EXPERIENCED FEEDBACK AND MINDSET OF NURSES

A research on the obstructing and stimulating aspects of the feedback process in combination with the implicit theories of nurses in a Dutch hospital

Name:	Anouk Hölzken
Student number:	s1677225
Faculty:	Behavioural, Management, and Social Sciences
	Master Educational Science and Technology
University:	University of Twente
Supervisors:	T. Hirschler MSc and Dr. S. van Aalderen
Organisation:	Gelre Ziekenhuizen
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UNIVERSITY OF TWENTE.

gelre ziekenhuizen

Abstract

Due to several changes within healthcare, continuous learning becomes more important for nurses. One way to continue one's development, is the use of informal feedback, also known as the provision of feedback between equal colleagues. However, literature showed to be ambiguous regarding aspects that can influence the feedback process between nurses. To add, whether such experiences regarding the feedback environment could be dependent of the underlying implicit factor that is known as a mindset, was still unknown. An online questionnaire gathered qualitative and quantitative data among nurses within a Dutch hospital to answer these two questions. The qualitative results showed several obstructing and stimulating aspects that influence the feedback process, such as the openness, safe environment, relationship, and personal situation of the nurses. Furthermore, whether feedback is favourable or unfavourable has a high impact on the experiences, and thus nurses emotions, as well. More research is needed to determine the order of influence these aspects have on the feedback environment and therefore the eventual learning effect. To add, the quantitative results showed some significant relationships between the mindsets of the nurses and scales of the feedback environment. The mindset seems to influence whether the nurses find the feedback valuable and whether they trust their colleagues who provide feedback. This study did not show other significant relationships. It is expected that other possible relationships did not occur, as many other aspects showed to have an influence on the experienced feedback environment. Future research is needed to study this assumption.

Keywords: informal feedback, feedback environment, growth mindset, fixed mindset, implicit theories.

Acknowledgements

This thesis is the final project of my Master Educational Science and Technology at the University of Twente.

When finishing high school I knew two things; I wanted to learn something about ‘management’, and I wanted to work with people. I started with the first by registering for my Bachelor in Facility Management at Saxion. During these years of studying I realised I missed my second goal, working with people. As the thought of continuing to be a student for a couple more years also sounded pretty attractive to me, I started looking for a suitable Masters education. I then found EST, which immediately sounded like the perfect study as it made the combination between business administration, human resource development, and a little bit of psychology. During the last two years I had the chance to not only extend my student days, but to develop myself into the subject of how people can develop themselves within organisations (ironic isn’t it?). When graduation came closer, I got the wonderful opportunity to apply my gathered knowledge in practice with an internship at Gelre Ziekenhuizen. During this period I had the chance to work on several projects, with different responsibilities. I experienced some bigger projects from the sidelines, but also got assigned some projects on my own, both valuable learning opportunities. Moreover, I could perform my own research within this hospital. The advantage of graduating is that you can pick a subject that suits you. As I have always been interested in psychology and the behaviour of people, I chose feedback. A concept that is either loved or hated. To make it even more interesting, my lovely colleague Sandy from ‘het Leerhuis’ suggested to add mindset to the mix, making it the perfect subject for me. After my subject was chosen and my internship was started, a turbulent year followed, with a lot of ups and downs in both my personal and professional life. Looking back, I am grateful for all the people who helped me through this year and my thesis. To start, I would like to thank my first supervisor from the University, Tim, who supported me with the process of writing, structuring, and this ambiguous thing that is called ‘statistics’. I would also like to thank my second supervisor, Sandra, who entered my graduation process last-minute but still managed to help me through the last weeks with her extensive knowledge regarding the implicit theories. Furthermore, I want to give a special thanks to Jettie, who was not only my mentor and coach, but always provided a listening ear when necessary as well. Thank you for your encouraging words, critical questions, and our lively discussions. I would also like to thank my friends, family, and boyfriend, who supported me throughout the entire year by providing encouraging advice, some necessary hugs here and there, and even their homes. All these important people in my life provided me the confidence I needed to successfully finish my thesis.

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Introduction

The perception of health has greatly changed over the years. In 1948 the World Health Care Organization (WHO) defined health as “a state of complete physical, mental and social well-being”. However, this definition is currently being reviewed after criticism as it does not fit today’s society anymore. The definition proposed by Huber et al. (2011), where health is described as “the ability to adapt and implement one’s own control, in light of the physical, emotional and social challenges of life” (p. 3), shows that the focus is changed. More attention goes towards dealing appropriately with health issues with more expected autonomy from the patients. This shift influences the job of nurses, as patients are expected to take more control regarding their own care. Furthermore, the complexity of the provided care will increase, while the length patients stay in the hospital will decrease. These changes make it necessary for nurses to continuously learn so they are able to adjust to these changes (Berings, 2006).

The importance of continuous learning is also included in the report of V&V2020. This report, commissioned by the Dutch department of health, discusses the new perspective on health and how healthcare should look like in the year 2020. This report influences the policy of Dutch hospitals. According to V&V2020, one tool that can be used to improve learning is informal feedback, also known as feedback among colleagues (V&VN, 2016). Such informal feedback can be considered a crucial factor in any learning process (Van der Rijt et al., 2012). More specifically, Van de Ridder, Stokking, McGaghie and Ten Cate (2008) added that informal feedback is a crucial element in clinical learning situations. Overall, informal feedback can be considered a valuable learning tool and when used optimally it can result in an increase of informal learning, a better collaboration, more competent employees and better patient care (van de Ridder, McGaghie, Stokking & ten Cate, 2015). These results are all in line with the healthcare vision for the year 2020 (V&VN, 2016).

However, informal feedback is usually experienced negatively in an average organisation (Baker, Perreault, Reid & Blanchard, 2013). In addition, the majority of informal feedback that is provided is given in a nonconstructive way, making this feedback non-productive (Baker et al., 2013). Furthermore, past studies within Dutch healthcare showed uncertainty of medical employees regarding the definition of feedback (Van de Ridder et al., 2008). To add, there is still some ambiguity regarding the feedback process and its effects on medical education (Van de Ridder et al., 2015), as well as positive and negative consequences of different types of feedback (Janssen & Prins, 2007). In 2016 another study has been conducted in a Dutch hospital that focussed on the sense of trust during the collaboration between nurses. One of the results showed that nurses also experienced difficulties with providing and receiving informal feedback towards and from their colleagues, but the reason behind this negativity remained largely unknown (Jochems, 2016). Literature showed that there is still some ambiguity among the influencing aspects on and effects of feedback, also with nurses (Jamtvedt, Young, Kristoffersen, O’Brien & Oxman, 2006). Therefore, the first part of this current study explores stimulating and obstructing aspects that can influence the feedback process between nurses.

Furthermore, it is known that the feedback effect, and therefore the desired learning effect, is also influenced by the way the feedback is interpreted by the feedback receiver (Van de Ridder et al., 2015). Literature shows that the interpretation towards challenges, setbacks and learning moments can be influenced by a person's mindset (Dweck, 2000). Dweck (2012) describes two different types of mindsets, a fixed mindset and a growth mindset. These mindsets are also known as implicit theories of intelligence. When people hold a fixed mindset, they believe that their core qualities are built-in and fixed by nature (entity theory). Hence, they believe that their abilities cannot be improved. Therefore, they have the tendency to perceive setbacks as an affirmation that they cannot do something. People holding a growth mindset believe that their qualities can be developed through nurture and their own persistent efforts (incremental theory). They are more open to challenges and learning opportunities (Dweck, 2012). To add, research also showed that the mindset of a person is malleable. By using the right interventions it is possible to influence a person's mindset more towards a growth mindset, which is valuable information as this also changes the way people perceive setbacks (Blackwell, Trzesniewski & Dweck, 2007). This study therefore suggests that nurses can either experience informal feedback as a learning opportunity where nurses can improve their abilities, or as a setback and confirmation of inability. Consequently, the second part of this study will focus on investigating the relationship between the experienced informal feedback environment of the nurses with their mindset.

To sum up, as a learning effect is eventually desired, a better insight into the experienced informal feedback environment of nurses is necessary to determine what aspects can positively or negatively influence this feedback effect. Therefore, obstructing and stimulating aspects that influence the feedback process will be explored. In addition, this study will investigate whether a nurses' mindset influences the way they experience such an informal feedback environment. When a significant positive relationship is shown, this information could help to change nurses' mindsets and maybe positively change their experiences towards feedback with it.

Outline Report

This report will firstly give an overview of the most important concepts of this study in an elaborate literature review, which ends with a research model and appropriate research questions. Thereafter, the method section will give an overview of the organisation of Gelre Hospitals, as this study is performed within this context. In addition, this chapter will give an elaborate explanation on the steps that were taken to perform the qualitative and quantitative research. To continue, the findings of this current study are presented in the results section, divided by the qualitative and quantitative results. This thesis will eventually end with an elaborate discussion of what is found during this study and what the implications are for theory, Dutch healthcare and possible future research.

Literature Review

This study focusses on two concepts, namely the informal feedback environment and implicit theories of intelligence, also known as the mindset. Both will be discussed in this literature review.

Informal Feedback Process

This current study will focus on the informal feedback process between nurses as equal colleagues. Formal feedback practices, such as 360-degree appraisals with supervisors, will therefore be omitted. Informal feedback happens promptly during day-to-day interactions between colleagues and is "a dynamic communication process occurring between two individuals that convey information regarding the receiver's performance in the accomplishment of work related tasks" (Baker et al., 2013, p. 260). As there is a wish of hospitals to have nurses as lifelong learners, it is not surprising that informal feedback is considered to be an important aspect according to the report of V&V2020 (V&VN, 2016). Berings (2006) stated that "professionals all agree that nurses need to learn continuously and that on-the-job learning is significant if this is to be achieved" (p. 88). As nurses work closely with each other on a day to day basis, on-the-job learning can easily occur as colleague nurses can be a big influence on each other's development (V&VN, 2016). Eraut (2006) adds that nurses who work closely alongside each other, are able to continuously learn from each other by asking questions and learn from provided feedback regarding shared activities. He also states that the ongoing monitoring of colleagues influences nurses' tacit knowledge (Eraut, 2006). The influence of informal feedback on the learning process has long been recognized by Ericsson, Krampe and Tesch- Römer (1993) who stated that "in the absence of adequate feedback, efficient learning is impossible and improvement only minimal even for highly motivated subjects" (p. 367). This influence is also recognized in more current studies which emphasize that informal feedback is considered to be of high importance in any learning process (Van de Ridder et al., 2015; Baker et al., 2013; Van der Rijt et al., 2012).

However, whether informal feedback can reach such desired learning, is dependent of multiple aspects. Before determining these aspects, it is firstly important to determine the phases of the feedback process, as these phases are the ones that are being influenced by such aspects. In this study, informal feedback is considered as the process explained by Van de Ridder et al. (2015), which is visualised in Figure 1. An informal feedback process within healthcare can be considered a communication process with five phases. In the first phase (A_1) the feedback recipient is performing a certain task, the observation and interpretation of this task by the feedback provider is the second phase (B). What follows is the actual communication where the feedback provider provides feedback to the feedback receiver (C), and this feedback is interpreted in the last phase (D). What usually happens is that this task is performed again, and differently depending on the feedback, which means this process, or rather cycle, is closed (A_2). The performances of A_1 compared to A_2 is the feedback effect (Van de Ridder et al., 2015). As continuous learning is the desirable goal for Dutch healthcare, a learning effect is the preferred feedback effect for this study. However, if this learning effect is possible is mostly influenced by phase C and phase D. Aspects that can influence one or both of these two phases will be discussed below.

Practical aspects. The communication message from the feedback provider towards the feedback receiver and the interpretation of this feedback message can firstly be influenced by five practical aspects (Rummler & Brache, 1995). First of all, the feedback message must be *relevant*. Each feedback receiver has a goal, the feedback should be related to this goal, or the receiver is not going to change towards the desired behaviour (Baker, 2010). Secondly, the feedback message should be *accurate*, meaning that the receiver recognizes the feedback. Inaccurate feedback has adverse effects such as distraction of the desired behaviour or losing trust (Baker, 2010). Thirdly, it is best when feedback is given within a suitable *time* frame so that the receiver is willing to change any undesired behaviour as quickly as possible (Baker, 2010; Baker et al., 2013). Fourthly, the provider should make sure they give *specific* feedback, which has a higher impact than generalized statements (Baker, 2010). Lastly, it is of high importance that the feedback is also *understandable* for the receiver or no feedback effect will be reached (Baker, 2010; Rummler & Brache, 1995). The above discussed components are mostly practical guidelines for the feedback provider to abide. According to Baker (2010), informal feedback that is missing one or more of these five aspects can have a short-term ineffective effect on the feedback process. However, consistent misuse or missing of these components, can even have a long term ineffective effect on the total feedback environment (Baker, 2010).

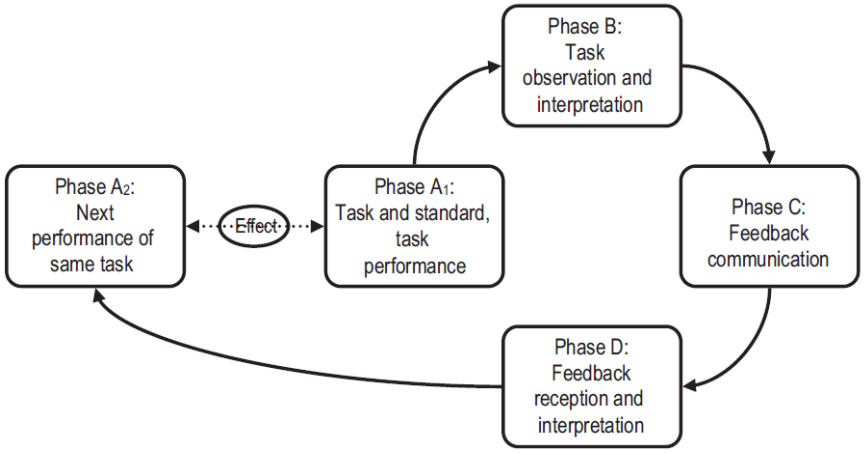

Figure 1: Representation of feedback process phases A1, B, C and D, and the feedback effect, which becomes apparent when two performances are compared (ΔA2–A1) (Van de Ridder et al., 2015).

The feedback environment "refers to the contextual aspects of day-to-day … co-worker-coworker feedback processes" (Steelman et al., 2004, p. 166). Instead of determining how one single loop of the feedback process is experienced, as with the above mentioned components, the feedback environment focusses on the experienced feedback in general. There are seven aspects that determine the feedback environment. Firstly, the *source credibility* shows the provider's expertise. This means if the feedback provider is aware of the receiver's job responsibilities and performance. This aspect shows the trustworthiness of the provider during the provision, which can ultimately cause the receiver to trust the feedback he or she receives (Steelman et al., 2004). Secondly, the *feedback quality* should be of acceptable standards to the receiver. This means that the feedback message should be consistent and useful. Therefore, the feedback may not be influenced by subjective or social aspects such as emotional liking or disliking each other (Steelman et al., 2004).

How the receiver assesses the informational value of the informal feedback eventually determines if the receiver is going to apply such feedback (Ilgen, Fisher & Taylor, 1979). Thirdly, the *feedback delivery* also influences the reaction of the feedback receiver. Very simply stated; "the more considerate the feedback source is when providing feedback, the more likely an individual is to accept and respond to the feedback" (Steelman et al., 2004, p. 167). Fourth and fifth, feedback can be *favourable* as in compliments, or *unfavourable* as in expressions of dissatisfaction. The way these types of feedback are interpreted are not necessarily dependent "whether the recipient likes the feedback" (Steelman et al., 2004, p. 168), but more whether, after reflection, the feedback is considered to be accurate (Steelman et al., 2004). Sixth, *source availability* shows the ease in which feedback can be obtained, making this aspect more of a prerequisite of the complete feedback process. The seventh and last construct shows if the organisation *promotes feedback seeking.* This means whether the environment supports or does not support the seeking of feedback and whether employees feel comfortable enough asking for feedback (Steelman et al., 2004). These seven aspects can be quantitatively measured, which helps to determine the experienced (informal) feedback environment within a team. The way these practical aspects are used by the feedback provider and experienced by the feedback receiver, can determine whether the feedback helps "to increase performer ability" (Baker, 2010, p. 481), or causes to have "a negative effect on future performance" (Baker, 2010, p. 481). However, according to Young (2000), the way feedback is experienced is not always related to students' abilities, to the received assessments, or to the positive or negative nature of the feedback, it is however largely related to their self-esteem (Young, 2000). The following part of this review therefore focusses on social aspects.

Social aspects. Besides the discussed practical aspects, social aspects such as the feeling of trust (Baker et al., 2013; Van der Rijt et al., 2012), the relationship with colleagues (Baker et al., 2013; Eraut, 2006), and self-esteem (Young, 2000; Sargeant, Mann, Sinclair, Van der Vleuten & Metsemakers, 2008; Ilgen et al., 1979) all influence the experienced feedback process, or environment, as well. For example, employees who receive negative feedback in a trusting environment, are more able to see the value and meaning of such comments (Van der Rijt et al., 2012; Edmondson, 2008). These feelings of trust can also promote openness towards feedback (Baker et al., 2013). On the other hand, when there is a lack of a trusting environment, negative feedback can influence the relationship (Baker et al., 2013). To add, the type of relationship also influences the way feedback is provided and received (Eraut, 2006). Furthermore, according to Sargeant et al. (2008), and Clynes and Raftery (2008), students with higher self-esteem are more capable of appreciating feedback. However, students with lower self-esteem can take such comments personally. This is confirmed by Young (2000), who adds that a higher self-esteem helps to experience feedback as information that people can make use of to improve themselves. Whereas a lower self-esteem causes feedback to feel like a defeat. This is supported by Ilgen et al. (1979), who already stated early on that feedback receivers "interprets the feedback stimulus in a fashion consistent with his or her self-orientation" (p. 356). To conclude, rather than experiencing feedback as a positive direction for change, people with low self-esteem seem to perceive it as "a definitive judgement of ability" (Young, 2000, p. 415).

Feedback effects. The above discussed aspects do not only affect phase C and D of the feedback process, but eventually affect the difference between A_1 and A_2. Several studies have shown that a lack of effect, where received feedback is simply not applied, is not the biggest risk of the feedback effect (e.g. Archer, 2010). For example, feedback receivers might find the received comments tedious, unusable, judgemental or too controlling (Archer, 2010). Even more important; "negative feedback can evoke negative feelings and interfere with its acceptance" (Sargeant et al., 2008, p. 275). This is explained by Trope, Ferguson and Raghunathan (2001), who state that, especially negative, feedback has the ability to discourage people with all kinds of emotional costs. It can lead to lower self-esteem, feelings such as shame and unhappiness, and disappointment in one's self ability. It is therefore pivotal for organisations to limit such negative emotional responses, as this can disrupt learning (Mangels et al., 2012).

Such negative thoughts regarding feedback were also shown to be present in a Dutch hospital (Jochems, 2016). Nurses seemed to have difficulties with providing feedback as a negative reaction from the receiver was expected. This study also emphasized that further research was necessary to determine the reason behind these difficulties with feedback responses (Jochems, 2016). Furthermore, as other literature concerning Dutch healthcare showed that feedback has the ability to decrease nurses' well-being, it is of high importance to know what type of aspects have the ability to cause such negative feedback effects (Giesbers, Schouteten, Poutsma, Van der Heijden & Van Achterberg, 2015). The first part of this current study will therefore investigate whether the practical and social aspects that influence phase C and D known from literature are important for nurses as well. This will be done by exploring obstructing and stimulating aspects that can influence the experienced informal feedback environment.

To continue, literature showed that the effects of feedback are influenced by the self-esteem of the feedback receivers. However, it is very difficult to influence a person's self-esteem in order to elevate such negative feedback effects (Haney & Durlak, 1998). To add, literature also showed that feedback can either be interpreted as a learning moment or as a defeat, dependent from several practical and social aspects. This current study suggests that these effects can be influenced by an underlying factor which influences the behaviour of people, namely implicit theories, or a person's mindset. Studies have shown that a mindset can have an impact on self-esteem, one's own judgement of ability, reactions towards setback, challenges, and thus learning moments. Literature also showed that, in contrast to self-esteem, the mindset is malleable (Dweck, 2000). This mindset is therefore the second concept that will be discussed in this literature review.

Mindset

A mindset, otherwise known as 'implicit theories of intelligence', can be 'fixed' (entity theory) or 'growth' (incremental theory). These implicit theories show a person's belief regarding their abilities, independent from their actual abilities. People holding a fixed mindset believe that "you have a certain amount of intelligence or talent and that's that. You can learn new things, but you can't change your ability" (Dweck, 2007, p. 1). On the other hand, people holding a growth mindset believe that "their abilities are things they can cultivate and develop throughout their lives. They believe that through effort and learning, they can become smarter or more talented" (Dweck, 2007, p. 1). However, it is important to emphasize that incremental theorists understand the influence of born ability such as talent and intelligence, but the belief that they can develop their abilities over time, differentiates them from entity theorists (Van Aalderen-Smeets & Walma van der Molen, 2016; Dweck, 2007). This theory can also be divided into a mindset regarding intelligence, or mindset regarding talent. From the intelligence point of view, people with a fixed mindset believe their intelligence is stable and fixed. They base their abilities on the amount of intelligence they are born with (Dweck, 2000). This means that such entity theorists are less motivated for learning, as they do not believe that it will improve their intelligence (Ommundsen, 2003). On the other hand, people with a growth mindset believe their intelligence is malleable and believe it has the potential to change or develop (Yeager & Dweck, 2012). Dweck (2015) states that such incremental theorists have a higher motivation for learning and self-development. From the talent point of view, people with a fixed mindset believe their talent is an innate trait (Chełkowska, Hyla & Baran, 2015). This means that such entity theorists base their abilities on their natural born talent (Ommundsen, 2003). They believe natural talent is "necessary in order to achieve a high level of proficiency" (Mercer & Ryan, 2010, p. 440). On the other hand, people with a growth mindset believe their abilities are a result of passion, discipline, training and practice (Dweck, 2007; Howe, Davidson & Sloboda, 1998). Such incremental theorists have more confidence in the power of hard work and effort (Mercer & Ryan, 2010).

It is important to indicate that "people can hold different implicit theories in different domains" (Dweck, 2000, p. 50). Meaning that, for example, people can believe that their foreign language learning talent is fixed, but their mathematical intelligence can grow (Dweck, 2007). However, the theory above also shows that the only difference between the talent mindset and intelligent mindset is whether people *believe* one or both of these traits is fixed or malleable. The behavior and effects of these implicit theories is basically the same. This literature review will therefore continue with 'abilities' as subject of a person's mindset.

Effects of mindset. One of the first indications to recognize a mindset, is to observe how an individual reacts to setbacks and failure. Incremental theorists perceive setbacks as a lack of effort, rather than a lack of ability (Dweck, 2000). As these individuals with a growth mindset are focussed on developing their competences, their world is "about learning and growth, and everything (challenges, effort, setbacks) is seen as being helpful to learn and grow" (Yeager & Dweck, 2012, p. 304). Their response towards setbacks is that they increase their effort and look for appropriate strategies to tackle the problem (Van Aalderen-Smeets & Walma van der Molen, 2016). They prefer to interpret failure as "useful information toward the longer term goal of learning and developing mastery"

(Burnette, O'Boyle, VanEpps, ollack & Finkel, 2013, p. 660). Rather than doubting their own abilities, incremental theorists are able to turn such setbacks into learning moments (Dweck & Leggett, 1988). However, entity theorists perceive setbacks as a lack of ability and they feel personally measured by their setbacks and failure (Dweck, 2007). They do not like challenges and have the tendency to avoid these as they are afraid to look foolish or feeling inadequate (Dweck, 2006; Dweck, 2015). The reason behind this fear is that these individuals with a fixed mindset are more focused on displaying their abilities and performances to others, or comparing their abilities with others (Mercer & Ryan, 2010). However, this behavior makes them "easily loose self-confidence in case of failure" (Van Aalderen-Smeets & Walma van der Molen, 2016, p.4). Mercer and Ryan (2010) suggest that entity theorists "would be likely to set lower goals and not even attempt to strive for such perfection" (p. 440). Consequently, rather than learning from setbacks, they usually feel discouraged, can become defensive (Dweck, 2012), and can experience negative emotions such as anxiety (Van Aalderen-Smeets & Walma van der Molen, 2016; Burnette et al., 2013).

Furthermore, it seems that setbacks can also play a moderating role between entity beliefs and self-esteem. Literature shows that the mindset does not have a direct influence on a person's self-esteem. However, Robins and Pals (2002) suggest that experiencing challenges or setbacks deteriorates the self-esteem of individuals with a fixed mindset *relative* to those with a growth mindset. In other words, when individuals with a fixed mindset experience a setback, their self-esteem decreases. However, when individuals with a growth mindset experience a setback, they tend to blame their failure to a lack of effort, which retains their self-esteem. This was shown by a study on students in college, a period with many challenges, where the gap of self-esteem between the two types of mindset widened significantly over a period of four years (Robins & Pals, 2002). To add, Niiya, Crocker and Bartmess (2004) showed that entity theorists' self-esteem was lower after failure than after success, whereas such failure or success had no significant effect on incremental theorists.

On a neuronal level, research has shown that incremental theorists gain significantly more knowledge than entity theorists with the help of feedback (Mangels et al., 2006; Moser, Schroder, Heeter, Moran & Lee, 2011). It is important to mention that this type of feedback is not similar to the feedback process discussed in the current literature review. Many studies that investigated the incremental theories with some kind of feedback, considered feedback to be provided information that shows if the individual was correct or wrong in, for example, a test (Burnette et al., 2013; Mangels et al., 2012; Moser et al., 2011; Mangels et al., 2006; Niiya et al., 2004). To continue, studies in cognitive neuroscience showed that entity theorists were less likely to engage in the processing of learning-relevant feedback when it was provided, as they were more focused on regulating their negative emotions (Mangels et al., 2006). Burnette et al. (2013) add that for entity theorists "knowing they have not reached the goal is all the information they need" (p. 678). These studies also showed that incremental theorists showed to be more attentive towards received feedback and have a greater ability to correct mistakes (Moser et al., 2011). Even after making a mistake, they still focus on learning, making them open towards such feedback (Burnette et al., 2013). To once again emphasize; "entity and incremental theorists differ not in whether they detect discrepancies, but rather in how they attend to subsequent information relevant to correcting errors" (Burnette et al., 2013, p. 678).

Relationship between feedback and mindset

One other important and interesting aspect of this implicit theories, is that research shows the mindset to be changeable with the help of large-scale interventions (Blackwell et al.,2007), or small-scale interventions (Paunesku et al., 2015). Even though most studies regarding the implicit theories were performed with teachers and students in a school setting (e.g. Dommett, Devonshire, Sewter & Greenfield, 2013; Schroder, Moran, Donnellan & Moser, 2014), the results all show that changing a persons' mindset by using the appropriate intervention is possible.

The first part of this literature review focussed on the informal feedback process, or environment. As the goal of healthcare is to increase the learning of their nurses, the use of informal feedback seems to be a fitting solution. However, the influence of several practical and social aspects can cause negative feedback effects. For example, literature showed that negative feedback could lead to a decrease in self-esteem. As this effect is not desired, this study suggests that it could be a solution to change such person's mindset with an appropriate intervention, as literature also showed that a person's self-esteem did not decrease after setbacks for incremental theorists. To add, as literature showed many consistencies between behavioural effects of mindset and possible interpretations towards feedback, this study suggests that, especially, phase D of the feedback process can be influenced by a person's mindset. This means that nurses can interpret feedback as a learning moment, or as failure, dependent of their implicit theory. This study therefore hypothesizes that there is a positive relationship between nurses' mindsets and their positive experiences regarding the informal feedback environment. To conclude, the second part of this study will focus on investigating the relationship between nurses' mindsets and their experienced informal feedback environment.

Research Questions

Following the information provided during the literature review, two research questions are formulated for this study:

Research question 1: What are the stimulating and obstructing aspects that influence the informal feedback process between nurses?

Research question 2: What is the relationship between the mindsets of nurses and their experience regarding the informal feedback environment?

Research Model

To answer research question 2, the type of mindset will be measured together with six aspects that determine how feedback is experienced in an organisation. Figure 2 shows an overview of the research model with the theoretical concepts which were discussed during the literature review.

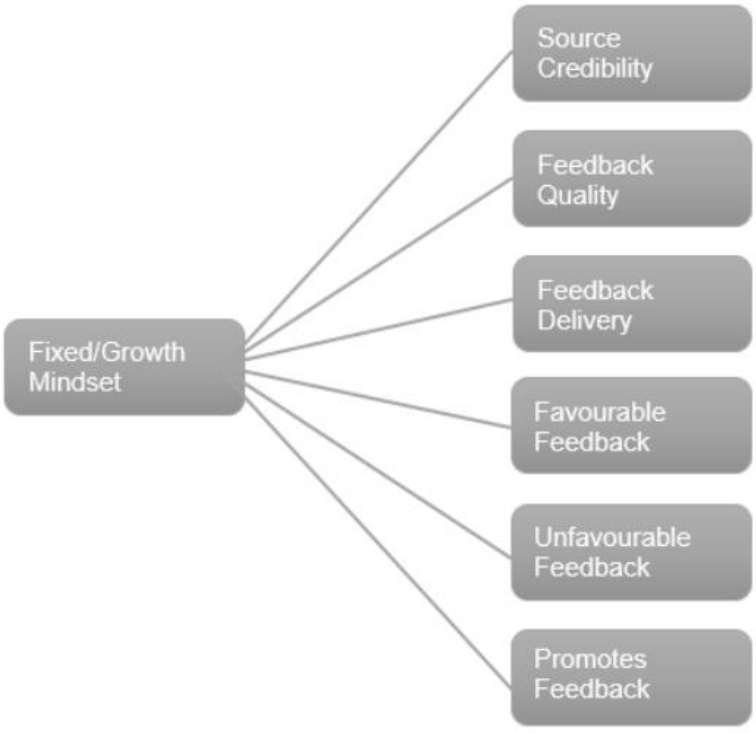

Figure 2: Research Model

Method

In this chapter the research method is described. Firstly, the overall research design is explained, followed by the context of this study, the sampling procedures and the characteristics of the respondents. Subsequently, the used instruments with the proper validity and reliability checks are elaborated on. Finally, the data analysis is discussed.

Research Design

A mixed method design was chosen using an online survey that consisted of open and closed questions. Firstly, the qualitative part explored aspects that influence the informal feedback process. Secondly, for the quantitative part, a correlational study with a cross-sectional design was chosen to test the relationship between nurses' mindsets and their experienced feedback environment. The mindset was the independent variable and the experienced feedback the dependent variable.

Context

This study is conducted in Gelre Hospitals, which has two large hospitals in the cities Apeldoorn and Zutphen of the Netherlands. The organisation has a total of 3.500 employees and around 25 nursing departments with approximately 800 nurses employed. Gelre Hospitals carry the STZ-status ('Samenwerkende Topklinische opleidingsZiekenhuizen'), also known as Cooperating Topclinical Training Hospitals. This status shows that this organisation has a strong focus on research and education. One department within the hospital, the Learning House ('het Leerhuis'), focusses entirely on the education of the staff. Prioritising education in such a big organisation is also formulated in the hospital's vision on learning, where it is stated that appreciative learning is their major focus and that giving constructive feedback is considered a high priority (Gelre Ziekenhuizen, 2015). This is visible in that the hospital currently provides some tools that focus on how the employees of the hospital should give feedback to their colleagues. This is done by the use of 'feedback-cards' which show the practical steps to give constructive feedback. There is also a short instruction included on how to receive feedback. Furthermore, the practicalities around feedback are also a topic during the mandatory course to become a suitable mentor to guide student nurses (Gelre Ziekenhuizen, 2016).

Research Method

In this research method, the sampling procedure and general procedure is discussed.

Sampling procedure. To decide on an appropriate sample, the nurse educators of the Learning House were asked to consult on which department would be best suitable. The choice was made to conduct this research at three departments in Apeldoorn and three departments in Zutphen. These different departments are a mix between surgical and non-surgical departments, with different specialized care. These departments were chosen as the educators were either curious about the outcome of this study on those particular departments, or because they felt those departments could use improvement regarding the feedback environment. Student nurses were excluded from this study, as the study focusses on the feedback process among equal colleagues.

Procedure. Before executing the data collection, a pilot was performed. With the help of 14 nurse educators and educational advisors from the Learning House, the instruments were tested before the online survey was sent to the nurses. To recruit the actual participants for this study, contact was being made with the supervisors of the departments to explain the research. A poster with information on the research and importance of the participation of the nurses was made and sent to the leaders who spread the poster throughout their departments. Afterwards, the nurses were invited by e-mail to participate in the study by filling out the online digital survey. Parantion, a program for conducting digital surveys, was used as the hospital always used this program when conducting an online survey. The survey started with a short introduction stating the reason and the goal for this research. To start the questionnaire, the respondents had to give their consent to participate in this research. It was also explained that participation was voluntary and anonymous. The Ethics approval from the Ethics Committee was obtained before starting the data collection. In total, one invite and two reminders were sent over a period of three and a half weeks (16-06-2016 till 11-07-2016).

Participant Characteristics

An invite to participate in the current study was sent to 194 nurses. Eventually 78 nurses (40%) responded. The group of nurses that participated in the study consisted of 5 males and 73 females, between the ages of 18 and 65 (*M* = 39, *SD* = 12.81). A one-way ANOVA was conducted on the variables age, years of work experience, and educational level, for each team (team 1 till team 6). This test showed that there was a homogeneity of variance as assessed by Levene's test. To add, this test showed no significant differences between teams regarding their demographic information, thus equal groups can be assumed. The demographic information per department is shown in Table 1.

Table 1.

Demographic Information Per Department

	N	Age		Years of Work Experience		Educational level		
		M	SD	M	SD	MBO	VVO	HBO
Team 1 (A)	8	32.89	13.31	10.67	7.86	6	2	1
Team 2 (A)	11	40.00	13.33	19.00	11.97	2	7	1
Team 3 (A)	13	35.38	14.84	11.62	12.94	5	1	7
Team 4 (Z)	13	43.85	10.44	11.69	11.03	5	4	4
Team 5 (Z)	19	42.98	12.81	20.19	14.19	12	3	4
Team 6 (Z)	14	38.00	10.98	14.00	8.66	8	3	3
Total	78	39.38	12.81	14.94	11.99	38	20	20

Note. Educational level ranges from Middle Professional Education (MBO), to Specialized Nursing Education (VVO), to Higher Professional Education (HBO). (A) Apeldoorn, (Z) Zutphen.

Measure

An online questionnaire was used with eight open questions to answer the first research question (qualitative), and 32 closed questions to answer the second research question. Firstly, the instruments are introduced, followed by several reliability and validity tests.

Instruments. Firstly, the questionnaire consisted of eight open questions. To answer the first research question, open questions such as 'When do you find it easy to receive feedback from a colleague' and 'Why do you find it hard to give feedback to a colleague in this situation' were added to the questionnaire.

Secondly, to measure the feedback environment, items from the Feedback Environment Scale (FES) developed by Steelman et al. (2004) were used. The FES officially consists of a 'Supervisor Source' and 'Co-workers Source'. The 'Supervisor Source' entails items about feedback received from the supervisor. As this study measures the experienced feedback among equal colleagues, only the 'Co-workers Source' was used. This study used six of the seven subscales from the FES. Items regarding the subscale 'Source Availability' were removed as these items did not have any value for this study, as nurses already interact on a daily basis with their colleagues. An example item from this subscale was; 'I have little contact with my co-workers'. The following six subscales were tested: Source Credibility, with five items such as: 'I have confidence in the feedback my co-workers give me', Feedback Quality with four items such as: 'My co-workers give me useful feedback about my job performance', Feedback Delivery with five items such as: 'When my co-workers give me feedback, they are usually considerate of my feelings', Favourable Feedback with three items such as: 'I frequently receive positive feedback from my co-workers', Unfavourable Feedback with three items such as: 'My co-workers tell me when my work performance does not meet organisational standards', and Promotes Feedback Seeking with four items such as: 'I feel comfortable asking my co-workers for feedback about my work performance'. In total, 24 items were used and could be answered by the use of a 5-point Likert scale ranging from 'totally disagree' to 'totally agree'.

Thirdly, to test the mindset of the nurses, four incremental items and four entity items divided over two scales from the Implicit Theories of Intelligence Scale (TOI) developed by Dweck (2000) were used. The scale Intelligence consisted of four items such as: 'Your intelligence is something about you that you can't change very much'. The scale Talent consisted of four items such as: 'You can always substantially change how much talent you have'. These eight questions were also answered by the use of a 5-point Likert scale ranging from 'totally disagree' to 'totally agree'.

Validity and reliability pilot. As the original versions of the FES and TOI were in English, but the research was held in a Dutch hospital, the questionnaire items were translated by using the forward-translation and back-translation method (Brislin, 1970). To make sure that the total questionnaire was understandable for nurses, the Think-Aloud method was used with two nurses from the hospital (Ericsson & Simon, 1984). Also, to make it the best fit for Gelre Hospitals, this adjusted questionnaire was tested by doing a pilot. 14 educators and educational advisors from the Learning House gave feedback on the questionnaire. This feedback was used to make the last changes in the questionnaire, making this the final version which can be found in Appendix A. To prevent answer tendencies, items were presented in random order to the participants (Choi & Pak, 2005).

Reliability open questions. To analyse the reliability of the open questions, a codebook was used. Codes were made with information from the literature review and during close contextual reading. To test the reliability, a colleague-researcher also coded a part of the open answers. The codes were then compared using the intra-class correlation (ICC). This is a method to assess the Interrater Reliability (IRR) for ordinal, interval, and ratio variables. As this codebook uses several different codes, this method was most suitable. The final ICC for this codebook was .74, making this tool reliable (Halgren, 2012).

Validity and reliability FES. *T*o check the validity and reliability of the final FES data collected from the nurses, the normal distribution was checked by looking at the skewness and kurtosis for values exceeding 2.0. Five items (2, 4, 5, 11 and 12) had to be removed as normality could not be assumed and they would have made the analysis results less reliable (Brown, 2011). An Exploratory Factor Analysis (EFA) was conducted on the 19 remaining items using a principal axis factor analysis with oblique rotation (direct oblimin) (Field, 2013). The Kaiser Normalization (KMO = .687) and the Bartlett's test of Sphericity ($p < .001$) confirmed that the data was suitable to conduct a factor analysis. An initial analysis was run to obtain eigenvalues for each factor in the data. Four factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 51.62% of the variance. The scree plot was ambiguous, but a parallel analysis showed that retaining four factors would be most suitable (O'Connor, 2000). The following criteria were used to remove items that did not fit any of these four factors that were used: items with factor loadings less than .32, cross-loadings less than .15 difference from the item's highest factor loadings, and items that contained absolute loadings higher than .32 on two or more factors (Worthington and Whittaker, 2006). A total of six items were removed using these criteria, leaving 13 items divided over four factors. Surprisingly, all these steps showed that, in contrast of the validation study of Steelman et al. (2004), this FES turned out to be an invalid instrument during this current study. An overview of the factor loadings can therefore be found in Table B1 of Appendix B.

To continue, the four factors were given appropriate labels in cooperation with two fellow-researchers. Factor 1 is called 'Appropriateness', entailing the suitability, applicability, properness and usability of the feedback, thus items from the original scales 'Feedback Quality', 'Feedback Delivery' and 'Promotes Feedback Seeking' combined. Appropriateness consists of four items, of which two were recoded, Cronbach's Alpha = .626. Factor 2 is called 'Favourable Feedback', entailing all three items of the original FES scale regarding positive feedback and compliments. Favourable feedback consists of three items, of which one is recoded, Cronbach's Alpha = .760. Factor 3 is called 'Unfavourable Feedback', containing all three items of the original FES scale regarding feedback on undesired behaviour and expressions of dissatisfaction. Unfavourable feedback consists of 3 items, Cronbach's Alpha = .623. Factor 4 is called 'Feeling of trust', entailing items from the original scales 'Source Credibility', 'Feedback Quality' and 'Promotes Feedback Seeking'. This factor shows a psychological safe and trusting environment where the employees have confidence in each other's feedback and are appreciative towards receiving feedback. Feeling of trust consists of 3 items, Cronbach's Alpha = .633.

The four factors with the matching items are shown in Table B2 of Appendix B. A minimum of three items per factor is necessary, otherwise the factor becomes unstable. This study reaches that minimum (Costello & Osborne, 2005). Even though the reliability of these four factors seem low, according to Kline (1999) “when dealing with psychological constructs, values below even .7 can, realistically, be expected because of the diversity of the constructs being measured” (Field, 2013, p. 709). Therefore, these Cronbach’s Alpha’s are considered acceptable. Table 2 shows the results of the factor analysis and reliability tests.

Table 2.

Final Factors Feedback Environment Scale

Factor	Eigen-value	Eigenvalues % explained variance	Cumulative % explained Variance	Number of items	Cronbach’s Alpha α
1. Appropriate-ness	4.72	24.82	24.82	4	.63
2. Favourable Feedback	1.79	9.41	34.22	3	.76
3. Unfavourable Feedback	1.74	9.16	43.38	3	.62
4. Feeling of Trust	1.57	8.25	51.62	3	.63

Validity and reliability TOI. The previous steps to determine the validity and reliability were also performed for the TOI data gathered from the nurses. The eight items were tested on normality by checking the skewness and kurtosis. As all the items showed to be normally distributed, no items were removed. A Principal Component Analysis with oblique rotation (direct oblimin) was conducted (Field, 2013). The Kaiser Normalization (KMO = .708) and the Bartlett’s test of Sphericity ($p < .001$) confirmed that the data was suitable to conduct a components analysis. An initial analysis was done to obtain eigenvalues for each factor in the data. Two factors had eigenvalues over Kaiser’s criterion of 1 and in combination explained 67.40% of the variance. The scree plot clearly showed two factors as well. None of the items needed to be deleted according to the criteria of Worthington and Whittaker (2006). An overview of the factor loadings can be found in Table C1 of Appendix C. Factor 1, Intelligence, consisted of four items, of which two were recoded, Cronbach’s Alpha = .852. Factor 2, Talent, consisted of four items, of which two were recoded, Cronbach’s Alpha = .857. The two factors with the matching items are shown in Table C2 of Appendix C. This analysis confirmed the scales of the two constructs in Dweck’s theory (1999). Table 3 shows the results of the factor analysis and reliability tests.

Table 3.

Final Factors Implicit Theories of Intelligence Scale

Factor	Eigen-value	Eigenvalues % explained variance	Cumulative % explained Variance	Number of statements	Cronbach's Alpha α
1. Intelligence	3.44	42.98	42.98	4	.85
2. Talent	1.96	24.42	67.40	4	.86

Data Analysis

To analyse the qualitative data, Excel was used to gather and structure all the answers. The summary of these answers is the answer to research question 1. During the quantitative data analysis, SPSS Statistics was used. To answer research question 2, a multiple linear regression analysis was used.

Construction of the codebook. The codebook was made with the help of the six scales that compose the feedback environment (Steelman et al., 2004), and three out of the five practical aspects according to Rummler and Brache (1995). Source Credibility, Feedback Quality, Feedback Delivery, Favourable Feedback, Unfavourable Feedback, Supporting Feedback Seeking, Relevant, Accurate, and Timely were the first labels. When calculating the ICC during the first round of coding, an ICC of .43 was found, meaning the IRR was fair (Halgren, 2012). When comparing the codes, it turned out that the disagreement was usually a result of missing codes that could grasp the meaning of the answers more appropriately than using only those nine codes. Therefore, the following labels were added based on the social aspects known from literature and close contextual reading: Openness, Safe Environment, Offensive/Defensive, Dialogue, Personal, Relation, and Learning Effect. Furthermore, Source Credibility and Accurate were made into one label, as well as Feedback Delivery and Timely, as these were almost always usable for the same sentence. The labels Feedback Quality and Relevant were removed as these were barely used. This resulted in 12 labels in total. After a second round of coding, the ICC was .78, which is excellent (Halgren, 2012). However, during a discussion it became evident that some sentences that received the same label, considered the feedback from a different point of view. Namely, from the perspective of Conditions, Behaviour, or Effect. Conditions entails the conditions the feedback has to fulfil *before* it is provided or can be received. Behaviour entails what happens *during* the providing and receiving of feedback and the behaviour that occurs. Effect entails the effect of the provided or received feedback, or what happens *after* the feedback is provided or received. Therefore, two types of codes were used. The 12 codes that are mentioned above and the three new codes. The two types of labels occur in different variations, but say something about the content of the sentence and in what part of the feedback process this happens. During a new round, the final ICC showed to be good as well with a value of .74 (Halgren, 2012). The final code book with explanation per label can be found in Appendix D.

Results

This section presents the results of this study. Firstly, the qualitative data will be analysed, described and summarized. Subsequently, the quantitative data will be analysed, described and visualised.

Qualitative Results

The qualitative part of the questionnaire yielded approximately 600 statements on eight questions from a total of 78 nurses, which ultimately results in answering research question 1: 'What are the stimulating and obstructing aspects that influence the informal feedback process between nurses?'

The analysis showed that the statements of the nurses could be divided into three categories, namely; conditions, behaviour, or effect. Conditions refer to conditions which the feedback has to meet in order to be successfully given or received. Behaviour refers to the communication and interpretation during the feedback process. Effect refers to the situation after the feedback is given or received. This is in line with the feedback process according to Van de Ridder et al. (2015), and the practical aspects according to Rummler and Brache (1995). However, new insights were given as well, which are all discussed in the analysis below. The analysis is structured with the help of the codebook. This chapter ends with a table that comprises the most important stimulating and obstructing factors.

Favourable and unfavourable feedback. Feedback can be divided in two types, namely favourable feedback, such as compliments, and unfavourable feedback, such as expressions of dissatisfaction. It is firstly important to report the following striking finding which came up during the analysis; when nurses answered the open feedback questions, they almost always linked their answers with unfavourable feedback. Meaning that they usually experience feedback as a process that occurs when situations are not happening as it should be, instead of a process that consists of acknowledging each other's successful performances. This finding is a major indicator of how the feedback environment is experienced among the nurses. Apparently, the majority does not think of feedback that can be used to complement each other, but mostly to correct each other. Therefore, almost all the stimulating and obstructing factors that are discussed in this chapter, are associated with unfavourable feedback.

To continue, the deviation between favourable or unfavourable feedback showed to be a *condition* in receiving and providing feedback as well. For example, 12 out 78 nurses indicated that they found it easy to receive feedback when this was favourable feedback. In addition, 17 nurses indicated that they found it easy to provide feedback when it was favourable feedback. They stated that favourable feedback could be experienced as pleasant, nice, enjoyable, and as a compliment or confirmation of them doing well. According to the nurses, the *effect* is that it can help to make colleagues feel more confident, to better develop themselves, and can even create a safe working environment. To add, 12 out of 78 nurses indicated that they found it difficult to receive feedback when this was unfavourable feedback. In addition, 14 nurses indicated that they found it difficult to provide feedback when it was unfavourable feedback. Their answers showed that this negativity was not only towards unfavourable feedback per se, but other aspects had influence as well.

For example, unfavourable feedback was experienced damagingly when the receiver feels they “could have done better”, when the feedback comes unexpectedly, when they “have tried their best”, or when it is provided in a very harmful and critical matter. The provider agrees by stating that these aspects make it difficult for them to provide feedback, as the *effect* is that the nurses feel insecure, discouraged, vulnerable, and they could feel like they failed. They also add that providing unfavourable feedback becomes more difficult when it is feedback regarding behaviour, towards more experienced or dominant colleagues, and when they are aware of possible personal issues. The *behaviour* of the provider is therefore dependent of the expected *effects* of the receiver. The nurses are afraid to hurt their colleagues, demotivate their colleagues and making their colleagues dislike them. They could also be hesitant to provide unfavourable feedback as past experiences showed that feedback did not have any effect with the receiver, making the feedback ineffective.

Credibility. Feedback should also consist of some other aspects before it can be successfully provided or received. It seems that the nurses find it an important *condition* that the feedback is credible, meaning that the nurses can recognize themselves in the feedback. Moreover, it should be believable and clear that both the receiver and provider have the same situation in mind that is subject for the feedback, otherwise, the receiver will not accept such feedback. Regarding the *behaviour*, it is important for the receiver to be able to have a dialogue with the provider, so the provider gets the opportunity to argument the feedback and base it on examples. Such examples were also considered as *conditions*. When these aspects of behaviour during the feedback process are absent, the *effect* may be that the receiver feels personally offended and eventually will not accept the feedback. Such conditions also help the provider during the feedback process. Having the knowledge that both parties have the situation “fresh in mind”, and that the provider has prepared his argumentation and examples, it is easier to give credible feedback. Furthermore, other *conditions* for the provider are a clear protocol to fall back on, no personal feelings that can interfere the credibility, feelings of trust, and confidence in their own feedback. These aspects can all stimulate or obstruct the credibility of feedback.

Delivery. Many answers were given that showed that the way feedback is provided and when it is provided, is a very important *condition* for the nurses. Nurses indicate that it is important that the feedback is delivered directly after the situation occurred. However, when it is very busy, the nurses prefer to receive it as soon as possible during a more quiet moment. Furthermore, they expect from the provider that it is given during one on one contact, without any presence of other colleagues or patients. This creates a more safe environment. These aspects are also conditions for the provider to confidently give feedback, as this assures them that the provision occurs in a correct matter. The feedback receivers also expect a calm, appropriate and open approach from the provider without having the feeling of being attacked. If these *conditions* are all met, the nurses feel it is possible to start a dialogue with each other. It is desirable behaviour for the nurses to have an open communication with each other regarding the feedback. The *effect* is that the feedback is clear for both the receiver and the provider. The nurses also indicate that this makes them more willing to accept the feedback and turn it into a learning moment.

Feedback seeking. Some answers from the nurses showed that specifically asking for feedback could be considered as a *condition*. Eight out of 78 nurses stated that they found it easy to receive feedback when they had purposely asked for it. To add, nine nurses stated they found it easy to provide feedback when their colleague had specifically asked for it. When the nurse purposely asks for feedback, she expects this feedback and the *behaviour* of this receiver is automatically more open towards feedback. The nurses that intentionally ask for feedback, also indicate that they experience feedback as something useful and can turn it into a learning moment. This asking for feedback creates a positive feedback *effect* with miniscule chances of a negative reaction from the feedback receiver.

Openness. Openness turned out to be a subject that many nurses viewed as an important *condition* whether they find it easy to receive *and* provide feedback. 19 out of 78 nurses indicated that they found it easy to give feedback when they know their colleague has an open attitude. To add, 11 out of 78 stated that they found it difficult to provide feedback when the receiver showed a closed attitude. There are several reasons behind these statements. First of all, open *behaviour* from the receiver ensures the provider that they are more likely to accept or even appreciate the feedback. Secondly, an open attitude from both parties can lead to a dialogue where the receiver and provider are listening to each other. Thirdly, the receiver is more likely to experience the feedback as constructive, rather than critic, with an open attitude. Fourthly, the provider feels that the feedback is more welcome when the receiver shows openness, giving them more freedom in the provision. It can be concluded that an open attitude from the receiver lowers the barrier of providing feedback, as a defensive reaction from the receiver as *effect* is not expected. On the other hand, when an open attitude is missing, the work environment or relationship can be affected or the feedback may not even be used. From the receiver's point of view, openness is considered to help the feelings of trust among the colleagues, together with an open communication and accepting attitude. However, the nurses admit that their open attitude can be dependent regarding their personal feelings and situation at a particular moment, meaning that they are not always as open towards feedback as they wished to be.

Safe environment. A safe environment can be characterized by psychological safety, which can be described as: "a team climate characterized by interpersonal trust and mutual respect, in which people are comfortable being themselves" (Edmondson, 1999, p. 354). The nurses consider a safe environment as a *condition* to safely provide and receive feedback. If they do not feel safe in their workplace and/or around their colleagues, they will not provide feedback, but also show negative *behaviour* towards receiving feedback. The nurses indicate that it is easier to receive feedback when it occurs in a trusting and familiar environment. They therefore expect a few *conditions* from the provider. First of all, they do not want to receive feedback in the presence of others. Secondly, the feedback provider has to be the same person who observed the situation. Meaning that the feedback cannot come from other colleagues, as this shows that they were "talking behind your back". Thirdly, an open communication is expected, meaning that the provider should also be open to start a dialogue. The nurses eventually state that it helps if all their colleagues have an open attitude, which all together results in an open atmosphere where all the nurses feel comfortable providing each other feedback. In conclusion, when the nurses experience a safe environment, the feedback is not considered as critic, but can result in a learning *effect*.

Offensive/Defensive. When there is a lack of Openness or Safe Environment, the nurses regularly experience that their colleagues can be offensive or react defensive. Both are considered to be negative aspects during the feedback process. Ten out of 78 nurses admitted that it was difficult to receive feedback when it was provided in an offensive way. To add, 19 nurses stated that they found it difficult to provide feedback when their colleague reacts defensive. These statements show that an offensive and/or defensive *behaviour* is a *condition* on whether they find it difficult to receive and provide feedback. According to the nurses, offensive or defensive behaviour can be described with an aggressive tone, very direct communication, judgmental behaviour, angry reaction, ignoring or walking away from the provider, or just “in a rude way”. When the feedback process has any of these characteristics, it is experienced as an attack, rather than as a learning moment. When such *behaviour* occurs, the *effect* is that the nurses feel misunderstood, unheard, hurt, and it makes them feel like they did something stupid. This is causing them to take the feedback, or reaction on feedback, personal. This eventually results in an unsafe environment with irritation and self-doubt among the nurses, meaning that a learning *effect* is absent.

Dialogue. When there are no offensive or defensive attitudes during the feedback process, a dialogue can take place. Having a dialogue turned out to be an important and desirable *behaviour* among the nurses. The nurses indicated that they find it a comfortable idea to immediately discuss the feedback with the provider, so the feedback doesn’t get ambiguous. This way they can check whether they understood the feedback well, or ask follow-up questions. For this situation to occur, there are a few *conditions*. First of all, the feedback should be given directly after the situation occurred. Secondly, it should be provided during one on one contact. Thirdly, the receiver expects openness from the provider. When the provider does not want to engage in a dialogue about the feedback, the receiver finds it difficult to receive feedback. This “does not feel good”, or it feels like the provider wants to impose their thoughts and actions on to the receiver. From the provider’s point of view, it turned out that they considered a dialogue desirable as well. During a dialogue they can argument their choices and explain the feedback properly during a calm conversation. When the conditions are met and the dialogue can take place, the nurses indicate that a learning *effect* can be reached as well.

Personal. The nurses’ personal wellbeing turned out to be an important *condition* on whether they found it easy or difficult to receive and provide feedback as well. 16 nurses indicated that they found it difficult to receive feedback when they were tired, had personal problems, felt insecure, had a bad day, or were already frustrated. When the nurses receive feedback during such personal conditions, the feedback can be experienced as an attack. The learning *effect* is missed, they take the feedback more personal and it can make them even more insecure. These effects are also the reason for the feedback provider to be hesitant in providing feedback. They find it difficult to provide feedback when they know that the receiver has personal problems, is under a high work pressure, is having a bad day, or is going to take the feedback personally. The underlying reasons are that they do not want to hurt their colleague, offend anybody, they are empathic towards their colleagues, and they are also afraid of causing an unsafe work environment. On the other hand, when the nurses feel personally good and comfortable, they are more open towards receiving feedback.

Relation. The type of relationship the nurses have with their colleagues has a high impact on how the feedback is received or provided as well. They find it easier to receive and provide feedback with colleagues they know well, feel comfortable with and respect. This makes the relationship a *condition*. This way they know their colleagues can appreciate the feedback and learn from it, the desired *effect*. However, 16 nurses indicated that they find it difficult to receive and provide feedback with colleagues they do not know very well, they do not feel comfortable with, or more dominant and assertive colleagues with a strong personality. Receiving feedback from such colleagues makes the nurses feel uncomfortable and insecure. However, providing feedback is also an issue as they are afraid of a negative reaction. They are afraid that those colleagues think that the feedback is a result of their 'bad' relationship, rather than helping with each other's improvements.

Learning effect. The learning effect is mentioned several times already, as this concept showed to be a result when certain conditions and desirable behaviours were met. This learning effect is also acknowledged by the nurses, as they gave this concept as a reason why they found feedback easy or difficult. To summarize, the nurses experience a learning effect when the receiver feels personally well, in a trusting environment, if the feedback is work-related, if it is communicated correctly, when there is an open attitude, when the feedback is positive, when a dialogue can occur, and when they agree with the feedback. However, the learning effect is missed when the feedback is incorrect, the nurses already feel insecure, when it is not communicated properly, when the receiver was already trying really hard, when their colleague is not open for feedback, when the receiver feels attacked, and if they have to provide (the same) feedback multiple times.

Research question 1

To answer the first research question; 'What are the stimulating and obstructing aspects that influence the informal feedback process between nurses?' an overview of the aspects is given in Table 8. This table includes the most important findings of the qualitative data and shows the effect the factors can have on parts of the feedback process, according to the nurses. However, this table does not make a dichotomy between the receiver's point of view and the provider's point of view, as these were almost always align. If not, this is indicated in the name of the aspects.

Table 8.

Stimulating and Obstructing Aspects that Influence the Feedback Process

	Desired outcomes										
Factors	**Positive personal feelings**	**Confidence**	**Safe environment**	**Learning effect**	**Acceptance**	**Feelings of trust**	**Dialogue**	**Openness**	**Appreciation**	**Provision of FB**	**Relationship**
Compliments	+	+	+	+							
Critic	-	-		-						-	
Open attitude		+		+	+	+	+	+	+	+	
Closed attitude			-	-							-
Positive personal situation	+							+			
Negative personal situation	-	-	-	-				-			
Positive relationship			+	+					+		+
Negative relationship		-	-				-				-
Offensive message	-	-	-	-		-					-
Defensive reaction		-								-	-
Psychological safety			+	+		+	+	+		+	
Dialogue				+	+		+				
Recognizable FB		+			+	+	+				
Unexpected FB		-									
FB on behaviour	-										
Argumentation by examples/protocol		+			+	+					
FB delivery ASAP				+	+						
FB delivery during quiet moment							+				
One on one contact			+								
Calm approach from FP			+		+						
Specifically asking for FB		+		+	+			+			

Note. FB (Feedback), FR (Feedback Receiver), FP (Feedback Provider). (+) Stimulating, (-) Obstructing.

Quantitative Results

To continue with the second part of this current study, an overall overview will be firstly given on the answers of the closed questions. Secondly, the relationships between the factors of the FES and TOI are described, after which the multiple linear regression analysis is elaborated on. This chapter will answer research question 2*:* 'What is the relationship between the mindsets of nurses and their experience regarding the informal feedback environment?'

Feedback and mindset. To get an overview of the nurses' answers, the Mean, Standard Deviation, Minimum and Maximum answers, divided per scale, are presented in Table 4.

Table 4.

Descriptive Statistics Per Scale Of The Dependent And Independent Variables

Variables	M	SD	Min	Max
Appropriateness	3.94	.38	3.00	5.00
Favourable Feedback	3.50	.67	1.33	5.00
Unfavourable Feedback	3.76	.52	2.33	5.00
Feeling of Trust	4.27	.44	3.33	5.00
Mindset on Intelligence	3.34	.74	1.50	4.75
Mindset on Talent	3.50	.68	2.00	4.75

Note: (N = 78)

Table 5.

Pearson correlations between the FES and TOI

	TOI		FES			
	Intelligence	Talent	Appropriate-ness	Favourable Feedback	Unfavourable Feedback	Feeling of trust
TOI						
Intelligence	1.00	.29*				
Talent	.29*	1.00				
FES						
Appropriate-ness	.09	.24*	1.00			
Favourable Feedback	-.09	.11	.29**	1.00		
Unfavourable Feedback	-.01	.15	.24*	.35**	1.00	
Feeling of Trust	.26*	.19	.30**	.28*	.22	1.00

Note: (N = 78, df = 76). *p < .05 (2-tailed),**p < .01 (2-tailed).

Relationship between the FES and TOI. A Pearson correlation coefficient was computed to assess the relationships between all factors, as seen in Table 5. There were two significant relationships found between the scales of mindset and the factors of the feedback environment. Firstly, 'Appropriateness' and 'Talent' were significantly correlated, $r = .24$, $p = .04$. Secondly, 'Feeling of trust' and 'Intelligence' were also significantly correlated, $r = .26$, $p = .02$.

Multiple linear regression analysis. To continue, a multiple linear regression analysis was conducted to see if the mindset of the nurses could predict the experienced feedback environment. To be more specific, multiple linear regressions were run with the independent variables 'Intelligence' and 'Talent' for each dependent variable (Appropriateness, Favourable Feedback, Unfavourable Feedback, Feeling of Trust). The backward entry method was used during the analysis, meaning that both independent variables were added to the equation first before deleting one at a time, showing which does or does not contribute to the equation. This method was chosen as the correlation analysis already showed differences between the two predictor variables ("Selection Process for Multiple Regression", 2016).

The results for Appropriateness are displayed in Table 6. Model 2, which included only the variable Talent, was accepted as the best fitting model over Model 1, which included both independent variables. Model 2 showed a significant relationship between appropriateness and talent ($F(1, 75) = 4.40$, $p = .04$), with an R^2 of .06. The results for Feeling of trust are displayed in Table 7. Model 2, which included only the variable Intelligence, was accepted as the best fitting model over Model 1, which included both independent variables. Model 2 showed a significant relationship between feeling of trust and intelligence ($F(1, 75) = 5.50$, $p = .02$), with an R^2 of .07. The models tested for favourable and unfavourable feedback are not included in tables, as no significant effects were found.

Table 6.

Multiple Linear Regression on Appropriateness with Intelligence and Talent

	Appropriateness	
	Model 1	Model 2
Parameters		
INT	.01	-
TAL	.13	.13*
Statistics		
R^2	.06	.06
F	2.19	4.40
df	74	75

Note. $*p < .05$.

Table 7.

Multiple Linear Regression on Feeling of trust with Intelligence and Talent

	Feeling of trust	
	Model 1	Model 2
Parameters		
INT	.14†	.16*
TAL	.08	-
Statistics		
R^2	.08	.07
F	3.30	5.50
df	74	75

Note. †$p < .10$, *$p < .05$.

Research question 2

The information from the quantitative analysis showed that the hypothesis regarding the feedback environment and nurses' mindsets is partly fulfilled. Firstly, the results show that there is a significant positive relationship between nurses' mindsets regarding talent and their experiences regarding the appropriateness of the feedback environment. Secondly, there is a significant positive relationship between nurses' mindsets regarding intelligence and their experiences regarding their feeling of trust concerning the feedback environment. As other significant relationships were not shown, the hypothesis could not be completely accepted.

Discussion

The results of this study gave new insights into the obstructing and stimulating aspects that influence the feedback process between nurses. This study also provided insights into the relationship between nurses' mindsets and their experienced informal feedback environment. The conclusion of these insights will be discussed below, together with new questions and discussion points that occurred.

First of all, the qualitative results showed that when nurses think about feedback, they mostly think about negative feedback. Rather than thinking of situations where colleagues complimented them on a job well done, or expressed their satisfaction on performances, they mainly thought about situations where critic and expressions of dissatisfaction were shared. To add, the results show that favourable feedback made the provision and receiving of feedback easy, whether unfavourable feedback made it difficult to provide and receive feedback. The nurses' open answers also showed the magnitude in influence compliments or critic can have on the liking or disliking of the feedback process. In other words, the presence of the aspects favourable and unfavourable feedback in phase C of the feedback process, have a high influence on how feedback is interpreted in phase D, ultimately resulting in a certain feedback effect. To sum up, it could influence social aspects such as the openness of the nurses towards feedback, it could make them feel safe or precisely the opposite, it could trigger a defensive reaction, or it could be experienced as an offensive message, it could improve or deteriorate the relationship among the nurses, it could make them feel personally good or bad, and it could induce a learning moment, but it could also prevent a learning moment. These examples show that these two aspects have a lot of impact on the eventual feedback effect. However, the answers also showed that the way favourable and unfavourable feedback was interpreted (phase D), could be influenced by other practical and social aspects as well (phase C). For example, it is dependent on the credibility of the feedback, on the way the feedback is delivered and if the receiver's feelings are taken into account, on the openness of the nurses towards feedback, whether they feel safe during the feedback process, whether it is provided in an offensive way, or received in a defensive way, and whether a dialogue is possible. However, it is also dependent of the person's wellbeing at that moment, dependent on the colleagues relationship with each other, and if they feel they can turn it into a learning moment. In conclusion, most practical and social aspects that were discussed during the literature review showed to be important for nurses as well. However, their personal well-being that is influenced by their private life situation, work pressure, having a "bad" day, and personal characteristics also showed to have a high impact on the way they experience feedback.

To continue, the quantitative data shows that the hypothesized positive relationship between the nurses mindsets and their experienced informal feedback environment was partly fulfilled. There was a positive and significant relationship found between a person's mindset regarding Talent and Appropriateness. This means that the more nurses believe that their abilities are based on effort, rather than natural born talent, the better their experiences are regarding the appropriateness of feedback. This also works reversed, the more nurses believe that their natural born talent determines their abilities, the less their experiences are regarding the appropriateness of feedback.

The quantitative data shows that the nurses who believe that they can continuously develop themselves by working hard, feel that the feedback that is given has an added value for them. They find received feedback more meaningful and useful, and believe that the feedback providers are supporting when giving feedback. Literature showed that people with a growth mindset on talent are usually willing to work harder, as they know effort is very important in one's own development. They trust that passion, discipline, training and practice will help them towards higher levels of proficiency (Mercer & Ryan, 2010; Dweck, 2007; Howe et al., 1998). This makes them appreciate all the tools that help them towards that development, such as feedback, even more (Dweck, 2006; Mercer & Ryan, 2010).

There was also a positive and significant relationship found between a person's mindset regarding Intelligence and Feeling of Trust towards feedback. This relationship shows that the more nurses believe that their abilities are based on effort, rather than their natural born intelligence, the more they have a feeling of trust towards feedback. This also works reversed, the more nurses believe that their natural born intelligence determines their abilities, the less their experiences are regarding their feelings of trust towards feedback. The quantitative data shows that the nurses who believe a person's intelligence is malleable and can be improved over time, the more they appreciate their colleague's feedback, believe in the credibility of the feedback, but also feel comfortable asking for feedback. Literature showed that a person with a growth mindset is more open towards challenges and is not afraid to make mistakes. In contrast to people with a fixed mindset, people with a growth mindset are less afraid to look foolish and their own learning and development is more important than the chance of failing (Dweck, 2006; Dweck, 2012). It is therefore reasonable that the more of a growth mindset nurses have, the more they appreciate the feedback, as they are always open to improve themselves. To add, in contrast to a fixed mindset, the growth mindset nurses do not immediately respond defensive when help is provided, but trust their colleagues on their credibility. Last, but not least, the more of a growth mindset, the more they feel comfortable asking their colleagues for feedback as they are less afraid to look foolish.

When looking at these two significant relationships, the question occurs why there was a relationship between Appropriateness and Talent, but not with Intelligence. The same question occurs for the Feeling of Trust and Intelligence, as there was no relationship with Talent. As previously mentioned, a person's mindset can be fixed for the one domain, but can have a growth mindset for the other (Dweck, 2000). This question could probably be answered better when the differences between these mindsets are made more clear within research. As discussed in the literature review, the type of mindset shows which trait the people *believe* is fixed or malleable. However, the literature review also showed that the behaviour and effects of these two types of mindsets are basically the same. When looking at published articles that use the implicit theories in one way or another, there is either a dichotomy regarding the two mindsets where they investigate the intelligence mindset (e.g. Blackwell et al., 2007), or where they investigate the talent mindset (e.g. Mercer & Ryan, 2010), usually without mentioning the other type of mindset. It also occurs that studies research 'Mindset', and usually talk about 'abilities' (Dweck et al., 1978; Grant & Dweck, 2003; Ziegler & Stoeger, 2010). To determine why some relationships were found, but others not, this distinction needs to be made clearer.

To continue, after the two found relationships, the question remained why these were the only relationships that were found. There were no relationships found with the dependent variables of Favourable Feedback and Unfavourable Feedback, even though the information from the literature review suggested a positive relationship. A person's mindset determines the way they react towards challenges and setbacks. An incremental theorist can experience a setback as a learning moment, whereas an entity theorist can experience a setback as a lack of ability, or confirmation of inability (Dweck, 2000). As unfavourable feedback can be described as critic and expressions of dissatisfaction, this variable could be experienced as a setback. A positive relationship with the nurses' mindset was therefore expected. Furthermore, a person's mindset can also determine the goal settings of a person (Mercer & Ryan, 2010). An incremental theorist focusses more on "the longer term goal of learning and developing mastery" (Burnette et al., 2013, p. 660). However, an entity theorist focusses more on displaying their abilities and performances to others (Mercer & Ryan, 2010). As favourable feedback can be described as compliments and expressions of satisfaction, it could be experienced as an input in one's self-development (Dweck, 2015), or it is all the information they needed to know as they succeeded in showing their abilities to others (Burnette et al., 2013). A positive relationship with the nurses' mindset was therefore once more expected.

When answering the remaining question why no relationships were found between a nurses' mindset and favourable or unfavourable feedback, even though it was hypothesized, it could be answered by the following: There are many more practical and social aspects influencing the way favourable and unfavourable feedback is experienced by nurses. Their mindset has an influence on other aspects of the feedback environment, as shown by the two significant relationships, but this influence does not seem to be enough to overshadow the stimulating and obstructing factors that have an influence on the way favourable and unfavourable feedback is experienced.

Limitations and Future Research

Despite a careful design of the study, some limitations have been encountered. This study gave an insight into the obstructing and stimulating aspects of providing and receiving feedback. However, as this was the qualitative part of the research, no insight was given into the order of importance or influence. To gain more knowledge about the aspects that can positively and negatively influence the feedback process, more research is needed. Moreover, during this current study it was not possible to see whether nurses with more fixed mindsets gave more *fixed* answers during the open questions and whether nurses with more growth mindsets gave more *growth* answers during the open questions. The open questions were quite steering, as they asked about positive and negative experiences. It did not give any insight into how those nurses perceived feedback *in general*. When during future research qualitative data is gathered which can be categorized in comments that fit a fixed mindset, and comments that fit a growth mindset, this data can be used in a quantitative analysis such as a Chi-Square (Field, 2013). To test the frequencies of their fixed or growth comments with their mindset, new insights can be given in the relationship between a person's mindset and their perception towards feedback.

Furthermore, the questionnaire that was used to test the feedback environment turned out to be invalid. This FES has been used in multiple other studies and they all mentioned sufficient Cronbach's Alpha's of the complete FES (Rosen, Levy & Hall, 2006; Sparr & Sonnentag, 2007; Whitaker, Dahling & Levy, 2007; Anseel & Lievens, 2007). However, when measuring more constructs in one test, it is best to calculate the Cronbach's Alpha for each of those constructs (Field, 2013). When calculating the Cronbach's Alpha on the complete FES for this current study, it also showed a sufficient value of .821. However, sufficient values were not reached when calculating each subscale. To add, neither of those other studies performed a factor analysis. The validation study of Steelman et al. (2004) shows that the FES should have probably been valid for this current study as they show a sufficient reliability per scale. However, rather than performing an Exploratory Factor Analysis, which is preferable for validation studies (Izquierdo, Olea & Abad, 2014), they performed a Confirmatory Factor Analysis, which did confirm the original scales. Nevertheless, there are two differences between this current study and the other studies. The other studies presented the questions to the participants divided per scale. This current study randomized the questions in order to prevent answer tendencies. Furthermore, this study used a 5-point Likert scale, instead of a 7-point Likert-type scale such as the other studies. This choice was made as other questionnaires that are distributed among Gelre Hospitals also use a 5-point Likert scale. Furthermore, a research from Colman, Norris and Preston (1997) showed very high correlations between scores from several 5-point scales and 7-point scales studies, using empirical research. To add, Dawes (2007) showed that "5- and 7-point scales produced the same mean score as each other, once they were rescaled" (p. 61).

Regardless of these differences, the data still showed that normality could not be assumed and that the original factors could not be found during the EFA, causing the items to decrease from 24 to 13 items in total. The scales 'Favourable Feedback' and 'Unfavourable Feedback' remained the same, but 'Appropriateness' and 'Feeling of Trust' emerged. Even though the appropriate measures were taken to make these new scales valid, it is striking that these were also the two scales that showed significant relationships with the independent variables. Furthermore, the quantitative data showed a small range for the scales appropriateness and feelings of trust and low correlations between the dependent and independent variables. A good correlation depends on the expectations, the sample size, whether the data forms a linear pattern without any outliers, and if it is statistically significant (Secrets of good correlations, 2010). As this study reached a sufficient number of participants, the data forms a linear pattern without any outliers, and the relationships were statistically significant, the choice was deliberately made to accept the found relationships. However, all limitations taken into consideration, to make sure that there is indeed not a stronger relationship between a person's mindset and the way feedback is experienced, future research is needed with a better and more valid instrument. During such research it is a recommendation to test if an intervention can positively change a nurses' mindset, as several studies (e.g. Blackwell et al., 2007) showed this to be possible. By doing a pre-test, an intervention, and a post-test, it is possible to see whether a person's mindset is indeed changed. To add, by simultaneously testing the experienced feedback during the pre-test and post-test, it is possible to find out if a relationship between the mindset and feedback experiences can be shown and if that person's feedback experiences changes with the mindset.

Practical Implications

The results of this study have practical implications for Gelre Hospitals and its nurses. Firstly, it is a positive result that the 'Feeling of trust' and 'Appropriateness' has scored relatively high. Jochems (2016) showed that trust leads to a high-quality working relationship, which is a positive result as this is necessary for learning (Carmeli, Brueller & Dutton, 2009; Eraut, 2004). The score on appropriateness means that the quality is usually sufficient and the delivery of the feedback generally occurs in an appropriate matter. This is important as this can affect the perceptions of the feedback atmosphere and satisfaction (Ilgen, Peterson, Martin & Boeschen, 1981). This information means for Gelre that they should try to maintain this sufficient level, by making sure that these two factors remain an important topic during their mandatory training (Gelre Ziekenhuizen, 2016).

The factors 'Unfavourable Feedback' and 'Favourable Feedback' are currently the two most important attention points for the hospital. The relatively low scores of these two scales compared to the other dependent variables show that there may be a lack of frequency in the provision of feedback, especially in favourable feedback. To add, the qualitative statements of the nurses showed that when asked about feedback, they immediately think about unfavourable feedback. This causes an imbalance. Both types of feedback are important as high-quality favourable feedback is connected with higher accomplishments and more involvement in the clinical practice. However, it could also lead to over-self-evaluation, whereas high-quality unfavourable feedback leads to a more accurate self-evaluation of nurses' own performance (Plakht, Shiyovich, Nusbaum & Raizer, 2013). This information shows that both types of feedback are necessary, in balance, for the nurses to keep developing themselves appropriately, a goal desirable for healthcare as documented in V&V2020.

This current study also gave new insights for the theory regarding feedback and the mindset. There have been multiple studies that researched variables that can influence the feedback process, or conditions the feedback has to fulfil. This study confirmed findings from the past, but also gave new or other insights. For example, Van de Ridder et al. (2015), studied variables that influence the feedback process and outcome. Their results show variables that are more focussed on the process and conditions of feedback such as the task complexity, task performance, and frequency. They also mention the relationship, but in contrast to the current findings, variables such as personal situation and feelings, openness, and safe environment are less focussed on. This shows that the way feedback is experienced, could be dependent of the type of profession or person. This is an important result for theory as it could be that nurses are more sensitive for personal influences, but this result also makes the generalizability to other professions or sectors more difficult. To continue, previous studies showed positive relationships with growth mindset people and their ability to rebound from mistakes (Moser et al., 2011), greater gains in knowledge (Mangels et al., 2006), and positive response to challenges (Blackwell et al., 2007). Overall, they all showed that a growth mindset can lead to learning. However, this current study did not only test the relationship, but also explored other possible influences. These influences starts the question whether personal feelings and emotions may be more important for the experienced feedback of nurses than their mindset. For example, Mangels, Good, Whiteman, Maniscalco and Dweck (2012), also stated that "we demonstrate for the first time that these emotional responses can disrupt not only initial performance, but also learning" (p. 238).

For healthcare to improve in their experiences of feedback environment, there are a few recommendations to achieve nurses as lifelong learners. To achieve effective feedback, it should be “embedded implicitly and explicitly in all activities” (Archer, 2010, p. 106). Examples to create such a feedback environment is early training and implementing peer feedback. However, as feedback should be embedded in everyday activities, workplace learning is preferred. This could lead to nurses who are more encouraged to actively seek feedback, but also encourage each other in providing feedback (Archer, 2010). Linking this to the results of the current study, it is firstly important to implement the importance of a balance between the provision of favourable and unfavourable feedback into such trainings. To add, changing nurses’ mindsets with the help of suitable interventions towards growth mindsets can also be an asset for healthcare, as it can improve the appropriateness and feeling of trust towards feedback. In addition, it is important for healthcare that when implementing trainings, they should take the most important obstructing and stimulating factors of the feedback process as a basis of such training; feedback should be credible and delivered considerately in a safe and trusting environment so the nurses do not feel offended, or respond defensive. The provider should also take the receivers’ feelings and the timing on the department into account. Both parties should be open to the feedback, but also the reaction, so that an effective dialogue can take place. This way, it is less likely that the relationship will be negatively affected. The nurses should come to realise that by the use of high-quality favourable, but also unfavourable, feedback learning moments can occur, eventually leading to the contribution of life-long learning.

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Appendix A

Questionnaire

The following questionnaire is the translated and final version which was sent, in random order, to the nurses of Gelre Hospital:

Beste verpleegkundige,

Via onderstaande vragenlijst onderzoek ik hoe jij als persoon het geven en ontvangen van feedback ervaart in jouw werk. Hierbij gaat het specifiek om de feedback die jij **ontvangt en geeft aan collega's onderling** (dus **niet** tussen student en werkbegeleider). Daarnaast wordt gekeken naar hoe je bepaalde aspecten van je werk beleeft als persoon.

Deze vragenlijst, die uit 41 vragen bestaat, kost ongeveer 15 minuten om in te vullen. De resultaten zullen anoniem behandeld worden, probeer het daarom ook zo eerlijk mogelijk in te vullen.

Tip: volg je intuïtie bij het beantwoorden van de vragen.

Alvast bedankt voor jouw medewerking.
Met vriendelijke groet,

Anouk Hölzken
Het Leerhuis
Gelre Ziekenhuizen

**Door verder te klikken ga je ermee akkoord dat de ingevulde gegevens anoniem verwerkt zullen worden in een academisch onderzoek voor Gelre Ziekenhuizen en Universiteit Twente.*

Aanvullende gegevens

A. Op welke afdeling werk je?
B. Wat is je geslacht?
C. Wat is je leeftijd?
D. Hoeveel jaren werkervaring heb je als verpleegkundige?
E. Wat is je hoogst afgeronde verpleegkundige opleiding?
    a. MBO
    b. Verpleegkundige vervolgopleiding
    c. HBO
    d. HBO-Master

Geloofwaardigheid van feedbackgever

1. Mijn collega's zijn over het algemeen bekend met de manier waarop ik mijn werk uitvoer.
2. Over het algemeen respecteer ik de mening van mijn collega's over de uitvoering van mijn werk.
3. Wat betreft feedback over mijn werkuitvoering, vertrouw ik mijn collega's meestal **niet**.
4. Mijn collega's zijn fair/eerlijk wanneer zij mijn werkprestaties evalueren.
5. Ik heb vertrouwen in de feedback die mijn collega's mij geven.

Kwaliteit van feedback

6. Mijn collega's geven mij bruikbare feedback op de uitvoering van mijn werk.
7. De feedback die ik van mijn collega's krijg over mijn werkuitvoering is behulpzaam/nuttig.
8. Ik waardeer de feedback die ik krijg van mijn collega's.
9. De informatie die ik van mijn collega's krijg over mijn werkuitvoering is over het algemeen **niet** erg betekenisvol.

De verschaffing van feedback

10. Mijn collega's zijn ondersteunend wanneer zij mij feedback geven over mijn werkuitvoering.
11. Wanneer mijn collega's mij feedback geven over de uitvoering van mijn werk, houden zij meestal rekening met mijn gevoelens.
12. Mijn collega's geven meestal feedback op een ondoordachte manier.
13. Over het algemeen behandelen mijn collega's elkaar onderling **niet** erg goed zodra zij feedback geven op werkuitvoeringen.
14. Over het algemeen zijn mijn collega's tactvol wanneer ze mij feedback geven over mijn uitvoering.

Gunstige feedback

15. Ik ontvang zelden lof van mijn collega's.
16. Mijn collega's laten het mij over het algemeen weten zodra ik iets goed doe op het werk.
17. Ik krijg frequent positieve feedback van mijn collega's.

Ongunstige feedback

18. Mijn collega's vertellen mij wanneer mijn werkuitvoering niet overeenstemt met de standaarden van de organisatie (bijv. protocollen).
19. Op momenten dat mijn werkuitvoering anders is dan van mij wordt verwacht, laten mijn collega's mij dit weten.
20. Op momenten dat ik een fout maak op het werk, vertellen mijn collega's mij dat.

Aanmoedigen van feedback

21. Mijn collega's vinden het vaak vervelend wanneer ik hen direct om feedback over mijn uitvoering vraag.
22. Zodra ik mijn collega's om feedback vraag over de uitvoering van mijn werk, zijn zij doorgaans **niet** bereid om hier op in te gaan.
23. Ik voel mij op mijn gemak zodra ik mijn collega's om feedback over mijn uitvoering vraag.

24. Mijn collega's moedigen mij aan om feedback te vragen zodra ik twijfels heb over de uitvoering van mijn werk.

Open vragen feedback

Het kan zijn voorgekomen dat je het makkelijk of moeilijk vond om feedback te ontvangen of te geven. Een voorbeeld kan zijn dat je moeite had om feedback te geven aan een collega omdat je wist dat deze persoon op dat moment problemen in de privé situatie had. Onderstaande open vragen gaan hierover, probeer zo eerlijk en open mogelijk te antwoorden.

25a. Wanneer vind je het makkelijk om feedback te ontvangen?
25b. Waarom vind je het makkelijk om in deze situatie feedback te ontvangen?

26a. Wanneer vind je het makkelijk om feedback te geven?
26b. Waarom vind je het makkelijk om in deze situatie feedback te geven?

27a. Wanneer vind je het moeilijk om feedback te ontvangen?
27b. Waarom vind je het moeilijk om in deze situatie feedback te ontvangen?

28a. Wanneer vind je het moeilijk om feedback te geven?
28b. Waarom vind je het moeilijk om in deze situatie feedback te geven?

Mening over intelligentie

Naast de vraag hoe feedback ervaren wordt en hoe je naar je werk kijkt als persoon, ben ik ook benieuwd hoe je als persoon naar de concepten 'intelligentie' en 'talent' kijkt. Hier gaan de volgende stellingen over. Denk eraan dat het eerste instinct vaak juist is.

29. Je hebt een bepaalde mate van intelligentie, en je kunt er weinig aan doen om dat te veranderen.
30. Het maakt niet uit wie je bent, aan je mate van intelligentie kun je aanzienlijk wat veranderen.
31. Je kunt nieuwe dingen leren, maar je kunt **niet** echt je basisintelligentie veranderen.
32. Je kunt zelfs je basisniveau van intelligentie aanzienlijk veranderen.

Mening over talent

33. Je hebt een bepaalde mate van talent, en je kunt er weinig aan doen om dat te veranderen.
34. Het maakt niet uit wie je bent, aan je mate van talent kun je aanzienlijk wat veranderen.
35. Je kunt nieuwe dingen leren, maar je kunt **niet** echt je basis niveau van talent veranderen.
36. Je kunt zelfs je basisniveau van talent aanzienlijk veranderen.

Dit waren de vragen. Hartelijk bedankt voor uw medewerking!

Appendix B

Table B1

Factor Loadings for Exploratory Factor Analysis with Oblimin Rotation of the Feedback Environment Scales

Items	Factors			
	Appropriateness	Favourable Feedback	Unfavourable Feedback	Openness
Familiar With Work (1)	.14		-.16	.35
Trusting Feedback (3)	.35	-.35		
Useful Feedback (6)	.32		-.36	.32
Helpful Feedback (7)	.48	.11	-.16	
Appreciate Feedback (8)				.60
Meaningful Feedback (9)	.55			
Supportive Feedback (10)	.69		.10	
Treating Colleagues (13)	.54	-.41		-.24
Tactful Feedback (14)	.27	-.15	.11	.22
Receiving Praise (15)		-.89		
Doing Well (16)	.13	-.48	-.27	.16
Positive Feedback (17)		-.65	-.13	.13
According To Protocols (18)		-.14	-.32	
Different Expectations (19)			-.80	
Mentioning Mistakes (20)			-.73	
Tolerance Asking Feedback (21)	.26	.17	-.30	
Helping After Asking (22)	.44	-.12	.12	.23
Comfortable Asking (23)				.76
Encouraging Asking (24)		-.25		.36

Note. Factor loadings >.32 are in boldface. Factor loadings <.10 are not visualised. Items are adapted from the Feedback Environment Scale by Steelman et al. (2004) and labelled according to their content. Recoded items are italicized.

Table 2B
Four Factors of the Environment Scale with Matching Items

Factors Appropriateness	Items
1	De feedback die ik van mijn collega's krijg over mijn werkuitvoering is behulpzaam/nuttig.
2	De informatie die ik van mijn collega's krijg over mijn werkuitvoering is over het algemeen niet erg betekenisvol.
3	Mijn collega's zijn ondersteunend wanneer zij mij feedback geven over mijn werkuitvoering.
4	Zodra ik mijn collega's om feedback vraag over de uitvoering van mijn werk, zijn zij doorgaans niet bereid om hier op in te gaan.
Favourable Feedback	
5	Ik ontvang zelden lof van mijn collega's.
6	Mijn collega's laten het mij over het algemeen weten zodra ik iets goed doe op het werk.
7	Ik krijg frequent positieve feedback van mijn collega's.
Unfavourable Feedback	
8	Mijn collega's vertellen mij wanneer mijn werkuitvoering niet overeenstemt met de standaarden van de organisatie (bijv. protocollen).
9	Op momenten dat mijn werkuitvoering anders is dan van mij wordt verwacht, laten mijn collega's mij dit weten.
10	Op momenten dat ik een fout maak op het werk, vertellen mijn collega's mij dat.
Feeling of Trust	
11	Mijn collega's zijn over het algemeen bekend met de manier waarop ik mijn werk uitvoer.
12	Ik waardeer de feedback die ik krijg van mijn collega's.
13	Ik voel mij op mijn gemak zodra ik mijn collega's om feedback over mijn uitvoering vraag.

Note. Items in *italic* are recoded.

Appendix C

Table C1

Factor Loadings for Principal Component Analysis with Oblimin Rotation of the Mindset

	Factors	
Items	Intelligence	Talent
Amount of Intelligence (34)	.81	
Change intelligence (35)	.77	
Learn new things (36)	.81	
Basic level of intelligence (37)	.90	
Amount of talent (38)		.71
Change talent (39)		.89
Learn new things (40)		.85
Basic level of talent (41)		.79

Note. Factor loadings >.32 are in boldface. Factor loadings <.10 are not visualised. Items are adapted from Mindset scale by Dweck (1999) and labeled according to their content. Recoded items are *italicized*.

Table C2

Two Factors of the Implicit Theories Scale with Matching Items

Factors	Items
Intelligence	
1	Je hebt een bepaalde mate van intelligentie, en je kunt er weinig aan doen om dat te veranderen.
2	Het maakt niet uit wie je bent, aan je mate van intelligentie kun je aanzienlijk wat veranderen.
3	Je kunt nieuwe dingen leren, maar je kunt niet echt je basisintelligentie veranderen.
4	Je kunt zelfs je basisniveau van intelligentie aanzienlijk veranderen.
Talent	
5	Je hebt een bepaalde mate van talent, en je kunt er weinig aan doen om dat te veranderen.
6	Het maakt niet uit wie je bent, aan je mate van talent kun je aanzienlijk wat veranderen.
7	Je kunt nieuwe dingen leren, maar je kunt niet echt je basis niveau van talent veranderen.
8	Je kunt zelfs je basisniveau van talent aanzienlijk veranderen.

Note. Items in *italic* are recoded.

Appendix D

Codebook

Label	Description
Accurate	Is the feedback provider knowledgeable about the performance of the feedback receiver and is the feedback therefore credible, whether the feedback is considered to be correct.
Quality	Is the given feedback useful, helpful and applicable, whether the feedback is matching the desired goal and helps improvement.
Delivery	When and how is the feedback given, does the communication happen in an acceptable way, when and it what situation the feedback is given.
Favourable Feedback	Do colleagues give each other compliments and do they mention positive performances.
Unfavourable Feedback	Are mistakes or undesirable behaviour of colleagues noticed and appropriately communicated.
Feedback Seeking	Do colleagues actively seek/ask for feedback and are they supported in this.
Openness	An open attitude from the colleagues towards giving and receiving feedback.
Safe Environment	Whether the nurses feel safe to give and receive feedback among each other, if there is a feeling of trust.
Offensive/Defensive	Whether the feedback is given in an offensive way, or received in a defensive way.
Dialogue	Whether the feedback causes a conversation between colleagues that helps to improve themselves.
Personal	Everything involving emotions/feelings, private situations and personal characteristics.
Relation	Everything involving the relationships among colleagues.

Learning Effect	Whether the feedback causes a learning effect, or whether the learning effect clearly misses as an effect of feedback.
Conditions	Conditions and terms the feedback has to fulfil **before** it is given or can be received.
Behaviour	What happens **during** the giving and receiving of feedback and what is the behaviour of the provider and receiver.
Effect	What is the effect of the given or received feedback, what happens **after** the feedback is given or received.