

# DIFFERENCES AND SIMILARITIES IN NURSES' LEARNING EXPERIENCES THAT EVOLVE OUT OF PERSONAL INTEREST VERSUS THAT EVOLVE FROM MOTIVATION TO COMPLY WITH REQUIREMENTS.

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## ABSTRACT

Continuous development of health care demands and increased use of technology change nurses' daily practice (Brigley, Young, Littlejohns, & McEwen, 1997; Molleman, Broekhuis, Stoffels, & Jaspers, 2008). Therefore, nurses should invest in professional development to remain competent and to provide adequate care. However, nurses are confronted with two realities in the process of their professional development. On one hand, nurses are eager to invest in their professional development with intrinsic motivation (Pool, 2015). On the other hand, there is an extrinsic demand to comply with requirements. The Self-Determination Theory emphasizes this discrepancy and states that even though learning experiences occur externally, individuals could always have some amount of intrinsic regulation towards the experience (Deci & Ryan, 1985; Ryan & Deci, 2000). This study examines differences and similarities between nurses' learning experiences that occurred out of personal interest versus learning experiences that occurred out of motivation to comply with requirements. And aims to gain insights and to develop a foundation in nurses' needs to become intrinsically motivated. Participants in this study were twenty nurses from two different departments of Radboudumc, The Netherlands. A qualitative study with narrative interviews was conducted, to reconstruct learning experiences that occurred out of personal interest (intrinsic learning experiences) and that occurred from motivation to comply with requirements (extrinsic learning experiences). Participants provided these experiences themselves. Results show significant differences between the intrinsic and extrinsic learning experiences in the level of intrinsic regulation before the experiences started. Also, the results show that nurses are mostly involved with informal learning activities during intrinsic learning experiences, supportive actors are mostly (in)direct colleagues and supervisors during the intrinsic learning experiences, and learning outcomes show mostly a gain in insights during the intrinsic learning experiences. The contribution of this study are the insights and the foundation that is developed, to be able to stimulate the intrinsic motivation of nurses, during external demands. Additionally, further research to gain deeper knowledge on this topic is necessary, to develop a better understanding of the internal processes of intrinsic motivation of nurses.

*Keywords:* intrinsic motivation, self-determination theory, professional development, hospital-based nurses

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## 1. INTRODUCTION

Offering high quality of care and providing safe patient care are the most important principles for health care organizations. At the same time, the continuous development of health care demands and the increased use of technology changes nurses' daily practice (Brigley et al., 1997; Molleman et al., 2008). Therefore, nurses should invest in professional development to remain competent and to provide adequate care.

However, nurses are confronted with two realities in the process of their professional development. On one hand, nurses are eager to invest in their professional development with intrinsic motivation, such as to increase competence and to enhance career development (Pool, 2015). On the other hand, there is an extrinsic demand to comply with requirements. This discrepancy is represented in the Self-Determination Theory (SDT), which elaborates on the influence of intrinsic and extrinsic motivation on learning experiences (Deci & Ryan, 1985). As a foundation, SDT defines two types of motivation: autonomous and controlled. Of these two, autonomous motivation is most important because it comes from interest and enjoyment. This enables learners to: increase problem-solving possibilities; enhance creativity; and enlarge physical and psychological wellbeing (Ryan & Deci, 2000). By meeting three psychological needs autonomy, competence, and relatedness, learners create a higher self-determination. This benefits all learning experiences, even when the origin of the learning experience comes from external motivation.

The disparity between autonomous and controlled motivation isn't frequently used, however the difference between intrinsic and extrinsic motivation is widely known. Intrinsic motivation is the key aspect to enhance individuals to become life-long learners (Dunlap & Grabinger, 2008) since it causes people to look for challenges and opportunities for learning (Ryan & Deci, 2000). As a result, a growing number of hospitals invest in adult learning approaches, such as self-directed learning (SDL). SDL complies with autonomous motivation because the primary responsibility for planning, carrying out, and evaluating personal learning experiences (LE's) belongs to the learner (Ellinger, 2004). SDL also enables nurses to: acquire necessary skills, knowledge, and abilities for their daily job; and create value for the patients and the organization (Artis & Harris, 2013).

Intrinsic motivation influences learning experiences positively, but still compliance has got a prominent position in the nurses' profession. Hospitals increasingly need to demonstrate the capability of health care professionals and compliance is one of the many measures an organization has. Compliance is used to impart the core values and vision of responsible action, in order to make risks manageable and to protect its reputation (Oostwouder & Wiggers, 2019). Consequently, nurses have to perform according to predetermined processes of the internal organization and reach predetermined goals of external organizations. However, compliance is characterized by individuals who perform to

avoid punishment or expect a reward, but don't necessarily believe the content of the process or goal (Ryan & Deci, 2000).

Health care organisations are aware of the importance and benefits intrinsic motivation could add to the professional development of their employees. Therefore, health care organisations aim to enable nurses to use SDL approaches. However, it is difficult to grasp the support organisations should provide to stimulate nurses' motivation. The purpose of this study is to acquire insights into the differences between LE's that evolved out of personal interest versus LE's that evolved from motivation to comply with requirements. Insights are acquired and those will be used as a foundation in the understanding of nurses' needs to become intrinsically motivated. The limitation of this study lies in solely providing insights. However, some recommendations on the stimulation of intrinsic motivation and the use of SDL can be made based on this study. This will benefit health care organisations. In order to acquire insights, a qualitative study with narrative interviews will be performed. The perception of nurses will be central in these interviews and in the data that had been provided. The data will be analysed on behalf of the value of nurses towards the learning experience: the trigger for the LE; the goal of the LE; and other reasons for the LE to occur, and on factual data: the activity that was central during the LE; the actors that had been involved; and the learning outcomes of the LE.

## 2. THEORETICAL FRAMEWORK

### 2.1. PROFESSIONAL DEVELOPMENT AND LEARNING

Nurses must invest in their professional development, in order to remain competent to provide safe patient care and high quality of care. Poell and Van der Krogt (2014a) emphasize the strategic actions nurses take in order to develop themselves professionally. Moreover, nurses create individual learning paths and engage in learning activities around a theme which they considered relevant (Poell & Van der Krogt, 2014b). Additionally, past experiences and expectations of the future influence the attitude and behaviour of an individual (Schalk et al., 2010). This implies that individuals could have different motives for professional development and learning, which is also based on the experience different individuals have.

Several studies have been conducted into nurses' motives for professional development. The motives on continuous professional development are developed in a framework by Pool, Poell, Berings, and Ten Cate (2016) by exploring literature. Nine motives are selected in this framework based on the Education Participation Scale (EPS) (Boshier, 1971, 1977) and Participation Reasons Scale (PRS) (Grotelueschen et al. in Pool et al., 2016). The motives that have been identified are; increase competence in the present job, deepen knowledge, enhance career development, comply with requirements, supplement gaps in prior education, increase self-esteem, get relief from routine, build a professional network, and improve health care. It should be noted that a motive for professional development depends on the values, norms, attitudes, and competence of an individual nurse (Davis, Taylor, & Reyes, 2014). Additionally, research suggests that care delivery is most likely to be improved when individuals plan and conduct their own learning, based on work-related problems (Gagliardi, Wright, Victor, Brouwers, & Silver, 2009).

Planning and conducting personal learning, could result in different types of learning activities. The same study by Pool et al. (2016) developed a framework on nurses' learning activities. Identifying these activities is most often done by the distinction between formal and informal learning activities. Formal learning refers to planned learning in an educational setting, which is mainly instructor-led (Kyndt & Baert, 2013; Silva & Garcia, 2019). Moreover, formal learning activities in this study are defined as learning activities organised by others (Pool et al., 2016). Formal learning activities receive the majority of attention from employers and human resource development (HRD) professionals, as these are easier to plan, observe, and register, compared to informal learning activities (Froelich, Beausaert, & Segers, 2015; Reich, Rooney, & Boud, 2015). The formal learning activities that had been identified are; education, course, conference, e-learning, team training, and short-hospital based activities (Pool, 2015). Whereas informal learning activities are initiated by the learners themselves and are mostly embedded in the daily practice of nurses (Lohman, 2006). In addition, informal learning is a way of learning that occurs spontaneously, based on the wishes of the learner and through the methods the learner prefers (Kyndt & Baert, 2013). The informal learning activities that had been

identified are; social interaction, participating in meetings, consulting media, engaging in extra tasks (Pool, 2015). The learning activities have been identified by Pool (2015), based on an overview presented by nurses of their engagement in learning activities over a period of one year.

## 2.2. SELF-DETERMINATION THEORY

Deci and Ryan (1985) saw that intrinsic motivation could affect individuals' behaviour, even though it had been believed that only extrinsic motivation would have such an effect. Their first thoughts and beliefs of intrinsic motivation have led to the development of the self-determination theory (SDT). Being self-determining means experiencing a sense of choice in initiating and regulating own actions (Deci, Connell, & Ryan, 1989).

The level of self-determination of individuals is influenced by three psychological needs each individual longs for, as those psychological needs lead towards an ongoing sense of integrity and well-being (Ryan & Deci, 2000). Moreover, addressing these three needs allows individuals to adhere stronger to behavioural change (Haas, 2019), optimal functioning, physical health, and well-being (Akirmak, Tuncer, Akdogan, & Erkat, 2019; Deci & Ryan, 1985). The first need is autonomy; which is defined as the need to follow a path that individuals highly value (Haas, 2019). In addition, autonomy indicates the perceived control over their lives, and the capability for voluntary actions (Akirmak et al., 2019). Therefore, individuals are more likely to perform, or initiate, behavioural change if they feel the choice is aligned with their central values and their lifestyle (Ryan, Patrick, Deci, & Williams, 2008). Enhancing autonomy could be done by an autonomy-supportive environment; by providing choice and decision-making flexibility (Legault, 2017). Second is the need for competence; individuals have the need to feel confident about, and need to believe in, one's ability to perform the desired behaviour (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000), this indicates a general sense of self-efficacy (Akirmak et al., 2019). Enhancing individual competence could be done by providing feedback, skills, and tools necessary to support protective behaviours (Ryan et al., 2008). Lastly, the need for relatedness; individuals look for a sense of belonging and trust, by looking for a sense of respect, trust, and care (Ryan et al., 2008). This means that relatedness gets impacted by the quality of the relationship with others. Satisfying relatedness occurs when relationships are nurturing and reciprocal, and most importantly, when they involve acceptance of the authentic self (Legault, 2017).

Studies regarding SDT and nurses have been performed regularly. Previous research about SDT and nurses focussed mainly on the support provided by nurses to influence the behaviours of the patient (Perlman, Moxham, Patterson, & Cregan, 2019), such as to provide care for patients (Priest, 2006), influence on treatment adherence (Mitchell, 2007), and the overall quality of care (Deci & Ryan, 2012). This doesn't comply with the nature of this study, as the intrinsic motivation of nurses is central



during this study. This stresses the importance and the value of this study, by expanding the field of SDT.

### THE SELF-DETERMINATION CONTINUUM

Claiming that any event affects individuals' feelings and perception of self-determination, or individuals' competence affects their intrinsic motivation, Ryan and Deci (2000) developed a self-determination continuum (SDC), which is shown in figure 1. With SDT as the foundation of this continuum, amotivation, extrinsic motivation, and intrinsic motivation have been divided into different regulation styles. These regulation styles are dependent to the amount of influence of either the controlled motivation or the autonomous motivation (Deci & Ryan, 2008), in which autonomous motivation is seen as the degree to which individuals have control over their own behaviour (Sánchez de Miguel et al., 2017), and controlled motivation is the degree to which certain behaviour is expected from others (Deci & Ryan, 2000).

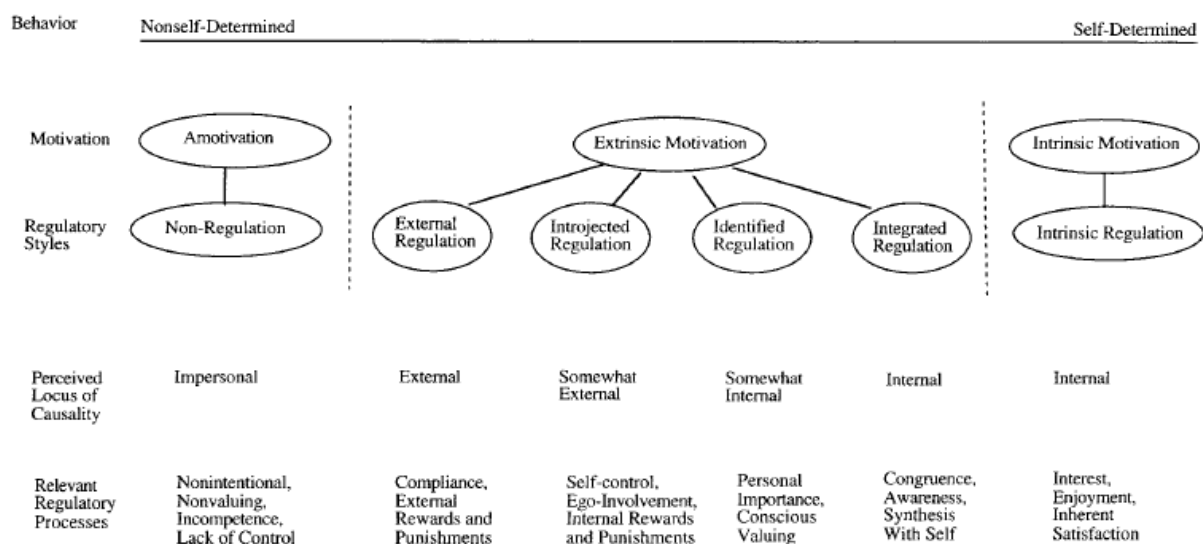


Figure 1. The Self-Determination Continuum of Ryan and Deci (2000)

Ryan and Deci (2000) provided detailed knowledge about the continuum, of which the main regulation styles will be explained. Extrinsic motivation could be divided into four different types of regulation styles. From highly extrinsic regulated towards more intrinsic regulation, the sequence is 1) external regulation, 2) introjected regulation, 3) identified regulation, and 4) integrated regulation. Both external and introjected regulation are part of controlled motivation. Experiences with external regulation are sensed as controlled and the behaviours occur since individuals aim to comply with external demands or to reward contingency. Introjected regulation is not fully accepting the regulation as one's own. Behaviours are performed in order to avoid guilt or anxiety, or to attain ego enhancement such as pride, these behaviours are not really experiences as part of the self. Individuals' are motivated to perform, to maintain feelings of worth. Identification regulation is a more autonomous form of extrinsic motivation. The value of the behavioural goal gets consciously

acknowledged by individuals. Therefore, the actions gets accepted or owned as personally important. The most autonomous form of extrinsic motivation is integrated regulation. Integration occurs when regulations are fully assimilated to the self, they have been evaluated and brought into congruence with one's other values and needs. They are still considered extrinsic, as they do not come from inherent enjoyment, but to attain separable outcomes. And finally, the intrinsic regulation, which is the only fully intrinsic motivation, in which individuals seek enjoyment and want to explore and learn for themselves.

### 2.3. COMPLIANCE

Nurses demonstrate their competence to be able to deliver safe and effective health care by attaining qualifications and registration of their knowledge, skills, health, and character, which are necessary to be considered capable in practice (The Nursing and Midwifery Council, 2015). These qualifications and registrations come from either external organisations, such as laws and regulations of the government, or organisational policies, such as the management. The internal compliance is differentiated between corporate compliance and governance. While corporate compliance is used to indicate how responsible acting is arranged internally, the purpose of governance is to control general rules and regulations between supervisors and management of the company (Oostwouder & Wiggers, 2019). Therefore, corporate compliance and governance are highly dependent on each other.

Compliance at health care institutions could be arranged on international, national, and organisational level. Internationally, many health care institutions decide to join the accreditation body JCI (Joint Commission International), which aims to "improve the safety and quality of care in the international community through the provision of education, publications, consultation, and evaluation services" (Joint Commission International, 2017, p. ii). *Wet BIG* is national policy that has been developed by the Dutch Government. It aims to guarantee the safety of patients and high quality of care, amongst other things by indicating which professional can perform which reserved operation (Rijksoverheid, 2018). And last, at the organisational level, there are regulations about risky actions, and how to guarantee the competence of the health care professional of these actions (Radboudumc, 2018).

However, while compliance demands are originally founded by external organisations or the management of an organisation, this doesn't mean that intrinsic motivation can't have any influence in the experience. The self-determination theory explains how controlled motivation and autonomous motivation could be of influence on individuals, even when the experience is originally seen as an extrinsic motivation (Ryan & Deci, 2000). Controlled motivation is characterized by the feelings of pressure to feel, think or behave in a certain way and values are not integrated to the individual self, which is contrary to the autonomous motivation in which the individuals have control over their own behaviour (Deci & Ryan, 2008). The perspective of SDT is interesting, as this could affect the current beliefs and structure of complying to formal regulations.

## 2.4. THE PRESENT STUDY

Even though it isn't always interpreted similarly, SDT believes that intrinsic motivation could affect activities or experiences to a varying extent for each experience (Deci & Ryan, 1985; Ryan & Deci, 2000). The influence of intrinsic motivation is dependent on the characteristics of the experience and the values and beliefs of individuals. This perspective is of high importance during this study. Because this clarifies the importance and logic to separate two types of learning experiences. In the past, motivation to learn has often been studied using the individual person as the unit of analysis: individual differences in motivation were studied in relation to trigger and outcomes. However, as nurses are confronted with two realities one learning experience could generate different outcomes than another.

During this study, the concept learning experiences will have a prominent role. It is therefore important to understand what LE's entail. LE's are seen as the entire sequence of planned or unplanned actions, that result in a learning outcome such as knowledge, skills, or insights. These experiences start with a trigger, but could have other reasons for the LE to occur, and have a goal. The central aspect of the LE's are the learning activities in which individuals are involved. Moreover, other actors could have a contribution to the entire experience. Also, this study will use the concepts intrinsic LE's and extrinsic LE's, starting at the results section. Intrinsic LE's are learning experiences that evolve out of personal interest, which is highly dependent on the intrinsic motivation of nurses. Contrary to the extrinsic LE's, which are learning experiences that evolve from complying to formal requirements, which is highly dependent on extrinsic motivation for nurses.

The goal of this research is to analyse differences and similarities between nurses' LE's that evolve out of personal interest and LE's that evolve from complying to formal requirements. This had led to the following research question:

*“What are similarities and differences in how nurses describe learning experiences that evolve out of personal interest versus learning experiences that evolve from motivation to comply with requirements?”*

The results of this study will provide insight into the differences and similarities between these two types of learning experiences. Based on these results, recommendations for further research and practical implications can be formulated.

### 3. RESEARCH DESIGN AND METHOD

#### 3.1. RESEARCH DESIGN

To answer the research question, a qualitative research design has been conducted with the use of narrative interviews. The aim of the interviews was to gain detailed in-depth knowledge and understanding on LE's with two types of motivation, one in which the participant learned out of personal interest (intrinsic motivation), and one in which the participant learned by complying to requirements (extrinsic motivation). The narrative construct aims to find one's complete story, to understand the individual's thinking, actions, and reactions (Bruner, 1986). The use of narrative interviews is appropriate since there is room for personal opinions and experiences of the participants (Migchelbrink, 2010). This study used narrative research to reconstruct nurses' learning experiences, in order to be able to analyse differences and similarities. These differences and similarities can be used for practical implications, to select suitable approaches to increase the intrinsic regulation of nurses during extrinsic LE's. The narrative construct is a suitable method to find practical implications, as it is used more often to improve the nursing practice (Holloway & Freshwater, 2007).

#### 3.2. PARTICIPANTS

The participants of this study were twenty hospital nurses at Radboudumc, Nijmegen, The Netherlands, ranging between 23 years old and 58 years old. This study focussed on nurses with a background in secondary vocational education or higher professional education and excluded nursing assistants and care helpers. Nurses have been selected over two departments with relatively higher and relatively fewer amounts of compliance, in order to generate a general picture of the entire hospital. The participants of the first department had been interviewed during the timeframe between 17.01.2019 and 12.02.2019. The other department had been interviewed during the timeframe between 24.01.2019 and 27.02.2019.

#### 3.3. INSTRUMENTATION

With the narrative interview as an instrument, the experiences of participants were explored by gaining detailed in-depth knowledge and understanding. The participants were asked to prepare the interview, by selecting recent LE's with different motivations; some LE's because participants wanted to develop themselves (intrinsic motivation), and some LE's because they were expected to develop themselves (extrinsic motivation). This letter is in Dutch and is attached to Appendix I. To be able to answer the research question, an interview guide is developed as a tool. Thus, semi-structured interviews were held. The tool was based on the narrative interview guidelines of NHL Stenden Hogeschool (2018). The focus during these narratives was on different phases of the LE's. To identify the process before the LE actually happened, the tool emphasised on the trigger for the LE, followed by the learning goal of the LE, and other reasons for the LE to occur. After this phase, questions were asked to identify the learning activities of the LE's, the learning outcomes of the LE's, and the actors that had been supportive during LE's. These six variables and their main questions have been presented in Table 1.1.

Table 1.1.

*Overview of Variables and its Interview Question*

Variable	Interview Question
Trigger	What was the trigger for this learning experience?
Learning Goal	What was your goal during this learning experience?
Reasons	Were there other reasons to engage in this learning experience?
Learning Activities	What happened during the learning experience?
Learning Outcomes	What did you learn during this experience?
Actors	Who, or what things, helped you during the learning experience?

The structure of the interview and the interview questions had been tested during pilot interviews. Pilots were used to find flaws in the interview guide and the items, and to test the setting and time duration of the interviews. Additionally, the pilots had been used to train the researchers' narrative interview skills. According to the findings of the pilot, adjustments had been made to the interview guide, and the final version is attached to Appendix II (in Dutch).

### 3.4. PROCEDURE

Permission for this study had been granted by the Ethical Review Board of the Dutch Association of Medical Research (NVMO), a prerequisite to conduct a study at Radboudumc, and by the Ethical Review Board of University of Twente. After this permission was acquired, both departments had been contacted. Participants of the first department participated out of personal interest and via the snowball-effect. Participants of the other department participated by being assigned to the study by the departments' supervisor. The available rooms to conduct the interviews were found on the spot at the department. At each department, five interviews started with the LE's out of personal interest, while the other five started with the LE's to comply with requirements. The duration of the interviews was between 30 and 80 minutes. The first three transcripts have been made manually, the other seventeen transcriptions were made with the assistance of the program AmberScript (2019), which was accessible on behalf of the BMS LAB of University Twente, which transcribed the interviews after uploading the audio fragment. The researcher has checked these transcripts and adjusted where necessary. The signed informed consents and the transcripts are saved on a shielded folder on the server of Radboudumc.

### 3.5. DATA ANALYSIS

First, transcripts were made of the records of the interviews, and pseudonyms were created for each participant. Second, the transcripts were coded on the basis of indexical and non-indexical coding. Indexical coding is the factual data of who, what, when and where, while non-indexical coding expresses the values, judgement, and any other form of gained wisdom (Schütze, in Jovchelovitch & Bauer, 2000). In this coding scheme, indexical coding covers 'what had been done' (learning activities), 'what had been learned' (learning outcomes), and 'who was supportive to the experience'

(actors). Non-indexical coding covers the experiences and values of the participants before the LE started, about the trigger of the LE, the learning goal of the LE, and other reasons for the LE to occur. A quick overview of the codes that were used is provided in Table 1.2.

On behalf of the interview questions that supports each variable, the coding scheme was developed. The main code *learning activities*, was categorised into formal and informal learning activities that had been provided by (Pool, 2015). The main code has got two subcategories; formal learning activities, that had been planned by others within a structured context: and informal learning activities, that happened spontaneously by the workers themselves. The sub codes belonging to these type of activities entail specific activities found in the study of Pool (2015). The main code *learning outcomes* was categorised into insight, knowledge, and skills, and the belonging sub codes had been formed due to inductive coding. The main code *actors* got sub codes based on inductive coding. The main codes *trigger*, *learning goal* and *reasons* were coded into the five types of regulation; external, introjected, identified, integrated and intrinsic (Ryan & Deci, 2000). As those subcategories present the overall value a participant had towards the LE. A logbook was made, to show the reasoning for this categorisation process. Therefore, other researchers are able to understand the logic behind the categorisation and will be able to reproduce. The full code tree, including definitions and keywords are presented in Appendix III. To allow for reliability, fellow students N. Sempel and J.C. Bloemendal have both been coding eight randomly chosen LE's, into the indexical and non-indexical codes. The differences between coding have been discussed between the three raters, including the researcher, and adjustments have been made based on these discussions. The total percentage of the interrater agreement is 92 percent.

Table 1.2.

*Brief Overview of the Code Scheme.*

Main categories	Main codes	Subcategories	Sub codes
Indexical	Learning Activities	Formal learning activities	Education
			Course
			Conference
			E-learning
			Team training
		Informal learning activities	Hospital-based activities
			Participating in meetings
			Consulting media
			Engaging in extra tasks
			Personal
	Learning outcomes	Insight	Work-related
			Professional
		Knowledge	Refreshing
			Communication
		Skills	Nursing operations
			Presenting

		Nothing learned	
Actors		Private	
		Things	
		Work	Direct colleagues
			Supervisor
			Management
			Others
Non-indexical	Trigger	External	
		Introjected	
		Identified	
		Integrated	
	Reasons	Intrinsic	
		External	
		Introjected	
		Identified	
	Learning Goal	Integrated	
		Intrinsic	
		External	
		Introjected	
		Identified	
		Integrated	
		Intrinsic	

## INDEXICAL DATA

The three variables learning activities, learning outcomes, and actors were central in the indexical data, and were asked during the interview with the following questions; “*What happened during the learning experience?*”, “*What did you learn during this experience?*”, and “*Who, or what things, helped you during the learning experience?*”. Each interview has got these questions, and the answer is coded according to the provided data.

Analysing the differences and similarities on basis of the learning activities, learning outcomes, and the actors, was done by first developing a quantitative overview of the number of times these codes had been used in the LE's. Each LE has got one learning activity, while they could have multiple actors and learning outcomes. An overview of these quantities is made and presented. Followed by a qualitative analysis of the differences, to provide more detail on the data; what stands out? How are the intrinsic and extrinsic LE's different? What other things does the data show?

## NON-INDEXICAL DATA

The three non-indexical variables trigger, the learning goal, and other reasons. The questions that been asked to provide data were; “*What was the trigger for this learning experience?*”, “*What was your goal during this learning experience?*”, and “*Where there other reasons to engage in this learning experience?*”. The answers to these questions have been coded into one of the five types of regulation; external, introjected, identified, integrated, and intrinsic. A logbook of this categorisation process had been made. This categorisation had been transformed into a scale, in which 0 = none, 1 = external, 2 =

introjected, 3 = identified, 4 = integrated, and 5 = intrinsic, to be able to show a quantitative overview of similarities and differences. An overview of these results will be provided and deeply explained on both the intrinsic and extrinsic LE's. After, the paired t-test will indicate if the means of these groups will differentiate significantly. This indicates whether or not the groups differ from each other.

### LEARNING PATHS

To provide detailed insight into the intrinsic and extrinsic LE's, learning paths will be presented. These paths will show what triggered the learning experience, what the learning goal and other reasons were. In addition, the learning activities, actors, and learning outcomes will be presented. These learning paths have been written from the perspective of the participant, by loosely translating the data into English. To identify different types of learning paths, the categorisation of the non-indexical data were used as a foundation. First, an average will be calculated of categorisation of the reasons and the learning goal. Then, it will be checked if that outcome is at least one point higher than the categorisation of the trigger, if it is at least one point lower than the categorisation of the trigger, or if it has a corresponding outcome to the categorisation of the trigger. An outcome is defined as corresponding when the difference between the trigger is less than one point. These differences will be the foundation of the learning paths, and for each path an intrinsic and an extrinsic LE will be presented. This calculation process was carried out, to be able to see the effect of the intrinsic motivation of the participants. If there is an increase, this entails that the intrinsic motivation of the participants grew prior to the learning activity. Contrary, if there is an decrease, this entails that the intrinsic motivation of the participants declined prior to the learning activity.

The goal of these learning paths is to provide insights into the process of intrinsic and extrinsic LE's of a participant. With this, differences and similarities between one participants' process should become clear. These paths can be used to show what the intrinsic motivation of nurses looks like, and how nurses are encouraged to use this type of motivation. Subsequently, an indication of nurses' needs to learn in a self-directed way, and to take control of their own professional development. The insights these two learning paths provide, should especially visible on the non-indexical data.



## 4. RESULTS

### 4.1. INDEXICAL DATA

The indexical data provided some insights, regarding the learning activities, the learning outcomes, and what actors have been involved during the LE. Below, these results are given.

#### LEARNING ACTIVITIES

The learning activities the participants had been involved in have been divided over formal and informal learning activities. To provide an overview of the differences between those main activities, Table 2.1 had been created. During the extrinsic LE's, the amount of formal and informal activities had been divided almost equally. However, during the intrinsic LE's participants were mostly involved in informal learning activities (75%), compared to the formal learning activities.

Table 2.1.

*Differences in Learning Activities between Intrinsic and Extrinsic LE's.*

Learning Experiences	Formal Learning Activities	Informal Learning Activities
Intrinsic	5	14
Extrinsic	10	9
Total	15	23

The results show that informal learning activities have got a distinction in the nature of the activities: the participant made a deliberate choice to get an active role during the learning activity; the participant had been part of the learning activity since the activity had been obligated. The most deliberate choices to participate in an activity occurred during the intrinsic LE's, 9 times out of 14. This results in an equal amount of 5 times in which the activity had been obligated in both the intrinsic and extrinsic LE's. In addition, during the deliberately chosen participation participants had been more in charge of the process of the learning activity.

To provide more detailed insights, Table 2.2 is developed. The aim of this table is to show quotations of participants as an example and to give an overview of the number of times each code had been used. Below Table 2.2, highlights of the results will be discussed.

Seven LE's have been coded into team training, a formal learning activity. While one intrinsic LE had been described within this code, all origins of these team trainings come from the organisation. Commonly discussed examples are "our ALS (advanced life support) training, which is obligated once a year" – *Paulien*, and "the communication training that had been imposed" – *Demi*. Another seven LE's have been coded into meeting. The intrinsic LE's to this code regard "the organisation of a casuistic meeting with a colleague" – *Milou*, and two meetings in which the origin of the meetings came from the organisation. This is the same as the origin of the extrinsic LE's, but there are differences whether the participant was in charge of the meeting "but I mainly led those conversations,

in which I was in the lead.” – *Diederik*, or when the participant only had to participate during the meeting “moral deliberation occurs regularly, I think once a month, in which you can discuss a case or situation.” – *Maike*.

Table 2.2.

*Quotations and an Overview of the Amount of Learning Activities.*

Main code	Sub code	Intrinsic LE's	Extrinsic LE's	Total	Quote
Formal Learning Activity	Conference	2	0	2	“That means that I always go somewhere, once a year, about management in business. And this time it had been the masterclass.” - <i>Belinda</i>
	Course	0	3	3	“It had been a course about minor interventions from the other department urology/gynaecology.” - <i>Alice</i>
	Education	2	1	3	“I’m about to start with a new education, oncology.” - <i>Lena</i>
Informal Learning Activity	Team Training	1	6	7	“Our ALS (advanced life support) training, which is obligated once a year” - <i>Paulien</i>
	Meeting	3	4	7	“So I had to tell those people that we expect them to work during the weekends as well.” - <i>Diederik</i>
	Hospital-based Activities	6	5	11	“I became a Hygiene and Quality employee since it is expected from us to have a field of attention.” - <i>Milou</i>
	Extra tasks	4	0	4	“I proposed the idea to develop training rooms for new employees.” - <i>Pascalie</i>
	Consulting Media	1	0	1	“As I wanted to broaden my knowledge about that topic, I asked an internist about it and had been searching on the internet.” - <i>Tanja</i>

The highest amount of learning activities are hospital-based activities, in which there is an equal amount of 5 intrinsic and extrinsic LE's coded. Hospital-based activities are learning activities that belong or are supportive to the daily job of nurses. Examples of this code are “a patient who is rushed in during the night, with a bad clinical condition, of which I was the nurse who had to manage everything” – *Vera*, “Shortly, I started with a new function as oldest of service (OVD)” – *Patty*, and “for the BIG registration we have to sign many nursing procedures, and I performed all those acts except the drips. And now I decided to train myself in performing that procedure as well” – *Daan*. There are two keys to these learning activities, 1) the expectations of the organisation to participate in the learning activities, as the activities are daily based practices: “Recently, I had a difficult situation with a patient in the ward, where I was called to assist as MED.” – *Diederik*. And 2) the opportunities the organisation provided to the nurses, to develop themselves: “The group of testers got too small for the number of colleagues on the department, and therefore you got to subscribe yourself to become a tester as well.” – *Iris*.

## LEARNING OUTCOMES

The learning outcomes of the participants were divided over four codes; insights, knowledge, skills, and no learning. Table 2.3 provides the differences between the learning areas of the intrinsic and extrinsic LE's, including quotations to provide insights into the content of the learning outcomes. The data shows that overall most of the participants gained new insights during the LE's, however the learning outcome skills follows closely. Only three participants indicated not to have learned, as those learning activities had not started yet.

It is possible for participants to have learned on several areas during the LE's, the outcomes have been coded conform that thought. Results show that 21 LE's have led to learning outcomes in one area, eleven of these had been intrinsic LE's. In addition, seven intrinsic LE's and seven extrinsic LE's have learning outcomes in two different areas. The combination of insights and skills is most common. Lastly, one intrinsic LE and two extrinsic LE's have learning outcomes on all three areas: insight; knowledge; and skills. The LE's that have learning outcomes on three areas, are explained deeply. The participant that had three learning outcomes during his intrinsic LE has learned the following things:

“I've learned that I'm capable of more than I expected. That I'm able to outgrow my fears or something else I don't like.” [insight], “I've learned about things I should keep an eye on, the points of attention.” [knowledge], and “I've learned about the nursing procedure, how to perform.” [skills] – *Daan*.

Both participants that had three learning outcomes during their extrinsic LE, have been participating in the attention field hygiene and quality. The first participant that has three learning outcomes learned the following:

“I really like to coach on the floor, and to take others with me in the process.” [insight], “I've learned a lot of theoretical knowledge on the subject.” [knowledge], and “My biggest learning point is about coaching, how to address others correctly; by highlighting positive things.” [skills] – *Vera*.

The other participant that gained three learning outcomes learned the following:

“Now I'm doing this for about a year, I've learned that it is a really important part.” [insight], “I've learned about the content, of which I barely knew anything. Especially the background information the medical microbiologist told us about.” [knowledge], and “Now I have to provide others with feedback, I see it becomes easier to do so.” [skills] – *Milou*.

Table 2.3.

*Overview of the Amount of the Learning Outcomes, Including Quotations as an Example.*

Code	Intrinsic LE's	Extrinsic LE's	Total		Quotation
Insight	11	10	21	Personal	"I can be really certain in my acting, this is what I'm going to discuss and nothing else. But now, I've learned to be open to the responses I get. And I noticed that this way more pleasant." – <i>Pascalie</i>
				Work-related	"That might be something for the next time, to provide something concrete, which is something this group needs" – <i>Diederik</i>
Knowledge	4	11	15		"There are a hundred thousand different bacteria, everything should be cleaned differently. And the importance of that really became clear." – <i>Vera</i>
Skills	9	9	18	Communication	"What I've learned most, is how to be communicatively skilled in such a situation. How you address others, to be sure they do what you ask for." – <i>Vera</i>
				Refreshing	"And of course it is some refreshing, how to provide feedback and how to keep your comments close to yourself." – <i>Demi</i>
				Nursing operations	"It is mainly cannula care, the observations of stuffiness, that is what you learn mostly." – <i>Daan</i>
				Presenting	"I've also learned to stand in front of such a group, to just do that." – <i>Milou</i>

Regarding the learning outcome insight, data shows a difference in acquiring personal or work-related insights. With a total of 21 LE's acquiring insight as a learning outcome, it is seen that twelve of these outcomes are work-related, of which seven extrinsic LE's and five intrinsic LE's. An example is: "That might be something for the next time, to provide something concrete, which is something this group needs" – *Diederik*. Moreover, nine of these outcomes are personal, of which three extrinsic LE's and six intrinsic LE's. As an example: "I can be really certain in my acting, this is what I'm going to discuss and nothing else. But now, I've learned to be open to the response I get. And I noticed that this way more pleasant." – *Pascalie*. Implying that during the extrinsic LE's the main focus is on the actual task, while during intrinsic LE's a personal gain is important as well.

The learning outcome knowledge, is the only learning outcome that shows a high discrepancy on the amount of times a learning outcome is gained between intrinsic and extrinsic LE's. In addition, participants indicate almost 3 times as often to have gained knowledge during extrinsic LE's, compared to intrinsic LE's. An example is: "Well, I've learned about a new specialism. The

functioning of a new area of the human body. ... Everything is visible on the outside, which brings a complete different physical approach.” – *Daan*.

The learning outcome skills shows a gain in skills that are necessary for the daily practice of nurses. What is seen, is that several types of skills could be identified; refreshing, communication, nursing operations, and presenting. Communication is the type of skill that occurs mostly. Two extrinsic LE's and five intrinsic LE's have communication skills as a learning outcome. An example of an extrinsic LE is: “What I've learned most, is how to be communicatively skilled in such a situation. How you address others, to be sure they do what you ask for.” – *Vera*. Nursing operations is the learning outcome that occurred five times, three times during extrinsic LE's and two times during intrinsic LE's. The learning outcome refreshing had been a frequent outcome as well. This occurred during three extrinsic LE's, and one intrinsic LE. However, this intrinsic LE has got an external trigger. Lastly, two learning experiences have the learning outcome presenting, one extrinsic and one intrinsic.

## ACTORS

An overview of the actors that had been involved during the learning experiences, is shown in Table 2.4. The actors that had been most involved during the LE's of the participants, were the direct colleagues. The total of 24 codes is divided into 12 extrinsic and 12 intrinsic LE's. The second most involved actors had been other connections, with a total of 17 codes and a distinction of 8 extrinsic and 9 intrinsic LE's. These other connections mostly consist of members of medical specialties, with the main contribution of doctors “The oesophagus team that has got two surgeons who do a lot of these surgeries.”- *Milou*, 28 y/o, followed by trainers “The person who was in charge of the meeting had a lot of knowledge and was able to answer all questions clearly.” – *Alice*, 46 y/o. After these other connections, supervisors were the most helpful actors during the LE's, they had been involved in 6 intrinsic and 4 extrinsic LE's. During the intrinsic LE's, four times the supervisors had been supportive actors: My supervisor, who hired me, I can always account on her when something's wrong.” – *Patty*, 39 y/o. While the supervisors had been demanding actors in three of the extrinsic LE's: “Our supervisor wanted us to start with re-training the evacuation to colleagues.” – *Tanja*, 36 y/o. In addition, half of the time, supervisors had been involved during the informal learning activities.

Table 2.4.

### *Involved Actors during the Learning Experiences*

Learning Experience	Things	Private setting	Direct colleagues	Supervisors	Management	Other connections
Intrinsic	3	3	12	6	1	9
Extrinsic	2	2	12	4	7	8
Total	5	5	24	10	8	17

What's noticeable is the amount of extrinsic LE's in which the management had been involved, 6 extrinsic over 1 intrinsic LE's. These managers had somehow been in charge of these LE, except during the LE of Lena (25 y/o): "During the training vitally endangered patient, I worked together with the head of the department of neurology.". Lastly, both private connections and things, have been coded 5 times, with 3 intrinsic LE's and 2 extrinsic LE's.

#### 4.2. NON-INDEXICAL DATA

Before the LE's started, participants had certain beliefs towards that LE. The thoughts of the participants had been asked about the trigger and the learning goal of the LE, and other reasons for the LE to occur. Table 2.5 is made to show examples of these beliefs, categorised into the different types of regulation.

Table 2.5.

*Examples of the Beliefs of the Participants on Different Types of Regulation.*

Code	Trigger	Learning Goal	Other Reasons
External	"It had been planned that all examiners are going to examine each other on January 8 <sup>th</sup> ." – <i>Hannah</i>	"The goal had been to notify everybody." – <i>Tanja</i>	"Secretly I think the management approved because they want both teams to lose their cold water fear a little." – <i>Pascal</i>
Introjected	"Lately we had a communication training. ... I wasn't really against it, but I thought 'another one'? Because it is obligated, I'll be present." – <i>Demi</i>		"It is a part of the job. Some sort of expertise promotion. Moreover, you are regularly expected to be present during these meetings." – <i>Maike</i>
Identified	"Due to shortages, we receive patients from the other department. ... That is how the question arose if we could receive some more information on those patients." – <i>Alice</i>	"The goal had been to remove the anxiety of the other specialism. To show that it is less scary than others believe in first instance." – <i>Pascal</i>	"If the nursing assistants fall out, I had only a small group to oblige to work. ... Soon, everybody will be used to work during weekends. Which makes it easier to solve problems." – <i>Diederik</i>
Integrated	"I jumped into that since I noticed that the function I had absorbed all my energy, and this really took my interest." – <i>Belinda</i>	"To master the subject, to gain all possible knowledge. But also to propagate in the workplace." – <i>Vera</i>	"We had planned to start this during the fall. Because we are keen on keeping everybody up-to-date as well." – <i>Tanja</i>
Intrinsic	"I really like to map the entire trajectory a patient has to go through. Which is the reason why I wanted to know what happens at the outpatient clinic." – <i>Mandy</i>	"To get over my anxiety, that this isn't that scary. To become able to just perform the act." – <i>Daan</i>	"Pure interest in today's developments. And to be able to contribute to these changes, from the perspective of the work floor." – <i>Sara</i>

*Note:* There is no data available for the code when the space is blank.

The full categorisation of each LE of each participant on the trigger, reasons, and the learning goal had been categorised in order of a scale and is presented in Table 2.6

Taking a detailed look at the table, it is shown that only 6 out of 20 intrinsic LE's had a full intrinsic trigger. The participants showed self-reflection during these experiences, which is seen in quotes such as "I think", "I want", and "what I wanted to know". Despite the extrinsic LE's, three participants had fully intrinsic reasons to participate in the LE. The reasons these participants had were: to become future proof if the participant ever wants to change her job; as the participant had previous experience to which she had interest in; and to lose the grind feeling the participant had. Moreover, despite the extrinsic LE, 10 participants had a learning goal that had been integrated with their values and beliefs. Noticeable is that in eight of these cases the reference "you" is used. The use of "you" is mostly seen in the learning goals of the extrinsic LE's.

Table 2.6.

*Types of Regulation for the Learning Experiences, n = 19*

Participant	Intrinsic learning experiences				Extrinsic learning experiences			
	Trigger	Other Reasons	Goal	Average	Trigger	Other Reasons	Goal	Average
1	4	5	4	4.33	3	4	4	3.67
2	5	5	3	4.33	4	4	4	4.00
3	5	5	4	4.67	1	1	3	1.67
4	3	4	3	3.33	3	5	4	4.00
5	1	5	3	3.00	3	5	4	4.00
6	2	3	3	2.67	3	3	4	3.33
7	4	5	4	4.33	1	1	0	0.67
8	4	5	5	4.67	1	0	4	1.67
9	5	4	5	4.67	2	0	4	2.00
10	-	-	-	-	1	3	4	2.67
11	3	0	3	2.00	-	-	-	-
12	4	5	5	4.67	1	4	1	2.00
13	5	4	4	4.33	1	1	3	2.67
14	2	2	4	2.67	1	0	3	1.33
15	4	4	3	3.67	2	1	0	1.00
16	4	5	4	4.33	3	0	4	2.33
17	4	5	4	4.33	3	3	3	3.00
18	4	4	5	4.33	4	5	4	4.33
19	5	5	5	5.00	4	1	3	2.67
20	5	5	4	4.67	1	1	3	1.67
Average	3.84	4.21	4.00	4.02	2.21	2.21	3.16	2.53

*Note.* 0 = none-regulation, 1 = external, 2 = introjected, 3 = identified, 4 = integrated, 5 = intrinsic

### PAIRED SAMPLE T-TEST

A paired t-test was run on a sample of 18 nurses, to determine whether there was a statistically significant mean difference between the trigger, reasons and the learning goal of the intrinsic and extrinsic LE's. These means differ slightly from the data presented in table 2.5, as this table also shows the regulation when there is no pair available. Therefore, Table 2.6 presents the means and the

standard deviation regarding the paired t-test, with a sample of 18 nurses. All other schemes of the paired t-test are presented in Appendix IV.

Table 2.6.

*The Means and Standard Deviations Regarding the Paired Sample T-Test*

Intrinsic learning experience								Extrinsic learning experience							
Trigger		Reasons		Goal		Average		Trigger		Reasons		Goal		Average	
Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
3.89	1.18	4.44	0.86	4.00	0.77	4.11	0.72	2.28	1.18	2.17	1.92	3.06	1.35	2.50	1.16

The paired t-test was run to determine whether there was a statistically significant mean difference between four variables: 1) between the regulation of the intrinsic trigger and the regulation of the extrinsic trigger, 2) between the regulation of the intrinsic reasons and the regulation of the extrinsic reasons, 3) between the regulation of the intrinsic learning goal and the regulation of the extrinsic learning goal, and 4) between the average regulation of the intrinsic LE's and the average regulation of the extrinsic LE's. Participants scored higher on the regulation of the intrinsic trigger ( $M=3.89$ ,  $SD=1.18$ ) than on the regulation of the extrinsic trigger ( $M=2.28$ ,  $SD=1.18$ ); a high statistically significant increase of 1.61,  $t(17)=3.90$ ,  $p < .002$ . Participants scored higher on the regulation of the intrinsic reasons ( $M=4.44$ ,  $SD=0.86$ ) than on the regulation of the extrinsic reasons ( $M=2.17$ ,  $SD=1.92$ ); a high statistical significant increase of 2.28,  $t(17)=4.85$ ,  $p < .001$ . Participants scored higher on the regulation of the intrinsic learning goal ( $M=4.00$ ,  $SD=0.80$ ) than on the regulation of the extrinsic learning goal ( $M=3.06$ ,  $SD=1.35$ ). There was a significant increase of 0.94,  $t(17)=2.58$ ,  $p < .020$ . Participants scored higher on the average regulation of the intrinsic experience ( $M=4.11$ ,  $SD=0.72$ ) than the average regulation of the extrinsic experience ( $M=2.50$ ,  $SD=1.16$ ); a high statistical significant increase of 1.61,  $t(17)=4.60$ ,  $p < .001$ . These results suggest that in general the intrinsic LE's have a higher intrinsic regulation at the start of the experience. Especially, this data suggests that when LE's with an extrinsic motivation occur, nurses have few intrinsic motivation towards the experience.

### 4.3. LEARNING PATHS

In order to provide insights in the learning paths taken by the participant, learning paths have been identified, based on the categorisation of the trigger and the average of the reasons and the learning goal of the LE. Calculating the averages, and categorising the LE's into the right learning path, provided some insight. It shows that the regulation of participants mostly remained the same during the intrinsic LE's, while an increase of the regulation is most common during the extrinsic LE's. Table 2.7 shows the number of increases of the regulation, decreases of the regulation and corresponding outcomes between the trigger and the average of the reasons and the learning goal.



Table 2.7.

*Increase, Decrease and Corresponding Outcomes between the Trigger and the Average of the Reasons and Goal*

Learning Experience	Increase	Decrease	Corresponding
Intrinsic	5	3	11
Extrinsic	9	4	7
Total	14	7	18

The reconstructions of the LE's will be a comparison of both LE's of one participant. In which all intrinsic LE's will have a high intrinsic regulation. The extrinsic LE's will be: a low, increasing regulation; a low, decreasing regulation; and a low regulation with corresponding outcomes. This shows how the LE's are dependent to the situation in which the experience occurs, and isn't only dependent to the individual who ends up in the learning situation.

A main difference between the intrinsic and extrinsic LE's of the participants, is the difference in perspective in which the participants approached the experience. During the intrinsic LE's, participants describe the experience from their own perspective, first person. This is seen by the frequent use of "I" "me", and "my". However, during the extrinsic LE's, participants describe the experience from the third perspective. This is seen by the frequent use of "we", and phrases such as "the goal had been".

### PARTICIPANT 3: CORRESPONDING INTRINSIC LE, INCREASING EXTRINSIC LE

The intrinsic urge to start planning her future had been the reason for Hannah's intrinsic LE to occur. During this LE, Hannah learned about the importance of her own values and feelings. Moreover, she kept the experience close to herself, by holding on to her perspective. During this learning experience, her motivation remains high, and close to herself. As well as her description of the learning activities and what she had learned. During the interview, enthusiasm had been highly present.

Contrary to her intrinsic LE, the extrinsic LE of Hannah had been a learning activity that had been imposed by others. She didn't have a choice to participate. However, she saw the importance of the learning activity and identified with the goal of the activity. At first, she started with a sense of detachment when she spoke of the experience. This is due to the decisions that had been made without her presence. However, as the experience continued there was a noticeable change in motivation and involvement from the moment she spoke about the learning goal until the learning outcome. However, this enthusiasm wasn't close to the enthusiasm during the intrinsic LE.

### PARTICIPANT 19: CORRESPONDING INTRINSIC LE, DECREASING EXTRINSIC LE

Mandy's intrinsic LE started with her own curiosity, about the path of patients towards their department. She wanted to see the entire process a patient experiences, which made her highly motivated during the entire experience, as she felt an intrinsic urge to do this. She spoke enthusiastic about the learning experience, with a high sense of intrinsic motivation and the use of the first person.

During the extrinsic LE that had been described by Mandy, it is clear that the experience started from within the organization, as the organisation reacted to things that occurred. However, she directly showed a high interest in the experience. But, she hadn't been actively motivated during the rest of the process towards the learning activity. What is characterising during this learning experience, is a noticeable sense of detachment about the learning experience. She remained enthusiastic when speaking about the trigger of the experience, however did not keep the level of enthusiasm during the entire narrative. Even though, she did understand the benefits of the communication training. In addition, this LE resulted in two types of learning outcomes. Which makes the training rather effective.

### PARTICIPANT 7: CORRESPONDING INTRINSIC LE, CORRESPONDING EXTRINSIC LE

Similar to Hannah, Patty has got a high motivation for her personal development and to invest in her future. An opportunity in the organisation made her actively chase her personal needs. She kept the entire narrative close to her personal beliefs, and kept speaking in first person. This LE also brought two types of learning outcomes, which makes her aware of her own contribution as a professional.

There had been barely any intrinsic motivation towards the extrinsic LE of Patty. Even though she did not show any disinterest, frustration, or any negative emotions, she didn't show any motivation either. Of all three extrinsic LE's that have been provided, this experience shows the biggest detachment of the participant. There is a high sense of external motivation, and it is clear if the management did not decide to implement the project, she would not bring such activities into action. At first there really seems to be a sense of disinterest, however that turned around a bit when actually executing the project.

## INTRINSIC LEARNING EXPERIENCE OF HANNAH (PARTICIPANT 3) – CORRESPONDING REGULATION

### Trigger [Intrinsic]

I really enjoy coaching on the work floor. So I figured, I have to do more with it than I'm doing currently. The question is whether or not I want to do this in the hospital. I had an intervision session lately, and I thought it is amazing what that woman does. This seems fun to me too. So, I went to a two-day congress, for entrepreneurs and supervisors, to see how you can grow into it. And to make a personal choice, what to do with my life. I already had a coach from here, since I figured I could learn some more.

### Reasons [Intrinsic]

Another reason to go was since I saw it was for supervisors as well, and I thought it can always make me smarter. I can learn more from it. I had seen some information, and I thought wow, I really want to be part of that. As a human being, I can learn from it even if I won't change anything in my career, these kind of days are always interesting to learn from.

### Learning Goal [Identified]

My goal had been to figure out what I want for the future. Partially since a reorganisation is coming. So, what is good for me to do? And to create a strong position for myself, regarding coaching. I went through my back last year, so it is important to work on myself. To make clear choices for myself. And to not always do what others want me to do.

### Learning Activities [Formal – Course]

So I went to a congress for two days, mostly for entrepreneurs and supervisors, to learn how you can grow in coaching. We really had to listen a lot, and we've got many examples of people who dared to took the step to do something different, to make other choices. But it had been interactive as well. It had been great. There had been a woman, who started with some exercises right after the break. To really get us out of our comfort zone.

### Actors

My physiotherapist, she might want to work with me in the future, and she attended me on the congress. I also went with her to the congress.

My husband, I discuss with him, but he is in it like; if it makes you happy, then fine, go.

### Learning Outcome [Insight]

I've learned to get some more structure into my life, for myself. Instead of taking care of others constantly, which I'm really good at. So, to take some more care of myself. And also to think of other things I want to accomplish in my life.

Also, I've learned to stand up for myself. To become a powerful person. Not to let others take the lead, what I'm always doing. I'm really sensitive to the opinions of others. And they told me to choose what I want.

## EXTRINSIC LEARNING EXPERIENCE OF HANNAH (PARTICIPANT 3) – INCREASING REGULATION

### Trigger [External]

I'm an examiner, of restricted actions, and we are going to examine everyone this year. Last year the examiners just started to test everybody, without getting all together first. I had not been an examiner by then, so I don't know any details. But those people indicated that they didn't want to do it like that anymore. They wanted to work differently. And so that had been adjusted immediately. Starting this year, all examiners should be rostered to have one day of examining each other. In that case, all examiners had been tested already. To this year it had been planned that on January 8<sup>th</sup> all examiners would go and examine each other, unprepared.

### Reasons [External]

The examiners really wanted this day to come. And the management approved. So in that case, it is a pretty expensive day. However, it does yield a lot. As the examinations will go smoothly throughout the year.

### Learning Goal [Identified]

The goal was to control the restricted actions as examiners, so it will be easier to examine others. Also, to trick the parts in the tests that annoys us as examiners, and to be able to adjust those to our preferences. To be able to delete all bad things. The ultimate goal is to be able to train a growing number of people in these actions. Since there are things that don't occur often. In that case, everybody remains competent in these actions.

### Learning Activities [Formal – Team Training]

We trained the restricted actions of the examiners. We have been divided into groups, and you had to show up for one part of the day. Which we were notified on shortly before the training, which is a little less pleasant. We went there on the moment we were expected, and have been divided into groups of two or three others. We went into a room with three people to examine those restricted actions. One knows something someone else might not know, and otherwise around. That isn't a problem. There is one person that writes down what happens and is keen on tackling mistakes in the sheet. And the other two had performed the required action.

### Actors

Senior nurse, for planning the day

Management, to approve the idea

Direct colleagues, working together to train the restricted actions and to evaluate the day.

### Learning Outcome [Skills]

We mainly refreshed the necessary skills for those actions, and how to examine others.

This had led to being more open to examining other colleagues, therefore the goal of the entire department has been reached as well.

## INTRINSIC LEARNING EXPERIENCE OF MANDY (PARTICIPANT 19) – CORRESPONDING REGULATION

### Trigger [Intrinsic]

I like to chart a total picture of the patient's trajectory, and I wanted to know what is happening at the outpatient clinic already and what is discussed there. I rose that question because I was interested in it. And the department facilitated me to actually being able to visit the outpatient clinic, as I had to leave the department for that day. What drove me most was my curiosity. But also to be able to receive the patient better during the intake at my department. So I already know what kind of information was given to the patient. What kind of preliminary phase they had. What kind of complaints they initially have. In order to be able to better respond to the patient.

### Other Reasons [Intrinsic]

A reason is to broaden knowledge. Maybe also to see whether I would like to work there, as nurses actually supervise that process. Another reason is to present myself among other specialists, showing that I am willing to do more than just work at the department. So, therefore it might be a tactical too.

### Learning Goal [Intrinsic]

I didn't really set a specific goal upfront, I went there blank, and wanted to absorb everything of the process at the outpatient clinic.

### Learning Activities [Informal – Extra Tasks]

I gained experience at the outpatient clinic, as my supervisor facilitated my request. My supervisor gave me the mail address of an indirect colleague, who I contacted. That colleague gave me a day to be present.

What was untypical, is that the planned day only covered one patient, while normally seven patients would be guided. By this, I could really experience what a patient goes through, so I went along with the patient to different specialists. First, the patients tell their story, later an anamnesis is made, and the social network of the patient is mapped. And the guiding nurse decides which specialists the patient should visit that day. And the specialists dig into the complaints of the patient. I noticed that those specialists speculate patients' process, while the patient is present. Which shocked me. Since the patient will receive the results, and the planned process, later.

### Actors

Supervisor, facilitation of the day

Indirect colleague from the outpatient clinic, showing me around

Doctor assistant, explaining the goal of such an intake

### Learning Outcome [Insight]

A lot of double work is done between the outpatient clinic and the intake at the department.

That the process goes real quick, within three weeks after the intake at the outpatient clinic, the patient will have the surgery planned.

I really experienced the trajectory at the outpatient clinic, it gave me insights

However, I don't have confirmation if I would like to work there, at least not as a nurse.

## EXTRINSIC LEARNING EXPERIENCE OF MANDY (PARTICIPANT 19) – DECREASING REGULATION

### Trigger [Integrated]

We as a team have received a communication training that had been imposed. It sounds really dramatic, but you didn't have a choice, you had to be present. This had been due to two complaints the hospital received within a month. This had been the straw that broke the camel's back. A fifteen-minute monologue was held by our supervisor about things he no longer wanted to see, mainly about the treatment towards patients, but also about the treatment from nurses towards the managers. Colleagues had been really shocked, they didn't know what was happening. I felt like they decided to throw the whole team together in one go. Which hadn't been tactical, but that had been communicated 100 times. In the meetings that followed, we came to the conclusion that the common denominator is communication, which is why a communication training was offered again. Which is a really demotivational trigger.

From the start I heard about the communication training, I really felt like I was excited to go. I never had such training before. Even though the rest of the team was not looking forward, they thought, another one? If it hadn't been imposed, if it wasn't obligated, I still would have attended the communication training.

### Reasons [External]

The trigger had been the main reason. Maybe they want to have such training every now and then. But this had been the straw that broke the camel's back.

### Learning Goal [Identified]

At first, I didn't have an expectation. I thought that they were going to explain how to communicate, things I've already learned in school. But when I heard about the experiences colleagues, I felt like it was going to be different. I had the feeling I was going to get more out of it. I hoped I would get some handles to put into practice, regarding communication. My goal had been to become more resilient towards a mature colleague or patient.

### Learning Activities [Formal – Team Training]

A communication training had been imposed. The duration had been from 8.30h till 12.30h. There had been an actor, or teacher actor, and about nine colleagues. Three of the colleagues came from my department and the rest came from urology/gynaecology. Which felt fine.

We started with discussing some theory about communication and how everybody scales others, which is about warmth and competence. That had been about stereotyping. We also discussed how it occurs that you're unable to ask more questions, and how to solve that, by providing feedback. And we have discussed some cases, about situations you would have wanted to provide feedback but didn't. followed by practicing those rules of providing

feedback. After that, we've finished up and shared a great lunch.

We had a comment, during the case that was discussed, in which the trainer said that everything that will be discussed would remain there. Someone said that she couldn't guarantee that, or that she didn't trust it would. And I thought, why would you say something like that? Is it a feeling she has got? But I think she had been really down-to-earth, that it is not possible to guarantee such a thing. However, that comment set the tone. It was also that person, that explained later on, that for her she had enough of it, and has decided to quit.

### Actors

The actor, who provided us with theory  
Colleagues, with whom I participated during the training.

### Learning Outcome [Insight and Knowledge]

I've learned about the differences, and the insight of colleagues, how they work. Which had been very interesting.

I've learned to look with a different view towards asking questions. About in-questions and ex-questions. I believe that these type of questions are going to help patients. To gain more depth in the conversations. But also to get a better understanding of my colleagues, and to get into the conversation stronger. How to act neutral, and what your nonverbal attitude does to someone else.

## INTRINSIC LEARNING EXPERIENCE OF PATTY (PARTICIPANT 7) – CORRESPONDING REGULATION

### Trigger [Integrated]

At this moment, I tend to develop towards the management. The OVD (oldest of service) had been a fun step, as there was a spot. So I applied to that function. I applied because I wanted to become visible in the department. I feel like there is much more I can do, that there are other areas to which I can develop myself.

### Reasons [Intrinsic]

My biggest motive is my own feeling to actively start to develop myself. The only thing that stopped me, had been my young family. I feel like I should be there for my children, and not send them to day-care. However, since my husband got a new job, I felt like it is my time to invest in my personal development.

### Learning Goal [Integrated]

The intensive care will reorganise. My main goal is to become a directing nurse (in Dutch: regieverpleegkundige). The area of which I want to become such directing nurse is unknown. Partly because it is not clear how it will be structured, yet. That makes it hard for me to show my interest, in the field I want to specialise in.

### Learning Activities [Informal – Hospital-Based Activities]

Shortly, I started as an OVD. A spot came free, and we were told that the ones that were interested should apply. Well, that is what I did. I have sent a letter, that got out in the selection procedure. Afterwards, I had conversations with colleagues, a senior nurse, head of the department and HR. I got picked out all of these conversations to fill the spot, together with someone else. After we've got the spot, we received one training day, and then we were good to go.

### Actors

Colleagues, senior nurse, head of the department and HR for the meetings.

The head of the department, as she hired me for the job.

One senior nurse, as he became our contact and had guided me during the training day.

### Learning Outcomes [Insight and Skills]

I've really grown in communication. It is always hard to communicate properly, to understand each other, and I've learned to ask for a confirmation. I stand my ground way stronger now. I dare to stand up for myself. That did grow through the years, but during the OVD I notice such things are really important. There are some colleagues to whom you should really stand your ground.

Also, I got way better in communication with the secretary, host and hostess, about stuff they need to be aware of. But also in asking questions if I don't know something. You should be aware of that. And also, I think it is hard to keep order in making a planning. But I figured you should start and just do it. You will never learn if you won't try. You should continue to develop yourself. Otherwise, you will get stuck in old patterns, and that isn't beneficial.

## EXTRINSIC LEARNING EXPERIENCE OF PATTY (PARTICIPANT 7) – CORRESPONDING REGULATION

### Trigger [External]

Research had been conducted and showed that many people have psychological problems when they are hospitalized to the IC, especially for a long period. It is a hard and scary world, with all the equipment and noises around patients. For most patients, being hospitalized to the IC had been an acute situation, so patients wake up in strange, unfamiliar surroundings. And to cover that, and to give the family a purpose during the hospitalization, the management decided to start with a project called family participation, in which family gets provided by possibilities to take care of their near ones.

### Reasons [External]

For me, it was all about exploring, waiting and seeing how it developed itself. In which I wanted to see good conditions towards family, about the possibilities and what they could expect. But it was mainly imposed by higher hand and the department responded to that request.

### Learning Goal [No Goal]

The only goal I had was starting with the project, see where it goes, and how it develops.

### Learning Activities [Informal – Hospital-Based Activities]

Families get involved in the care of their nearest family members who are hospitalized at the IC, such as to wash and take care of them, to read books, or to come and visit at the IC. The nurses have had some conversations with the management, to try to let the nurses see the benefit of the project, and to face the same direction. Which depends on the norms and values of individuals, which I believe is hard to change. After, papers were presented, to which nurses could register the family participation. So, a lot of steps have been taken already. Starting with the involvement of the families, I experienced that family likes to participate in the small stuff, such as cleaning nails and hair washing, but not for the daily morning care. The only struggle I have is the difference in leniency amongst nurses, in which one nurse could accept one type of participation while another wouldn't.

### Actors

The management, as they decided to start the project

### Learning Outcomes [Insight]

In general, I am positive about family participation. There will always be people of whom you feel you can't work with, but that are details. In general, I am positive, and I feel like colleagues and families have positive experiences as well.



## 5. DISCUSSION AND CONCLUSION

Starting this study, the aim was to investigate the differences and similarities between intrinsic and extrinsic LE's of nurses, and to provide insights. The main research question was "What are similarities and differences in how nurses describe learning experiences that evolve out of personal interest versus learning experiences that evolve from motivation to comply with requirements?" This had been done by conducting a qualitative study, with narrative interviews with twenty nurses from two different departments of Radboudumc. Providing the results had been done with indexical variables; learning activities, learning outcomes, and actors, and non-indexical variables; trigger, other reasons, and learning goal. Finalizing this study, this chapter will discuss the results, discuss limitations, suggest further research, and end with the final conclusion.

### 5.1. DIFFERENCES AND SIMILARITIES

The differences and similarities between nurses' LE's that evolve out of personal interest versus that evolve from motivation to comply to requirements have been researched. The most striking differences and similarities will be highlighted and discussed here.

First, it is seen that nurses participate mostly in informal learning activities during intrinsic LE's. In addition, the informal learning activities are often approached from a personal perspective; nurses want to gain something for themselves, not necessarily for the organisation. These results could be explained by the nature of informal learning; it occurs spontaneously, based on the wishes of the learner (Kyndt & Baert, 2013). In addition, informal learning activities are initiated by the learners, embedded in the daily practice of nurses (Lohman, 2006). An explanation for the frequently seen personal perspective during these intrinsic LE's, could come from the feeling of autonomy during these type of LE's. Autonomy is the need to follow a path that is highly valued by individuals (Haas, 2019). The feeling of, and need for, autonomy is strongest during intrinsic LE's, because nurses initiate these type of experiences themselves. This is in contrast to the extrinsic LE's, in which nurses have an equal amount of formal and informal learning experiences. During all these extrinsic LE's, participation had been expected and sometimes even demanded. Which indicates that nurses feel less autonomy during these type of LE's. The sense of autonomy during the extrinsic LE's could be increased, when activities are accompanied by a clear account of their importance (Trougakos, Hideg, Cheng, & Beal, 2014)

Second, learning outcomes of nurses show that nurses have a fairly equal amount of gain in insights and skills during intrinsic and extrinsic LE's. However, nurses gain less knowledge during their intrinsic LE's, compared to the extrinsic LE's. A possible explanation could be that nurses do not aim to gain knowledge during the intrinsic LE's, but merely want to act autonomously in areas in which nurses feel competent, which provides them with the necessary insights and skills. Whereas the gain of knowledge, and skills, is the goal of the management during extrinsic LE's, in order to keep the nurses

competent in their daily practice. This learning approach is increased by the external requirements set for nurses' abilities, in which the ability to recall and understanding of medical knowledge leads to nurses' required competence (Maurits, De Veer, & Francke, 2015). A gain in knowledge and skills is easier to plan and register by employers and HRD professionals, than a gain of insight (Froelich et al., 2015). Additionally, knowledge and skills could be connected to the psychological need of competence. However, satisfying competence doesn't necessarily lead to enthusiasm and passion, as autonomy doesn't play a dominant role (Van den Broeck, Ferris, Chang, & Rosen, 2016). Which means that formal learning activities do not fulfil nurses' need for autonomy.

Third, many actors are involved during nurses' LE's, in which direct and indirect colleagues are most common, both during intrinsic and extrinsic LE's. With nursing practice in mind, this result is not striking, and shows some sense of relatedness between nurses mutually. Moreover, nurses' learning is proved to be highly social (Berings, 2006), and nurses perceive social experiences often as antecedents for learning (Pool, Poell, & Ten Cate, 2012). In addition, it is shown that knowledge sharing in health care mostly appears between their occupational group, rather than in collaboration with external actors (Tasselli, 2015). What actually is noticeable, is the influence of management during the extrinsic LE's, contrasting to is the influence of supervisors during the intrinsic LE's. During intrinsic LE's nurses often go to supervisors, asking for permission and guidance. However, as Van den Broeck, Vansteenkiste, De Witte, Lens, and Andreissen (2009) highlight the influence of supervisors in the satisfaction of the three psychological needs, such result could be expected. Moreover, this points out the difference supervisors could make towards nurses' professional development. And demonstrates autonomy-supportive motivation demands from supervisors, because it highlights work satisfaction and commitment (Kanat-Maymon, Yaakobi, & Roth, 2018). Key aspects for supervisors are; empathy, providing choices, giving information, and stimulating initiative (Van den Broeck et al., 2009). This demonstrates the importance of skilled and competent supervisors to support nurses' needs. Moreover, the frequent involvement of supervisors also entails a stronger form of relatedness during these intrinsic LE's, compared to the extrinsic LE's. Supervisors, higher in hospitals' hierarchy than (in)direct colleagues, have an active role during intrinsic LE's. Therefore, nurses feel strongly related to their supervisors, as supervisors give nurses the feeling to be loved and cared for (Deci & Ryan, 2000). The importance and use of relatedness is thus demonstrated.

Fourth, Deci and Ryan (1985) describe different levels of regulation towards an experience. These beliefs were based on one type of regulation towards one experience. However, this study shows that it is possible for individuals to have different levels of regulation on several aspects towards one LE. Moreover, this study shows that the type of regulation is dependent on individuals' beliefs towards the situation. During the extrinsic LE's, nurses had low intrinsic regulation regarding the trigger and the other reasons for the LE to occur. However, their regulation towards the goal of the activity grew towards a higher intrinsic regulation. Meaning that nurses understand the importance of the LE, or

even have the same values as the goal of the LE. A possible explanation could be found in the three psychological needs of Deci and Ryan (1985). It seems that nurses have a sense of relatedness towards their colleagues, which is shown in the high amount of (indirect) colleagues that were involved during the experiences. Moreover, relatedness towards the nursing practice could explain why the goal of the extrinsic LE's are perceived as important and valuable. Relatedness is characterized by looking for a sense of trust, respect and care (Ryan et al., 2008), and is impacted by the quality of the relationship with others. In addition, Van den Broeck et al. (2016) found that employees that feel pressured, do not experience autonomy and competence, but still could feel a sense of relatedness. This is in contrast with the intrinsic LE's, that shows an high average of intrinsic regulation on all three categories; trigger, other reasons, and learning goal. This could be explained by the high sense of authenticity during intrinsic LE's; it leads to more interest, excitement, and confidence, which manifests enhanced performance, persistence, and creativity (Ryan & Deci, 2000).

Lastly, the learning paths that have been presented show differences and similarities between the LE's of one nurse. What's most noteworthy is the use of the first persons perspective during the intrinsic LE's. The use of a first-person perspective highlights a subjective experience as a causal determinant of motivation and personality (Koole, Schlinkert, Maldei, & Baumann, 2019). Meaning that nurses have been more motivated and autonomous when using the first-person perspective. This confirms that during the intrinsic LE's, nurses strongly incorporate their own values. Not only in their actions, but in the explanation and narratives of the learning experiences too. Which is contrary to the use of the third-person perspective during extrinsic LE's, which entails a higher objective observation towards an experience (Koole et al., 2019).

## 5.2. LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

Participants were asked to share LE's that made them proud of the achievement. Therefore, it is questionable if the experiences that had been shared, reflect the actual practice of the participants. This note is especially applicable to the extrinsic LE's, since those led to a relatively high internal regulation on the learning goal, compared to the trigger and other reasons. This limitation is mostly applicable to the first department, in which nurses participated by the snowball effect. As it seemed that only nurses that are highly interested in learning and professional development participated to this study. Contrasting to the other department, which seems to be more of a representative sample of the entire department, by being randomly pointed to nurses by the supervisor.

Coding the learning outcomes of the participants, had been done by the exact phrases provided by participants during the interviews. However, it is questionable whether a gain in insight could be coded independently. Or, if there should always be a gain in knowledge, that led to an insight.

Identifying the learning paths were dependent on the scores given to the trigger, other reasons and the learning goal of the learning experience, and based on the regulation categories of Ryan and Deci

(2000). Especially the distinction between integrated and intrinsic motivation seems strict, however speaking with nurses this difference could barely be sensed. Number wise, this distinction seems strong, however in the way participants spoke about those LE's didn't really give the impression that there would be a distinction. Therefore, the results of the scheme provided is discussable. In addition, the data about the trigger, other reasons, and the learning goals imply that there is an order in these three phases, which isn't necessarily the case. An example is participant 15, who told that the organisation has other reasons, and she didn't have a specific goal. However, it is believed that the trigger during these LE's does come first, the order between reasons and the learning goals could be different for each experience.

Lastly, having an indication of the origin of nurses LE's, the learning goals, and their learning paths did provide insights on improvement of stimulating nurses intrinsic motivation. Although, this study is not complete yet, and to gain deeper knowledge on this topic it is advised to perform an extensive research with the SDT as a foundation. Especially on the hand of the three psychological needs, autonomy, competence and relatedness could show new insights on ways to stimulate nurses' learning. In addition, a combination with an experimental research with non-formal learning would be advisable.

### 5.3. CONCLUSION

The aim of this study was to acquire insight on the differences and similarities between nurses' LE's that evolved out of personal interest versus LE's that evolved from motivation to comply with requirements. The insights between the differences of this study will be used to develop a foundation in the understanding of nurses' needs to become intrinsically motivated. This will be helpful for health care organisations as the importance of intrinsic motivation in nurses' professional development gets emphasized increasingly, due to the increase of technologies and health care demands (Molleman et al., 2008). The biggest differences between LE's that evolve out of personal interest versus LE's that evolve form motivation to comply with requirements, that have been found during this study, are shown in table 3.1.

Table 3.1

*Differences between the different types of learning experiences*

LE's that evolve out of personal interest	LE's that evolve form motivation to comply with requirements
High relation with supervisors	High influence of the management
Fulfilment of autonomy, competence, and relatedness	Fulfilment of relatedness with (in)direct colleagues
Mostly informal learning activities	Both formal and informal learning activities
Use of first-person	Use of third-person

These differences indicate that nurses have the necessary skills to use their intrinsic motivation in their professional development, and put differently, are able to learn in a self-directed manner. The differences show that nurses are able to direct their own learning, and are able to be autonomous in their professional development, during the intrinsic LE's. Therefore, nurses have the skills and abilities to become such learners during extrinsic LE's as well. However, the differences show that the three psychological needs, autonomy, competence, and relatedness, aren't always met effectively during the LE's that evolve from motivation to comply with requirements. To generate a higher intrinsic motivation, sense of autonomy, and self-directedness during these LE's health care organisations should modify the assets of intrinsic LE's to the extrinsic LE's. In short, to create a higher use of intrinsic motivation during compliance to requirements, health care organisations should: invest in the supportive and stimulating skills of the supervisors; take note of meeting the three psychological needs during the extrinsic LE's; develop multiple learning activities to support the need of autonomy; and emphasize a learning culture on the job. In order to stimulate the need for autonomy, competence and relatedness, nurses' values and beliefs must be included while developing interventions.

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## APPENDIX I – LETTER OF PREPARATION (IN DUTCH)

Beste verpleegkundige,

In de informatiebrief heb ik besproken dat we tijdens het interview zullen ingaan op jouw ervaringen als verpleegkundige. Tijdens dit interview zou ik graag een aantal leerervaringen bespreken. Met leerervaringen bedoel ik situaties die op het werk zijn voorgekomen waar je van geleerd hebt. Er zijn twee soorten leerervaringen die ik tijdens het interview graag wil bespreken. Deze worden hieronder uitgelegd:

Denk eens terug aan de afgelopen drie maanden, zijn er leerervaringen geweest die tot stand zijn gekomen omdat je jezelf wilde ontwikkelen, waar je trots op was? Probeer eens twee of drie van deze momenten te herinneren en schrijf deze kort (een paar losse zinnen of steekwoorden) op, op de lijntjes hieronder.

Denk nogmaals terug aan de afgelopen drie maanden. Zijn er leerervaringen geweest die tot stand zijn gekomen omdat er van jou werd verwacht dat je jezelf ontwikkelde, waar je trots op was? Probeer eens twee of drie van deze momenten te herinneren en schrijf deze ook kort op, op de lijntjes hieronder.

Als laatst wil ik je vragen om jouw leerervaringen niet te delen met anderen, dit is namelijk beter voor de resultaten van het onderzoek.

Alvast bedankt voor je medewerking en ik zie je graag, samen met de aantekeningen over je leerervaringen tijdens ons interview. Heb je vooraf nog vragen, twijfel dan niet om contact met me op te nemen.

Vriendelijke groet,

Rowan Bouwmans  
[Rowan.Bouwmans@radboudumc.nl](mailto:Rowan.Bouwmans@radboudumc.nl)

Deze leermomenten, die ik heb ervaren uit eigen interesse, maakten mij trots:

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Deze leermomenten, die van mij werden verwacht, maakten mij trots:

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## APPENDIX II – INTERVIEW GUIDE (IN DUTCH)

### Introductie

Doel van dit onderzoek is om inzicht te krijgen in de leerervaringen die jullie als verpleegkundigen hebben. Door goed te begrijpen hoe deze ervaringen tot stand komen, hopen we beter te kunnen snappen hoe we hierin kunnen ondersteunen. *Doornemen en ondertekenen informed consent*. Vandaag zal er een narratief interview worden gehouden, dat betekent dat het waarom niet belangrijk is, maar wel wat er precies gebeurd is. Ik op zoek ben het hele verhaal. Aan het eind heb ik ook nog een paar algemene vragen over professionele ontwikkeling

*Mezelf voorstellen*: Rowan Bouwmans, studente aan Universiteit van Twente, opleiding EST, sinds september stage bij RHA. En verder basketbal en schilderen.

WIE	WAT	WAAR	WANNEER	HOE
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### Inleiding → Kern

We hebben onszelf even kort kunnen voorstellen en jij hebt me kunnen vertellen over verpleegkunde. Is er iets dat je nog aan deze kennismaking toe zou willen voegen?

Dan zou ik nu graag willen overgaan op het bespreken van de leerervaringen, die je ook hebt voorbereid. Ik wil graag beginnen met de situaties waarin je leerde omdat [...]

### Leerervaring 1 → Leerervaring 2

Bedankt voor je verhaal. Samengevat zeg je [...] Heb ik het dan juist begrepen? Is er nog iets wat ik vergeten ben of wat jij er graag aan toe wilt voegen?

Dan zou ik deze leerervaring graag willen afsluiten en door willen gaan met de situaties die je hebt opgeschreven in het leren omdat [...].

### Leerervaringen → Slot

Bedankt voor dit verhaal. Als ik het samenvat dat heb ik [...] gehoord. Klopt dat? Is er nog iets wat je bent vergeten of wat je graag nog toe wilt voegen?

We hebben nu twee situaties besproken die ingaan op jouw ontwikkeling in het verleden. Nu zou ik graag nog een paar laatste algemene vragen stellen. Oké?

### Inleiding

Zou jij jezelf voor willen stellen? Wat is je leeftijd? Welke opleiding heb je gehad? Wat is je functie? Hoe lang werk je op deze afdeling?

Wat is de reden geweest dat je verpleegkundige wilde worden?

- Is daar door de jaren heen iets aan veranderd?

Kun je omschrijven hoe een typische dag voor jou als verpleegkundige eruit ziet?

### Kern

Van de [...] situaties die je hebt opgeschreven, welke springt er voor jou het meest uit om over te vertellen?

Ik wil je vragen om helemaal terug te gaan naar de eerste aanleiding die jou in deze leersituatie gebracht heeft, wat was er gebeurd? Had je bepaalde verwachtingen? Wat wilde je ermee bereiken?

Wat waren nog meer redenen die de leerervaring tot stand hebben gebracht?

*[vat redenen samen]* Oké, en toen ging je beginnen, wat gebeurde er toen zoal?

Welke andere mensen of dingen hebben jou geholpen tijdens deze leerervaring?

Welke dingen gingen minder goed?

Als je nou zo terug kijkt, wat heb je dan geleerd tijdens deze situatie?

Is daarmee je doel bereikt?

Waren er nog anderen blij met het resultaat?

Is er nog iets aan deze situatie wat heel belangrijk is en je nog niet hebt kunnen vertellen?

### Slot

Het laatste onderwerp waar we het over hebben is professionele ontwikkeling, vind je dit belangrijk in jouw werk als verpleegkundige? Waarom wel/niet?

Als je ondersteund wilt worden in je professionele ontwikkeling, wat moet er dan vooral wel en vooral niet gedaan worden?

Op welke manier kunnen we in de organisatie jou het best ondersteunen in jouw professionele ontwikkeling?

Wat zou jij zelf kunnen doen voor jouw professionele ontwikkeling?

## APPENDIX III – CODE SCHEME (IN DUTCH)

Het codeerschema wordt hieronder weergegeven, waarbij er een aparte weergave is van de indexicale codering en de non-indexicale codering. Aangezien dit meer ruimte geeft voor de definities en voorbeelden.

### INDEXICALE CODERING

Hoofdcodes	Definitie	Sub categorieën	Definitie	Sub codes	Definitie	Duidelijk voorbeeld
Activiteiten	De daadwerkelijke gebeurtenis van de leerervaring	Formele leeractiviteiten	Geplande activiteiten, waarvan er verwacht wordt dat de deelnemer deze doormaakt. Veelal zijn deze leeractiviteiten verbonden aan een instelling, organisatie, of instituut.	Opleiding	Vanuit een instelling of een formele instantie, waarbij het de periode voor minimaal één jaar is vastgelegd. En de leerder op over meerdere onderwerpen kennis en ervaring opdoet.	“En, oh ja, eigenlijk is dat ook mijn onderzoek wat ik heb gehad. Ik moest een onderzoek doen en dat onderzoek heb ik gedaan.” – <i>Aad, 28 jaar</i>
				Cursus	Officiële bijeenkomsten, van een paar uur tot een dag, waarbij de leerder over één onderwerp kennis en opdoet. Deze cursussen kunnen zowel intern als extern gegeven worden. Informatie wordt veelal mondeling overgebracht, door iemand die voor de groep staat.	“Dat was scholingen kleinere, kleinere ingrepen, omdat we nou eigenlijk ook wel de dag opnames in de kleinere ingrepen van de urologie/gynaecologie bij de hoofd/hals, dan ook wel krijgen.” – <i>Alice, 46 jaar</i>
				Conferentie	Een conferentie is een verzamelnaam voor bijeenkomsten van	“En dat betekend dat ik altijd wel iets, één keer per jaar, naar een of andere scholings of symposium ga over

Informele leeractiviteiten	Activiteiten die spontaan tot stand zijn gekomen en op voorhand niet gepland zijn geweest.		maximaal drie dagen, bij een externe organisatie. Hier wordt informatie gegeven over een onderwerp, maar er zijn meerdere sprekers en de bijeenkomsten zijn vaak interactief.	management in het bedrijfsleven. En die masterclass was daar ook eentje van." – <i>Belinda, 50 jaar</i>
		Team training	"hands-on" activiteiten met meerdere mensen van dezelfde organisatie. En vaak met (een deel van alle) directe collega's.	"Maar we hebben als team een communicatietrainingen opgelegd gekregen." – <i>Mandy, 23 jaar</i>
		Vergadering	Een bijeenkomst van (in)directe collega's die samen over hetzelfde onderwerp spreken. Waarbij na een paar uur de bijeenkomst weer voorbij is. Een vergadering kan een eenzijdige kennisstroom zijn, maar kan ook interactief zijn.	"Casusbesprekingen. We hebben vaak, of vaak, we hebben iedere dag om half 2 hebben we een soort van rondje met alle verpleegkundigen die op dat moment aanwezig zijn. Nou dat kan een dilemma zijn, het kan klinisch redeneren zijn, casusbesprekingen zijn." – <i>Demi, 31 jaar</i>
		Ziekenhuis gebaseerde activiteiten	Overige activiteiten die uitgevoerd moeten worden om naar behoren de functie als verpleegkundige uit te kunnen voeren. En komen voort uit de dagelijkse praktijk.	"Nou, ik ben aandachtsvelder geworden van een aandachtsveld hier op de vloer. Dus daar moest ik mezelf wel in ontwikkelen en kreeg ik ook een heel andere rol. Naast verpleegkundige kreeg ik ook een andere rol daarbij." – <i>Vera, 27 jaar</i>
		Extra taken	Taken die niet van een verpleegkundige worden verwacht, maar waarover de verpleegkundige zelf	"We gaan een triviant spel opzetten, ten aanzien van alle ziektebeelden." – <i>Rachelle, 48 jaar</i>

				Raadplegen media	besluit om deze uit te voeren. Het opdoen van kennis, door schriftelijke (online) bronnen te raadplegen. Deze activiteit wordt niet van de verpleegkundige verwacht.	“Nou ik had eerst de internist gesproken en die zei dat dan even zo snel. En dacht ik oh, ja, ik ga het even op internet opzoeken. Dus dat heb ik eigenlijk gedaan en dan heb ik het nog met een collega erover gehad en ja, toen heb ik het gewoon opgeschreven.” – <i>Tanja, 36 jaar</i>
Leeruitkomst	Wat de deelnemer heeft opgestoken van de leerervaring.	Inzicht	Inzicht zijn de perspectieven die de deelnemer heeft opgedaan ten aanzien van een bepaald onderwerp.	Persoonlijk	Een verkregen inzicht die ondersteunend is aan de persoonlijke ontwikkeling van de deelnemer.	“Voor jezelf op te komen, krachtig persoon te zijn. Niet door anderen laten beïnvloeden, wat ik dus heel erg doe. Ook met studiekeuzes en werk.” – <i>Hannah, 45 jaar</i>
				Werk gerelateerd	Een verkregen inzicht die ondersteunend is aan de mogelijkheid om de functie als verpleegkundige beter uit te kunnen voeren.	“Ja, dat misschien mensen wat sneller, hoe moet je dat zeggen, beter op de hoogte moeten houden van, of het frisser moeten houden eigenlijk. Ze krijgen in het begin als ze hier komen, krijgen ze een rondleiding van ons. Maar ik kan me voorstellen dat dat heel erg verwaterd, als je er helemaal niks mee te maken hebt, dus dat we dat wat vaker moeten opfrissen.” – <i>Tanja, 36 jaar</i>
		Kennis	Kennis is theoretische informatie die door de deelnemer is opgedaan.	Professioneel	Verkregen kennis die eraan bijdraagt om het verpleegkundig vak of beter te kunnen uitoefenen.	“Nou vooral gynaecologische ingrepen, daar heb ik wel meer kennis over gekregen zeg maar.” – <i>Alice, 46 jaar</i>

Vaardigheden	Vaardigheden zijn de 'hands-on' acties waar de deelnemer beter in is geworden.	Refreshen	Wanneer deelnemers een bepaalde verpleegkundige handeling hebben herhaald tijdens de leeractiviteit.	"Nee, dat refreshen dat benoemde je wel goed. Meer vaardigheden. Bij die ALS is het zo dat, nou ja, dan heb je mensen die krijgen allemaal een plek rond het bed. En iemand masseert en iemand zorgt voor ademweg, ademhaling, beademing. Iemand zorgt voor de kar en allerlei medicatie. Ja, weer even al die rollen in een reanimatie en wat precies bij welke rol hoort, dat voorbij horen komen, zien komen, ervaren. De combinatie, maakt het zo goed." – <i>Merel, 44 jaar</i>
		Communicatie	Wanneer deelnemers door middel van communicatie het vak beter uit kunnen voeren, of door middel van communicatie anderen (moeten) helpen.	"Dat het altijd belangrijk blijft om wel altijd het bij jezelf te houden. Dus vanuit jezelf te praten, waarom jij daar tegenaan loopt en niet in de wij-vorm. Dus dat heb ik wel geleerd." – <i>Demi, 31 jaar</i>
		Verpleegkundige handelingen	Nieuwe handelingen die verpleegkundigen aangeleerd hebben gekregen.	"Ja die specifieke, het is echt hele specifieke wondzorg, die heb ik dan wel geleerd. Ja. En ook wel weer toepassing van bepaalde wond materialen die zij gebruikt." – <i>Alice, 46 jaar.</i>
		Presenteren	Voor een groep een voordacht geven over een bepaald onderwerp.	"En ook wel geleerd om voor zo'n groep te staan, om dat gewoon te doen." – <i>Milou, 28 jaar</i>
Niet geleerd	Wanneer er door de deelnemer, tijdens de desbetreffende leerervaring niet			"Nee, nee ik ben er nu nog niet mee bezig. Nee." – <i>Lena, 25 jaar</i>

			iets is opgestoken.		
Actoren	De personen die de deelnemer hebben geholpen tijdens de leerervaring.	Privé			<p>“Ook wel mijn moeder. En mijn vader ook heel erg, ja. Dat werkt niet altijd goed, maar die twee zijn eigenlijk wel heel belangrijk geweest. En een goede vriend van mij ook. Die heeft eigenlijk precies hetzelfde traject doorlopen als ik. Dus we hebben altijd heel veel met elkaar gespard. Dus eigenlijk zijn personen wel het meest belangrijke, dan dingen.” – <i>Aad, 28 jaar</i></p> <p>“En ook het feit dat het opgenomen wordt, want dan zie je jezelf terug en dan denk ik je, ach ja ik had eigenlijk, nou eerder bloeddruk moet meten, ik noem maar iets.” – <i>Paulien, 58 jaar</i></p> <p>“Nou ja de collega die dan natuurlijk, in die zin, waar ik het eerste mee aanleerde.” – <i>Daan, 46 jaar</i></p> <p>“En mijn leidinggevende dat, want die heeft alles, die, al die lessen geregeld. Dan zal die ook wel blij zijn dat het ook daadwerkelijk gedaan is.” – <i>Pascalie, 52 jaar</i></p> <p>“Nou, even na praten met de zorgmanagers, die natuurlijk vaker dit soort gesprekken doen.” – <i>Diederik, 36 jaar</i></p> <p>“Mijn fysiotherapeut die is, die werkt met trajecten mensen pijn vrij te maken. En die zei ook van nou, weet je zij wil dan misschien wel samen met mij werken, dus zij zei van ga mee daar heen?” – <i>Hannah, 45 jaar</i></p>
		Dingen		Directe collega's	
		Werk		Leidinggevende	
				Management	
				Andere connecties	

## NON-INDEXICALE CODERING

Hoofdcodes	Definitie	Sub categorieën	Definitie	Voorbeeld
Aanleiding	De gebeurtenis voorafgaand aan de leerervaring, welke de reden van totstandkoming van de leerervaring is.	External	Een external aanleiding heeft een sterkte externe motivatie. Wanneer deze er niet was geweest, had de gebeurtenis ook niet plaats gevonden. <i>Key words: verplicht, moet, 'wordt standaard gegeven', JCI</i>	"Dat moest gewoon standaard gegeven worden aan alle, alle medici, paramedici, verpleegkundigen. Die wordt standaard gegeven. Moet je 1 keer in de zoveel jaar, moet je die scholing volgen. Daar zit dan ook bijvoorbeeld reanimatie bij. Dus die moet je dan gewoon volgen." – <i>Lena, 25 jaar</i>
		Introjected	Een introjected aanleiding heeft een externe motivatie, waarbij de deelnemer de gebeurtenis aangaat om een beloning te krijgen, maar vaak om een gevoel straf te voorkomen. <i>Key words: 'het is dat het moest', 'ik had anders kunnen kiezen, maar', 'er werd mij gezegd'</i>	"Ik had nee kunnen zeggen, maar zo voelde het niet echt." " <i>Het werd niet helemaal in dank afgenomen.</i> " "Nee, dat denk ik ook niet, want ze zeiden ja jij bent daar de uitge, uitge, ja hoe zeg je dat..." " <i>Uitgekozen persoon voor.</i> " "Ja. Uitgekozen persoon voor en we denken dat dat jou heel goed past. Nou, zo. Ja dan kan ik niet zeggen. ja, dat ga ik niet doen." – <i>Milou, 28 jaar</i>
		Identified	Een identified aanleiding heeft een externe motivatie, waarbij de deelnemer de meerwaarde van de leerervaring inziet. Daarom zegt de deelnemer indirect dat deze de leerervaring op een succesvolle manier wil afronden. <i>Key words: interessant, leerzaam,</i>	"Dat was scholingen kleinere, kleinere ingrepen, omdat we nou eigenlijk ook wel de dag opnames in de kleinere ingrepen van de urologie/gynaecologie bij de hoofd/hals, dan ook wel krijgen. Omdat ze eigenlijk met de hele verdieping samen zijn gegaan. Dus daar hebben we eigenlijk een soort scholing van gehad. Maar dat was eigenlijk, dat was dan ook verplicht, maar dat was en ook een vraag vanuit onszelf zeg maar dat dat opgezet is. Dus ja dat was, ja dat was wel ook wel interessant." – <i>Alice, 46 jaar</i>
		Integrated	Een integrated aanleiding komt vanuit de externe omgeving, maar valt in hoge mate samen met de waarden, inzichten en wensen van	"Nou ja, omdat ik toch wat meer naar management neig, nu op dit moment. Dit was gewoon een leuke opstap, die functie kwam vrij. En daar heb ik op gesolliciteerd en ik ben daar voor op aangenomen,



			de deelnemer. De aanleiding van dergelijke gebeurtenissen was niet afhankelijk van de deelnemer, hoewel de intrinsieke motivatie een hoge rol speelt en veel eigen initiatief <i>Combinatie van ik-vorm met externe gebeurtenis</i>	ja.” – <i>Patty, 39 jaar</i>
		Intrinsic	Een intrinsieke aanleiding komt vanuit de deelnemer zelf, waarvan de activiteit met op geen enkele mogelijkheid plaats gevonden zonder de deelnemer. <i>Key words: Ik wil, ik vind, ik heb, ik kan, ik dacht, ik kwam</i>	“En ik wilde heel graag steeds gevoed worden in mijn seniorschap met scholing. En dat kan vanuit het Radboud, daar zijn voldoende leergangen, er is voldoende symposia wat dat betreft, maar ik heb ook nu steeds weer gemeend van, ik vind het ook wel heel leuk om input te krijgen van buitenaf. En dat betekent dat ik altijd wel iets, één keer per jaar, naar een of andere scholings of symposium ga over management in het bedrijfsleven. En die masterclass was daar ook eentje van.” – <i>Belinda, 50 jaar</i>
Redenen	Overige redenen die van invloed zijn geweest om deel te nemen aan de leerervaring, maar zijn niet zo doorslaggevend als de aanleiding.	External	External redenen komen vanuit een extrinsieke motivatie, waar de deelnemer geen invloed op heeft gehad. <i>Key words: zij wilden, zij hebben gezegd, anders was ik er niet geweest</i>	“Ja, weet je, stiekem denk ik wel ook dat het, dat een van de redenen van het management is geweest van, we moeten er gewoon voor gaan zorgen dat beide teams hun koudwatervrees een beetje gaan verliezen. Voor de ingrepen van het andere specialisme. Officieel zijn we gewoon een afdeling, een team.” – <i>Pascalle, 52 jaar</i>
		Introjected	Een introjected reden heeft een externe motivatie, waarbij de waarde van de deelnemer ligt in het voorkomen van een straf of het krijgen van een beloning. <i>Key words: wordt verwacht</i>	“Nou ja het hoort ook wel gewoon een stukje bij werk. Een soort, toch een beetje deskundigheidsbevordering. Ja het wordt ook wel verwacht hoor, dat je wel deelneemt aan dit soort. Heft niet wekelijks maar dat je wel regelmatig, zeg maar deelneemt aan dergelijke bijeenkomsten.” – <i>Maike, 39 jaar</i>
		Identified	Een identified reden komt vanuit de externe motivatie, maar de deelnemer ziet de meerwaarde	“Ja, je wilt het gewoon goed doen. Het is in kritieke toestand altijd hè, als zoiets gebeurt zo'n reanimatie. Dus je wilt ook weten wat er van je, wat je moet

			van deze reden ook in. <i>Key words: 'het is niet gewoon standaard procedure', 'je wilt ..., maar het wordt ook verwacht'</i>	doen. Het wordt ook van je verwacht dat je weet wat je moet doen hè, dat is natuurlijk ook zo. Het is ook een onderdeel van je werk." – <i>Paulien, 58 jaar</i>
		Integrated	Integrated redenen komen van origine vanuit de externe motivatie, maar sluiten dusdanig hoog op de waarden, inzichten en wensen van de deelnemer aan, dat deze bijna intrinsiek hadden kunnen zijn. <i>Key words: ook voor mezelf, belangrijk</i>	"Nee, ik wilde zelf graag. Omdat het bij het lijstje hoorde. Ja en mijn angsten overwinnen dan." – <i>Daan, 46 jaar</i>
		Intrinsic	Intrinsic redenen komen vanuit de intrinsieke motivatie van de deelnemer, welke als enige invloed heeft op de redenen voor de leerervaring. <i>Key words: 'ik vind het belangrijk dat', 'ik voel dat', ik wil, 'wat heb ik nodig'</i>	"Ja, het is iets wat in elk werkveld voorkomt. Dus waar ik ook in de toekomst, als ik een andere baan zou kiezen naartoe zou gaan, dit blijft overal. Dus het is wel iets waar ik, wat ik in mijn rugzak kan stoppen, de kennis die ik altijd kan meenemen naar iets anders." – <i>Vera, 27 jaar</i>
		Geen	Wanneer er geen extra redenen zijn waarom de leerervaring heeft plaats gevonden.	
Doel	Het resultaat wat de deelnemer op voorhand met de leerervaring wil bereiken.	External	Een external doel, is een doel dat de externe omgeving van de deelnemer heeft opgelegd. De deelnemer heeft hier zelf geen verdere invulling aan gegeven en wil buiten dit doel niets intrinsiek bereiken. <i>Key words:</i>	"Het doel was gewoon ervoor zorgen dat iedereen weer op de hoogte was." – <i>Tanja, 36 jaar</i>
		Identified	Een identified doel is door de externe omgeving opgelegd, waarvan de deelnemer de	"Mijn doel is gewoon, ja, wat er aan recente inzichten is opgedaan in reanimeren, om dat weer even scherp te krijgen. Want er gebeuren toch altijd weer een

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	meerwaarde inziet, dat gevoel is kenmerkend voor deze fase. De deelnemer wil echter niet meer bereiken dan wat de externe omgeving heeft aangedragen. <i>Key words:</i>	hoop dingen en dan denk ik oh, ja.” – <i>Merel, 44 jaar</i>
Integrated	Een integrated doel, is een doel dat van de externe omgeving komt, maar die in hoge mate overeenkomt met de inzichten, waarden en wensen van de deelnemer. Waardoor de deelnemer het doel eigen heeft gemaakt. <i>Key words:</i>	“Ja gewoon weet je wel, je, je bewust blijven van hoe jij omgaat in zo'n situatie. En dat je weet van ik zit op de goeie weg, of ik, ik heb het goed aangepakt. En geen specifiek doel van oh ja, weet je, je haalt, het is altijd wel een beetje een doel om er een leermoment uit te halen.” – <i>Maike, 39 jaar</i>
Intrinsic	Een intrinsic doel, is een doel dat vanuit de deelnemer zelf is ontstaan. Deze is niet afhankelijk van de externe omgeving of motivatie. <i>Key words: ik,</i>	“Nou ik, mits het met uren uitkomt, wil ik toch wel voor teamleider gaan.” – <i>Sara, 32 jaar</i>
Geen	Wanneer de deelnemer zelf, noch de omgeving, geen doel hebben die bereikt moeten worden met de leerervaring	

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## APPENDIX IV – SPSS OUTPUT

### *Paired Samples Statistics*

		M	N	SD	SE
Pair 1	Intrinsic Trigger	3.89	18	1.18	0.28
	Extrinsic Trigger	2.28	18	1.18	0.28
Pair 2	Intrinsic Reasons	4.44	18	0.86	0.20
	Extrinsic Reasons	2.17	18	1.92	0.45
Pair 3	Intrinsic Goal	4.00	18	0.77	0.18
	Extrinsic Goal	3.06	18	1.35	0.32
Pair 4	Intrinsic Average	4.11	18	0.72	0.17
	Extrinsic Average	2,50	18	1.16	0.27

### *Paired Samples Correlations*

		N	Correlation	p
Pair 1	Intrinsic Trigger & Extrinsic Trigger	18	-0.10	.684
Pair 2	Intrinsic Reasons & Extrinsic Reasons	18	0.13	.603
Pair 3	Intrinsic Goal & Extrinsic Goal	18	0.00	1.00
Pair 4	Intrinsic Average & Extrinsic Average	18	-0.21	.40

### *Paired Samples Test*

		Paired Differences							
					95% CI				
		<i>M</i>	<i>SD</i>	<i>SE</i>	<i>LL</i>	<i>UL</i>	<i>t</i>	<i>df</i>	<i>p</i>
Pair 1	Intrinsic Trigger – Extrinsic Trigger	1.61	1.75	0.41	0.74	2.48	3.90	17	.001
Pair 2	Intrinsic Reasons – Extrinsic Reasons	2.28	1.99	0.47	1.29	3.27	4.85	17	.000
Pair 3	Intrinsic Goal – Extrinsic Goal	0.94	1.55	0.37	0.17	1.72	2.58	17	.019
Pair 4	Intrinsic Average – Extrinsic Average	1.61	1.49	0.35	0.87	2.35	4.60	17	.000

Note. LL = lower limit, UL = upper limit