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Self-directed learning at the workplace among healthcare professionals

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#### Preface

With this thesis, I am completing the master's program Educational Science & Technology at the University of Twente. I would like to thank my first supervisor, dr. Maaike Endedijk, for her support, valuable feedback and the motivation she provided during this trajectory. Her guidance really helped me to improve and finish this project and I am really thankful for the great supervision she provided. My thank also goes out to my second supervisor, Rike Bron, for her feedback especially during the last phase of my research. I would also like to thank my external supervisor, Yanieke Paalman, and all other people from Deventer Ziekenhuis for giving me the opportunity to conduct my thesis in this organization and providing help when needed. I would also like to thank Tim Hirschler, who supervised my project during the first several months. Thanks to my parents for their great support during the last year and last, but not least a special thanks to my boyfriend, Bedi, for his help and always listening.

#### Abstract

Developments in healthcare demand healthcare professionals to develop skills which enhance lifelong and self-directed learning. Being aware of learning and learning opportunities the workplace offers will in the future be crucial in order to meet the demands of healthcare. The ongoing developments also lead to the introduction of different function profiles for nurses with a different level of education. The aim of the current study is to broaden current knowledge of both awareness of learning at the workplace and self-directed learning at the workplace among nurses. Based on the insights, learning processes can be unraveled and implications on how to improve self-directed learning can be made. 12 nurses participated in this gualitative study. Learning logs and semistructured interviews were used. The study addresses the following research guestions 1) To what extent are nurses aware of their learning experiences & learning opportunities the workplace offers?, 2) To what extent do nurses engage in the different facets of self-directed learning? 2a) What facets of SDL do nurses report in daily experiences? 2b) Why do nurses make certain choices regarding SDL?, and 3) What are differences between the two occupational groups regarding awareness of learning experiences and opportunities and engagement in the different facets of SDL?. Results have shown that awareness of learning experiences and opportunities is present but can be improved in order to broaden nurses' perspective of learning. The last three facets of SDL, namely the second facet (planning) is mostly missing, which indicates that improvement can be made here. There were slight differences between the two occupational groups; higher educated nurses reported more learning experiences and slightly more informal learning opportunities. Due to the small sample generalizability of results is limited. Attempts of facilitating nurses in the learning process should focus on awareness of learning and the planning phase of learning.

Keywords: self-directed learning, healthcare, workplace, awareness of learning

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#### 1. General introduction

A transformation in health care is taking place as a result of changes in medicine and society. Throughout the past years, medicine and biomedical sciences are improved continuously (Murat, Coto-Yglesias, Varkey, Prokop & Murad, 2010). Along with that, tasks are becoming more complex as technology, protocols, guidelines and administrative tasks are increasingly used. Furthermore, ageing of the population increases as well as the number of patients with serious health issues and demands for health care which extends different domains (Maurits, de Veer & Francke, 2016). With hospitals being knowledge organizations, quality of treatment relies heavily on the expertise of healthcare professionals (Bjørk, Tøien & Sørensen, 2013). Because of these developments healthcare professionals must develop skills that will enable them to become life-long learners (Murat et.al., 2010). Self-directed learning (SDL) also results in lifelong learning (Hernandez & Rankin, 2015). The advantages of SDL in the workplace correspond with the ongoing changes in healthcare, which makes it crucial for healthcare organizations to adapt to this way of learning. Continuous improvement of skills is needed, otherwise caretakers are not able to meet the requirements of care resulting from the developments (Maurits, de Veer & Francke, 2016).

The ongoing developments also translate into practical settings, with hospitals being in the process of adapting to the transformation in healthcare. In response to the changes, recently different job profiles for nurses with different educational backgrounds were introduced. Beforehand, no differences in tasks were made between these two occupational groups (Spil en regisseur in de persoonsgerichte zorg, 2015; Rijksoverheid, 2015). The developments request healthcare professionals to refine and learn skills and knowledge regarding their daily work in a self-directed manner (Bjørk, Tøien & Sørensen, 2013). There is increasing awareness of the importance of learning at the workplace; attention is drawn to healthcare professionals taking more responsibility for the process of learning and development (Tannebaum, Beard, McNall & Salas, 2010; V&V, 2012). Trends in healthcare reveal that in the future it is important to strengthen the workplace as a learning environment to ensure durable proficiency of healthcare professionals (V&V, 2012).

To strengthen the workplace as a learning environment it is important to get more insight in the process of SDL and factors which connect to this process. First, it is important that healthcare professionals are aware of possibilities to engage in self-directed learning at the workplace. Formal learning opportunities are widely known and commonly perceived learning experiences. Besides these formal aspects of learning, the workplace also offers possibilities to learn. Recognizing and being aware of these possibilities is crucial in order to engage in self-directed learning at the workplace (Marsick & Watkins 2001; Bjørk, Tøien & Sørensen, 2013). Second, a closer look should be taken on how healthcare employees engage in the different facets of the process of SDL. Through acknowledging which facets are not displayed and how the different facets are performed, it becomes evident where support is needed. Third, level of education influences SDL behavior (Cornelissen, 2012; Stockdale, 2003). Research must show whether nurses with a difference in educational background actual display differences in awareness of learning and SDL.

The purpose of this study is to gain deep insight in the process of self-directed learning and the awareness of opportunities for learning at the workplace among nurses with different educational backgrounds. Results can give important insights in the self-directed learning processes based on which learning can be supported.

#### 2. Theoretical framework

#### 2.1 Opportunities of learning at the workplace

Regarding learning at the workplace, a difference between formal and informal learning runs throughout the literature. Formal learning is usually perceived as structured activities, which happen away from the job, for example in form of a training. Informal learning, in the contrary, is less structured, close to the job, based on experience and can happen through, among other things, discussing or observing others (Matthews, 1999; Stevens, Ashton & Kelleher, 2001; Marsick & Watkins, 2001; Sambrook, 2005). Within this study workplace learning is defined as all activities that happen during the daily work and can result in a learning experience. Learning as the workplace can for example include activities through which competences are acquired or improved. Knowledge, as well as skills and attitudes can be part of learning at the workplace (Kyndt & Baert, 2013).

Formal learning activities are more likely to be recognized. Learning taking place at the workplace itself is less visible. less studied by researchers and sometimes not recognized by learners (Marsick & Watkins, 2001: Biørk, Tøien & Sørensen, 2013). Learning often is something which happens as a side product and arises from experience. Spontaneous learning experiences are often implicit (Simons, 2003). A study by Simons (2000) has shown that employees experience difficulties in entitling learning experiences and processes but experience less difficulties in entitling competencies which they are able to perform now and were not able to perform a year ago. This implies that learning may take place while employees are not fully aware of the fact that certain processes are learning experiences. Besides concrete experiences which can be described, the workplace also offers a lot of possibilities to learn. Recognizing and being aware of these possibilities are crucial in order to engage in SDL at the workplace, learning experiences can be created through recognizing learning opportunities (Marsick & Watkins 2001; Bjørk, Tøien & Sørensen, 2013). Literature on awareness of learning experiences and opportunities at the workplace is scarce. Because recognizing the workplace as a learning environment and being aware of learning opportunities the workplace offers is a requirement of self-direct learning, it is crucial to get deeper insight in this topic. Insight is strongly needed in order to support self-directed learning at the workplace

#### 2.2 Self-directed learning

Self-directed learning (SDL) is an important cornerstone of adult education and is a key element of organizations and a career-long process for employees in today's economy (Ellinger, 2004). Promoting SDL in the workplace and integrating it within organizations has many benefits such as increased motivation of employees, workplace performance and academic achievement (Guglielmino & Toffler, 2013). Furthermore, SDL leads to increased strategic thinking, confidence and autonomy of employees (O'Shea, 2003; Guglielmino & Toffler, 2013).

SDL is broadly defined as self-learning, where "learners have the primary responsibility for planning, carrying out, and evaluating their own learning experience" (Ellinger, 2004, p.159). SDL also includes discovering learning opportunities and taking the initiative to learn (Raemdonck, van der Leeden, Valcke, Segers, & Thijssen, 2012). SDL is closely related to self-regulated learning (SRL) (Loyens, Magda & Rikers, 2008). SRL is defined as learning wherein thoughts, feelings and actions are self-generated and planned to achieve personal goals (Zimmerman, Boekarts, Pintrich & Zeidner, 2000). Zimmerman (2000) proposed a model of self-regulated learning which involves planning, performance and self-reflection as phases of SRL. Both SDL and SRL include active engagement and goal-directed behavior and awareness is needed in both. SDL includes SRL, but also the conscious development of learning goals and considerations regarding the learning resources and strategies (Bolks & van der Klink, 2011). Therefore, the focus of this study will be SDL. The definition of Knowles (1975) is the most commonly used and provides the most detailed overview of facets of self-directed learning.

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

Because this definition provides the most detailed and concrete picture of facets of SDL it will be used as a framework within this study.

*Self-directed learning model.* Based on the definition of self-directed learning of Knowles (1975), self-directed learning is comprised of five facets (Ellinger, 2004). Awareness of all facets of self-directed

learning and taking the initiative regarding all five facets is crucial in order to engage in self-directed learning (Zimmerman et.al., 2000; Knowles, 1975). The five following facets relate to the individual level of the learner.

*Diagnosing learning needs.* The first facet in SDL is the diagnosing of learning needs. Employees must be able to identify what they will learn or what they should learn. If a need is felt, the motivation to learn is much stronger than when an external party wants employees to learn certain things (Knowles, 1970). Important is that employees can self-diagnose their learning needs. In the literature, it is differentiated between felt needs, expressed needs, normative needs and comparative needs (Grant, 2002). Emphasis is placed on felt and expressed needs because these forms stem from the individual. Felt needs relate to what employees say they need and expressed needs relates to what they express through actions what they need. Sources of learning needs or for example: mistakes, patient's complaint, competence standards, reflection on practical experience, and innovation in practice (Grant, 2002). It is important that healthcare professionals are aware of what they need to learn and that they can clearly express them.

*Formulating learning goals.* The next step is formulating learning goals which fit the learning needs. This step involves critical thinking. Furthermore, it involves the ability to formulate goals relevant in the context of the identified learning needs (Patterson, Crooks & Lunyk-Child, 2002). Examples of learning goals are: acquiring knowledge or solving problems. Learning goals can differ in specificity, proximity and difficulty level. Goals that are specific are more likely to results in enhanced learning and boost performance. Goals that are proximal results in greater motivation and therefore are more likely to result in greater performance. Difficulty influences the effort spent to attain the goal. While a high difficulty may result in doubt in the first place, working towards goals which set high standards can be beneficial for building self-efficacy (Schunk, 1990). The clearer healthcare professionals can formulate learning goals, the more aware they are of this step of SDL. Awareness means being conscious of what should be achieved.

Identifying human and material resources for learning. After formulating learning goals, human and material resources for learning must be identified. Learning resources therefore include both materials such as books, assessments, online resources, materials provided in the workplace (Tidd, Bessant, & Pavitt, 1997) but also human resources as colleagues, managers, or other employees within the hospital which can assist in the process of learning. First, it is important that employees are aware of the possibilities there are within the hospital and second, it is important that nurses are able to choose resources that fit the identified learning need and goals.

Choosing and implementing appropriate learning strategies. The early distinction of learning strategies by Weinstein & Mayer (1986) includes rehearsal, elaboration, organization, comprehension monitoring and affective strategies (Weinstein, Husman, & Dierking, 2000). Learning strategies include self-consequences, which includes self-punishment and self-rewarding, organizing and transforming, seeking and selecting information or seeking social assistance (Zimmerman & Pons, 1986). Important is, that employees are aware of learning strategies and that they have the ability to choose appropriate strategies that fit the resources, needs and goals.

*Evaluating learning outcomes.* The last step includes evaluating the learning outcomes. Emphasis lies on self-evaluation, which requires awareness and insight in the learning process from nurses (Knowles, 1970). Self-evaluation is defined as a judgement of one's performance and a comparison of performance with standards. Two forms of self-evaluation criteria are mastery and prior performance. Mastery standards relate to performance ranging from novice to expert, whereas prior performance are standards which relate to personal growth by comparing prior to current performance. Self-evaluation is important because it defines whether an individual has been successful or not; this in turn affects future actions towards learning (Cleary, Callan, & Zimmerman, 2012).

#### 2.3 Level of education

Healthcare is a fast-changing domain which has become more complex throughout the last years (Spil en regisseur in de persoonsgerichte zorg, 2015). In the Netherlands, there is both vocational and higher vocational education providing nursing programs (hbo-v (higher vocational education) and mbo-v (vocational education)). Therefore, nurses differ regarding their educational background. Recently, different job profiles for these two occupational groups were introduced. Before, nurses had the same job profile regardless the level of education.

With this development healthcare responds to the fast-changing demands of the healthcare sector (Rijksoverheid, 2015). Due to the recency of this development, research about learning processes among these different groups is not available. Based on the function profiles, higher

educated nurses ('regieverpleegkundigen') are expected to take greater autonomy and have higher ability regarding planning, coordination and analyzing. This implies that this group of nurses should exhibit greater engagement in self-directed learning and awareness of learning opportunities. Expectations are that hbo-v educated nurses exhibit greater ability to initiate the learning process. Also, research has shown that level of education is a positive predictor for engaging in learning: employees with a higher level of education are more likely to engage in learning activities. Reasons for this can be that low-skilled employees have had bad experiences with education and that higheducated employees are more likely to work in an organization which offers greater learning opportunities. (Kyndt & Baert, 2013). Furthermore, a study by Cornelissen (2012) has shown that employees with a higher educational degree are more likely to learn in a self-directed way. There is a positive relationship between level of education and the extent to which people are self-directed learners (Stockdale, 2003). Research on in which facets of self-directed learning differences occur has not been done yet. Also, little is known about how the level of education relates to awareness of both the workplace as learning environment and the process of SDL.

#### 3. Current study

Ongoing changes in healthcare have made it crucial to strengthen the workplace as a learning environment and facilitate learning in a self-directed way. The process of SDL consists of five different facets. Awareness of the five different facets is needed to fully self-direct one's learning. Awareness of the workplace as a learning environment is also necessary, seeing opportunities the workplace offers as a learning environment helps engaging in SDL. In healthcare, nurses with different educational background, and therefore different function profiles, are working. Research has shown that level of education plays a role in SDL, where differences occur is still unclear.

This study will address the following research questions:

- 1. To what extent are nurses aware of their learning experiences & learning opportunities the workplace offers?
- 2. To what extent do nurses engage in the different facets of self-directed learning?
  - a. What facets of SDL do nurses report in daily experiences?
  - b. Why do the nurses make certain choices regarding SDL?
- 3. What are the differences between the two occupational groups regarding awareness of learning experiences and opportunities and engagement in the different facets of SDL?

#### 4. Method

#### 4.1 Context

This study is conducted within the organization Deventer Ziekenhuis (DZ). DZ is a medium size hospital located in Deventer, The Netherlands. DZ provides top-clinical and personal healthcare. The organization constantly improves performance by closely listening to the patients' needs. DZ follows new trends and developments and carry out applied scientific research (Deventer Ziekenhuis, n.d.-b). Following this mission, DZ wants to get greater insight in how self-directed learning at the workplace is perceived among nurses. Nurses differ regarding level of education.

*Mbo-v (verpleegkundige).* This group is responsible for the coordination of the primary process of caretaking. This relates to caretaking which can be easily planned and is calculable, but nevertheless can be complex (Deventer Ziekenhuis, 2015).

*Hbo-v (regieverpleegkundige).* This group is responsible for the coordination of the total process of caretaking in a broad context. This group differs from the other group through critical and analytical ability. Skills as interpreting, analyzing, evaluating, concluding, arguing and reflecting are emphasized in the daily practice of this professionals (Deventer Ziekenhuis, 2015). Core purpose of this function is planning, coordination, performance and evaluation of the caretaking process (Deventer Ziekenhuis, n.d.-a).

#### 4.2 Research design

This research is a multimethod qualitative study. Two different groups of respondents were included in this research, to examine what the differences between these two groups are. This research produced qualitative data, gathered by a multi-method approach using a structured learning log (Endedijk, 2010) and a semi-structured follow-up interview. This design will give a detailed insight into the extent which employees self-direct their learning at the workplace as well as the awareness of learning experiences and opportunities.

#### 4.3 Participants

This study was aimed at gathering data at the individual level. Nurses working at the five general nursing departments at DZ were asked to participate. To participate in this study, nurses had to work at one of the five general nursing departments, be older than 18, and be either mbo-v or hbo-v educated. Nurses unable to participate in june/juli/august/september 2017 were excluded from the sample. This form of sampling is called purposive sample.

Finally, 12 nurses participated in this study. Five of them were mbo-v educated ('verpleegkundige'), six of them were hbo-v educated ('regieverpleegkundige') and one was inservice educated. Inservice is an older education which does not exist anymore, recording to the website of the professional association of nurses (http://www.venvn.nl/), inservice educated nurses are officially classified as mbo-v educated nurses. In the following, the inservice educated nurse will be discussed as a mbo-v educated nurse. In Table 1 a complete overview of the descriptive statistics is given.

Respondent	Occupational level	Age in years	Gender	Working hours p/w	Work experience in years
1	In convico	45	F	30	27
2	HBO-V	45 25	F	36	10
3	MBO-V	25	F	32	2.5
4	MBO-V	27	F	28-32	2
5	HBO-V	43	F	24	15
6	HBO-V	37	F	24	16
7	HBO-V	26	F	32	6
8	MBO-V	30	F	32	11
9	MBO-V	26	F	32	4
10	HBO-V	30	F	24	10
11	MBO-V	40	F	24	22
12	HBO-V	29	F	32	6

#### Table 1.

Overview Respondents' Personal Background Variables

#### 4.4 Instrumentation

In this study, two different measurement tools were used to examine how nurses self-direct learning at the workplace in combination with awareness. In the following, the two measurement tools are explained in more detail.

*Learning logs.* To measure self-directed learning facets at the workplace learning log-books were used. The learning log-books are based on the 'Structured Learning Report' developed by Endedijk (2010). Adjustment have been made to fit the goal of this study. This tool is a multiple measurement tool, providing daily measurements per respondent during the period of one working week. Only working days results in measurement. The learning log-book consists of eleven questions, one open question and 10 multiple-choice questions, which is called mixed intra method. At the beginning of the learning log-book demographic data had to be filled in once, at the end of the learning log-book space for feedback is provided. There are different answer routes, depending on response on previous questions, causing a various length of the learning log-books. In *Table 2*, the questions and answers of the learning log-book along with the corresponding self-directed learning facet are presented. This to make clear which question measures which facet of SDL. The complete learning log-book can be found in *Appendix B*.

Table 2.

SDL Behavior Measured by the Learning Log-Book			
SDL Facet	Corresponding question		
1. Learning need	What was the primary motive for wanting to learn this? (Wat was de voornaamste aanleiding om dit te willen leren?)		
2. Learning goal	Did you plan/intented to learn this? (Had u van tevoren voorgenomen/gepland om dit te gaan leren)		
<ol> <li>Resources/</li> <li>Learning strategy</li> </ol>	What learning activity did you use? I learned in this learning experience through(Wat was de leeractiviteit die u heeft gebruikt? Ik heb in deze leerervaring iets geleerd door)		
5. Evaluation	Was you satisfied about the learning experience? (Was u tevreden over de leerervaring?) How do you go further with this learning experience? (Hoe gaat u nu verder met deze leerervaring?)		

Semi-structured follow-up interviews. After conducting the learning log-books, a semistructured follow-up interview was held with each respondent. While the learning log-books measures how nurses actual engage in self-directed learning facets at the workplace, the interviews give more detailed insight in how nurses engage in the different facets, the recognition of the workplace as a learning environment and nurses' awareness of learning opportunities. Furthermore, the interviews provide insight in why choices regarding SDL were made. The interview consisted of eleven main questions with sub questions. Because of the semi-structured nature of the interview, the researcher had the possibility to ask other questions based on the responses of the respondents. Questions were also adapted to fit the answers on the learning log-books. The complete interview scheme can be found in *Appendix C*. The interview questions were asked to receive information about (a) learning experiences of nurses and awareness of those (b) opportunities of learning at the workplace, awareness and causes of those, and supplementary information about (c) the five facets of selfdirected learning and choices nurses made regarding the SDL facets.

#### 4.5 Procedure

Starting point of the data collection was the recruitment of participants. First, the manager of the clinical departments was informed about the research. After getting approval for the data collection the operational managers of the five general clinical nursing departments were informed about the research and asked to cooperate with their team. Each manager chose four nurses, two of them hbo-v educated and two of them mbo-v educated. An invitation with a short explanation about the research was written by the researcher and sent to the chosen persons by the operational managers along with the request to participate. 12 nurses agreed to participate. After agreement to participate, the learning

logs were distributed to the participants via email. After the nurses filled in the learning logs, they were sent back to the researcher. Each participant filled in the learning log between one and four times, dependent on the working days per week. The learning logs were filled in on 38 days in total. On 29 days, a learning experience was reported. There were 9 days without a learning experience, coming from six participants. After the researcher received the learning logs back a follow-up interview was planned with each participant. The interviews took place at Deventer Ziekenhuis, the Netherlands. To guarantee the privacy of participant and to create a positive climate, interviews were held in one-on-one conversation with a cup of thee or coffee. Without the introduction given by the researcher, the duration of the interviews ranged between 15 and 30 minutes. After the interviews, the participants were asked whether they would like to receive a summary of the results. After the data collection, the interviews were transcribed. The transcribed interviews and the outcomes of the learning logs were set in atlas.ti for analysis.

#### 4.6 Interrater reliability

Measurements such as a coding scheme rely on subjective interpretation by the observers. To show that the coding scheme, although it is a subjective measurement, is reliable Cohen's kappa was calculated. Cohen's kappa measures the agreement between two or more observers by taking agreement by chance into account. Kappa can range between 0, which indicates no agreement, to 1, which indicates perfect agreement (Viera & Garrett, 2005).

Kappa was calculated for each category of the coding scheme. Half of the interviews (six) were coded by the second observer. The main categories of the coding scheme (Awareness Learning opportunities, causes learning opportunities, awareness learning experiences, learning needs, learning goal, motives, resources & strategies, evaluation) were given to the second observer, the quotations which had to be coded were given blank. In the table below an oversight of kappa per category is given.

#### Table 3.

Kappa per category	
Category of the coding scheme	Карра
Awareness learning opportunities	0.88
Causes learning opportunities	0.89
Awareness learning experiences	0.88
Learning needs	0.70
Learning goals	0.60
Motives	0.68
Resources & Strategies	0.80
Evaluation	0.64

According to Viera & Garrett (2005) an agreement between 0.41 and 0.60 is a moderate agreement, an agreement between 0.61 and 0.80 is a substantial agreement and an agreement between 0.81 and 0.99 is an almost perfect agreement. All calculated values are either substantial or almost perfect, the category 'learning goals' is the only exception. With a value of 0.60, which indicates a moderate agreement, but almost belongs to the next higher category. Feedback on improvement of definitions was given by the second observer. Definitions afterwards have been improved to provide clearer definitions of codes.

#### 4.7 Data analysis

#### 4.7.1 Learning logs

The question about whether or not nurses can report a learning experience, produced qualitative data. The learning experiences described were divided into categories based on its content. The other questions of the learning logs produced categorial data.

#### 4.7.2 Interviews

The semi-structured interviews were first transcribed. The transcribed interviews were analyzed with a coding scheme (*Appendix D*). Coding happened in two steps which were repeated. First, the interviews were coded according to the main categories (Awareness Learning opportunities, causes learning opportunities, awareness learning experiences, learning needs, learning goal, motives, resources & strategies, evaluation). These categories are based on the facets of SDL, the awareness

of learning opportunities and experiences and underlying causes. After this, relevant quotations within these categories were marked in order to find similarities. Based on similarities, codes were made. The interviews were read and coded multiple times in order to refine codes and definitions of codes. Graph 1 shows an overview of all codes.

#### Graph 1 Coding tree



Coding happened as followed:

- 1. <u>Awareness learning opportunities:</u> multiple codes can be given per category (informal/formal). Each subject is coded. <u>Underlying causes:</u> Multiple codes can be given per category, each cause is coded separately.
- 2. <u>Awareness learning experiences:</u> Multiple codes can be given per category. Each cause is codes separately.
- 3. <u>Learning needs</u>: Per category (learning need = one described learning experience) one code (either personal or imposed need) is given.
- 4. <u>Learning goal:</u> If present, one code is given for a described learning goal (either continuous, long-term or short-term).
- 5. <u>Motives:</u> Multiple codes can be given per category. Each motive is coded separately. One learning experience (learning need) can have multiple motives.
- 6. <u>Resources and strategies:</u> One code is given per category. Choose the code which is most applicable.
- 7. <u>Evaluation</u>: One code is given per category. Choose the code which is most applicable.

#### 4.7.3 Research questions

To answer the first research question 'To what extent are nurses aware of their learning experiences & learning opportunities the workplace offers?', all codes which fall in the first three categories are of interest (awareness learning opportunities, causes learning opportunities, awareness learning

experiences). To answer this research question, first all learning experiences, retrieved from the learning logs, were first divided into four categories, depending on the content of the experience. Afterwards, all codes for awareness of learning experiences are described in detail. Examples and frequencies were given. Second, the codes for awareness of learning experiences were described along with the codes for the underlying causes for learning opportunities. Examples and frequencies were given.

To answer the second research question '*To what extent do nurses engage in the different facets of self-directed learning*?' with the two sub questions 'What facet of SDL do nurses report in daily experiences?' and 'Why do nurses make certain choices regarding SDL?' the learning logs and interviews were used for answering. The learning logs give answer to the first sub question, the interviews to the second. Results are described per facet of SDL. For each facet, the answers on the learning logs were given (frequencies) and the codes relating to the facet were described, examples and frequencies were given.

To answer the third research question 'What are differences between the two occupational groups regarding awareness of learning experiences and opportunities and engagement in the different facets of SDL?' a profile for each nurse is made. The profile displays the individual answers of the nurses. Not all categories have been taken into account. Comparison is made regarding amount of learning experiences per day, awareness of learning experiences and underlying causes for this, learning need and whether described experiences were planned or unplanned. This choice was made, based on the expectation that higher educated nurses exhibit greater ability to initiate the learning process, as described in the theory section of this study.

#### 5. Results

#### 5.1 Awareness of learning experiences and learning opportunities

The first research question was 'To what extent are nurses aware of their learning experiences & learning opportunities the workplace offers?'. In the following, the results regarding this question are described, first regarding the learning experiences, after this regarding the learning opportunities.

#### 5.1.1 Awareness of learning experiences

First, an overview of the described learning experienced retrieved from the learning logs is given in table 4. The learning experiences are sorted based on content.

Table 4	
Described learning experiences retrieved from the learning logs	
Category of content	Quantity
Becoming aware of something	1
Learning a certain practice	11
	10
Gaining knowledge	10
Working on a problem/conflict/issue	7
Total learning experiences	29
Total days	38
Days without learning experiences	9

12 nurses filled in the learning log 38 times (only on working days). This resulted in 29 days with a learning experience and 9 days without a learning experiences. The 9 days without a learning experience came from six nurses. Concerning the content, the learning experiences can be classified into four different categories. In table 5 one example per category is given.

Table 5.

Examples of learning experiences per category of content

Becoming aware of	Learning a certain	Gaining knowledge	Working on a
something	practice	g-	problem/conflict/issue
"[I learned] that psychosocial care not only consists of heavy conversations about feelings and	"I learned the newest technique of bandaging stump" ("Ik heb geleerd om op	"I did not know several medicines during the medication administration and looked those up."	"A patient who was really 'outspoken', I tried to handle this in an appropriate way."
perceptions. It can also consist of small things, asking whether something can be done, giving a glass of water, a hotpack, etc."	de nieuwste manier stomp te zwachtelen.")	("Tijdens het delen van de medicatie kende ik enkele medicijnen niet en heb deze opgezocht.")	("Patiënt die erg "mondig" was, ik heb gepoogd hier met een correcte manier mee om te gaan.")
("Dat psychosociale Zorg niet altijd bestaat uit een zwaar gesprek over gevoelen en belevingen. Het kan ook bestaan uit kleine dingen, vragen of er nog wat gedaan kan worden, glaasje water geven hotpack geven etc.")			

Second, the underlying reasons for (un)awareness of learning experiences are discussed along with the underlying reasons for differences in reported learning experience. In table 6 the codes belonging to the category 'Awareness Learning experiences' of the coding scheme can be found. Results regarding the awareness of learning experiences are described per code.

Table 6.

Codes and frequencies of the category Awareness Learning experiences

Category coding scheme	Code (frequency)
Awareness learning experiences	Obviousness (13) Nature of tasks (16) Extent of contact (13)

#### 5.1.1.1 Obviousness

One reason is obviousness. Obviousness in this case refers to activities or experiences which happen regularly and are judged as small and therefore, on first sight, not rated as a learning experience. One nurse for example stated: "Vond ik wel vrij lastig inderdaad. Omdat je toch wel heel veel als zelfsprekend ervaart als leermoment zeg maar. Oh daar ben ik dan vandaag ook weer achter gekomen. Maar dat realiseer je je dan niet zo hoe je daarmee omgaat ofzo. Moet je echt wel even bij nadenken ja." (Original); "I thought it was quite hard, indeed. Because a lot of things are experienced as self-evident. Oh, this I also find out. But you did not realize how you handle this. It takes some time to think about it." (Translation). This is one example for the difficulty which is experienced in reporting learning experiences due to obviousness. Some actions are experienced as self-evident which make it hard to recognize them as a learning experience. The reverse effect was also found: Interviewer: "Vond je het lastig om een leerervaring te bedenken op die dag?" Interviewee: "Ja je moet kijken. Iets kleins... ja iets kleins... je hebt natuurlijk best wat veel leerpuntjes op een dag waar je... bij situatie staat... hoe kan ik dat aanpakken... dus ja zulke dingen kun je wel benoemen." (Orginal) Interviewer: "Did vou find it hard to come up with a learning experience on this day?" Interviewee: "Yes, vou have to take a look... a little thing... of course you always have learning points on a day... a situation... how to handle this... thus such things you can name." (Translation)

This is one example for easiness of reporting learning experience due to obviousness. This shows that obviousness can also make it easier to recognize learning experiences. However, nurses report difficulty due to obviousness more often than easiness due to obviousness.

#### 5.1.1.2 Nature of task

One reason for differences in reported learning experience is the nature of tasks. Tasks for example differ dependent on the type of shift (*"Je hebt hele andere werkzaamheden in de dag late of nachtdienst."* (*Original*) *"You do have really different activities during the day, late or nightshift."* (*Translation*)) Differences for example are, that during the dayshift more things happen and during the nightshift or late shift more activities regarding basic caretaking have to be done which can result in differences in learning experiences:

"[...] je hebt in een nachtdienst natuurlijk wat meer tijd voor verdieping. [...] Waar je bijvoorbeeld in een dagdienst weer niet aan toe komt. [...] In een dagdienst gebeurt veel meer, dus je komt ook veel eerder leermomenten tegen. [...]"

"[...] during the night shift you have more time for deepening. [...] Which you do not have during a day shift. [...] During a day shift a lot more things happen, thus you come across learning experiences sooner. [...]"

Another important point is the role as a professional which influences the learning experiences. Every shift, one nurse has the role as shift coordinator. This leads to having other tasks compared to 'normal' nurses. Although there are differences regarding the learning experiences, opinions on whether more or less learning experiences take place differ:

*"Ik was vandaag dienstcoordinatoor ... op zo een dag dat je veel meer dingen moet. Veel meer dingen moet onderzoeken... veel meer dingen moet...ja navragen en eh... meer leersituaties zult hebben."* 

"I was coordinator of the shift today... on such a day I have to do more things. More things which I must examine... much more things which I must... enquire and eh... you shall have more learning experiences."

In conclusion, dayshifts are generally experienced as more dynamic. Therefore, learning experiences are more likely during a day shift. Regarding the role as a professional (coordinator of shift) opinions are divided. Therefore, the role as nurse, level of pressure and differences in tasks influence the learning experiences.

#### 5.1.1.3 Extent of contact

Another reason for differences in reported learning experience is the extent of contact. This refers to both colleagues and patients. For example, if level of pressure is low due to only few patients it is not very likely that many learning experiences can be reported. Another point is that there is a difference in number of colleagues during the different shifts, during the day nurses work together with more colleagues and also with more disciplines, doctors and physio therapists for example. This gives opportunities to learn and report learning experience, which is mainly mentioned by the nurses. On the other hand, nurses are more dependent on each other during the night, due to less colleagues during the night shift. This can also lead to learning experience as working dependently and close together offers opportunities to learn. Nurses are mainly aware of these two features of awareness of learning experiences, below one example:

"[...] met late diensten... wij zijn maar met zijn vieren bij late dienst. Dus dan ben je heel erg op elkaar aangewezen. En dan... moet je soms meer leren. Omdat je tegen meer dingen eigenlijk aanloopt. En overdag ben je met veel meer en dan heb je iedereen die wel wat weet. En dan leer je wel van elkaar. Maar ik denk toch dat 's avonds ook wel een goed moment is. En overdag heb je weer de artsen, dus ja... moeilijk om te zeggen wat nou echt meer leerervaringen oplevert. Ja."

"[...] during the late shift... we are with four nurses during the late shift. Therefore, we are really dependent on each other. And then... you have to learn more. Because more things come up, actually. And during the day you are with a lot more colleagues and everybody knows something. Therefore, you learn from each other. But I think that in the evening is also a good moment. And during the day you also have doctors, thus... difficult to say which bears more learning experiences. Yes."

#### 5.1.2 Awareness of learning opportunities

Above, a closer look at the learning experiences the nurses described in the learning logs was taken. In the following a closer look at the learning opportunities nurses report is taken. During the interviews insight was gained in which learning opportunities the workplace offers and how aware nurses are of these opportunities. In table 7 the codes belonging to the category 'Awareness learning opportunities' and 'causes learning opportunities' can be found.

Category coding scheme	Code (frequency)
Awareness learning opportunities	Informal learning opportunities (13)
	Formal learning opportunities (17)
Underlying causes	Open culture (4)
	Contact with colleagues (14)
	Personal interest (8)
	Given resources (6)

Table 7Codes and frequencies Awareness Learning opportunities & Causes learning opportunities

In the coding scheme, a difference between formal learnings opportunities and informal learning opportunities is made. Regarding formal learning opportunities things which are mainly mentioned are: courses, further education (specialism), e-learnings, training days or previous education. Regarding informal learning at the workplace, learning from colleagues was mentioned most often. Furthermore, giving and receiving feedback was mentioned a lot. Another thing which was mentioned often was that through this research awareness about what learning can include was created:

"Het is wel even een goede manier om kritisch te kijken. Het is niet alleen kennis vergaderen, het zijn ook feedback situaties, leren van collega's. En dat zijn wel dingen van oja dat ... daar zou ik snel voor mezelf meer uit kunnen halen. Dus... als je het zo bekijkt dan ... denk ik wel dat je door daar breder naar te kijken... leren is meer dan alleen maar kennis het is ook op andere manieren, en ook daarvoor open staan. Dus dat was wel een eyeopener eigenlijk. Ik kon daar niet zo veel mee, maar het is wel een manier om ook naar leren te kijken, klopt. Doordat je duidelijke voorbeelden gaf denk ik ohja dat is ook leren. Ja."

"It is a good way to look critically. It is not only gathering knowledge, it is also feedback situations, learning from colleagues. And it are things...I could easily get more out of it for me. Thus... if you look at it this way... through looking at it more broadly... learning is more than only knowledge, there are other ways, and also being open for it. This was an eye-opener for me actually. I could not do much with it but it is a way to look at learning, true. Because you gave good examples I thought... yes, this is also learning."

#### 5.1.3 Underlying causes for awareness of learning opportunities

Four underlying causes for the learning opportunities could be determined: open culture, contact with colleagues, personal interest and given resources. The underlying cause 'given resources' relates to resources that are given by the organization. Learning opportunities named relating to this underlying cause are mostly formal, regarding the e-learnings, courses and trainings which are provided by the hospital. The underlying cause 'open culture' mostly bears informal learning opportunities such as giving and receiving feedback, receiving explanation by doctors, ability to ask questions easily. These two underlying causes are rather barely named during the interviews.

The two causes 'personal interest' and 'contact colleagues' were much more mentioned during the interviews, 'contact colleagues' was mentioned most (43.8%).

#### 5.2 Engagement in and choices regarding self-directed learning

The second research question was 'To what extent do nurses engage in the different facets of selfdirected learning?' with the two sub questions (a) 'What facets of SDL do nurses report in daily experiences?' and (b) 'Why do nurses make certain choices regarding SDL?'. Results are described per facet of SDL. Both results from the learning logs and interviews are described per facet.

#### 5.2.1 Learning need

Table 8 displays the answer possibilities and frequencies to the question 'What was the primary motive to learn this?' of the learning log.

Table 8

Frequencies	answers	learning	log q	uestion	What w	was t	the p	orimary	' motive	to	learn	this?	,
													_

Answers	Frequency
I was curious	2
I wanted to develop myself	6
Others stimulated me to develop	1
I wanted to prepare myself for future situations	2
Because it is needed to function (by the organization)	2
Other	4

This question was not filled in in each learning log, since this question should only be filled in depending on the answer on the previous question. Nevertheless, this question was still filled in several times without following the indicated answer route. Answers which indicate personal motives,

namely 'I was curious', 'I wanted to develop myself', and 'I wanted to prepare myself for future situations' made up for 58,8% of the reported motives. Within the interviews, a closer look at the starting point of each described learning experience was taken. Table 9 displays the codes and frequencies of the category 'learning need'.

Table 9		
Codes and frequencies learning need		
Category coding scheme	Codes (Frequencies)	
Learning need	Personal need (13)	
Ĵ.	Imposed need (15)	

Learning experiences either derived from an imposed need, wherein action had to be taken anyway, or a personal need, wherein action is fully self-initiated. In table 10 examples of both codes are given.

Table 10

Examples of the codes 'imposed need' and 'personal need'

Imposed need	Personal need
"Ja. Dat was een patiënt die onverwachts naar	"Eigenlijk is dat gekomen door op de afdeling
Deventer wilde en van zuurstof afhankelijk was.	zijn heel weinig mensen die infuusnaalden
Waardoor we eigenlijk heel snel moesten	kunnen prikken. En eigenlijk iedere opname
toen hadden we dat eigenlijk gauw omgezet op	toegediend moeten worden. En ik vind het heel
een zuurstoftank en die patiënt aing ook al. Dus	lastig dat ik daarin afhankeliik ben van een
dat overkwam me ook wel een beetje dus dat	ander, dat die voor mij een infuusnaald moet
was ook ongepland."	prikken wanneer ik dat wil. Dat vond ik niet wat.
"Vac One retire twented to set to Deventer and	Dus toen heb ik een cursus gedaan bij de OK
Yes. One patient wanted to go to Deventer and he was dependent on oxygen. Therefore, we	om infuusnaalden te prikken.
had to think really quick how this worked. And	"At our nursing department not everyone is able
yes then we moved him on a oxygen tank real	to insert IV. But nearly every patient needs to
quick and then he went. This just happened to	have one. And find it hard to be dependent on
me and therefore was not planned."	others, that they have to do it for me whenever I
	operating room."

Furthermore, from the interviews, five underlying motives for engaging in learning could be found. Frequencies and codes of the underlying motives are displayed in table 11.

Table 11Codes and frequencies motives

Category coding scheme	Codes (frequencies)	
Motives	Contact with colleagues (5) Contact with patients (15) Personal development (21) Reflection on own actions (3) Formal learning (8)	

Learning experience due to an imposed need mainly had 'contact with patients' as underlying cause to engage in learning. Learning experience due to a personal need mainly had 'personal development' as underlying cause to engage in learning.

#### 5.2.2 Learning goal

Table 12 displays the answer possibilities and frequencies to the question 'Did you intend/plan to learn this?' of the learning log.

Table 12

Frequencies answers learning log question 'Did you intend/planned to learn this?'	
Answers	Frequency
I planned to learn this	7
I wanted to learn this, moment was not planned	1
It just happened to me	21

72,4 % of all described learning experiences happened unplanned. Additional to the learning logs, respondents were asked within the interviews to described situation wherein learning goals were set and learning therefore happened planned. An overview of codes and frequencies of the category learning goal can be found in table 13.

Table 13 Codes and frequencies learning goal

Category coding scheme	Codes (Frequencies)
Learning goal	Continuous goal (5)
	Long-term goal (7)
	Short-term goal (8)

The underlying motives, which were already described under 5.2.1 Learning need (Table 11), were also matched with the learning goals. Continuous learning goals had 'reflection', 'personal development', 'contact with patients' and 'contact with colleagues' as underlying motive to engage in learning. Short-term learning goals only had one underlying motive: formal learning. Nurses mainly set long-term learning goals due to 'personal development' as underlying motive.

#### 5.2.3 Resources and strategies

Table 14 displays the answer possibilities and frequencies to the question 'Which learning activity did you use?' of the learning log.

Table 14

Frequencies answers learning log question 'Which learning activity did you use?'

Answer	Frequency
Do or experience something	16
Try something new	7
Observing how others do something	5
Together with colleagues (or others) through thinking, talking	12
Feedback or information received by others	7
Examining what went good in a certain situation	3
Information looked up in a book, magazine, the internet	9
Formal learning; course or class	1
Others	0

Answers on this question were divers, each answer possibility is presented. When sorting the answer possibilities by content, two main categories can be found. The first one is about doing something ('do or experience something', 'try something new') and the second contains all answer possibilities where colleagues are involved ('observing how others do something', 'together with colleagues (or others)

1

trough thinking, talking', 'feedback or information received by others'). The first category made up for 38.3 % and the second category made up for 40 % of the total answers. This also reflects the results of the first research question, where was shown that contact with colleagues is the main reason for recognizing learning opportunities. Again, colleagues play the biggest role in carrying out learning experiences.

Additional to the learning logs, within the interviews reasons were found for why nurses make certain choices regarding the learning activities. In table 15 an overview of the frequencies of codes can be found.

Table 15

Codes and frequencies resources and strategies

Category coding scheme	Codes (Frequencies)
Resources and strategies	Standard procedure (3) Nearest solution (2) Own insight (20)

It turned out that nearly all choices regarding the learning activities were made based on own insight (80%).

#### 5.2.4 Evaluation

Table 16 displays an overview of the frequencies of answers on the question 'Did you were satisfied with the learning experience?' of the learning log.

Table 16

Frequencies answers question learning logs 'Did you were satisfied with the learning ex	kperience?'
Answers	Frequency
I did not think about that	0
Yes, I am satisfied	28
No, I am going to do things differently the next time	1

Nearly all respondents reported to be satisfied with the described learning experience (96.6%). In table 17 an overview of frequencies of answers to the question 'How do you go further with this learning experience?' of the learning log is presented.

Table 17

Frequencies answers question learning logs 'How do you go further with this learning experience?'

Answers	Frequency
No new plans	0
Did not went as I wanted, try again	0
I thought of what to do in a similar situation	3
Remaining doing this way	7
Improving what I learned	11
Applying to practice	6
New learning goal	0
Other	7

Not all answer possibilities were represented. The most common answer possibility was 'improving what I have learned' with 32.5 %.

Additionally, in the interviews three reasons based on which the learning experience were evaluated were identified. Table 18 shows an overview of the codes and frequencies.

Table 18         Codes and frequencies evaluation	
Category coding scheme	Codes (Frequencies)
Evaluation	Sense of achievement (7) Sense of proficiency (8) Others' satisfaction (3)

While 'satisfaction of others' only occurred little (16.7%) most satisfaction was dedicated to personal motives, namely 'sense of achievement' and 'sense of proficiency' (83.3).

#### 5.3 Differences between hbo-v and mbo-v educated nurses

In table 19 the number of learning experiences per day the learning log was filled in, the codes regarding the categories 'awareness learning opportunities', 'causes learning opportunities', 'learning need' in terms of percentages, and how many of the described learning experiences were planned in terms of percentages are displayed for each nurse.

R.	LE/D	Awareness LO	Causes Learning opportunities	Learning need	Planned/unplanned
3	3/3	33% informal	50 % open culture 50% contact colleagues	33 % personal	33% planned
4	2/4	20% informal	40% personal interest 40% contact colleagues 20% given resources	0 % personal	50% planned
8	3/4	33% informal	100% contact colleagues	67 % personal	0% planned
9	2/4	33% informal	50% personal interest 25% contact colleagues 25% open culture	50 % personal	0% planned
11	1/3	50% informal	33% personal interest 33% open culture 33% contact colleagues	0 % personal	0% planned
1	2/3	25 % informal	25 % Personal interest 25 % Open culture 50 % Given resources	50 % personal	100 % planned
2	3/3	100% informal	100 % contact colleagues	33 % personal	0 % planned
5	3/3	100% informal	67% personal interest 33% contact colleagues	67 % personal	0% planned
6	1/1	100 % informal	100% contact colleagues	0 % personal	0% planned
7	2/2	50% informal	25% personal interest 75% contact colleagues	50 % personal	50% planned
10	4/4	50% informal	50% contact colleagues 50% given resources	50% personal	0% planned

Table 19 Differences between hbo-v and mbo-v educated nurses

123/40% informal100% given resources100 % personal100% plannedRemarks: R: respondent, LE/D: number of learning experience/number of days the learning log was filled in,<br/>Awareness LO: category of the coding scheme with the concerning codes, Learning need: category of the coding<br/>scheme with the concerning codes, Planned/unplanned: whether the learning experiences described in the<br/>learning logs happened planned or unplanned

From the findings above, averages for both educational groups were calculated. The averages can be found in table 20.

# Table 20Averages of percentages given in table 19

Educational background	LE/D	Awareness LO	Causes LO	Learning need	Planned/unplanned
Mbo-v	13/21	32.3 % informal	22.2% open culture 41.3% contact colleagues 24.7% personal interest 11.7% given resources	33.3 % personal	30.5 % planned
Hbo-v	16/17	66.6 % informal	0 % open culture 59.7 % contact colleagues 15.3 % personal interest 25 % given resources	50 % personal	25 % planned

*Remarks:* R: respondent, LE/D: number of learning experience/number of days the learning log was filled in, Awareness LO: category of the coding scheme with the concerning codes, Learning need: category of the coding scheme with the concerning codes, Planned/unplanned: whether the learning experiences described in the learning logs happened planned or unplanned

There are differences between hbo-v and mbo-v educated nurses. Hbo-v educated nurses report more learning experiences. From 9 days without a learning experience in total, 1 was from a hbo-v educated nurse and 8 were from mbo-v educated nurses. When looking at the hbo-v educated nurses, only 5.9 % of the days the learning logs were filled in resulted in no reported learning experience. When looking at mbo-v educated nurses, 62% of the days the learning logs were filled in resulted in no reported learning experience. On average, 32% of the described learning opportunities of mbo-v educated nurses were informal, whilst 66.6% of the described learning opportunities of hbo-v educated nurses were informal. On average, the learning needs of hbo-v educated nurses were slightly more personal compared to mbo-v educated nurses (50% against 33.3%). On average, mbo-v educated nurses (25%). On average, mbo-v educated nurses report slightly more personal underlying motives for learning opportunities (24.7%) than hbo-v educated nurses (15.3%).

#### 6. General discussion & conclusions

The aim of the current study was to broaden current knowledge of both awareness of learning at the workplace and self-directed learning at the workplace among nurses. With this research a contribution to existing research is aimed to made, along with providing insights based on which learning can be supported. The research is driven by the following research questions: 1) To what extent are nurses aware of their learning experiences & learning opportunities the workplace offers?, 2) To what extent do nurses engage in the different facets of self-directed learning? 2a) What facets of SDL do nurses report in daily experiences? 2b) Why do nurses make certain choices regarding SDL?, and 3) What are differences between the two occupational groups regarding awareness of learning experiences and opportunities and engagement in the different facets of SDL?. In the following, the answers to these questions will be discussed and put into perspective. Moreover, limitations will be described. Finally, conclusions will be drawn and implication for research and practice will be given.

# Research question 1: To what extent are nurses aware of their learning experiences & learning opportunities the workplace offers?

To answer the research question, this study shows that nurses generally are aware of the learning opportunities the workplace offers. A study by Tynjälä (2008) shows that workplace learning consists of both informal and formal learning. This supports the finding of the current study. Each nurse was able to report both formal and informal learning opportunities the workplace offers. Also, literature has shown that contact with colleagues is crucial in order to engage in workplace learning. Interaction with colleagues, which are experts in a certain field, is highly important for learning at the workplace (Tynjälä, 2008). This was also shown in the current study, contact with colleagues was the most mentioned reason for reporting learning opportunities at the workplace. One limitation of this findings is that the results are solely based on self-reports of the nurses. No actual check was made on what are learning opportunities the workplace offers, so therefore no real comparison between what is reported and what is actually there can be made. Follow-up research could take this more into account in order to deliver more objective data.

To answer the other part of the research question, this study shows that nurses are not fully aware of their learning experiences. Not all working days actual result in a learning experience. One possible explanation could be that there were no learning experiences on these days, but this is highly unlikely. The results show, that hbo-v educated nurses report learning experiences on almost each day the learning log was filled in, with only one day resulting in no learning experience. This supports the hypothesis, that each day can result in a learning experience and that days without a learning experience can be dedicated to missing awareness. To prove this assumption, in follow-up research, observations of nurses can be made and compared to self-reported learning experiences.

The data supports the assumption that awareness of learning experiences may be missing, as it shows that obviousness is one reason for difficulty in reporting learning experiences. Also, different nature of tasks and function during a shift have shown to have an influence on reporting concrete learning experiences. Tynjäljä (2008) states that learning in the workplace is often implicit and less predictable. Often, learning in the workplace is less visible and therefore not recognized by learners (Marsick & Watkins, 2001; Bjørk, Tøien & Sørensen, 2013). This shows, that awareness of concrete learning experiences may be missing, and that although awareness of learning opportunities the workplace offers is present, sometimes nurses fail to entitle concrete learning experiences which happen during the workday.

Another striking result which should be mentioned is that nurses report that contact with more colleagues and disciplines during work generally results in more learning experiences. This is supported by the literature (Tynjälä, 2008), and by the fact that, as described above, contact with colleagues was the main reason for reporting learning opportunities the workplace offers. Striking was, that working together with less colleagues can also result in learning experiences through being more dependent on each other and more independent in activities which needs to be carried out. This suggests that under circumstances, where nurses must carry out a certain task and are not able to rely on other human resources, learning experience arise.

Another striking result was, that most of the described learning experiences are concerned with gaining knowledge and learning a certain practice. Other examples of learning, such as having a AHA-moment, having a discussion with a colleague, hearing something interesting in a conversation, experiencing a striking event, etc. (Endedijk, 2010), are less or not reported. This is in line with the job description of nurses, as this profession is more practically focused (Deventer Ziekenhuis, 2015). The literature also supports these findings, as learning at the workplace is often situation-specific (Tynjälä, 2008).

## Research question 2: To what extent do nurses engage in the different facets of self-directed learning?

Do answer this research question, it can be stated that nurses engage adequate in the later three facets of SDL, namely identifying resources, implementing strategies and evaluation. The study has shown that nurses fully engage in these facets and that choices regarding these facets are deliberate. However, the study has also shown that nurses do not fully engage in the first two facets of SDL. Following the classic model of self-directed learning by Knowles (1975), self-directed learning is a linear model and taking the initiative regarding all five facets is crucial for engagement in self-directed learning (Knowles, 1975; Zimmerman et al., 2000). Nevertheless, self-directed learning is an ambiguous concept which can be interpreted in many different ways (O'Shea, 2003). Therefore, when setting the concept of SDL in a broader perspective, it can be stated that nurses learn self-directed. Nevertheless, there is no full engagement in self-directed learning and it has been shown that when facilitating SDL at the workplace, focus should be especially on the first two facets of SDL, namely recognizing a learning need, setting learning goals and the awareness of those.

Regarding the first facet of SDL, recognizing a learning need, the study shows that half of all described learning experiences had a personal need, half of them had an imposed need. A personal need indicated a higher level of self-directedness of learning. Self-initiating the learning process is a crucial element of SDL (Knowles, 1975). When having a personal learning need, initiating the process lies fully by the learner self. When having an imposed learning need, the learner has no choice than starting the learning process. Therefore, a personal need indicates a higher level of self-directedness, as the choice is fully made by the learner self. It is guite logical that many learning experiences of nurses have an imposed learning need, as learning in the healthcare environment is often contextual and derives from situations the nurses face at the moment (Tynjälä, 2008). A personal learning need, wherein the learner could have also made the choice to not start the learning process, goes one step further. Learning in those cases could be seen as self-enrichment, whereas in the cases of an imposed need, learning only takes place when awareness arises from the fact that the learner experiences impediment in his or her work. In further research, the underlying reasons for engaging in learning based on a personal need can be investigated. Why do some nurses report learning experiences with a personal need? Why do some report learning experiences with an imposed need? And which factors are having an influence?

Another striking result was, that the second facet of SDL was mostly missing. Most learning experiences happen unplanned. Nevertheless, during the interviews nurses, when asked, could point out and report learning experiences which are planned. One possible explanation is, that planning may take place, but awareness is missing, so nurses are not able to report what they have planned and what goals they have made. Planning is a very broad term but can be defined as determining in advance which activities are needed to reach a certain goal (Mintzberg, 1981). Within this study, planning ahead merely occurs, which not which not necessarily means that no learning goals are set. It can also mean that nurses are just not able to express what learning goals they have set. The moment, a nurse starts a learning process, a certain goal should be reached, for example gaining a certain knowledge, learning a certain practice, etc. This could, again, be linked to awareness. It seems, that awareness is missing and that nurses are not aware of which learning goals they set.

## Research question 3: What are the differences between the two occupational groups regarding awareness of learning experiences and opportunities and engagement in the different facets of SDL?

Differences that were found are that hbo-v educated nurses report more learning experiences, more informal learning opportunities, and more personal learning needs. Mbo-v educated nurses report slightly more personal underlying causes for learning opportunities and report slightly more planned learning experiences. However, the later two differences were so small, that they are not taken into account when looking for possible explanations.

The differences between hbo-v and mbo-v educated nurses are in line with the expectations. Based on the function profile (Deventer Ziekenhuis, n.d.-a), higher educated nurses are expected to take greater autonomy and are able to place healthcare in a broader context. Expectations were that higher educated nurses exhibit more awareness of learning and have higher ability regarding planning and therefore exhibit greater ability to initiate the learning process. The literature also supports these findings, as research has shown that education is a predictor of engagement in learning (Kyndt & Beart, 2013; Cornelissen, 2012). Due to the recency of the division in function profiles, research is not available. The current study can add to the existing knowledge about learning processes among nurses. Still, making assumptions based on qualitative data should be made with caution, as generalizability is limited and results and subjectivity is high.

#### Limitations

The relatively small sample of 12 nurses as well as the qualitative nature of this study limits the generalizability of the results. Besides that, no reliability analysis was done for the classification of learning experiences based on the content. Also, there were quite a lot of differences in circumstances under which the learning logs were filled in, such as vacation period – no vacation period, differences in shift, differences in function during the shift. These circumstances had, as described above, influence on the learning experiences. Higher ability to compare the learning experience could be reached through minimalizing these differences in circumstances. Additionally, this study only focusses on experiences which result in learning. Days, on which the learning log was filled in but which resulted in no learning experience, were not taken into account. It could be of added value to also take days without learning experiences into account, in order to investigate which circumstances are responsible for the lack of learning. Perhaps, insights also result in recommendations to facilitate learning.

#### Conclusions and implications for practice

In summary, this study shows that although awareness for learning opportunities is present, awareness of concrete learning experiences is sometimes missing. The classic model of self-directed learning, which was used as a framework, is not displayed in this setting. Nevertheless, self-directed learning takes place. Whenever initialized, nurses are perfectly capable to run through the facets of self-directed learning. This study has shown, that facilitation of self-directed learning at the workplace should especially focus on the first two facets. Awareness is a red line, running though the results and has proven to be maybe the most important factor. Facilitation of self-directed learning at the workplace should therefore strongly focus on awareness. Differences between the two function groups support the ongoing developments in healthcare, along with the recently made difference between hbo-v and mbo-v educated nurses.

Taken together these results suggest, that an improvement in awareness of what learning can be altogether. Awareness is important for self-directed learning, improving awareness can lead to better recognition of learning opportunities and henceforth better use of those. The results support this implication, nurses reported that this study (filling in the learning logs and giving the interview) lead to greater awareness of learning. Another suggestion is to facilitate nurses in planning of learning experiences. The results have shown that this facet mostly is missing. The study also shows that short-term goals were always related to formal learning, thus externally planned activities. However, it has also become clear that due to different functions and level of pressure during a shift, there are a lot of possibilities to plan activities in the future. For example, recognizing a learning opportunity, memorizing it, planning it at an appropriate moment in the future. if nurses were facilitated in this process, learning opportunities, which happen at a certain moment which do not lead to learning, can well lead to learning at a future moment. Facilitating nurses in this process, can therefore lead to more aware and effective learning at the workplace.

#### References

Bolks, T., & van der Klink, M. (2011). Zelfsturing gaat niet vanzelf. *Tijdschrift voor lerarenopleiders* (VELON/VELOV)–32 (2), 4-11.

Cleary, T. J., Callan, G. L., & Zimmerman, B. J. (2012). Assessing self-regulation as a cyclical, context-specific phenomenon: Overview and analysis of SRL microanalytic protocols. *Education Research International*, 2012.

Cornelissen, L. (2012). Evaluation of a learning portfolio: how to stimulate self-directed learning among employees in health care (Master's thesis, University of Twente).

Deventer Ziekenhuis. (n.d.-a). *Functiebeschrijving regieverpleegkundige getekend*. Intern document Deventer Ziekenhuis.

Deventer Ziekenhuis, 2015. *Notitie Herinrichting Verpleegkundige zorg*. Intern document Deventer Ziekenhuis.

Deventer Ziekenhuis. (n.d.-b). *Organisatie, Over ons.* Retrieved April 20, 2017 from https://www.dz.nl/organisatie/Paginas/Default.aspx

Ellinger, A. D. (2004). The concept of self-directed learning and its implications for human resource development. Advances in Developing Human Resources, 6(2), 158-177.

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

Grant, J. (2002). Learning needs assessment: assessing the need. Bmj, 324(7330), 156-159.

Guglielmino, L. M., & Toffler, A. (2013). The case for promoting self-directed learning in formal educational institutions. *SA-Educ Journal*, *10*(2), 1-18.

Hernández, R., & Rankin, P. (2015). *Higher Education and Second Language Learning: Promoting Self-Directed Learning in New Technological and Educational Contexts*. Peter Lang.

Knowles, M. S. (1970). *The modern practice of adult education* (Vol. 41). New York: New York Association Press.

Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. New York: Association Press.

Kyndt, E., & Baert, H. (2013). Antecedents of Employees' Involvement in Work-Related Learning A Systematic Review. *Review of Educational Research*, *83*(2), 273-313.

Loyens, S. M., Magda, J., & Rikers, R. M. (2008). Self-directed learning in problem-based learning and its relationships with self-regulated learning. *Educational Psychology Review*, *20*(4), 411-427.

Matthews, P. (1999). Workplace learning: developing an holistic model. *The learning organization*, 6(1), 18-29.

Marsick, V. J., & Watkins, K. E. (2001). Informal and incidental learning. *New directions for adult and continuing education*, 2001(89), 25-34.

Maurits, E. E. M., de Veer, A. J. E., & Francke, A. L. (2016). Inspelen op veranderingen in de zorg.

Mintzberg, H. (1981). Research notes and communications what is planning anyway?. *Strategic Management Journal*, *2*(3), 319-324.

Murad, M. H., Coto-Yglesias, F., Varkey, P., Prokop, L. J., & Murad, A. L. (2010). The effectiveness of self-directed learning in health professions education: a systematic review. *Medical education*, 44(11), 1057-1068.

O'shea, E. (2003). Self-directed learning in nurse education: a review of the literature. *Journal of advanced nursing*, *43*(1), 62-70.

Patterson, C., Crooks, D., & Lunyk-Child, O. (2002). A new perspective on competencies for selfdirected learning. *Journal of Nursing Education*, *41*(1), 25-31.

Raemdonck, I., van der Leeden, R., Valcke, M., Segers, M., & Thijssen, J. (2012). Predictors of selfdirected learning for low-qualified employees: a multi-level analysis. *European Journal of Training and Development*, 36(6), 572-591.

Rijksoverheid. (2015). Toekomstbestendige beroepen in de verpleging en verzorging. Rapport stuurgroep over de beroepsprofielen en de overgangsregeling. Verkregen van https://www.rijksoverheid.nl/documenten/rapporten/2015/12/03/toekomstbestendigeberoepen-in-de-verpleging-en-verzorging op 09-03-2017

Sambrook, S. (2005). Factors influencing the context and process of work-related learning: Synthesizing findings from two research projects. *Human Resource Development International*, 8(1), 101-119.

Schunk, D. H. (1990). Goal setting and self-efficacy during self-regulated learning. *Educational psychologist*, *25*(1), 71-86.

Simons, P. R. J. (2003). Competenties verwerven met en zonder instructie. Utrecht: Expertisecentrum ICT in het onderwijs van de Universiteit Utrecht.

Simons, P. R. J. (2000). Lerend werken: tautologie of uitdaging?.

Stevens, J., Ashton, D., & Kelleher, M. (2001). The developing contribution of workplace learning to organisational performance. CIPD and the European Consortium of Learning Organisations (2001) Workplace Learning in Europe, London: Chartered Institute of Personnel and Development.

Stockdale, S. L. (2003). Development of an instrument to measure self-directedness.

Spil en regisseur in de persoonsgerichte zorg. 'Herinrichting Verpleegkundige zorg'. *Beleidsnotitie.* (2015, September). Retrieved March, 23, 2017 from https://www.nvz-ziekenhuizen.nl/ library/27733/Beleidsnotitie%20definitief%202015.pdf

- Tannenbaum, S. I., Beard, R. L., McNall, L. A., & Salas, E. (2010). Informal learning and development in organizations. *Learning, training, and development in organizations*, 303-332.
- Tidd, J., Bessant, J. R., & Pavitt, K. (1997). *Managing innovation: integrating technological, market and organizational change* (Vol. 4). Chichester: Wiley.
- Torunn Bjørk, I., Tøien, M., & Lene Sørensen, A. (2013). Exploring informal learning among hospital nurses. *Journal of Workplace Learning*, 25(7), 426-440.
- Tynjälä, P. (2008). Perspectives into learning at the workplace. *Educational research review*, 3(2),130-154.
- V&V (2012). *Beroepsprofiel verpleegkundige*. Retrieved March 28, 2017 from http://www.venvn.nl/Portals/1/Nieuws/Ouder%20dan%202010/3\_profiel%20verpleegkundige\_ def.pdf
- Viera, A. J., & Garrett, J. M. (2005). Understanding interobserver agreement: the kappa statistic. *Fam Med*, *37*(5), 360-363.
- Weinstein, C. E., Husman, J., & Dierking, D. R. (2000). Self-regulation interventions with a focus on learning strategies.
- Weinstein, C. E., & Mayer, R. E. (1986). The teaching of learning strategies. In M. C. Wittrock (Ed.), Handbook of research on teaching. (3rd ed., pp. 315-327). New York: Macmillan,
- Zimmerman, B. J., Boekarts, M., Pintrich, P. R., & Zeidner, M. (2000). A social cognitive perspective. *Handbook of self-regulation*, *13*(1), 695-716.
- Zimmerman, B. J., & Pons, M. M. (1986). Development of a structured interview for assessing student use of self-regulated learning strategies. *American educational research journal*, 23(4), 614-628.

#### Appendices

Appendix A. Informed consent (Toestemmingsverklaringformulier)

#### Toestemmingsverklaringsformulier

#### Titel onderzoek: Zelfsturend leren op de werkplek Verantwoordelijke onderzoeker: Natascha Kläser, n.klaser@student.utwente.nl

Door dit onderzoek hoop ik meer inzicht te krijgen in leerprocessen die op de werkplek plaats vinden en het bewustzijn hiervan. Ik wil je eerst vragen om het logbook dat je van mij ontvangen hebt gedurende een werkweek elke dag in te vullen. Dit zal per dag ongeveer 10 minuten van je tijd in beslag nemen. Door dit logboek in te vullen hoop ik meer inzicht te krijgen in leeractiviteiten die je in je dagelijkse werkomgeving ervaart. Tijdens het tweede deel van mijn onderzoek wil ik je graag vragen om deel te nemen aan een interview. Dit is een een-op-een gesprek dat ongeveer een half uur zal duren. Tijdens dit interview ga ik meer de diepte in en zal ik gerichtere vragen stellen over het logboek dat je eerder hebt ingevuld. Alle gegevens zullen anoniem verwerkt worden en niet aan derden bekend worden gemaakt. Als je nog vragen hebt hoor ik het graag, ik ben onder bovenstaand mailadres te bereiken.

#### In te vullen door de deelnemer

Ik verklaar op een voor mij duidelijke wijze te zijn ingelicht over de aard, methode, doel en belasting van dit onderzoek. Ik weet dat de gegevens anoniem verwerkt en vertrouwelijk behandeld zullen worden en tevens niet aan derden bekend gemaakt zullen worden. Mijn vragen zijn naar tevredenheid beantwoord.

Ik begrijp dat alle materialen of bewerkingen daarvan uitsluitend voor analyse en wetenschappelijke presentaties gebruikt zullen worden.

Ik stem geheel vrijwillig in met deelname aan dit onderzoek. Ik behoud me daarbij het recht voor om op elk moment zonder opgaaf van redenen mijn deelname aan dit onderzoek te beëindigen.

Naam deelnemer: .....

Datum: ..... Handtekening deelnemer: .....

#### In te vullen door de uitvoerende onderzoeker

Ik heb mondelinge en schriftelijke toelichting gegeven op mijn onderzoek. Ik zal resterende vragen over het onderzoek naar vermogen beantwoorden. De deelnemer zal van een eventuele voortijdige beëindiging van deelname aan dit onderzoek geen nadelige gevolgen ondervinden.

Naam onderzoeker: .....

Datum: ..... Handtekening onderzoeker: .....

#### Appendix B. Learning log

#### Inleiding

Beste deelnemer,

Deze vragenlijst is een soort logboek waarmee je jouw leerervaringen van deze week kunt bijhouden. Het doel is om inzicht te krijgen in wat er wordt geleerd en hoe er wordt geleerd door jou op de werkplek.

Beschrijf alsjeblieft per situatie duidelijk in eigen woorden wat je hebt geleerd. Graag wil ik je vragen om deze vragenlijst gedurende een werkweek elke dag in te vullen. Het invullen zal niet meer dan 5 tot 10 minuten per dag kosten. Voor het invullen van de vragenlijst krijg je een aantal vragen over je demografische gegevens. Deze vragen hoef je uiteraard maar een keer in te vullen.

Alvast bedankt voor je deelname!

#### Algemene vragen:

Wat is je naam?		
Wat is je geslacht?		
Wat is je leeftijd?		
Wat is je opleiding?	HBO-V	MBO-V
Hoeveel jaren werkerv	aring heb je in c	le zorg?
Welke functie heb je bi	ij DZ (specialism	ne)?
Hoeveel uur werk je vo	olgens je contra	ct?
Op welke afdeling ben	je werkzaam?	

#### Leerervaringen op de werkplek

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 kan 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 je 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?
- lets gedaan wat heel erg goed ging? Of juist fout?
- lets 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 hebt geleerd. Dit mag je op jouw manier beschrijven. Daarna volgen er een aantal meerkeuzevragen die gaan over hoe je leerproces tot stand is gekomen. Deze vragen kun je in ongeveer 10 minuten beantwoorden. Soms zul je op een bepaald moment meerdere dingen leren, kies er dan één uit om te beschrijven.

1. Kun jij een concrete leerervaring beschrijven die vandaag in de context van jouw werk heeft plaatsgevonden? (Dit kan zowel thuis, op jouw 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 aan het einde van de vragenlijst.

Als je antwoord 'ja' was dan kun je hieronder verder gaan met de vragenlijst.

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

3.	Had je van tevoren 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
	doen

Nee, het is me overkomen (	(Door naar vraag 5	)
----------------------------	--------------------	---

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

Ik	was	niei	IWS	ale	ria	naar	lets.
	1100	11100		gie		naan	1010

- Ik wilde mezelf verder ontwikkelen op dit gebied
- Anderen hebben mij gestimuleerd om me hierin te ontwikkelen

	lk wilde	mij voorbereide	en op nieuw	e situaties	waar ik in d	le toekomst	mee te
m	aken kan						
	1						

knjgen
Omdat dit nodig is vanuit de organisatie om goed te functioneren
Anders, namelijk

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

te

<ul> <li>iets nieuws uit te proberen</li> <li>te observeren hoe anderen iets aanpakken</li> <li>informatie wat ik heb opgezocht in een boek, tijdschrift of op internet</li> <li>feedback of informatie wat ik van een ander heb gekregen</li> <li>zelf na te gaan wat er goed ging in een bepaalde situatie (bijv. in het contact met</li> </ul>
de
patiënt) <ul> <li>samen met collega's (of anderen) na te denken en te praten (samen analyseren)</li> <li>formeel onderwijs; in een cursus of klas</li> <li>anders, namelijk</li> </ul>
Waren er nog meer leeractiviteiten onderdeel van jouw leerervaring? Ja Nee

Als je 'nee' heeft geantwoord ga je door met vraag 10.

6.

Als je 'ja' heeft geantwoord ga je door met de vraag die hieronder volgt.

7.	Jouw eerste leeractiviteit was (zoals aangekruist bij vraag 5). Wat was je
	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 ging in een bepaalde situatie (bijv. in het contact met
	de
	patiënt)
	samen met collega's (of anderen) na te denken en te praten (samen analyseren)
	formeel onderwijs; in een cursus of klas

anders, namelijk.....

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

Als je 'nee' heeft geantwoord ga je door met vraag 10.

Als je 'ja' heeft geantwoord ga je door met de vraag die hieronder volgt.

9. Jouw tweede leeractiviteit was ...... (zoals aangekruist bij vraag 7). Wat was je derde leeractiviteit? Ik heb geleerd door.....

	ie	ts i	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	ging in een	bepaalde	situatie	(bijv. in het	contact met
de							

patiënt) samen met collega's (of anderen) na te denken en te praten (samen analyseren) formeel onderwijs; in een cursus of klas

anders, namelijk.....

- 10. 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
- 11. 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
te	recht kom
	lle wil wat ile hah galaard za hliivan daan

- ☐ 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 dank voor het invullen!

Hieronder is er ruimte voor feedback:

Appendix C. Interview-scheme semi-structured follow-up interviews

#### Inleiding

Welkom. Hartelijk dank dat je mij wil helpen met afstuderen en vandaag dit interview met mij gaat doen. Ook hartelijk dank voor het invullen van de logboekjes. We ga vandaag proberen om meer inzicht te krijgen op hoe je in de praktijk leert. Het komende half uur ga ik wat verdiepende vragen over de leerervaringen die je hebt opgedaan stellen. Heb je nog vragen? Ik ga het interview opnemen, de opnames zal ik alleen ter analyse gebruiken en alle gegevens worden

uiteraard anoniem verwerkt. Heb je hier bezwaar tegen? Dan ga ik nu de opname starten.

- 1. Hoe heb je het invullen van de logboekjes ervaren? Waren er vragen waarmee je moeite had? Waren er vragen waar je moeilijk een antwoord op kon geven? Hoe moeilijk was het om een concrete leerervaring te bedenken? Had je het gevoel dat je heel veel leerervaringen had en moeilijk eentje kon kiezen of had je moeite om één ervaring te bedenken? Wat maakte dat je op de een dag wel een leerervaring had en op de andere dag geen? Waar zou dat aan kunnen liggen?
- 2. Was het invullen een geheel nieuwe ervaring voor jou? Heb je eerder nagedacht over leren in de praktijk of was het invullen van de logboekjes een aanzet om hierover na te denken? Welke mogelijkheden zijn er voor jou op de werkplek als het gaat om leren?
- 3. Je hebt aangegeven dat je van te voren bedacht had om dit te gaan leren. Hoe is deze gedachte tot stand gekomen? Wat wilde je leren? Waarom wilde je dit gaan leren?
- 4. **Je hebt aangegeven dat de leerervaring jou is overkomen.** Hoe ben je erachter gekomen dat je iets geleerd hebt?
- 5. Heb je weleens een leerervaring gehad die je van tevoren gepland had?
- Je hebt aangegeven dat de aanleiding om dit te leren .... was. Hoezo wilde je je verder ontwikkelen op dit gebied/was je nieuwsgierig etc.? (Afhankelijk van het antwoord op de vragenlijst?)
- 7. Als je naar je leerervaringen kijkt. Wat was de aanleiding om dit te gaan leren? Hoe is de leerervaring ontstaan? Wat was het begin?
- 8. Wie was betrokken bij jouw leeractiviteit? Welke personen? Hoezo waren deze personen betrokken en niet iemand anders? Waren er nog andere dingen onderdeel van jouw leeractiviteit (welke hulpmiddelen heb je gebruikt)? Denk aan boeken, materialen op de afdeling, etc. Kun je nog andere personen/dingen bedenken die je hadden kunnen helpen bij deze leeractiviteit? Kun je alternatieve mogelijkheden benoemen?
- 9. Hoe heb je geleerd? Kun je de stappen van het proces nader toelichten?
- 10. Je hebt aangegeven dat je hebt geleerd door ... te doen (afhankelijk van het antwoord op de vragenlijst). Kun je dat nog nader toelichten? Wat heb je precies gedaan? Waarom

heb je hiervoor gekozen? Kun je nog andere manieren bedenken hoe je dit had kunnen leren?

11. Je hebt aangegeven dat je wel/niet tevreden was over de leerervaring. Wat zorgt ervoor dat je wel/niet tevreden bent? Wat zou je de volgende keer anders doen en waarom? Waarom zou je het de volgende keer op dezelfde manier doen en waarom? Hoezo bent u tevreden/niet tevreden? Denk je dat je het beter had kunnen doen, anders? Heb je in een eerdere situatie anders gehandeld?

#### Appendix D. Coding scheme

Category	Sub category	Code	Definition	Example
1. Awareness:	Informal learning	awarenessLO.informal	Learning opportunities	<b>G:</b> Ja, bij mij is wel
1.2 Awareness learning	oppotunities		regarding informal learning;	veel, sowieso bij ons
opportunities:			opportunities at the	hele team leren we veel
Awareness of learning opportunities.			workplace (for example	van collega's. Ons
Which learning opportunities do nurses			receiving explanations of a	team is echt wel heel
report regarding the workplace.			doctor).	erg laag benaderbaar
				van goh als je ergens
				niet uitkomt dan helpen
				we wel elkaar. Sowieso
				alle collega's zijn daarin
				heel belangrijk. Het is
				echt wel een
				teamberoep.
	Formal learning	awarenessLO.formal	Learning opportunities	<b>G:</b> Ja, voor sommige
	opportunities		regarding formal learning;	dingen op de werkplek.
			offer of courses, e-	Dus bijvoorbeeld
			learnings, lessons etc.	bepaalde handelingen.
				Daar hebben we wel e-
				learnings voor. Dus als
				ik me niet bekwaam in
				voel dan doe ik ze ook
				niet. Of als ik dan een
				keer denk ik weet hoe
				het moet maar het gaat

				nog niet heel soepel
				dat ik nog wel denk, ik
				bekijk de e-learning of
				de cursus of het
				formulier nog even
				terug.
1.2.1 Underlying causes:	Open culture	causesLO.open culture	Learning opportunities,	<b>G:</b> [] de
Underlying causes of awareness of			either formal or informal,	leidinggevende staat
learning opportunities.			arise from an open culture	wel open voor
			at the department; giving	cursussen.
			and receiving advice easily,	
			asking and receiving	
			feedback etc.	
	Contact with	causesLO.contact	Learning opportunities,	G: En inderdaad dan
	colleagues	colleagues	either formal or informal,	collega, die het een of
			arise from contact with	ander uitlegt Of soms
			colleagues; working	een keer meekijken
			together leads to learning	met een onderzoek
			opportunities, situations	of met een ik heb een
			where learning arises.	implantatie van een
				dat soort dingen. Of als
				ik in de visite zit en het
				is rustig en daar komt
				wat voorbij wat mij niet
				zo bekend is qua
				ziektebeeld. Dan ik aan

			de cardioloog of aan de
			verpleegkundige
			specialist vraag. En dat
			die het dan uitlegt. Die
			vinden het ook wel leuk
			om te doen natuurlijk.
			Dus, ja zo her en der
			pik je dan overal wel
			wat op.
Personal interest	causesLO. personal	Learning opportunities	G: En ik heb ook wel
	interest	whether formal or informal	een tijdje mijn ogen
		are perceived because of	opengehouden voor
		personal interest/personal	scholingsdagen van
		characteristics of the nurse.	buitenaf ofzo om me
			wat meer in te
			verdiepen maar ja, heb
			ik me nog niet heel erg
			op gefocust. En ik weet
			dat er volgens mij, dat
			ze die cardio cursus
			ook wel willen
			doorzetten. Om het een
			beetje up-to-date te
			houden. Dus als je
			komt, weet je dat vind
			ik ook gewoon leuk dus

				dan geef ik me daar
				ook voor op. Maar alles
				bij elkaar zo, ben je
				toch met zijn allen wel
				bezig.
	Given resources	causesLO. given	Learning opportunities	G: We hebben
		resources	whether formal or informal	natuurlijk die e-
			are perceived because of	learning. En we
			the given resources	hebben sowieso wel
			provided by the hospital.	verplichte
				scholingsdagen.
1.3 Awareness Learning experiences	Obviousness	causesLE.obviousness	Activities/duties which are	G: Wij op de afdeling
Underlying reasons for awareness of			obvious. Often experiences	vragen elkaar best
learning experiences and differences in			which happens regularly on	vaak om advies. Als we
reported learning experiences.			a daily base and which are	ergens tegen aanlopen
			situational.	dan vragen we elkaar
				heel laagdrempelig en
				eigenlijk is dat wel een
				leermoment voor jezelf.
				Want als iemand jou
				advies geeft of ja dus
				meer op die manier.
				Daar sta je helemaal
				niet bij stil.
	Nature of tasks	causesLE.tasks	Reasons are lying in the	G: En ehm overdag
			type and nature of tasks	breng je vaak mensen

			and level of pressure.	weg naar OK, 's
			Differences in tasks and	avonds krijg je ze terug
			level of pressure during the	en daar kun je wel weer
			shift can, for example, arise	nieuwe dingen in
			from differences between	terecht zien komen. En
			early, late or night shift or	ja.
			function during the shift.	
	Extent of contact	causesLE.contact	Reasons lying in the extent	<b>G:</b> []werk je maar
			of contact with patients,	met zijn drieën, dan
			colleagues and others.	ben je wel van elkaar
			Differences in the extent of	afhankelijk soort van.
			contact can, for example,	En overdag werk je met
			arise from differences	z'n achten en s avonds
			between early, late or night	met z'n zessen dus dat
			shift or function during the	is ook wel weer anders.
			shift.	
<u>2. SDL:</u>	Personal need	need.personal need	Starting point of the	G: En ik vind het heel
2.1 Learning needs:			learning experience.	lastig dat ik daarin
Starting point of the learning experience.			Learning arises because	afhankelijk ben van een
			the nurse felt the need to	ander, dat die voor mij
			learn.	een infuusnaald moet
				prikken wanneer ik dat
				wil. Dat vond ik niet
				wat.

	Imposed need	need.imposed need	Starting point of the	G: Omdat we de nacht
			learning experience.	ingingen wilde ik
			Learning arises because	natuurlijk wel dat die
			the nurse felt an imposed	patiënt wel een leeg
			need to learn (action had to	zakje had, want dat
			be taken in the specific	zakje dat die had zat
			situation, therefore it was	helemaal vol met
			not a conscious choice to	drainvocht.
			engage in learning)	
<u>SDL:</u>	Continuous goal	goal. continuous	A continuous goal	G: En ehm maar ik
2.2 Learning goal:			describes a desired result	heb wel ook voor
Different kinds of learning goals (if			which requires continuous	mezelf als leerpunt dat
present) Object of what should be			attention by the learner. It	ik heel gauw een beetje
learned. A learning goal describes the			is an area of concern which	kriebelig raak en dat
aim of learning, the desired result.			is unlikely to be achieved	dan afreageer op mijn
			completely. Although,	collega af en toe zeg
			progress can be achieved.	maar. En dat heb ik wel
				als continu leerpunt dat
				ik denk die kan er
				niks aan doen. Dat
				moet ik gewoon op een
				normale manier doen.
				Of als er een chaos is

				dat ik dan een beetje
				kriebelig van word. Dat
				ik weet dat ik af en toe
				een beetje bot uit de
				hoek kan komen.
	Long-term goal	goal. long-term	A long-term goal describes	G: Infusen prikken
			a desired result which	denk ik. Dat is…niet
			requires long-term attention	iedereen bij ons op de
			by the learner. It cannot be	afdeling deed dat, en
			achieved within one	dat was best wel een
			session of learning, but can	ding. Er moeten best
			only be achieved within	wel veel infusen
			multiple sessions. Progress	worden geprikt en als
			takes some time.	niet iedereen dat doet
				ja wie gaat er dan
				prikken? Dan wordt dat
				zo een issue.
	Short-term goal	goal. short-term	A short-term goal describes	<b>G:</b> Ja. Of als je zegt we
			a desired result which	gaan met collega's
			requires short-term	klinisch redeneren. 's
			attention by the learner. It	Middags om 3 uur. Dat
			can be achieved within one	kan ook een
			session and progress is	leermoment zijn.
			achieved fast.	
<u>2. SDL:</u>	Contact with	motives. contact	Influence of contact with	G: Nee. Naja, het was

2.1/2.1Motives:	colleagues	colleagues	colleagues (for example	een overdracht van
Underlying reasons for engaging in			advice, criticism etc.) on	dienst. Zij droegen dat
learning.			the learning experience.	over. We hebben dat
				uitgerekend en het
				klopt niet. Dus ik had
				daar een melding van
				gemaakt. Ja maar ik
				had die dag daarvoor
				ook gewerkt en ik had
				dat zelf ook
				uitgerekend, het klopt
				wel. Dus daarom
	Contact with patients	motives. contact patients	Influence of contact with	G: Volgens mij was ik
			patients or family of	in die dienst zelf die
			patients (for example	dienstcoordinatoor. Dat
			conversations, symptoms	houdt in dus dat jezelf
			of disease etc.) on the	de opnames
			learning experience.	coördineert op de
				afdeling. We kregen
				toen wegens het vol
				zijn van een andere
				afdeling, kregen we
				deze patiënt. Hij kreeg
				een liducaineinfuus en
				dat is als
				pijnbehandeling. Ik had

			nog nooit zo een infuus
			gegeven. Ik wou eerst
			weten wat het is en hoe
			we dat gaan aansluiten.
Personal development	motives. personal	Influence of the need to	G: lk leek me
	development	develop as a professional	inderdaad wel
		on the learning experience.	interessant en ik denk
		Future-oriented.	je dat je daar zelf ook
			weer heel veel van
			leert. Want ze kwam uit
			een ander ziekenhuis
			daar heeft ze ook wel
			andere ervaringen. Dus
			daar kun je zelf ook
			weer heel veel van
			leren. Van goh in
			Enschede deden we
			het zo bewijze van
			spreken. En dan
			waarom, waarom dan?
			En daar zit dan vaak
			ook weer een logische
			gedacht achter. Dus
			dan kunnen we er een
			beetje over sparren wat
			wel en wat niet.

	Reflection on own	motives. reflection	Influence of the reflection	<b>G:</b> Dus dat is dan ook
	actions		on own actions regarding	misschien een beetje
			one's competency,	mijn fout dat ik denk
			expectations and	van de secretaresse zal
			development on the	alles wel geregeld
			learning experience. Past-	hebben. Maar dat zijn
			oriented.	ook mensen die
				kunnen ook dingen
				vergeten natuurlijk. Dus
				ja.
	Formal learning	motives. Formal	Influence of courses,	G: Ja. Bijvoorbeeld
	moments		education, trainings, e-	katheter inbrengen.
			learnings and other formal	Dan is er een e-
			learning moment on the	learning over het
			learning experience.	inbrengen van een
				katheter.
2.SDL:	Standard procedure	rs. standard procedure	The choice of resources	G: Ja. Standaard zoals
2.3 Resources and Strategies:			and strategies for the	we eigenlijk altijd bij
Reasons for choosing resources and			learning experiences is	elke handeling, het
strategies for learning.			made following a standard	protocol erbij. En ja,
			procedure (given by the	weet je, je gaat toch
			organization e.g.).	een beetje sparren met
				collega's, die het altijd
				doen.
	Nearest solution	rs. nearest solution	The choice of resources	G: En die zei Eddy doet
			and strategies for the	het inderdaad anders.

		learning experience is	Ja hoe dan. Maar dat
		made following the nearest	wist die niet meer zo
		solution (based on	goed. Ik zei we bellen
		availability, easiest way).	Eddy wel dan kan ik het
			ook wel een keer zien.
			En die heeft het nog
			een keer voorgedaan.
Own insight	rs. own insight	The choice of resources	G: 'Ja natuurlijk. Ik had
		and strategies for the	ook naar C kunnen
		learning experience is	gaan vragen maar als
		made based on own insight	dat niet nodig is. We
		(considering alternatives,	worden al zoveel
		choosing the most	gestoord door allerlei
		appropriate resources and	telefoontjes. Dan als ik
		strategies for the specific	dat inhoud van een
		learning experience,	protocol bijvoorbeeld.
		problem-solving ability).	Maar dat was meer
			algemene informatie.
			Dat kan ik eerst wel
			eventjes op algemene
			manier en onze eigen
			protocollen als je het
			kunt vinden. Of bij
			andere afdelingen,
			collega's natuurlijk ook.
			Maar dit is iets wat

				vaak voorkomt dus dat probeer je eerst breder te zoeken.'
2. SDL: 2.4 Evaluation: Factors by which the learning experience is evaluated.	Sense of achievement	evaluation. achievement	The learning experience is evaluated as satisfactory/unsatisfactory based on whether achievement is felt (goal/aim achieved, result is as expected).	<ul> <li>I: Hoe komt dat dan dat je tevreden bent over de leerervaring?</li> <li>G: Ja, dat ze de schoen wel goed aanheeft uiteindelijk.</li> <li>En dat ze ook gewoon kon lopen en met de fysio kon oefenen. Dat is je doel, mensen mobiliseren.</li> </ul>
	Sense of proficiency	evaluation. proficiency	The learning experience is evaluated as satisfactory/unsatisfactory based on whether proficiency is felt (ability to perform a task, role as a professional).	<i>G:</i> als het voor mij helder is en ik het in eigen woorden kan vertellen. Dus als een collega mij vraagt hoe doe je dat? Dat ik weet dit moet ik doen hier moet ik op letten. En dat ik dan niet denk ja ik weet het niet meer zo goed. Dan is het voor mij niet een goed leermoment geweest.

Others' satisfaction	evaluation. others	The learning experience is evaluated as satisfactory/unsatisfactory	<i>I:</i> Ja, zeker. En je geeft ook weer aan dat je tevreden was over de leerervaring []
		based on whether others are satisfied (feedback of	<b>G:</b> Ja, het is iets praktisch. Als die zit
		colleagues, satisfaction of	dan zit die gewoon. En dan denkt je joepie hij
		patients e.g.).	zit erin. En … als de patiënt dan ook nog
			zegt van dat is een extra pluim natuurlijk.
			Dat is natuurlijk extra leuk.

Remarks: I: Interviewer; G: Interviewee