (Raemdonck, 2006). Lastly, the concept is open for education (Raemdonck, 2006). Meaning that employees' level of SDL can be modified. The latter is the most important characteristic for educators in an organization, as this suggests that there are possibilities to foster and facilitate SDL at the workplace.

According to Gijbels et al. (2010), in SDL there is a relation between someone's learning attitude and the actual learning behaviour at the workplace. Employees with a self-directed learning attitude show more self-directed learning behaviour like; searching for new information, find solutions for new problems, and trying something new (Gijbels et al., 2010). For that reason, in the present study the complete SDL process at the workplace will be operationalized as a '*characteristic adaptation*' (Raemdonck, 2006), where characteristic reflects the SDL attitude, and adaptation the SDL behaviour of employees. In the following sections, first the concept of SDL attitude will be explained, after which a comprehensive elaboration of SDL behaviour will be given.

2.2 Self-directed learning attitude

SDL behaviour is driven by certain cognitive (beliefs), affective (attitudes), and volitional (intentions) aspects (Raemdonck, 2006). Hereafter, these aspects are summarized as someone's self-directed learning attitude. Based on literature, someone's SDL attitude seems to influence their concrete SDL behaviour (Gijbels et al., 2010), therefore it is very important to take this aspect into account when measuring SDL behaviour among employees working in residential care.

Trait-like aspects, like someone's SDL attitude, are mostly measured with off-line aptitude measuring instruments (Endedijk et al., 2015). These instruments are frequently criticized for its restrictive understanding of SDL (van Hout-Wolters, 2000). Scholars state that it is hard to pinpoint which learning situations participants have in mind, and which concrete SDL behaviour they possess. This is due to the fact that these measurements are often self-reports, measured at one single point in time (van Hout-Wolters, 2000). Nevertheless, SDL aptitude measurements are valuable to establish someone's general attitude and motivation for self-directing their learning at the workplace (Perry & Winne, 2006; Zimmerman, 2008). An example of an aptitude measurement is the scale 'self-direction in learning processes' developed by Raemdonck (2006).

In addition to the assumption that someone's SDL attitude is related to their concrete SDL behaviour, research revealed that people's SDL attitude might be influenced by their personal background variables. Consequently, in this study the following background variables will be taken into account to explore a possible correlation: age, gender, educational level, years of work experience, employment, and occupational categories.

First, regarding *age*, research showed different outcomes, in which Reio (2004) revealed that younger people are more self-directed in their learning than older people. Second, diverse studies exposed a relationship between *gender* and self-directed learning, where females showed a higher degree of self-directedness (Stockdale, 2003). Third, it seems that individuals with a *higher educational level* are more self-directed learners than individuals with a lower educational level (Stockdale, 2003). Fourth, according to Raemdonck (2006), employees who have more *years of work experience* are more confident and execute their work more independently, whereby a higher level of self-directed learning at the workplace is assumed. Fifth, research revealed that *employmen*t, expressed in the amount of hours employees work, is related to SDL. Employees who work more hours have more face to face contact which has a positive influence on interpersonal relations, collaboration, and devotion of employees (Hallowell, 1999). In other words, employees who work fulltime are more connected to the organization, in which a higher level of self-directed learning is expected. Last, the research of Durr, Guglielmino, and Guglielmino (1996) revealed differences between *occupational categories* in their readiness in SDL. Although this research was not conducted in healthcare, this variable might influence employees' SDL in different sectors.

2.3 Self-directed learning behaviour at the workplace

Learners are active participants who, to some extent, can control their own learning process (Pintrich, 2004). Based on the model of Pintrich (2000) and Zimmerman (2000) the SDL process in a learning experience consists of three main phases; *forethought*, *performance*, and *self-reflection.*

First, in the *forethought phase* the learning activity can be planned or unplanned (Eraut, 2004). Moreover, learning can start with pre-defined goals and time planned for the learning activity (deliberative), as a reaction where there is little time to think (reactive) or unconsciously where implicit linkages are made (Eraut, 2004). In addition, the learner can have a certain learning orientation, which motivates the learner to take a certain path to reach his learning goal (Pintrich, 2000; Zimmerman, 2000). Summarized, this phase encompasses *planning* and *learning goal orientation*, where the learner might activate prior knowledge (Endedijk, Vermunt, Verloop, & Brekelmans, 2012).

Second, the *performance phase* is focused on the meta-cognitive awareness of the employee, that can be related to the self, task, or context (Pintrich, 2004). In other words, an employee can reflect on the learning experience to pursue his learning process. SDL behaviours in this phase are *strategy choice, strategy control, and monitoring* (Zimmerman, 2008). *Strategy choice* are the actual learning activities used in a learning experience. For example, information searching, reflection, observing others, or analysing with colleagues. Thereafter, if the learning strategy was consciously chosen, learners might *control* their *learning strategy*, which reflects the reason for the chosen strategy. Eventually, when learners recognize that they have learned something, and therefore keep track of reaching their learning goal, they are able to *monitor* their learning process (Cheng, Kuo, Lin, & Lee-Hsieh, 2010).

Third, *reflection on the learning outcome*, *evaluation* on the overall learning experience, and *future planning* are part of the *self-reflection phase* (Endedijk et al., 2015; Pintrich, 2000; Zimmerman, 2000). Based on findings and conclusions made during this phase, employees are able to adapt their further work and learning process (Endedijk et al., 2015). First, they are able to reflect and evaluate on their *learning outcome*. In other words, *what* they exactly learned from the complete learning experience. For example, they might learn something in the communication / collaboration with their colleague, or something specifically focused on the expert content of their profession. Subsequently, people can *evaluate* their learning experience and outcome in words of contentment to determine their further learning path (Raemdonck, 2006). Accordingly, in *future planning* people present the way they continue with their learning experience. For example, by setting a new learning goal (Endedijk et al., 2012).

These phases and related learning behaviours are understudied in workplace learning. Nevertheless, some studies have used Pintrich's (2000) and Zimmerman's (2000) model as a starting point to explore the concrete learning processes at the workplace. These studies indicate that certain SDL behaviour is related to specific learning strategies and outcomes. For example, it seems that there is a difference in the followed learning path of employees when they had planned their learning experience or not (Dannenberg, 2015). Furthermore, a study with engineers revealed that learning processes at the

workplace consists of a longer chain of learning activities, in which a certain order can be discerned (Endedijk et al., 2014). Moreover, it appears that certain SDL behaviour is more related to institutional settings, whilst others are more related to workplace settings. For example, monitoring by feedback, reflection, and new information were not frequently used as monitoring behaviour at the workplace (Endedijk & Bronkhorst, 2014). The present research builds upon these previously mentioned studies into workplace learning processes. This will give more empirical basis for measuring SDL at the workplace on a micro-level. Additionally, it will provide detailed insights into employees' specifically used SDL behaviour in the work context.

To measure the specific SDL behaviours, event measuring instruments are suitable (Endedijk et al., 2015). On-line event measurements at the workplace (during the learning performance) are difficult due to the unplanned and unstructured nature of learning experiences in workplace learning (Tynjälä, 2008). For that reason, in the present study use will be made of an off-line measurement technique. In this manner, a concrete learning experience will be measured not during but independent from or after the learning performance. An example of an instrument measuring various learning experiences in multiple contexts off-line, is the Structured Learning Report, develop by Endedijk (2010). This instrument is a structured diary log aiming to examine concrete SDL activities on the micro-level (Endedijk et al., 2015). This multiple-event instrument showed that concrete SDL activities can be measured in a valid and reliable way (Endedijk et al., 2015).

3. Present study

The aim of this study is to examine how healthcare employees, working in residential care, self-direct their learning in their daily work at the workplace, and to what extent they use the different aspects of SDL behaviour at the workplace. Consequently, in this study the personal background variables, SDL attitude, and variables covered by SDL behaviour will be taken into account. In the research model *(Figure 1)* an overview is given of the included concepts, possible relations, and the overall learning process of employees' SDL at the workplace.

3.1. Research Question

In order to guide this research, the following research question is posed:

How do healthcare employees, working in residential care, self-direct their learning in their daily work at the workplace?

In addition, the following sub questions are formulated:

1. What is the level of the self-directed learning attitude of employees working in residential care and the relation with their personal background?
2. How do employees, working in residential care, specifically self-direct their learning at the workplace?
   2a. What concrete SDL behaviours are frequently demonstrated by healthcare professionals when they direct their learning at the workplace?
   2b. What are typical combinations of SDL behaviour in the successive phases of employees' learning process when they direct their learning at the workplace?
3. What is the relation between employees' SDL attitude and their concrete SDL behaviour in multiple learning experiences at the workplace?

Based on literature it is predicted that employees' age, years of work experience, employment and educational level is positively related to the level of their SDL attitude. Additionally, it is expected that a difference in employees' SDL attitude will be present in gender and occupational categories. Lastly, healthcare professionals with a high level of SDL attitude are expected to demonstrate more self-directed learning behaviour at the workplace.

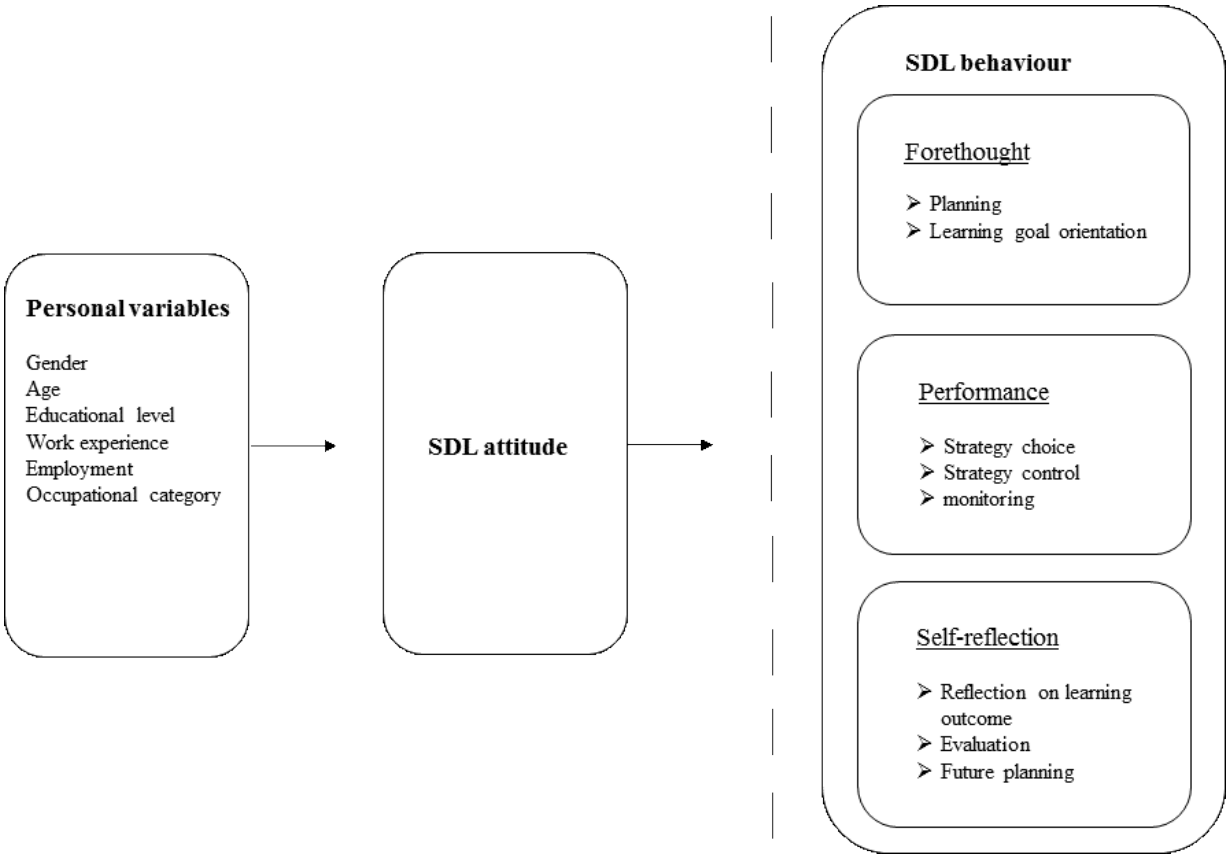

Figure 1. The research model of self-directed workplace learning. The dashed line in the model presents the distinction between employees' personal characteristics and the specific SDL behaviour used in their learning experience, in which the first-mentioned influences the latter.

3.2 Method

3.2.1 Context

This study is conducted within the organization of Carintreggeland. Carintreggeland is a healthcare organization focusing on housing, welfare, and care. Providing assistance to the elderly and people with physical or mental disabilities is their core business. The organization has approximately 4300 employees of which 3000 are working in residential care, and the other 1300 in home care services. Carintreggeland organizes her care client-centred and question-based, where the aim is to encourage clients' independency, and foster their social quality of life. Therefore, it is essential that employees also take personal control in their work- and learning processes. As a result, teams as well as individual employees need to be more self-directed in their work- and learning development.

3.2.2 Research methodology

This study is a descriptive case study, as it is the purpose to see how the theory of self-directed workplace learning works in this specific organization. In addition, a relational element is included in the third research question to examine the possible relation between SDL attitude and SDL behaviour. Moreover, the data will be gathered by a multi-method approach using a survey and a digital structured learning log (Endedijk, 2010). This log file consists of one open question and eighteen closed questions, which is a so called mixed intra method. Overall, this design will give a detailed insight into the extent which employees self-direct their learning at the workplace. According to Babbie (2010) surveys, and especially diary logs, are an appropriate method to examine attitudes and orientations of a large population

that cannot be observed directly. In addition, data gathering by surveys make it possible to generalize results of the sample to broader groups beyond the sample (Swanson & Holton, 2005).

3.2.3 Procedure

As a starting point, for this research several managers were informed and asked to cooperate voluntarily with their teams. Subsequently, teams received information about the content of the study by e-mail of their manager. Thereafter, they were invited to a meeting with the researcher at their work location, in which explanation and instructions orally were given, and afterwards on paper. They were told that the purpose of this study was to see *what* and *how* employees' of Carintreggeland learn at the workplace. In the instruction it was explained what kind of learning experiences and activities one could think of, that learning experiences at the workplace can vary in length, and that it could include learning outcomes changing skills, knowledge, or someone's attitude. Moreover, they were told it is desirable that they describe different kind of learning experiences.

In this study, the distribution of the survey and the learning log file took place in two phases. First, participants received the survey (by e-mail) regarding their personal background and SDL attitude. On Monday, 5 days after they received this survey, their first digital learning log concerning SDL behaviour was sent to their e-mail address. The days after, until Sunday, they received this digital learning log in which they could describe each day a different learning experience from the workplace (in total 7 working days). In addition to the link in their personal e-mail address, the survey and learning log were also available on the intranet of Carintreggeland, their team mail, and on Facebook. As a result of open access to the survey, it could be that more people eventually participate than the invited 165 employees, but the several options to access the link were really appreciated by the employees.

The main reason that the data collection took place via the internet, is that more response was expected by this method of data collection. In addition, this data collection method would give the least chance of data loss, and the data could be transmitted directly to the analysis program. In contrast, there was a risk for non-response, because it depends on how often employees check their personal and team e-mail address if they filled in the surveys on time. To minimize this risk, posters of the study were distributed, messages were placed on the intranet, and reminder e-mails were sent every day during the research period. Finally, the research was approved by the Ethic Commission of the University of Twente, and informed consent was obtained from all participating employees. In addition, all previously invited employees have received the procedures of the study in writing.

3.2.4 Sample

This study was aimed at data gathering on the individual level. To prevent that groups of employees were overrepresented, employees of diverse locations, different age, work experience, gender, and occupational categories were approached. When employees met the prerequisite of a minimum half-time employment, of each team half of the team members were selected to participate in this study. The reason for this kind of selection, is the inappropriate and unstable circumstances in some areas of the organization due to reorganization (e.g. uncertainty about the ability to maintain jobs, problems within teams, departing managers). All the selected employees who met the determined conditions, were considered to be an accurate reflection of the entire organization. In total 165 employees were personal invited to participate in this study. Eventually, 160 fully participated in the first part measuring employees SDL attitude and their personal background variables (response rate = 96.97%), 147 in the second part, measuring SDL behaviour (response rate = 89.1%), and 136 respondents participated in both parts (82.42%).

The following descriptive results concern the overall dataset of 136 participants who completed both surveys. As expected, more women (97.1%) than men (2.9%) participated, which is common in healthcare. The majority of the respondents completed secondary vocational education on MBO level (75.6%), 15 respondents achieved the MAVO/VMBO (11.1%), and 13 finished higher professional education (9.6%), one was missing. Of these respondents 54 are caretakers (39.7%), 27 coordinator care & welfare (19.8%), 25 nurses (18.3%), and others were; helpers, activation & welfare employees, interns,

call centre employees, and housekeepers (1 missing). In the various job profiles, nurses were the largest group with a higher educational level. Of the nurses 30.8% completed a higher educational level, and in the other categories only 3.3%. The age arranged from 21 to 62 and the average age can be determined at 44.1 years (SD=11.0, 1 missing). In addition, the participating employees have an average of 17.72 years of work experience (SD=9.21, 13 missing) and work on average 25.16 hours a week (SD=5.9, no missing values). In *Table 1* a complete overview of the descriptive statistics is given.

Table 1.

Overview Respondents' Personal Background Variables

Variable	Mean	Categories	Percentage	SD
Gender		Male	2.9%	
		Female	97.1%	
Education		LBO	1.5%	
		MAVO/VMBO	11.1%	
		MBO	75.6%	
		HAVO/VWO	2.2%	
		HBO	9.6%	
		University	0.0%	
Age	44.1			11.0
Work experience in years	17.72			9.21
Working hours	25.16			5.9
Occupational category		Caretakers	39.7%	
		Nurses	18.3%	
		Coordinators care & welfare	19.8%	
		Helpers	6.6%	
		Interns	3.7%	
		Care call centre employee	5.9%	
		Housekeeper	1.5%	
		Activation employee	2.2%	
		Other	2.2%	

3.2.5 Instrumentation

In this research, two different measurement tools are used to examine how healthcare employees, working in residential care, direct their learning in their daily work at the workplace. Below these two instruments are explained in detail.

Survey SDL attitude and personal background. To measure the level of employees' SDL attitude in relation to their personal background variables, an aptitude measuring instrument (trait-like) was used. In total the survey consisted of 18 questions, of which six questions concerned background variables, namely: age, work experience, employment, educational level, gender, and occupational categories. It should be noted that for the categorical questions educational level and occupational categories, the answer possibility *other, namely* was added. The other 14 items were aimed at measuring the level of employees' SDL attitude, for which the scale 'self-direction in learning processes' developed by Raemdonck (2006) was used. The 14 items with a five point Likert-scale (ranging from 1= totally disagree to 5 = totally agree), has proven to be suitable for high-qualified and low-qualified employees, which was a prerequisite for this study given the variety of employees' educational level in the sample. Additionally, the scale was adapted to the language of the organization, where Flemish expressions are adapted to the Dutch context. See *Appendix A* for the complete survey.

Factor- and reliability analysis. Validity and reliability of the instrument was ensured by an exploratory factor analysis and reliability analysis. Factor analysis with an oblique rotation (using the principal component analysis) revealed two factors, but Kaiser's criterion of the second factor is just above the value of 1.00 and only explains 8.891% of the variance. Moreover, the scree plot shows one clear factor. Consequently, it can be concluded that this scale has one factor measuring SDL attitude, which is also in line with previous literature regarding this measurement scale. Eventually, a reliability analysis revealed a Cronbach's alpha of .88, meaning that the scale has a good internal consistency.

Digital structured learning log. To measure frequently used SDL behaviours in the work context of healthcare professionals and typical combinations of these behaviours in their learning process, an off-line multiple event measurement is used. The instrument is a so-called digital structured learning log based on the 'Structured Learning Report' developed by Endedijk (2010). This tool is a repeated measurement providing multiple measurements per respondent over a predefined period of seven days. In total, the learning log consisted of 19 questions, but there were different answer *routes*, depending on previous responses, causing a various length of the questionnaire. The learning log was adapted to the context of the research, and a pilot study was conducted beforehand to ensure the log would give meaningful results. A group of 15 employees of different occupational categories, locations, and age were asked to fill in the digital log once, and were interviewed for possible feedback. From this pilot study it appeared that no adjustments had to be made.

The log consists of one open and more categorical questions including the variables: *planning, goal orientation, strategy choice* (activities), *learning strategy control*, *monitoring, reflection on the learning outcome, evaluation,* and *future planning*. The answer options in each variable reflect different degrees of self-directed learning behaviour at the workplace. For example, regarding learning goal orientation, when their goal was to develop themselves it was valued as a higher level of SDL than when the learning was stimulated by others. This classification of SDL behaviour is based on literature revealing that self-directed learning can be demonstrated in varying degrees (Endedijk et al., 2012; Schunk & Zimmerman, 1998). Below, in *Table 2*, each variable, the corresponding question and the answer options / categories are presented. It should be noted that every variable had the option *other, namely*. In *appendix B* the complete questionnaire can be found.

Table 2.

SDL Behaviour Measured by the Structured Digital Learning Log

Phase		Variable	Corresponding question in the instrument	Categories
Forethought	1.	Planning	*Did you plan to learn this?*	(1) Planned; (2) unplanned; (3) learning wish
	2.	Learning goal orientation	*And if so, why did you want to learn this?*	(1) curiosity; (2) develop myself; (3) stimulated by others to develop myself; (4) prepare for future situations; (5) necessary from the organization
Performance	3.	Strategy choice	*How did you learn this?*	(1) information searching; (2) formal education; (3) analysing/thinking of specific situation; (4) trying something new/experimenting; (5) doing/experiencing;(6) observing others; (7) receiving feedback; (8) analysing with colleagues
	4.	Learning strategy control	*Why did you learn it in this way?*	(1) don't know; (2) there is no other way; (3) this is the quickest and easiest way; (4) manner of learning works for me; (5) suggestion / instruction from someone else
	5.	Monitoring	*How did you realise that you learned something?*	(1) don't know; (2) it worked out well; (3) it didn't worked out well; (4) reaction of others; (5) by receiving feedback; (6) by reflection on the learning situation; (7) by receiving new information; (8) by awareness of own behaviour.

Self-reflection	6.	Reflection on the learning outcome	*What did you learn?*	(1) subject matter expertise; (2) communication / collaboration; (3) personal development; (4) organization of work content; (5) other
	7.	Evaluation	*Are you completely satisfied with your learning experience?*	(1)didn't think about; (2) satisfied; (3) unsatisfied
	8.	Future planning	*How will you proceed with this learning experience?*	(1) No new plans; (2) try again; (3) concrete action plan; (4) continue with learned content / consolidate; (5) improve what is learned; (6) apply in practice; (7) new learning goal / wish

First, in the forethought phase employees' *learning goal orientation* was only asked if their learning experience was planned or a learning wish existed. Second, in the performance phase in total three strategy choices could be mentioned. Hence, after the first and second question regarding *strategy choice*, it was asked if more strategy choices were part of their learning experience. A maximum of three strategy choices was chosen because earlier studies showed that four or more strategy choices in one learning experience was exceptional in workplace learning (Dannenberg, 2015; Endedijk et al., 2014). The categorization of these strategy choices is based on previous research into healthcare (Berings, Poell, & Simons, 2008; Lisman et al., 2007), and studies focusing on the micro-level of SDL in other research fields (Dannenberg, 2015; Endedijk et al., 2014; Endedijk & Vermunt, 2013). Subsequently, *strategy control* was a follow-up question if participants thought in advance to learn that way. Third, in the self-reflection phase the *reflection of the learning outcome* was asked by an open question supported by several suggestions for workplace learning experiences. The classification of learning outcomes, performed by the researcher, was based on literature (Berings, Poell, & Simons, 2008), including the V&VN competence profiles (van Hooft, Dwarswaard, & van Staa, 2015), and Can Meds roles (Frank, 2005). Two second coders were used to ensure the reliability of the coding of learning outcomes. Coding of the learning outcomes resulted in a good inter-rater reliability (Kappa = .86). The codebook is presented in *appendix C.*

3.2.6 Data analysis

Procedure. The data was gathered in a non-anonymous way, because this information was needed to connect repeated data of one person, and to be able to analyse a possible relation between participants' SDL attitude and their SDL behaviour. After connecting the data of a person, the data was processed anonymously.

Data analysis. To answer the first sub question; *What is the level of the self-directed learning attitude of employees working in residential care and the relation with their personal background,* a descriptive analysis was performed. Additionally, to explore the possible relation with employees' background variables, a multiple regression analysis was accomplished. In this analysis categorical data (gender, job profile, educational level) were transformed into dummy variables.

To answer the second sub question; *How are learning processes at the workplace actually directed by healthcare employees working in residential care?* firstly some conditional procedures were performed. To begin, the open question regarding learning outcomes was coded and checked by two second coders, which was satisfactory (*Kappa* = .86). Second, the answer option, *other namely*, which was included in several questions in the survey, was analysed. It appeared that employees who filled in this

option often liked to say something in their own words, but the answers could be ascribed to one of the existing categories of the variable. Except for future planning, where thirteen employees have expressed their plans to go further with their learning experience by sharing or discussing the information with others. These answers, plus the answers which could not be attributed to the other answer options, were excluded from analysis. Creating a new category in future planning was no option, because other respondents might have answered this also when the option was available.

The analysis regarding the second sub question started with creating frequency tables of each variable to reveal notable differences, which consequently give the answer to the question; *What concrete SDL behaviours are frequently demonstrated by healthcare professionals when they direct their learning at the workplace?* Subsequently, to answer the following question; *What are typical combinations of SDL behaviour in the successive stages of employees' learning process when they direct their learning at the workplace?,* the relationship between the different variables of SDL behaviour are analysed with chi-square analyses. These chi-square analyses were supplemented with post-hoc adjusted residuals (*AR*) analyses, to reveal cells which show deviation from the expected frequency (Haberman, 1973). When adjusted residuals had at least a difference of plus two or minus two standard deviations, it was considered that a difference of two qualitative answer options was statistically significant (Field, 2009).

In the chi-square analysis of *learning strategies* in relation to other variables of SDL behaviour, three categories in the variable *strategy choice* were merged into one. The classification of learning strategies is adopted from other studies (Dannenberg, 2015; Endedijk et al., 2014), and provides a clearer overview of the kind of learning strategies employees used. Following this procedure the variable reduced from 9 to 5 categories in which *other, namely* is excluded. First, *information searching, analysing/thinking of the learning situation, experimenting/trying,* and *doing/experiencing* have remained the same. Second, *feedback of others, observing others* and *reflection with colleagues* are transformed to *social learning*. Last, *formal education* is excluded, because this category had a low frequency (4.8%) and is not of interest in this analysis.

To answer the third sub question; *What is the relation between employees' SDL attitude and their concrete SDL behaviour in multiple learning experiences at the workplace?* SDL behaviour had to be ordered from a low degree of SDL behaviour to a high degree of SDL behaviour. Therefore, some aspects of SDL behaviour covered by the same concept were merged into one variable (e.g. planning and learning goal orientation). In the answer options of each of these variables (except strategy choice and learning outcome), a distinction is made between no self-directed learning behaviour, a bit of self-directed learning behaviour (mostly external stimulated or not consciously chosen), and fully self-directed learning behaviour (self-initiated). Eventually respondents could gain four points in one learning experience regarding SDL behaviour: (1) one in the learning intention (planning and learning goal orientation); (2) one in learning strategy control; (3) one in monitoring; and (4) one in future planning. Evaluation is excluded from this ranking method, because approximately 80% of the answers were in one category. The total score was divided by the number of learning experiences, so that it was not taken for granted that participants with more learning experiences are more self-directed in their learning. In this way, it was possible to analyse the relation between various aspects of SDL behaviour and participant's SDL attitude. In the table below *(Table 3)* the different answer options of the variables are presented, in which the distinction and given values are presented.

Table 3.

SDL Behaviour to Different Extents

Variable	SDL behaviour	Value
Planning		
Planned learning strategy		
Curiosity	Fully	1.0
Personal development	Fully	1.0
Preparing for their future	Fully	1.0
Stimulated by others	A bit	0.5
Necessary from the organization	A bit	0.5
Learning Wish		
Curiosity	A bit	0.5
Personal development	A bit	0.5
Preparing for their future	A bit	0.5
Stimulated by others	No	0.0
Necessary from the organization	No	0.0
No planned learning strategy	No	0.0
Strategy control		
Conscious choice		
Because there is no other way	Fully	1.0
Because this way is the fast and easiest	Fully	1.0
This manner of learning works for me	Fully	1.0
Commissioned by another	A bit	0.5
Don't know	A bit	0.5
No conscious choice	No	0.0
Monitoring		
Because it worked	Fully	1.0
Because it didn't work	Fully	1.0
By reflection	Fully	1.0
By realization of new information	Fully	1.0
Awareness of own behaviour	Fully	1.0
By the reaction of others	A bit	0.5
By feedback of others	A bit	0.5
Don't know	No	0.0
Future planning		
New learning goal	Fully	1.0
Have a concrete plan for a future similar situation	Fully	1.0
Improve what is learned	Fully	1.0
Try another time	A bit	0.5
Continue exactly in line with what I learned	A bit	0.5
Apply the learning content in practice	A bit	0.5
No new plans	No	0.0

The variables *strategy choice* and *reflection on the learning outcome* were not analysed in terms of the level of SDL behaviour. Moreover, it was not possible to assume that one strategy choice was more self-directed than the other, and the same is true for learning outcomes. However, these two variables have been included in the learning log to make one's learning experience complete, expose possible relations with other SDL behaviour, and makes it possible to compare results with other studies.

4. Results

In the following section the results will be presented in order of the research questions, starting with results regarding participants' SDL attitude in relation to their personal factors. Subsequently, an elaboration on the outcomes regarding participants' concrete SDL behaviour will be given. Lastly, the relation between participants SDL attitude and their concrete learning behaviour at the workplace is explored and will be further elucidated.

The level of employees' SDL attitude and the relation to their personal background variables

From the first part of this research, in which respondents' SDL attitude was measured with the five point Likert-scale of Raemdonck (2010), outcomes revealed that the mean score of the sample's (N = 160) SDL attitude was 4.26 (SD = 0.51). This means that on average they answered between partially agree and fully agree on the 14 statements about self-directed learning at the workplace. Moreover, a t-test, $t(159) = 31.44$, $p = < .001$, showed that the average of the sample's SDL attitude differs significantly from the centre of the scale. In other words, they answered above average. Additionally, compared to the study of Jolij (2014), which made use of the same scale in a similar organization, in the current study sample's average was .41 points higher (M = 3.85). See *appendix A* for the SDL attitude scale and corresponding items. The statement *I will never be too old to learn something for my work* showed the highest score (M = 4.92), and *I like to undertake learning activities on my own* demonstrated the lowest score (M = 3.79).

To analyse a possible relation with personal background variables, a multiple linear regression was calculated to predict participants' SDL attitude based upon their age, years of work experience, working hours, gender, educational level, and job profile. Preliminary analyses were performed to ensure there was no violation of the assumption of normality, linearity, and multicollinearity. A significant regression equation was found, $F(8.120) = 2.749$, $p = .008$, with an R^2 of .155. Meaning that 15.5% of the variance in SDL attitude is explained by the model. Participants' SDL attitude increased .013 points for each hour of work, and nurses scored on average .206 higher on the SDL attitude scale than other occupational categories. Both employment ($t = 2.234$, $p = .022$) and job profile ($t = 2.205$, $p = .029$) were significant predictors of participants' SDL attitude. Although higher educational level didn't show to be a significant predictor of someone's SDL attitude ($t = 1.723$, $p = .088$), the *p-value* is close to the significance level ($p \leq .05$). See *Table 4* for the overall regression table.

Table 4

Multiple Regression Analysis

Model	Unstandardized Coefficients		β	t	Sig.
	B	Std. Error			
(Constant)	3.678	.232		15.840	.000
Age	.003	.004	.90	.723	.471
Years of Work experience	.005	.005	.113	.978	.330
Working hours (contract)	.013	.006	-.209	2.324	.022
Dummy variable Female	-.297	.217	-.118	-1.365	.175
Dummy variable low education	-.074	.108	-.063	-.686	.494
Dummy variable high education	.218	.126	.161	1.723	.088
Dummy variable nurses	.206	.093	.212	2.205	.029
Dummy variable caretakers	.104	.074	.132	1.406	.162

Self-directed learning behaviour at the workplace

From the second part of this research, the overall data presented a total of 695 logs obtained by 147 respondents. This gives an average of 4.7 logs a person. A learning experience was reported 466 times (3 missing), so 229 times employees of Carintreggeland could not come up with a learning experience that day. Below, results regarding the second sub question; *How do employees, working in residential care, specifically direct their learning at the workplace?* are given. First, frequency tables of each aspect concerning SDL behaviour and the related categories are presented, in which a distinction is made in a low and high level of SDL behaviour. This elaboration will follow the structure of the SDL process: (1) planning; (2) strategy choice; (3) strategy control; (4) monitoring; (5) reflection on the learning outcome; (6) evaluation; and (7) future planning. Second, in line with previous research, typical combinations of SDL behaviour in the successive stages of employees' SDL learning process will be given, in which results in form of chi-square analyses are presented in the *appendix D.*

The manner and extent to which employees self-direct their learning

Planning

Table 5 presents the planning behaviour of employees in their learning experiences at the workplace (*other, namely* excluded = 2). The data shows that 65.5% of the employees showed no self-directed learning behaviour in planning, 19.3% a bit, and 15.2% of the employees planned their learning conscious and on their own initiative. Employees who fully directed their learning in planning mostly did that because they had the purpose to develop themselves (8.5%). Of the 19.3% of employees who showed a bit of planning behaviour mostly did that because they were obliged by the organization (11.9%).

Table 5

Frequency Table Planning Behaviour

Planning			
Planned learning strategy			
Curiosity	Fully	11	2.4%
Personal development	Fully	39	8.5%
Preparing for their future	Fully	20	4.3%
Stimulated by others	A bit	5	1.1%
Necessary from the organization	A bit	55	11.9%
Learning Wish			
Curiosity	A bit	3	.7%
Personal development	A bit	19	4.1%
Preparing for their future	A bit	7	1.5%
Stimulated by others	No	2	.4%
Necessary from the organization	No	11	2.4%
No planned learning strategy	No	289	62.7%
Total		461	100%

Strategy choice

Of the final set of 463 learning experiences, 690 strategy choices were reported, of which the variables *other, namely* (.6%) and *formal learning* (4.8%) were excluded resulting in 653 strategy choices in total. On average the learning processes entailed $M = 1.50$ strategy choices, in which 67.4% contained a single strategy choice, 22.5% a sequence of two strategy choices, and 10.1% three strategy choices. From the overall dataset results show that social learning strategies took place most frequently (48.8%), and information searching less frequently (6.3%). Although, social learning strategies are commonly used in employees' learning experiences at the workplace, the high proportion of this category may also be caused by the fact that three categories related to social learning are merged into one. In this category 34.8% learned by feedback of others, 48.3% by analysing with colleagues, and 16.9% by observing others. *Table 6* shows an overview of employees' strategy choices.

Table 6

Frequency Table Strategy Choices

Learning strategy choice	**Frequency**	**Percentage**
Social learning	319	48.8%
Feedback of others (34.8%)		
Analysing with colleagues (48.3%)		
Observing others (16.9%)		
Doing/experiencing	152	23.3%
Analysing/thinking	72	11.0%
Experimenting/trying out	69	10.6%
Information searching	41	6.3%
Total	653	100%

Learning strategy control

Table 7 presents the SDL behaviour regarding employees' strategy control (*other, namely* excluded = 1). It can be stated that the vast majority of employees did not determined their learning strategy in advance. In other words, 63.4% of the employees didn't show any self-directed learning behaviour in their strategy choice. In contrast, 134 (29.4%) employees do have deliberately chosen their learning strategy, in which they mostly selected the manner of learning based on their personal preference. Only 7.2% of the employees showed a bit of self-directed learning behaviour regarding strategy control, in which 1.7% answered they didn't know why they have chosen a specific learning strategy.

Table 7

Frequency Table Strategy Control

Strategy control			
Conscious choice			
This manner of learning works for me	Fully	50	11.0%
Because there is no other way	Fully	46	10.1%
Because this way is the fast and easiest	Fully	38	8.3%
Commissioned by another	A bit	25	5.5%
Don't know	A bit	8	1.7%
No conscious choice	No	289	63.4%
Total		456	100%

Monitoring

Monitoring was a frequently used SDL behaviour in employees' learning experience. Only 11 employees (2.4%) showed no monitoring behaviour, and 96 (20.7%) a bit. The other 76.9% of the employees showed fully SDL behaviour in monitoring. Mostly they monitored by realizing that something worked out well (24.2%), and the least by experiences in which they became aware of their own behaviour (5.8%) or because something didn't work out (6.9%). In *Table 8* the outcomes regarding monitoring behaviour are presented (*other, namely* excluded = 2).

Table 8

Frequency Table Monitoring

Monitoring			
Because it worked	Fully	112	24.2%
By realization of new information	Fully	110	23.8%
By reflection	Fully	75	16.2%
Because it didn't work	Fully	32	6.9%
Awareness of own behaviour	Fully	27	5.8%
By the reaction of others	A bit	63	13.6%
By feedback of others	A bit	33	7.1%
Don't know	No	11	2.4%
Total		463	100%

Learning outcomes

In the reflection on their learning outcome, employees mostly indicated that they learned something in terms of professional expertise. Results showed that professional knowledge and skills are most prevalent (42.3%). In the subcategory of expertise skills can be seen that a large part consists of skills regarding working with the new *my care* computer system. Subsequently, communication / collaboration is a common learning outcome (31.5%), where communication / collaboration with colleagues (64.6%) represents the largest part. Employees' learning outcomes concerning the organization of their work content were mentioned least frequently (6.7%). See *Table 9* for the results.

Table 9

Learning Outcomes

Learning outcome	Frequency	Percentage
Subject matter expertise	197	42.3%
General	20	
Knowledge	47	
Skills	47	
➢ Mycare system	51	
Quality control	32	
Communication/collaboration	147	31.5%
General	23	
With colleagues	95	
With clients/family	29	
Personal development	74	15.9%
Organization of work content	31	6.7%
other	17	3.6%
Total	466	100%

Evaluation

After filling in the learning log participants were also asked if they were satisfied or not when reflecting on their complete learning experience. In total 389 (83.8%) employees stated that they were satisfied with their learning experience, 47 (10.2%) would do things differently next time, and 28 (6.0%) participants didn't thought of it. For evaluation behaviour in SDL no values are specified because of the high percentage in one category (satisfied). In *Table 10* the percentages are presented (1 missing).

Table 10

Frequency Table Evaluation

Evaluation	Frequency	Percentage
I am satisfied	389	83.8%
I would do things differently next time	47	10.2%
I didn't think about it	28	6.0%
Total	464	100%

Future planning

In *Table 11,* the frequencies of future planning behaviour is presented. In total 170 (37.8%) employees fully directed their learning in words of future planning. They showed initiative and had the aim to boost their learning to a higher level. Most of them wanted to improve what they had learned (19.4%), and only 8.2% had a new learning goal. Employees who showed a bit of future planning behaviour (51.5%) also self-initiated their future planning, but wished to continue on the same learning level. Most of them wanted to apply the learning content in practice (26.3%). In total 48 (10.7%) employees out of 449 showed no future planning behaviour. It must be noted that, in this SDL behaviour aspect, 13 employees stated by the option *other, namely* that their purpose is to discuss or share their knowledge/skills with others In order to avoid validity problems no new category was created and they are covered by missing values (in total 17 missing).

Table 11

Future Planning

Future planning			
Improve what is learned	Fully	87	19.4%
Have a concrete plan for a future similar situation	Fully	46	10.2%
New learning goal	Fully	37	8.2%
Apply the learning content in practice	A bit	118	26.3%
Continue exactly in line with what I learned	A bit	99	22.1%
Try another time	A bit	14	3.1%
No new plans	No	48	10.7%
Total		449	100%

Typical SDL behaviour combinations in the successive stages of employees' SDL process

Planning

A relation is explored between employees' *planning* behaviour and the kind of *strategy choice* which subsequently is used. A chi-square analysis showed a significant difference, $X^2(8) = 22.987$, $p = .003$, in strategy choices when their learning was planned, unplanned or a learning wish existed. Results showed that *social learning* mostly took place in *unplanned* learning experiences (*AR* = 2.8). Further, *experimenting/trying out* (*AR* = 3.3) was applied more often in *planned* learning situations than expected, and in a *learning wish* only a significant relation was found with *doing/experiencing* (*AR* = 2.3) as employees' first strategy choice in their learning process. The chi-square is presented in *Appendix D.* The table shows that three expected counts are below 5 (20%). According to Stern (2010) this is acceptable.

Learning goal orientation

In employees' learning orientation to reach their goal a distinction was made between: (1) intrinsic learning goal; (2) extrinsic learning goal; (3) and long term intrinsic learning goal. A chi-square analysis showed a significant relation, $X^2(8) = 22.160$, $p = .005$, in which the strategy choice analysing/thinking (*AR* = 3.3) was often applied when employees had an intrinsic learning goal orientation. In contrast, experimenting/trying out (*AR* = 2.5) seems to be a frequently chosen strategy when participants' had an extrinsic learning goal orientation. In *Appendix D* the chi-square analysis is presented. The table shows that three expected counts are below 5 (20%). According to Stern (2010) this is acceptable.

Learning strategy choice

Earlier studies have proven that a certain pattern can be recognized in the type of *strategy choices* and the position in the sequence of the strategy choices in the complete SDL process. In this study a chi-square analysis showed a significant relationship, $X^2(4) = 10.259$, $p = .036$, in which *social strategy choices* were applied more often in the *second* or *third* position in the sequence of strategy choices (*AR* = 3.2). In contrast, *doing/experiencing* (*AR* = 2.1) was more often used as expected as employees' *first* strategy choice. In *Appendix D* the results are demonstrated in a chi-square analysis.

Reflection on the learning outcome

In line with earlier research, a possible relation between the nature of *strategy choices* and employees' *reflection on their learning outcome* is explored. A chi-square analysis showed a significant relation, $X^2(12) = 27.403$, $p = .007$, in which post-hoc analysis showed that *strategy choices* like *information searching* (*AR* = 3.1) and *experimenting/trying* (*AR* = 2.2) were deployed significantly more when employees' stated that their learning outcome concerned *subject matter expertise*, and *analysing/thinking* significantly less (*AR* = -2.9). On the other hand, *analysing/thinking* was more often used when employees have stated that their learning outcome concerned personal development (*AR* = 2.2). In *Appendix D* the chi-square analysis is presented. The table shows that four expected counts are below 5 (20%). According to Stern (2010) this is acceptable.

Self-directed learning attitude in relation to self-directed behaviour at the workplace

For the analysis of a possible relation between participants' SDL attitude and the specific used SDL behaviour, a linear regression analysis was performed. It was expected to find a positive linear relationship between employees' SDL attitude and their SDL behaviour demonstrated in workplace learning experiences. More specific, employees with a positive SDL attitude are expected to demonstrate more deliberate and self-iniated behaviour in tracking their learning process.

Employees could score between zero and four points on the total SDL behaviour scale (1 point for each aspect), consisting of *planning*, *learning strategy control*, *monitoring* and *future planning*. Overall, participants' (*N* = 136) mean score on SDL behaviour was below the average of two (*M* = 1.9, *SD* = .64632), in which 50% scored between 1.5 and 2.25. In the analysis of every single aspect of SDL behaviour, employees showed low *planning* behaviour (*M* = .2676, *SD* = .24738), in which 75% scored between 0 and .40. Additionally, their *learning strategy control* also revealed a low average (*M* = .2826, *SD* = .29311). In constrast, employees did show more *monitoring* (*M* = .8589, *SD* = 18192) and *future planning* behaviour (*M* = .5946, *SD* = 24759). In monitoring 50% of the participants scored between .75 and 1, and 50% of the employees scored between .50 and .75 in future planning.

In the analysis of SDL behaviour as a whole in relation to employees' SDL attitude no significant relationship was found. Additionally, to see if someone's SDL attitude was only related to one of the aspects of SDL behaviour, regression analyses of each aspect; *planning, learning strategy control, monitoring*, and *future planning* in relation to SDL attitude were performed. However, again no significant relationships are found. See *Table 12* for the statistical outcomes.

Table 12

Regression Analysis of Each Aspect of SDL Behaviour in Relation to SDL Attitude

Variables in relation to SDL attitude		Unstandardized Coefficients		β	t	Sig.
	Test-statistics	B	SE			
Planning	F(1) = .195	.025	.056	.038	.442	.659
Strategy control	F(1) = .131	-.024	.067	-.031	-.362	.718
Monitoring	F(1) = .146	.016	.042	.033	.382	.703
Future planning	F (1) = .087	.017	.057	.026	.296	.768
Total score SDL behaviour	F (1) = .174	.062	.148	.036	.418	.677

5. Conclusion and discussion

The aim of this study was to explore how employees, working in healthcare organizations, are self-directing their learning at the workplace. Three questions were posed, regarding individuals' SDL attitude, SDL behaviour and the possible relation between those constructs, to guide this study. In total 457 learning experiences, and different self-directed learning behaviours were analysed in relation to individuals' SDL attitude. In this section the most important findings, in relation to the research question, will be presented. Later on, limitations, suggestions for further research, and practical implications will be discussed.

Employees' SDL attitude. To answer the first research question; *What is the level of the self-directed learning attitude of employees working in residential care and the relation with their personal background?* this section will focus on employees' SDL attitude and the relation with their personal background variables.

Firstly, salient results regarding employees self-directed learning attitude were found. Participants in this study showed an above average positive attitude towards self-directed learning at the workplace, and also a higher average than another study in a similar context (Jolij, 2014). This may be due to the fact that the organization highlights the importance of learning in the organization. They believe that well-developed employees provide a higher quality of care. In addition, Carintreggeland recently implemented self-directed work teams, which seems to create a meaningful work environment where the self-managing character stimulates the learning behaviour of individuals (Kessels, 2004). Moreover, the study of Jolij (2014) revealed a positive relation between self-directed work teams and the self-directed learning attitude of employees.

Second, regarding employees' personal background variables, it became clear that two variables had a significant influence on employees' attitude of SDL. For *working hours,* it seems that employees who work more hours possess a more positive attitude towards SDL than employees' who work less hours for the organization. This is in line with earlier research stating that employees who work more hours are more attached to the organization and their profession than employees who work less hours (Hallowell, 1999). As a result, employees with a larger contract show a more positive SDL attitude than employees with a smaller contract. In addition, the occupational category *nurse*, showed a more positive attitude regarding SDL than other *occupational categories,* which is in line with the research of Durr et al. (1996). Nevertheless, it seems that this relationship is influenced by employees' *educational level*, because nurses have a relatively *higher educational level* than other job profiles. Unfortunately, this relationship was difficult to prove because of the skewed distribution in educational level, where higher educated employees only represented a small number in the total sample. However, based on the results it is

suspected that *educational level* influences the SDL attitude of employees, which is consistent with outcomes of Stockdale's (2003) study. Consequently, for further research it is recommended to include this variable. In contrast, no significant relations were found between participants' SDL attitude and their age (Reio, 2004), gender (Stockdale, 2003), and years of work experience (Raemdonck, 2006). This could be caused by the lack of diversity in the sample. A large part of the employees were working for more than 10 years at the organization, were above 40 years old, and only a few were male workers.

Employees SDL behaviour. To answer the second research question; *How do employees, working in residential care, specifically self-direct their learning at the workplace?* This section will be divided in two parts. First, an elaboration of the outcomes regarding employees' specific SDL behaviour will be presented, following the phases of the SDL process: (1) forethought; (2) performance; (3) self-reflection. Second, typical combinations of SDL behaviour in the SDL process of healthcare employees will be explained, compared to previous research.

Forethought. Workplace learning is often unintended, which is in line with the results of this study. In almost two thirds of the learning experiences employees' didn't show any self-directed planning behaviour. When employees did show a bit of self-directedness in their planning behaviour, it was mostly because it was necessary from the organization. This is a remarkable result, which implies that a lot of employees have the feeling that they should meet a certain requirement from the organization when it is related to their learning. Employees who showed fully self-directed learning behaviour mostly planned their learning experience for their personal development, and less out of curiosity or to prepare for future situations. The latter is an important detail, because from literature it is stated that being able to react on and anticipate to future situations is essential in self-directed learning behaviour (Raemdonck, 2006). Additionally, the organization also wishes that employees have a long-term vision regarding learning, in which they are able to anticipate potential challenges.

Performance. In workplace learning healthcare employees frequently chose *strategy choices* with a *social learning* aspect. Mostly by analysing with colleagues, then, by feedback from others, and as least by observing others. Two thirds of the employees have indicated that a colleague from the team was involved in this social learning strategy, some said that a colleague not from the team but in the organization was involved, and only a few stated that it was someone outside the organization. Subsequent to social learning strategies, learning by *doing/experiencing* was often chosen in employees' learning experiences. These outcomes are in line with previous research of Berings, Poell, and Gelissen (2008), stating that nurses learned the most by interaction and doing their daily work. Moreover, consistent with the study of Dannenberg (2015), *information searching* was used least frequently as strategy choice. In *controlling* their *strategy* employees showed a low level of self-directed learning behaviour. In other words, most of them have not deliberately chosen their *learning strategy*. It can be stated that most employees have learned in a reactive way, in which conscious planning and choosing strategies do not apply. When employees showed a bit of SDL behaviour in controlling their learning strategy it was often commissioned by someone else, whilst employees who fully controlled their learning strategy did this because of their personal preference. In contrast to the low level of SDL behaviour in *strategy control*, the average level of employees' *monitoring* behaviour was high. Three quarters of the employees showed fully SDL behaviour in monitoring. Most of them realized that they learned by something that *worked out well* or by *receiving new information*. The opposite was found in a study in teacher education, where most student teachers indicated that they learned a lot at the workplace by *unsuccessful* learning situations, and not often because they had *received new information* (Endedijk & Bronkhorst, 2014). These diverse outcomes can be caused by the fact that the study of Endedijk and Bronkhorst (2014) is a comparison study between contexts, and is conducted in a student teacher education curriculum. Most healthcare employees in this study are not following formal education, are expected to avoid making mistakes at the workplace instead of learning from them, and learn in order to keep functioning on a professional level, in contrast to students who are learning to 'become' a professional. However, there are also some similarities, namely *feedback* and *awareness of own behaviour*

are common *monitoring* behaviours at institutes, but infrequent monitoring behaviours in workplace learning (Endedijk & Bronkhorst, 2014). Only a few employees stated that they didn't know how they realised that they learned something. The fact that only a few employees showed low or no monitoring behaviour, can be caused by the fact that employees who didn't realized that they learned something are not in the sample at all.

Self-reflection. In the *reflection on the learning outcome* employees mostly learned something in their *expertise* knowledge or skills. However, almost as much is learned in the *communication /collaboration* with others. In this category employees stated that they mainly learned in the interaction with colleagues. Only a few learned in their *organization of their work content*, and a sixth in their *personal development*. This is in line with other research (Lundgren, 2011), where healthcare employees showed little learning outcomes in personal development, but indicated that they have the desire for more opportunities in this category. In the current study there might also have been insufficient scope for employees' professional development, based on the extrinsic stimulation in employees' planning and strategy control in their learning process. Contrary, a study into teacher learning, personal development was a major part of learning outcomes (Dannenberg, 2015). This difference may be due to the diverse characteristics of the profession. In healthcare specialized knowledge is very important, meaning that clients in this sector are dependent on the available knowledge and accuracy of the healthcare professional (Lundgren, 2011). Further, more than three quarters of the employees was satisfied about their learning experience. Only a few showed no *evaluation* behaviour at all, and some indicated that they would do things differently next time. Subsequently, employees scored slightly above average on SDL behaviour in *future planning*. Only one tenth showed no future planning behaviour at all, and half showed a bit of future planning behaviour in which most employees had the purpose to apply the learned content in practice. Again a difference was found with the study of Endedijk and Bronkhorst (2014) were student teachers' often aimed to apply new knowledge and skills in practice when they learned something in institutional settings instead of the workplace. However, this seems logical considering that students often switch between the different contexts. When employees fully directed their future planning behaviour they often indicated that they aim to improve their learning, and only a few had a new learning goal.

Typical combinations of concrete SDL behaviour in employees' learning process

In employees' concrete learning process at the workplace it appeared that most of the learning was *unplanned*, by *doing/experiencing* and *social learning* as most prevalent learning strategies. Moreover, *social learning* took place more frequently at the end of the sequence of learning strategies, and *doing/experiencing* was often used as first learning strategy. This corresponds to results of workplace learning on meso- and macro-level (Tynjälä, 2013), and studies into workplace learning on the micro-level in other research fields (Dannenberg, 2015; Endedijk et al., 2014). Furthermore, in line with the view of Eraut (2004), *experimenting* and *trying out* demonstrated to be more deliberate strategies.

Regarding employees' *learning goal orientation*, *experimenting* and *trying out* were often used when they were extrinsic motivated, and reflection strategies *(analysing/thinking)* were often used when they had an intrinsic motivation to learn. Surprising is the fact that no relations were found between employees' learning goal orientation and *social learning strategies*, whilst social interaction can foster their professional learning and development (Apker, Propp, Ford, & Hofmeister, 2006; Bolhuis, 2002).

Finally, from the exploration of employees' *reflection on their learning outcome*, it revealed that *analysing/thinking* strategies were mostly deployed when employees' learning outcomes were aimed at *personal development*. In addition, the more deliberate strategies, *information searching* and *experimenting/trying out*, were related to learning outcomes in words of expert knowledge and skills. The latter is consistent with the study of Dannenberg (2015) revealing that teachers have deliberate strategies when they focus on didactical learning outcomes. Overall, it can be stated that these combinations of SDL behaviours are a logic result from the combinations in earlier stages in the learning process, where *analysing/thinking* was used for learning outcomes in *personal development*, and also because of an *intrinsic learning goal orientation*. Additionally, *experimenting*, *trying out*, and *information searching*

were used more often because of an *extrinsic learning goal orientation*, leading to learning outcomes in *subject matter expertise*. Based on this, one could say that the organization focuses on learning outcomes in expert knowledge and skills, and less on the personal development of employees.

The relation between employees' SDL attitude and SDL behaviour. Based on literature it was expected that employees' *SDL attitude* is related to their specific *SDL behaviour* demonstrated in workplace learning processes. According to Gijbels et al. (2010), employees who have a positive SDL attitude will show more self-directed learning behaviour at the workplace. For example, they take more initiative in trying something new or search for new information (Gijbels et al., 2010). By contrast, in this study no significant relation is found between employees' *attitude* and *behaviour* in self-directed learning at the workplace, which is remarkable. Based on these results, it can be concluded that there is no evidence to assume that employees' *attitude* towards SDL influences their specific *SDL behaviour* at the workplace. Reasons for this might be; the possible dissonance between someone's beliefs and actual executed behaviour (Endedijk & Vermunt, 2013; Lonka & Lindblom-Ylänne, 1996), the inability of using SDL behaviours at the workplace, or the limited space that is given to employees to self-direct their learning at the workplace. As Confessore and Kops (1998) state, SDL must be supported by the organization in which HRD professionals need to recognize and respond to employees' capacity in SDL. Unfortunately, there is little research in which the relationship between employees' SDL attitude and actual SDL behaviour in workplace learning is measured. For that reason, it is recommended to explore this relation further, including possible influencing factors, in future research.

Overall, results obtained from the digital learning log showed that learning experiences often started as a reaction. Nevertheless, despite that employees' learning experiences started mostly unplanned and without a specific learning goal, results showed that it can still involve self-directed learning behaviour in a more retrospective way, which is in line with earlier research (Endedijk et al., 2012). In this study employees showed initiative in *monitoring* their learning experience, and *planning their future learning* strategy. However, to fully self-direct their learning process at the workplace, still some improvements have to be made. They have to take more responsibility in planning, strategy control, and evaluation of their learning experiences. In addition, employees' future planning was often aiming a strategy choice on the same learning level, whilst it might be to the benefit of their professional development when they boost their learning to a higher level. For example, by creating a new learning goal. None of the single aspects of SDL behaviour (planning, strategy control, monitoring, future planning) was significant related to employees' SDL attitude.

5.1 Limitations

Despite the advantages this design has given regarding the concrete insight into the various learning experiences, some factors might have influenced the results. For instance, the learning experiences were selected by the employees themselves, which could possibly has given an over-representation of certain learning experiences. In addition, filling in the structured learning log required from employees that they were able to retrospectively look at their learning experience and outcome. This also requires from participants that they are aware of their learning processes at work, which can be difficult to recognize because a lot of learning at the workplace takes place unconsciously (Tynjälä, 2008). Moreover, because results were built upon self-reflections it is hard to distract if employees' learning experiences resulted in objective learning outcomes. In addition, learning outcomes concerning *expertise skills* (subcategory of subject matter expertise) might be overrepresented because of the implementation of a new digital system. In the week of the data gathering employees had to learn how to work in this new electronic patient record.

This study was restricted to one organization in healthcare, which could be a limitation for the external validity. Therefore, it is interesting to examine how the situational variability affect the differences in employees' SDL attitude and behaviour at the workplace, and how frequently used and typical combinations of SDL behaviour in the learning process hold in the course of time. Longitudinal designs with more qualitative data gathering methods, like interviews and observations, can help to

determine influencing factors, explore how SDL attitude and behaviour is related, and disclose more in-depth information of SDL at the workplace (Babbie, 2010). Besides, generalization of results to other similar organizations might be difficult, because this organization was in the middle of a reorganization. Hence, results might not hold over variations in settings, persons, and outcomes (Shadish, Cook, & Campbell, 2002).

Although previous studies into workplace learning and self-directed learning were conducted in healthcare, the investigation of SDL on the micro-level where two kind of measurements were combined was never conducted before in this research area. More studies using this research design are needed to examine if the combination of an aptitude and multiple-event measurement is reliable to measure a possible relation between someone's attitude and behaviour in self-directed learning at the workplace.

In addition, it is recommended to critically reconsider the categories in each aspect of SDL behaviour when the aim is to measure SDL behaviour to different degrees. The variables of SDL behaviour with the included categories of the learning log file have largely been adopted from previous research (Dannenberg, 2015; Endedijk, 2010; Endedijk et al., 2015), because the digital learning log revealed to be a valid and reliable way to measure the different SDL behaviours in workplace learning. Nevertheless, it was hard to make a strict division in some variables between a low and high degree of self-directed learning behaviour demonstrated by the participant. For example, the variable *monitoring* had only one answer option reflecting *no* monitoring behaviour, two answer options reflecting *a bit* of monitoring behaviour, and in total five options reflecting *fully* monitoring behaviour. Therefore, one can say that there was no equal division of the extent to which someone showed this SDL behaviour. Additionally, in *strategy choices* three strategies were merged into one category, which might have caused an overrepresentation of this category. Finally, in *evaluation behaviour* a large group of answers was in one category, what caused that no measurement of different degrees in evaluation behaviour could be done, and no valuable judgements could be made. It is recommended to re-examine this question and related categories, but a follow-up question as in the study of (Endedijk & Bronkhorst, 2014) might also be helpful.

5.2 Practical implications

This study revealed to be a good way to measure the *quality* of self-directed learning at the workplace in healthcare, but further adjustments need to be made to use this kind of assessment for the *quantitative* measurement of employees' level of SDL behaviour and the relation with their SDL attitude. In other words, further inquiry is needed to improve the quality of this multiple-event measurement when the aim is to make a difference in the degree of self-directed learning behaviour of employees in a work context. In addition to the reconsideration of categories as stated in the limitations, in further research one may consider to include one extra category in *future planning.* In this study thirteen employees have filled in that they are going to *share* or *discuss* the learning content of their learning experience, which could be seen as a potential category in *future planning*. Furthermore, social learning, like discussing and sharing with others, is becoming increasingly important, which can be seen as an opportunity for the continuation of employees' professional development (Apker et al., 2006).

In this study, employees showed that they have a positive attitude towards self-directed learning, but don't use prospective SDL behaviour frequently in their learning experiences at the workplace. Moreover, no evidence was found that employees' SDL attitude influences their SDL behaviour. For the organization this means that they have done a good job in creating a positive learning attitude among their employees. Unfortunately, this seems insufficient to ensure that employees show actual self-directed learning behaviour in their learning processes at the workplace. For that reason, it is recommended for the organization to provide tools in supporting these concrete SDL behaviours at the workplace. For example, by portfolio's or personal development plans, or a buddy system where more employees with more skills in SDL behaviour are connected to others with less SDL behaviour. It is advised to put emphasis on the little used SDL behaviours; planning, goal orientation, strategy control and stimulate employees to upgrade their future planning behaviour to a higher level where they have a long term vision. To support employees' SDL behaviour it is also advised to provide space and opportunities for them to use it. In line

with Lundgren (2011), employees need time to reflect, having feedback moments, and using other strategies in learning experiences to foster their personal development.

Regarding typical combinations of SDL behaviour in workplace learning processes, results showed that social learning strategies mostly took place in a later stage of the learning experience. As a result, it is suggested to provide learning experiences starting with more deliberate strategies with a follow-up by means of a social learning aspect. In addition, these social learning strategies were mostly used *in* the care teams, whilst literature stated that it is very useful to exchange information, new knowledge, and skills *between* teams (Kessels & Plomp, 1999). It might be a potential opportunity to use social learning strategies to foster employees' knowledge and professional development, as it is now deployed rarely for these learning outcomes. Additionally, experimenting or trying something new were often used in planned learning situations, but according to Gijbels et al. (2010) these strategies are related to employees who are self-directed in their learning at the workplace. Accordingly, it might be a fruitful endeavour to foster experimenting strategies at the workplace, in, for example, new techniques in the conversation with clients and family.

Lastly, striking in this study were the feedback answers given by employees at the end of the learning log where there was space for personal comments regarding the research. A lot of employees answered that, by filling in the structured learning log, they became aware of their learning processes and opportunities during the study. This indicates that the organization also have to keep working on making employees aware of the learning opportunities at the workplace. For that reason, it is suggested to implement reflection moments in a continuous manner at the workplace, which is in line with the cyclic character of learning (Kolb, 1985).

References

Apker, J., Propp, K. M., Ford, W. S. Z., & Hofmeister, N. (2006). Collaboration, credibility, compassion, and coordination: professional nurse communication skill sets in health care team interactions. *Journal of Professional Nursing, 22*(3), 180-189.

Babbie, E. R. (2010). *Introduction to social research*: Wadsworth Cengage learning.

Berings, M. G. M. C., Gelissen, J. P. T. M., & Poell, R. F. (2005). What and how do nurses learn on the job?: the development of a classification.

Berings, M. G. M. C., Poell, R. F., & Gelissen, J. P. T. M. (2008). On-the-job learning in the nursing profession: Developing and validating a classification of learning activities and learning themes. *Personnel Review, 37*(4), 442-459. doi: 10.1108/00483480810877606

Berings, M. G. M. C., Poell, R. F., & Simons, P. R. J. (2008). Dimensions of on-the-job learning styles. *Applied Psychology, 57*(3), 417-440. doi: 10.1111/j.1464-0597.2008.00362.x

Bolhuis, S. (2002). Professioneel leren: wat is het en hoe bevorderen we het? *Tijdschrift voor medisch onderwijs, 21*(4), 173-182.

Cadorin, L., Suter, N., Dante, A., Williamson, S. N., Devetti, A., & Palese, A. (2012). Self-directed learning competence assessment within different healthcare professionals and amongst students in Italy. *Nurse education in practice, 12*(3), 153-158. doi: 10.1016/j.nepr.2011.10.013

Cheng, S.-F., Kuo, C.-L., Lin, K.-C., & Lee-Hsieh, J. (2010). Development and preliminary testing of a self-rating instrument to measure self-directed learning ability of nursing students. *International Journal of Nursing Studies, 47*(9), 1152-1158. doi: http://dx.doi.org/10.1016/j.ijnurstu.2010.02.002

Confessore, S. J., & Kops, W. J. (1998). Self-directed learning and the learning organization: examining the connection between the individual and the learning environment. *Human Resource Development Quarterly, 9*(4), 365-375.

Dalen, A. v. (2006). Meervoudig verantwoorden. *ZM Magazine, nummer, 10*.

Dannenberg, S. (2015). Learning paths of teachers, studying: intention, activities and outcomes to understand teacher learning at the workplace.

Durr, R., Guglielmino, L. M., & Guglielmino, P. J. (1996). Self-directed learning readiness and occupational categories. *Human Resource Development Quarterly, 7*(4), 349-358.

Endedijk, M. D. (2010). *Student teachers' self-regulated learning*: Utrecht University.

Endedijk, M. D., Brekelmans, M., Sleegers, P., & Vermunt, J. D. (2015). Measuring students' self-regulated learning in professional education: bridging the gap between event and aptitude measurements. *Quality & Quantity*, 1-24.

Endedijk, M. D., & Bronkhorst, L. H. (2014). Students' Learning Activities Within and Between the Contexts of Education and Work. *Vocations and Learning, 7*(3), 289-311.

Endedijk, M. D., Hoekman, M., & Sleegers, P. (2014). Learning paths of engineers: studying sequences of learning activities to understand knowledge workers' professional development.

Endedijk, M. D., & Vermunt, J. D. (2013). Relations between student teachers' learning patterns and their concrete learning activities. *Studies in educational evaluation, 39*(1), 56-65.

Endedijk, M. D., Vermunt, J. D., Verloop, N., & Brekelmans, M. (2012). The nature of student teachers' regulation of learning in teacher education. *British Journal of Educational Psychology, 82*(3), 469-491.

Eraut, M. (2004). Informal learning in the workplace. *Studies in continuing education, 26*(2), 247-273.

Field, A. (2009). *Discovering statistics using SPSS*: Sage publications.

Frank, J. R. (2005). *The CanMEDS 2005 physician competency framework: Better standards, better physicians, better care*: Royal College of Physicians and Surgeons of Canada.

Gijbels, D., Raemdonck, I., & Vervecken, D. (2010). Influencing Work-Related Learning: The Role of Job Characteristics and Self-Directed Learning Orientation in Part-Time Vocational Education. *Vocations and Learning, 3*(3), 239-255. doi: 10.1007/s12186-010-9041-6

Haberman, S. J. (1973). The analysis of residuals in cross-classified tables. *Biometrics*, 205-220.

Hallowell, E. M. (1999). *The human moment at work*: Harvard Business Review.

Jolij, I. (2014). Self-directed learning in self-directed teams in a healthcare organization.
Kessels, J. (2004). 11 The knowledge revolution and the knowledge economy. *New frontiers in human resource development*, 165.
Kessels, J., & Plomp, T. (1999). A systematic and relational approach to obtaining curriculum consistency in corporate education. *Journal of Curriculum Studies, 31*(6), 679-709.
Knowles, M. S. (1975). Self-directed learning.
Kolb, D. (1985). *Learning styles inventory*: USA.
Lisman, A., Natte, M., & Poell, R. (2007). Op zoek naar leerwegtypen van verpleegkundigen. *Develop, 3*(2), 22-31.
Lonka, K., & Lindblom-Ylänne, S. (1996). Epistemologies, conceptions of learning, and study practices in medicine and psychology. *Higher education, 31*(1), 5-24.
Lundgren, S. (2011). Learning opportunities for nurses working within home care. *Journal of workplace learning, 23*(1), 6-19.
Onstenk, J. (1999). *Enhancing the self-directed learning potential of jobs.* Paper presented at the European Conference" Lifelong Learning—Inside and Outside Schools", Bremen, Germany.
Perry, N. E., & Winne, P. H. (2006). Learning from learning kits: gStudy traces of students' self-regulated engagements with computerized content. *Educational psychology review, 18*(3), 211-228.
Pintrich, P. R. (2000). *The role of goal orientation in self-regulated learning*: Academic Press.
Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational psychology review, 16*(4), 385-407.
Raemdonck, I. (2006). Self-directedness in learning and career processes. A study in lower-qualified employees in Flanders. *Gent: Universiteit van Gent*.
REGERINGSBELEID, W. R. V. H. (2004). Bewijzen van goede dienstverlening: Amsterdam: Amsterdam University Press.
Reio, T. (2004). Prior knowledge, self-directed learning readiness, and curiosity: Antecedents to classroom learning performance. *International Journal of Self-directed learning, 1*(1), 18-25.
Schober, M. (2007). The global emergence of advanced practice nurses in providing home and community health care services. *Home Health Care Management & Practice, 20*(1), 34-40.
Schunk, D. H., & Zimmerman, B. J. (1998). *Self-regulated learning: From teaching to self-reflective practice*.
Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*: Wadsworth Cengage learning.
Stern, L. (2010). *A visual approach to SPSS for Windows*: Boston, MA: Pearson Education, Inc.
Stockdale, S. L. (2003). Development of an instrument to measure self-directedness.
Tynjälä, P. (2008). Perspectives into learning at the workplace. *Educational Research Review, 3*(2), 130-154.
Tynjälä, P. (2013). Toward a 3-P model of workplace learning: a literature review. *Vocations and Learning, 6*(1), 11-36.
van Hooft, S., Dwarswaard, J., & van Staa, A. (2015). Ondersteunen van zelfmanagement Wat vraagt dit van verpleegkundigen? *Bijzijn XL, 8*(3), 8-11.
van Hout-Wolters, B. (2000). Assessing active self-directed learning *New learning* (pp. 83-99): Springer.
Zimmerman, B. J. (2000). Attaining self-regulation: a social cognitive perspective. *Handbook of self-regulation*, 13-39.
Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal, 45*(1), 166-183.

Appendix A

Below, the in this research used scale and corresponding items are presented. All items had a 5 point Likert-scale, in which 1 = fully disagree and 5 = fully agree. Every item is a statement regarding self-directed learning, in which the higher the score the more positive their attitude is towards self-directed learning at the workplace.

General questions:

- Wat is je geslacht?
- Wat is je leeftijd?
- Wat is je hoogst *afgeronde* opleiding?
- Hoeveel jaren werkervaring heb je in de zorg?
- Welke functie heb je bij Carintreggeland?
- Hoeveel uur werk je op papier (contract)?
- Op welke locatie ben je werkzaam?

Self-directed workplace learning:

1. Ik zal nooit te oud zijn om nieuwe dingen te leren voor mijn werk.
2. Ik vind altijd wel tijd als ik iets wil leren.
3. Ik neem initiatief als ik merk dat ik iets kan leren wat nuttig is voor mijn werk.
4. Ik voel zelf aan wanneer het nodig is om iets bij te leren voor mijn werk.
5. Leren vind ik een belangrijk aspect in mijn arbeidsleven.
6. Ik geef niet op wanneer ik iets moeilijks aan het leren ben.
7. Ik streef naar uitwisseling van ervaring met mensen die gemotiveerd zijn in hun werk.
8. Ik test mezelf om te weten of ik iets grondig heb geleerd.
9. Het afgelopen jaar leerde ik voor mijn werk veel dingen op eigen initiatief.
10. Ik zoek vaak informatie op om meer te weten over onderwerpen in mijn vakgebied waarin ik geïnteresseerd ben.
11. Wanneer ik leer, begrijp ik meer van de wereld om mij heen.
12. Ik onderneem graag leeractiviteiten op eigen houtje.
13. Ik weet welke stappen ik moet ondernemen als ik iets nieuws wil leren.
14. Ik ben graag betrokken bij projecten op het werk waar kansen worden geboden om te leren.

Appendix B

Zelfgestuurd werkplekleren 2e gedeelte

Beste Collega,

Dit is DAG …. (datum) van het tweede gedeelte van het onderzoek. Deze vragenlijst is een soort van logboek waarmee je jouw leerervaringen van deze week kunt bijhouden. Het doel hiervan is om inzicht te krijgen in wat er wordt geleerd, maar ook vooral hoe er wordt geleerd door jullie op de werkplek.
let op! vul alles in en beschrijf duidelijk in eigen woorden 'wat' je hebt geleerd. Immers leert ieder wat anders in een bepaalde situatie of van een bepaald moment.
Nogmaals: Deelname aan het onderzoek is geheel veilig. GEEN persoonlijke informatie of antwoorden die je geeft worden gedeeld of openbaar! Door verder te gaan met het invullen van deze vragenlijst geef je toestemming voor dit onderzoek.

Wat is je personeelsnummer?
Dit wordt gevraagd zodat jouw leerervaringen van meerdere werkdagen aan elkaar kunnen worden gekoppeld. Zodra alles verzameld is wordt jouw personeelsnummer verwijderd en worden de gegevens anoniem geanalyseerd.
……..

Concrete leerervaringen op de werkplek (logboek)

Leerervaringen kunnen heel verschillend zijn:

- Het kan meer georganiseerd en gepland zijn, of toevallig gebeuren
- Het kan iets groots zijn, maar ook een klein stapje in de goede richting
- Het kan heel lang duren of een kort moment zijn
- Je kunt iets in je eentje hebben geleerd of met anderen samen
- Het kan een verandering zijn in je kennis (je weet nu iets wat je nog niet wist), gedrag (je doet nu iets anders dan voorheen), of opvatting (je denkt nu ergens op een andere manier over)

Een leerervaring is een gebeurtenis waarvan jij het gevoel had dat je iets hebt geleerd.

Suggesties voor leerervaringen

Heb je vandaag:

- gewerkt aan een probleem, issue of conflict?
- een discussie gehad met een collega?
- een AHA moment gehad, een nieuw inzicht ergens in gekregen?
- gewerkt aan iets wat nieuw voor je was?
- iets gedaan wat heel erg goed ging? Of juist fout?
- iets interessants gehoord in een gesprek of bijeenkomst?
- nieuwe informatie opgezocht of hulp gevraagd aan een collega?
- ben je, je ergens bewust van geworden?
- een opvallende gebeurtenis meegemaakt, of iets wat je heel erg bezig heeft gehouden?

De vragenlijst start met een open vraag over **wat** je geleerd hebt. Dit mag je op jouw manier beschrijven. Daarna volgen er en aantal meerkeuze vragen die gaan over hoe je leerproces tot stand is gekomen. Deze vragen kun je in ongeveer 5 minuten beantwoorden. Soms zul je op een bepaald moment meerdere dingen leren, kies er dan één uit om te beschrijven

1. Kun je een concrete leerervaring beschrijven die in de afgelopen dagen in de context van je werk heeft plaatsgevonden?

(dit kan zowel thuis, op je werk of elders geweest zijn).

- ❍ Ja, ik heb een leerervaring in gedachten
- ❍ Nee, ik kan voor vandaag geen concrete leerervaring bedenken (einde vragenlijst).

Bij antwoord 'nee' kom je bij het einde van de vragenlijst

Als je antwoord 'ja' was dan kun je in een tekstblok hieronder je leerervaring beschrijven.

2. **Wat heb je geleerd?** (beschrijf hieronder in eigen woorden wat je leerervaring was):

…….

3. Er zijn verschillende manieren om te leren. Daardoor kun je in één leerervaring verschillende leeractiviteiten gebruiken. Wat was de eerste leeractiviteit die je hebt gebruikt? Ik heb in deze leerervaring iets geleerd door.....

- ❍ iets te doen of te ervaren
- ❍ iets nieuws uit te proberen
- ❍ te observeren hoe anderen iets aanpakken
- ❍ informatie wat ik heb opgezocht in een boek, tijdschrift of op internet
- ❍ feedback of informatie wat ik van een ander heb gekregen
- ❍ zelf na te gaan wat er goed en minder goed ging in een bepaalde situatie (bijv. in het contact met de cliënt)
- ❍ samen met collega's (of anderen) na te denken en te praten (samen analyseren)
- ❍ formeel onderwijs; in een cursus of klas
- ❍ anders, namelijk..... _____

Als je een antwoord hebt gegeven waar iemand bij betrokken was krijg je deze volgende vraag:

4. In de vorige vraag heb je aangegeven dat er één of meerdere personen betrokken waren bij deze leeractiviteit. Was dat iemand van je team?

- ❍ Ja
- ❍ Nee, maar wel met iemand binnen de organisatie
- ❍ Nee, dit was iemand buiten de organisatie

5. Waren er nog meer leeractiviteiten onderdeel van jouw leerervaring?

- ❍ Ja
- ❍ Nee

Als je nee antwoord kom je bij de vraag of het een geplande leerervaring was of niet.
Bij antwoord 'ja' op de vorige vraag.

6. Jouw eerste leeractiviteit was ……. was jouw tweede leeractiviteit? ik heb geleerd door.....

- ❍ iets te doen of te ervaren
- ❍ iets nieuws uit te proberen
- ❍ te observeren hoe anderen iets aanpakken
- ❍ informatie wat ik heb opgezocht in een boek, tijdschrift of op internet
- ❍ feedback of informatie wat ik van een ander heb gekregen
- ❍ zelf na te gaan wat er goed en minder goed ging in een bepaalde situatie (bijv. contact met de cliënt)
- ❍ samen met collega's (of anderen) na te denken en te praten (samen analyseren)
- ❍ formeel onderwijs; in een cursus of klas
- ❍ anders, namelijk..... _____

Als je een antwoord hebt gegeven waar iemand bij betrokken was krijg je deze volgende vraag:

7. In de vorige vraag heb je aangegeven dat er één of meerdere personen betrokken waren bij deze leeractiviteit. Was dat iemand van je team?

- ❍ Ja
- ❍ Nee, maar wel iemand binnen de organisatie
- ❍ Nee

8. Waren er nog meer leeractiviteiten onderdeel van jouw leerervaring?

- ❍ Ja
- ❍ Nee

Als je nee antwoord kom je bij de vraag of het een geplande leerervaring was of niet.

Bij antwoord 'ja' op de vorige vraag.

9. Jouw eerste leeractiviteit was ……. en jouw tweede leeractiviteit was ……..Wat was jouw derde leeractiviteit? Ik heb geleerd door.....

- ❍ iets te doen of te ervaren
- ❍ iets nieuws uit te proberen
- ❍ te observeren hoe anderen iets aanpakken
- ❍ informatie wat ik heb opgezocht in een boek, tijdschrift of op internet
- ❍ feedback of informatie wat ik van een ander heb gekregen
- ❍ zelf na te gaan wat er goed en minder goed ging in een bepaalde situatie (bijv. contact met de cliënt)
- ❍ samen met collega's (of anderen) na te denken en te praten (samen analyseren)
- ❍ formeel onderwijs; in een cursus of klas
- ❍ anders, namelijk..... _____

Als je een antwoord hebt gegeven waar iemand bij betrokken was krijg je deze volgende vraag:

10. In de vorige vraag heb je aangegeven dat er één of meerdere personen betrokken waren bij deze leeractiviteit. Was dat iemand uit je team?

- ❍ Ja
- ❍ Nee, maar wel iemand binnen de organisatie
- ❍ Nee

---

11. Je hebt net aangegeven op welke manier je hebt geleerd. Had je van te voren voorgenomen/gepland om dit te gaan leren?

- ❍ Ja, ik had gepland om dit te gaan leren
- ❍ Ik wilde dit al langer leren, maar had het niet gepland om dat op dit moment te doen
- ❍ Nee, het is me overkomen

Als bij de vorige vraag ja, of ik wilde dit al langer leren is geantwoord:

12. Wat was de voornaamste aanleiding om dit te willen leren?

- ❍ Ik was nieuwsgierig naar iets
- ❍ Ik wilde mezelf verder ontwikkelen op dit gebied
- ❍ Anderen hebben mij gestimuleerd om me hierin te ontwikkelen
- ❍ Ik wilde mij voorbereiden op nieuwe situaties waar ik in de toekomst mee te maken kan krijgen
- ❍ Omdat dit nodig is vanuit de organisatie om goed te functioneren
- ❍ Anders, namelijk _____

13. En had je van te voren bedacht het op deze manier te leren?

- ❍ Ja, daar had ik van te voren over nagedacht
- ❍ Nee, dit was geen bewuste keuze

Als je bij de vorige vraag hebt geantwoord dat je van te voren hebt nagedacht het zo te leren.

14. Je hebt net aangegeven dat je van te voren had bedacht dat je het op deze manier wilde leren. Waarom heb je voor deze manier gekozen?

- ❍ Weet ik niet
- ❍ Omdat je dit niet op een andere manier kunt leren
- ❍ Omdat dit de snelste en makkelijkste manier is om dit te leren
- ❍ Deze manier van leren werkt voor mij heel goed en past dus bij mij
- ❍ Ik kreeg de opdracht (of het was een suggestie) van een ander om het op deze manier te doen
- ❍ Anders, namelijk..... _____

15. Waardoor kwam je erachter dat je iets geleerd hebt?

- ❍ Weet ik niet
- ❍ Op het moment dat ikzelf ervoer dat het lukte/werkte
- ❍ Op het moment dat ikzelf ervoer dat het NIET lukte/werkte
- ❍ Op het moment dat ik de reactie van anderen zag of hoorde
- ❍ Op het moment dat ik feedback kreeg
- ❍ Nadat ik had gereflecteerd op de ervaring die ik had (teruggekeken op de situatie)
- ❍ Op het moment dat ik besefte dat ik nieuwe informatie had gekregen
- ❍ Toen ik mij bewust werd van mijn eigen gedrag
- ❍ Anders, namelijk _____

16. Was je tevreden over de leerervaring? (de leerervaring die je vandaag in deze vragenlijst hebt beschreven)

- ❍ Daar heb ik niet over nagedacht
- ❍ Ja, ik ben tevreden
- ❍ Nee, ik zou dingen de volgende keer anders doen

17. Hoe ga je nu verder met deze leerervaring?

- ❍ Ik heb (nog) geen nieuwe plannen
- ❍ Het was niet gegaan zoals ik wilde, dus ik ga het nog een keer proberen
- ❍ Ik heb precies bedacht wat ik ga doen als ik weer in een soortgelijke situatie terecht kom
- ❍ Ik wil wat ik heb geleerd zo blijven doen
- ❍ Ik wil wat ik heb geleerd nog verder verbeteren
- ❍ Ik wil wat ik heb geleerd gaan toepassen in de praktijk
- ❍ Ik heb op basis van wat ik heb geleerd een nieuw leerdoel voor mezelf opgesteld
- ❍ Anders, namelijk..... _____

Hartelijk bedankt voor het invullen van je logboek!

Ik hoop dat je morgen het logboek nog een keer wilt invullen.

Hartelijke groet,

Daniëlle Aagten
Ruimte voor feedback is hieronder:

…….

Appendix C

Coderingsschema

Om een tweede beoordelaar handvatten te geven wat betreft de beoordeling van de open logboekvraag 'wat heb je geleerd?', is in dit document een handleiding en coderingsschema weergegeven.
Het is belangrijk dat de beoordelaar in staat is om **hoofdzaken** van **bijzaken** te onderscheiden in het antwoord wat de respondent gegeven heeft. In dit geval gaat het om de **leeruitkomst** (hoofdzaak) en niet om de leersituatie, betrokken personen of andere zaken die beschreven zijn. Daarnaast, wanneer meerdere leerervaringen in één antwoord zijn gegeven dan is de **laatste** leerervaring het uitgangspunt.
Bijvoorbeeld: Vandaag hadden we een multidisciplinair overleg waarbij we gesproken hebben over meerdere cliënten (samenwerken). Hierin kwam ook naar voren dat een bepaalde cliënt beter niet naar de aankomende groepsactiviteiten kon gaan. Dit zou teveel prikkels geven. (vakinhoudelijk) Ik was het niet eens met mijn collega. Waar ik normaal mijn mond houd, heb ik nu mijn eigen mening gegeven. (persoonlijke ontwikkeling).

Wanneer er twijfel is tussen twee soorten leerervaringen bij een antwoord, kies dan degene die het nadrukkelijkst aanwezig is in het antwoord.
Bijvoorbeeld: "Ik heb een stagiaire iets uitgelegd over de procedure bij het geven van een bepaald medicijn. Ik wist niet helemaal meer de exacte procedure volgens het protocol. Daarom hebben we deze erbij gepakt. Ik heb geleerd wat er precies in het protocol staat en hoe de procedure vervolgens plaats moet vinden." Je zou kunnen zeggen dat het hier gaat om het overdragen van kennis aan de student, wat zou betekenen dat het een leerervaring op **communicatie en samenwerkingsgebied** is. Alleen, in de laatste zin wordt duidelijk aangegeven door de respondent dat haar leerervaring gaat om het werken volgens protocollen. Het gaat hier dus om een **vakinhoudelijke leerervaring** waarbij we het plaatsen onder **beleid en kwaliteitsbewaking.**

Als helemaal niet duidelijk is wat er is geleerd in de leerervaring dan gebruiken we code 5.
Deelnemers aan dit onderzoek hebben één van de volgende functies: zorgverlener (op verschillende niveaus; verpleegkundige, verzorgende, helpende), huishoudelijke hulp, medewerker welzijn en activering, zorgcentralist en/of een van deze functies met een additionele taak als coördinator. In de vakinhoudelijke leerervaring is ter verduidelijking van sommige functies een omschrijving gegeven van de werkinhoud.
TIP: Zeg het zinnetje….. ik heb geleerd dat ….. (in je hoofd) vóór het antwoord wat is gegeven door de respondent.
Daarnaast zijn er ook antwoorden gegeven door de respondenten als leren omgaan met de computer en weten waar ze iets uit het zorgpakket moeten bestellen → dit is vakinhoudelijk (ook al is dit niet één van de hoofdvaardigheden; het is nodig voor hun werk dat ze het weten en kunnen). Weten waar bijv. sleutels hangen of andere dergelijke antwoorden → code 5.

Is er geen onderscheid gemaakt tussen vakinhoudelijke vaardigheid en kennis en bijv. communicatie met cliënt en/of collega, of worden beide genoemd. Gebruik dan de algemene code ipv. De subgroepcode.

code	Soort leerervaring	
1	Vakinhoudelijk Alles wat betrekking heeft op de inhoud van het werk in betreffende functie. Een leerervaring wat bijdraagt aan het vakinhoudelijk functioneren van de werknemer. Bij de **zorgverlener** gaat het dan om; het vaststellen van de behoefte aan zorg; therapeutische interventies en persoonlijke verzorging; informatievoorziening, educatie, advies en voorspraak; lichamelijke, emotionele en geestelijke ondersteuning. Daarnaast is de zorgmedewerker samen met de **huishoudelijke hulp** verantwoordelijk voor de cliënt zijn leefomgeving. Ook administratieve zaken als signaleren, rapporteren en evalueren zijn een vast onderdeel van de werkinhoud van zorgverleners. (Het zorg(leef)plan is in dit geheel een ondersteunend instrument). De **Welzijn & Activeringsmedewerkers** heeft vakinhoudelijk gezien naast lichte zorgtaken als; eten bereiden, ondersteuning en begeleiding van ADL (algemene dagelijkse levensverrichtingen) ook taken als; voorbereiden, opstellen activiteitenprogramma, verzorgen van materiaal m.b.t. dagactiviteit, evalueren van activiteit en voorlichten van bijv. vrijwilligers. Daarnaast geldt voor deze medewerker net als de zorgmedewerker dat administratieve taken ook onderdeel zijn van hun werkinhoud. Signaleren, rapporteren, evalueren. De **zorgcentralist** binnen Carintreggeland daarentegen hebben vakinhoudelijk andere uitgangspunten. De kern van deze functie is het beantwoorden, beoordelen en afhandelen van diverse (laag)complexe telefonische hulp-/zorgvragen. Resultaatgebieden zijn; beantwoorden en afhandelen hulp-/zorgvragen, informatie en advies, signalering en kwaliteit en administratie. Bij hen gaat het bijvoorbeeld om; kennis van, computer- en telefonisch systeem, informatiestromen, de dienstverlening aan externe organisaties, Carintreggeland producten, na te volgen scripts, protocollen en procedures en kennis van lichte zorgvragen. Sociale vaardigheden, zelfstandigheid en nauwkeurigheid zijn belangrijke competenties. Complexere zorgvragen en alarmeringen worden afgehandeld door de **verpleegkundig** zorgcentralist. Zij hebben dus ook meer kennis van ziektebeelden, kennis van sociaal-emotionele ondersteuning en andere zorg gerelateerde vragen vanuit de cliënt nodig.	
1a	Vakinhoudelijke kennis Kennis is wat je weet……..	Voorbeelden: • Bij dementere cliënten is het belangrijk veel structuur aan te bieden in de dagelijkse bezigheden. Dit heb ik gemerkt vandaag op mijn werk doordat de cliënt veel rustiger werd nadat er voor hem een vastgestelde structuur wordt aangehouden. • Ik heb gemerkt dat je beter een ander moment kunt pakken om een bepaalde zorg gerelateerde taak uit te voeren (kousen aantrekken) wanneer de bewoner onrustig is. Vaak ontstaan er conflictsituaties wanneer je de cliënt wil pushen.

<table>
<tr><td></td><td></td><td>Voorbeeld kennis zorgcentralist:
Voor het doorverbinden naar de alarmcentrale toetste ik altijd de cijfers van het betreffende nummer in, maar leerde vandaag dat deze onder een sneltoets staat en dit dus veel sneller is.
Bepaalde informatie voor het crematorium wist ik niet te geven. Dit heb ik opgezocht en nagevraagd bij een collega. Vervolgens doorgegeven. Nu weet ik het voor de volgende keer.</td></tr>
<tr><td rowspan="2">1b</td><td>Vakinhoudelijke vaardigheid

Vaardigheid is wat je doet……..

(een handeling bekwaam uitvoeren)</td><td>Voorbeeld:
Ik heb vandaag voor het eerst bij iemand een katheter ingebracht. Dit had ik nog niet eerder in de praktijk gedaan.</td></tr>
<tr><td>1b1 <u>Vakinhoudelijke vaardigheid:</u>
werken in het nieuwe systeem (mycare/omaha)</td><td>Voorbeeld:
We hebben deze week geleerd hoe je in een nieuw digitaal systeem voor cliëntenadministratie kunt werken.</td></tr>
<tr><td>1c</td><td>Vakinhoudelijk specifiek gericht op beleid- en kwaliteitsbewaking
Bij deze leerervaringen gaat het om het uitvoeren van taken rondom kwaliteit en beleid. Dit kan betrekking hebben op controle van beleid en kwaliteitszaken, maar ook signaleren, verbeteren van knelpunten in beleidsvoering en/of ontwikkeling van nieuwe beleidsvoering. Denk hierbij aan procedures, wetgevingen, protocollen, regels en beroepscodes die nagevolgd dienen te worden.</td><td>Voorbeeld:
Geleerd om de aangeleerde en afgesproken procedure consequent na te leven. Ook omdat dit belangrijk is voor de kwaliteit van de zorg.
Ik heb geleerd om nog beter om te gaan met hygiëne.
Ik heb het protocol zuurstof opnieuw doorgenomen, omdat dit al erge lange tijd niet meer heb gebruikt, moest ik even kennis opfrissen aangezien we nu een cliënt met zuurstof hebben.</td></tr>
<tr><td>2</td><td colspan="2">Communicatie
In de zorg en binnen Carintreggeland wordt er verwacht dat werknemers communiceren op ‘maat’ met een groot inlevingsvermogen en op een open en respectvolle manier. De nadruk bij leerervaringen op dit gebied ligt op; de gespreksvoering met collega, cliënt, naasten, mantelzorgers en vrijwilligers over hun rol, inzet en doel via schriftelijk, face-to-face of elektronisch contact.</td></tr>
<tr><td>2a</td><td>Communicatie en samenwerking met interne en externe collega’s
Alles waarbij de leeruitkomst te maken heeft met contact, sociaal-emotionele ondersteuning, communicatie en samenwerking met collega’s binnen en buiten Carintreggeland.</td><td>Voorbeeld:
Collega die al ruim een jaar op een afdeling werkt weet niet hoe bepaalde dingen gedaan worden op dat team. Heb geleerd haar advies te geven dat je door onderzoeken en initiatief nemen dit soort dingen kunt leren. Vervolgens heb ik haar de werkzaamheden laten uitvoeren zodat zij het ook kan en weet.</td></tr>
</table>

	Dit kan een leerervaring zijn die leidt tot een betere samenwerking tussen collega's (ook stagiaires), vrijwilligers en of met extern deskundigen. Het is daarin van belang om gebruik te maken van elkaars kwaliteiten. Belangrijk hierin is dat men; openstaat voor feedback en ook feedback geeft, coachende rol aanneemt waar nodig en optreed als belangenbehartiger van de cliënt.	• Ik heb geleerd om iemand aan te spreken op de werkmanier binnen de praktijk. • Ik heb geleerd dat een collega er baat bij heeft dat hij/zij gelijk feedback ontvangt wanneer dat nodig is. • Na uitwisseling van informatie samen eruit gekomen hoe we het beste kunnen handelen.
2b	Communicatie met cliënt, naasten, mantelzorg Alles waarbij de leeruitkomst te maken heeft met contact, sociaal-emotionele ondersteuning, communicatie en samenwerking met cliënt, naasten en mantelzorg. De leerervaring richt zich op een verbetering van de communicatie en samenwerking met deze doelgroep (of trekt de leer uit een leersituatie op dit gebied om te gebruiken in een volgend soortgelijke situatie).	Voorbeeld: • D.m.v. van andere benadering een gesprek aan gaan met familie. • Benadering van een bewoner. Er werd mij verteld om bij een bewoner me een lachend gezicht naar binnen te gaan. Heb dit toen ook gedaan en de bewoner reageerde erg positief. Heb geleerd dat non-verbale communicatie naar cliënt ook erg belangrijk is.
3	Persoonlijke ontwikkeling Leerervaringen op dit gebied zeggen iets over iemands sterke of zwakke kanten. Deze leeropbrengsten zijn een reflectie van de persoon op eigen handelen. Leerervaringen die leiden tot ontwikkeling en professionalisering van de werknemer (zorgverlener) zelf (bewustwordingsprocessen). In de leerervaring ligt de nadruk op de eigen ontwikkeling.	Voorbeeld: • Aanval van een collega relativeren en niet boos reageren. • Gesprek gehad met de familie waarvan ik dacht dat dit erg lastig zou worden. Maar heb geleerd dat ik me niet zo snel zorgen moet maken over iets waarvan je niet precies weet hoe het gaat verlopen. • Ik heb geleerd om voor mezelf op te komen.
4	Organisatie van de werkinhoud Een leerervaring die leidt tot een betere organisatie van het uit te voeren werk. Bij zorgverleners draait het dan vooral om de organisatie rondom het zorgplan, maar ook heeft het betrekking op; planning, schema's, roosters, structurering, prioriteiten stellen en efficiëntie.	Voorbeeld: • Ik heb geleerd om meer vooruit te kijken, dingen zoals planning, beter te plannen, en ook eerder te plannen. Zo moest ik al weken omaha learning doen en schoof het steeds vooruit. Totdat ik het gedaan heb en dacht….dat was niet zo moeilijk.
5	Overig De leerervaring past niet in de omschrijving van de 4 andere leeropbrengsten. De beschrijving is te onduidelijk over wat er is geleerd.	Voorbeeld: • Ik heb geleerd dat ik hier maar een 'nummer' ben en dat je geen antwoord op vragen krijgt wanneer je dat graag zou willen. • Conflict met een klant van een externe klant van ons.

Appendix D

Relation Between Planning and the Learning Strategy that Follows

Categories		IS	AT	ET	DE	SL	Total
Planned learning	Observed frequency	12	16	22	23	42	115
	Expected frequency	7.6	13.7	12.6	29.5	51.6	115.0
	Adjusted residual	1.9	.8	3.3*	-1.6	-2.1*	
Unplanned learning	Observed frequency	15	31	23	73	141	283
	Expected frequency	18.8	33.7	31.1	72.5	126.9	283.0
	Adjusted residual	-1.5	-.8	-2.6*	.1	2.8*	
Learning wish	Observed frequency	2	5	3	16	13	39
	Expected frequency	2.6	4.6	4.3	10.0	17.5	39.0
	Adjusted residual	-.4	.2	-.7	2.3*	-1.5	
Total	Observed frequency	29	52	48	112	196	437
	Expected frequency	29.0	52.0	48.0	112.0	196.0	437.0

Note. IS = information searching, AT = analysing/thinking, ET = experimenting/trying out, DE = doing/experiencing, SL = social learning strategies.

* Significant deviations of the observed frequency from the expected frequency

Chi-square Analysis of Learning Goal Orientation in Relation to the Strategy that Follows

Categories		IS	AT	ET	DE	SL	Total
Intrinsic learning goal orientation	Observed frequency	7	17	7	13	23	67
	Expected frequency	6.2	9.3	11.0	16.8	23.8	67.0
	Adjusted residual	.5	3.7*	-1.8	-1.4	-.3	
Extrinsic learning goal orientation	Observed frequency	6	1	15	18	18	58
	Expected frequency	5.3	8.0	9.5	14.5	20.6	58.0
	Adjusted residual	.4	-3.4*	2.5*	1.3	-.9	
Intrinsic long term learning goal orientation	Observed frequency	1	3	3	7	13	27
	Expected frequency	2.5	3.7	4.4	6.8	9.6	27.0
	Adjusted residual	-1.1	-.4	-.8	.1	1.5	
Total	Observed frequency	14	21	25	38	54	152
	Expected frequency	14.0	21.0	25.0	38.0	54.0	152.0

Note. IS = information searching, AT = analysing/thinking, ET = experimenting/trying out, DE = doing/experiencing, SL = social learning strategies.

* Significant deviations of the observed frequency from the expected frequency

Chi-square Analysis of the Learning Strategy in Relation to the Sequence in the Learning Experience

Categories		IS	AT	ET	DE	SL	Total
First strategy in the sequence	Observed frequency	29	52	50	113	196	440
	Expected frequency	27.6	48.5	46.5	102.4	214.9	440
	Adjusted residual	.5	.9	1.0	2.1*	-3.2*	440.0
Second or third strategy in the sequence	Observed frequency	12	20	19	39	123	213
	Expected frequency	13.4	23.5	22.5	49.6	104.1	213.0
	Adjusted residual	-.5	-.9	-1.0	-2.1*	3.2*	
Total	Observed frequency	41	72	69	152	319	653
	Expected frequency	41.0	72.0	69.0	152.0	319.0	653.0

Note. IS = information searching, AT = analysing/thinking, ET = experimenting/trying out, DE = doing/experiencing, SL = social learning strategies.

* Significant deviations of the observed frequency from the expected frequency

Chi-square Analysis of the Nature of Learning Strategies and Learning Outcomes

Categories		IS	AT	ET	DE	SL	Total
Subject matter expertise	Observed frequency	18	10	21	39	92	180
	Expected frequency	10.5	19.0	14.8	40.9	94.8	180.0
	Adjusted residual	3.1*	-2.9*	2.2*	-.4	-.6	
Communication/collaboration	Observed frequency	4	16	6	33	84	143
	Expected frequency	8.4	15.1	11.7	32.5	75.4	143.0
	Adjusted residual	-1.9	.3	-2.1*	.1	1.8	
Personal development	Observed frequency	2	13	6	19	33	73
	Expected frequency	4.3	7.7	6.0	16.6	38.5	73.0
	Adjusted residual	-1.2	2.2*	.0	.7	-1.4	
Organization of work content	Observed frequency	1	6	2	6	16	31
	Expected frequency	1.8	3.3	2.5	7.0	16.3	31.0
	Adjusted residuals	-.6	1.7	-.4	-.5	-.1	
Total	Observed frequency	25	45	35	97	225	427
	Expected frequency	25.0	45.0	35.0	97.0	225.0	427.0

Note. IS = information searching, AT = analysing/thinking, ET = experimenting/trying out, DE = doing/experiencing, SL = social learning strategies.

* Significant deviations of the observed frequency from the expected frequency