# Facilitating Reflective Learning

Mirabelle Schaub-de Jong

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**Mirabelle Schaub-de Jong**

Juli 2012

*Facilitating Reflective Learning*

Dissertation for the University of Groningen, the Netherlands, with references and summary in Dutch. The study presented in this thesis was carried out at the Graduate School for Health Research (SHARE) of the University of Groningen, within the program of Research in medical Education (RME) and at the Research and Innovation Group in Health Care and Nursing of the Hanze University of Applied Sciences Groningen, the Netherlands.

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# Facilitating Reflective Learning

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# 1

# Introduction

## Introduction

Since quite some time several medical and health science curricula have implemented competence-based learning. The focus shifted from mere acquisition of knowledge and skills to the achievement of competences, which implies a combination of knowledge, skills and attitudes. [1] In competence-based programmes professionalism has become a core competence, as well in the Netherlands as internationally. [2-5]
There is no established format how to teach students professionalism. However, the role of reflection is recognized as being important. [6,7] A recent review shows diversity of pedagogical approaches and educational goals to teaching reflection. [8] There is hardly empirical evidence how reflective learning can be best implemented to promote professionalism. [9] The studies of this dissertation focus on conditions that may facilitate students' reflective learning specifically in small groups and in professional practice.

## Views on professionalism

Three views of professionalism can be distinguished from those formulated in the literature: professionalism as a personal trait [10], professionalism as a behavioural characteristic [11] and professionalism as accountability [12]. When professionalism is considered as a personal trait, the focus is on character formation. For instance, physicians are good professionals when they are empathic, honest and conscientious. Professionalism defined in terms of behavioural characteristics is focused on the observable behaviours of the professional. [11] According to this view, professionals are good professionals if their behaviour satisfies prescribed criteria such as 'taking the opinions of patients seriously' or 'keeping promises and appointments'. [4] Viewing professionalism in terms of professional behaviour provides a practical framework for teaching and assessing professional behaviour in educational settings. [11,13]

Professionalism defined as accountability emphasizes the idea that professionals 'can be called on to justify or change [their] actions' in the fields of action for which they are legitimately responsible, providing arguments for actions derived in terms of norms and standards. [15] Taking this view further, Verkerk et al.[12] argue that

professionalism can be understood as reflective professionalism with an explicit focus on accountability. According to this view: *'a professional physician does good things the right way when he/she is capable to account for decisions made in the light of public, professional and personal norms and values regarding patient care within a given context and professional environment'.* This means that in practice, professionals do not only seek the 'right' answer (doing things technically correctly) but also what is 'best' considering the circumstances of patient and care (doing the right things). Accountability in reflective professionalism therefore regards choices and decisions considering possibly conflicting values and norms in a complex social medical context in relation to others, such as patients, other professionals, the organizational culture, society etc. Verkerk et al. [12] argue that reflective professionalism for this reason can be understood as a second-order competence: an evaluative and reflective competence that can only be expressed through the performance of other competences. Therefore, reflective professionalism is possible only when a professional has developed a reflective competence besides his technical competence which allows him to be accountable for the decisions made.

In this dissertation the concept of professionalism used is 'reflective professionalism'. This implies that students have to learn to critically reflect on their professional behaviour. They also have to learn to account for their professional choices regarding patient care based on professional standards within a given context and professional environment.

### Reflection

Medical and healthcare professionals work with others in a complex social medical process. High-quality mastery of reflection is required to learn to behave within this context and to be accountable for professional choices. Students therefore have to learn to reflect on their own behaviour and that of others because reflection is a prerequisite for identifying, analysing and discussing personal behaviour and that of others. [16-18] When professionalism is viewed in terms of reflective professionalism the ability to reflect is also a prerequisite for preparing students to be accountable for decisions made regarding patient care within a given context and professional environment . [12]

*Definition of reflection*

What exactly constitutes reflection has been defined in different ways. Rogers [19] performed an analysis of common definitions of reflection and revealed important commonalities. These commonalities imply that reflection involves examining the manner in which a person responds to a given situation. [20] This includes both an exploration of the negative and positive emotions triggered by an experience [21] and the underlying beliefs or premises that may affect one's response. [22,23] The intent of reflection is to integrate the understanding gained from experience into existing knowledge, beliefs etc., in order to enable better choices or actions to be made in the future. [16] Reflection could also lead to additional knowledge or conceptual understanding. [24]

From the perspective of reflective professionalism reflection can be defined as a cyclic process of analyzing, questioning and reframing (professional) experiences. This includes consideration of how and why decisions were made, underlying beliefs and values both of individuals and institutions, assumptions about roles, abilities and responsibilities and being able to account for one's decisions.

*Expected outcomes of reflective learning*

The literature discusses various expected learning outcomes for reflective learning. First, reflective learning is expected to lead to a deeper understanding of experiences and a stronger capacity to apply knowledge to new situations. [24] Second, reflective learning is expected to enable students to guide and monitor their own learning process. [18] Third, reflective learning is expected to result in an awareness of feelings and/or thoughts, [20,21] which may encourage students to think in new ways and helps them to develop alternative explanations for experiences. [7,25,26] Fourth, the learning outcomes of reflective learning are expected to promote self-awareness, are expected to create a more balanced view of new perspectives [7,16] and may refine critical thinking . [27] Fifth, reflective learning is expected to provide professionals insight into their attitudes about the medical profession and their ideas of developing an identity in the medical community. [2] Sixth, through reflective learning professionals are expected to learn to explore their reasoning when solving professional problems and the values and beliefs which form a part of their professional identity underlying this reasoning. This may result in an increased awareness of the moral aspects of professional experiences. [28] Seventh, engagement in reflective learning is expected to stimulate an awareness of a person's own beliefs and how these can differ from the beliefs of others. [11]

The focus of reflective professionalism is on reflection and accountability. In order to be able to account for professional choices made it is expected that reflective learning outcomes focus on: awareness of feelings and/or thoughts, an understanding of the difference between one's own perspective and that of others, increased moral awareness.

In creating a learning environment that facilitates students' reflective learning appropriately, it is not feasible to focus equally on all expected outcomes. [21] Included in our studies the expected outcomes of reflective learning were focused on: (1) enhancing the students' self-awareness [20,21]; (2) helping them recognize how their feelings shape their behaviour [20]; (3) creating deeper insights into how this behaviour affects their interactions with clients, patients and colleagues [7,16]; and (4) creating insights into how their professional values, needs, motives and attitudes influence their professional practice. [11,28] These 4 outcomes of reflective learning encompass basic elements for enhancing reflective professionalism as it is expected that students enhance their awareness of many (moral, emotional) aspects of the daily practice in which they operate. [28]

## Educational methods to facilitate reflective learning

To teach students to behave as reflective professionals, the training of reflection skills should start with the recognition that there are reflective skills which must be taught and trained explicitly through analysing professional experiences. [6] A way of facilitating reflective learning is the use of a variety of methods to train reflection skills alongside the curriculum. It is important to train students to develop reflective skills such as synthesis, analysis and questioning, because mastering these skills appears to be effective in enhancing students' reflective learning. [29] The strategies commonly used to teach the reflection skills and to stimulate reflective learning include both written and verbal processes with individual or small groups of students. The literature describes several reflection methods to encourage reflective learning and stimulate the development of reflective skills: reflective journals [30], portfolios [26,31], critical incidents [25,32] or reflection models. [28]
An important method to encourage and enhance reflective learning and the development of reflective skills is participation in small groups. Participation in small groups entails collaboration, which is expected to result in improved

reflective skills and deeper critical thinking. Working in the small group may enable students to discuss their professional experiences. [20,22,23] Discussing and analysing their experiences in small groups also may enable students to make explicit the knowledge that is implicit in their actions. [32] Participation in small groups is expected to stimulate social interaction and to encourage students to develop reflective learning habits, to stimulate reflection on personal experiences and the development of reflective skills such as listening, clarification and the presentation of experiences. [33] Although the importance of small groups to developing reflection skills is recognized, little is known about (1) the contributions of small group discussions to the development of the reflection skills of undergraduate students, (2) what students learn from a professional development course in which reflection on experiences in small groups is an essential component or (3) which teacher competences are required to facilitate reflective learning in small groups or (4) how competent teachers - working in different curricula - are in facilitating reflective learning in small groups. These topics are addressed in this dissertation.

## Developing professional behaviour in clinical practice

In the educational context students learn to analyse and reflect on professional situations in small groups. Students learn to reflect on their experiences 'on action' in small groups discussions: is their behaviour acceptable according to their knowledge, norms and values and the prevailing circumstances. In clinical practice, students learn how to behave and react professionally and continue to learn within their day-to-day experiences. [34] In the clinical practice they are expected to reflect 'in action' and react to unprofessional situations. However, despite the professional development training in which reflection on experiences is an essential component during their preclinical years, students experience difficulties in applying professional behaviour in practice. For instance students do not react to unprofessional situations in clinical practice. [35,36] The reasons for not reacting to unprofessional situations could be that students do not know the professional norms for a situation, e.g. they lack normative reasons to react. Students can also fall back on personal reasons or excuses for not reacting. In applying theoretical reasoning, a distinction is drawn between normative and personal, so-called motivating, reasons. [37] Some of these motivating reasons can count as excuses for not reacting on unprofessional situations. Although it is well documented that

in the clinical environment external factors such as institutional culture, time constraints, high workload [38,39] or the role of supervisors and/or peers [40,41] influence professional behaviour these studies do not explore what students' excuses are for not reacting to unprofessional situations. However, excuses may not always be valid, because of external or personal circumstances. If we wish students to account for their professional behaviour in daily clinical situations it is of interest to learn what kind of excuses students use when not responding to unprofessional situations and how students' excuses depend on external circumstances. This topic was also addressed in this dissertation.

## Outline of this dissertation

This dissertation focuses on conditions that may facilitate students' reflective learning specifically in small groups and also in professional practice. Peer meetings foster reflection when experienced professionals are learning and working together. [33, 42] We do not know whether participation in peer meetings also contributes to the learning experiences of undergraduate students in reflection terms. To gain an understanding of the role of small group discussions in the reflective learning process of students, the following questions (Chapter 2) were investigated: (1) What do students report with respect to learning about their personal experiences in peer meetings? and (2) What do students report about the role of peer meetings in their learning experiences?

The second study (Chapter 3) is aimed at gaining an insight into the learning outcomes of a course designed to develop professional behaviour through learning to reflect on experiences. The course combined different methods for fostering reflection: personal reflection on experiences, group discussions, written reflections after each peer meeting, and portfolio compilation. The following questions were explored: (1) which learning outcomes do students report after participating in the professional development course, and (2) do the outcomes under question 1 relate to areas of professional behaviour?

The role of the teacher is important in facilitating reflective learning in small groups. The teacher guides students to develop their reflective skills by processes including reflective thinking, listening, clarification and analysis. The question is

which competences teachers need to facilitate reflective learning in small groups (Chapter 4). This study describes the development and validation of a questionnaire to assess teachers' competences essential for facilitating reflective learning.

There are no data showing how competent teachers are in practice. The aim of this study (Chapter 5) was to measure students' perceptions of their teachers' competencies to encourage reflective learning in small groups and to analyze differences between teachers from different curricula.

Students learn to account for their professional choices. This also implies responding to unprofessional behaviour of others. However, in clinical practice students often mention difficulties in responding to unprofessional situations. The last study (Chapter 6) described the results of online focus groups in gaining a deeper understanding in students' excuses for not responding to unprofessional situations in clinical practice. The following research questions were explored: (1) Are students able to recognize unprofessional situations? (2) What are students' excuses for not reacting to unprofessional situations? and (3) what is the role of supervisors and peers in the student's excuses?

A general discussion will be presented in Chapter 7. The results of the studies described in the previous chapters will be discussed. Moreover, implications for educational practice and recommendations for further research will be set out. A summary of this dissertation will be provided in English in Chapter 8 and in Dutch in Chapter 9.

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Intervisie lost niet iets op, maar geeft wel aanleiding om gedachten verder uit te breiden en te experimenteren met gedrag (student intervisie 3)

# 2

**The role of peer meetings for professional development in health science education: a qualitative analysis of reflective essays**

Schaub-de Jong MA, Cohen-Schotanus J, Dekker H, Verkerk MA.

Adv Health Sciences Educ 2009;**14**:503-13.

## Abstract

The development of professional behaviour is an important objective for students in Health Sciences, with reflective skills being a basic condition for this development. Literature describes a variety of methods giving students opportunities and encouragement for reflection. Although the literature states that learning and working together in peer meetings fosters reflection, these findings are based on experienced professionals. We do not know whether participation in peer meetings also makes a positive contribution to the learning experiences of undergraduate students in terms of reflection.

The aim of this study is to gain an understanding of the role of peer meetings in students' learning experiences regarding reflection. A phenomenographic qualitative study was undertaken. Students' learning experiences in peer meetings were analyzed by investigating the learning reports in students' portfolios. Data were coded using open coding.

The results indicate that peer meetings created an interactive learning environment in which students learned about themselves, their skills and their abilities as novice professionals. Students also mentioned conditions for a well-functioning group.

The findings indicate that peer meetings foster the development of reflection skills as part of professional behaviour.

## Introduction

The development of professional behaviour is one of the important objectives for students in Health Sciences. Professional behaviour can be defined as the integration of knowledge, skills and attitude. [1,2] In order to develop their professional behaviour, students need to develop skills that allow them to reflect on their own experiences and thus be able to shape their professional behaviour. [3-8] Reflection is therefore fundamental to the development of professional behaviour. [9]

The fostering of reflection usually aims to make students conscious of their behaviour, professional or otherwise. [6,7,9-12] Students analyze their professional experiences and try to understand and clarify their professional behaviour. This kind of reflective action may lead to adaptation or even change in professional behaviour.

A variety of methods and reflection programmes that encourage and provide students with opportunities to reflect as part of their professional behaviour have been described. For example, portfolio-based learning has been mentioned as a tool to encourage student reflection. [12,13] Others have suggested that working with other professionals is important for enhancing the quality of reflection. [8] An improvement in reflection skills was also found when descriptions of professional situations (vignettes) were used as a tool to encourage reflection. [14]

Several other studies claim that working in a group entails collaboration, which results in improved reflective skills and deeper critical thinking. [5,7,8,15] Collaborative learning refers to methods of learning in small groups, where students work together at various performance levels towards a common goal. [16] Participating in a collaborative learning environment benefits several learning processes: the active exchange of ideas, critical thinking and engaging in discussion in a meaningful, personal and professional way. In addition, working together encourages participants to take responsibility for their own learning, resulting in increased understanding of their professional thinking and their skills as beginning professionals. [15-17] Thus, learning and working together in peer meetings can provide a learning environment where reflection can be stimulated. In the studies mentioned above, the results are based on experienced professionals. [5,7,8,15] We do

not know whether participation in peer meetings also makes a positive contribution to the learning experiences of undergraduate students with regard to reflection.

A qualitative analysis of reflective essays was undertaken in order to gain an understanding of the role of peer meetings in students' learning experiences. The following questions were analyzed:

(1) What do students report with regard to learning about their personal experiences in peer meetings?
(2) What do students report about the role of peer meetings in their learning experiences?

## Methods

### *Study context and participants*

The investigation was carried out in the Department of Speech Therapy at the Hanze University Groningen. Subjects were health sciences students participating in peer meetings guided by a coach. Peer meetings are integral to the longitudinal course of professional development. The aim of the meetings is to make students aware of themselves both as professionals and in relation to others in order to encourage the development of professional behaviour. [18]

Peer meetings involve a maximum of seven students, participating in eight sessions, each of which lasts for 90 minutes. Students discuss and analyze personal experiences from professional practice in a highly structured way. Each student presents an experience and one is selected for discussion. The students ask clarifying questions of the presenting student to which the latter must respond. Different approaches, advice and solutions may then be suggested. The presenting student selects a piece of advice or a solution that best fits his or her situation. At the end of the session the students evaluate what they have learned. The teachers intervene as little as possible to allow the collaborative reflection process to develop naturally. They may intervene in the discussion at the clarification stage to improve and encourage a deeper understanding of the experience presented for discussion. They may also provide supplementary analysis, perspectives or advice at the end of the meeting. Following each session, students write a report in which they reflect on their personal experiences during the meeting. In between the meetings, the teacher

and the peers provide feedback on this reflection. Reflection and feedback stimulate the reflection process. [2,6,10,19] At the end of the course, students write a reflective essay which provides insight into the individual learning process experienced during the course. [12] The format for the reflective essay is described in the study manual and includes four topics:

- the personal learning process, based on learning objectives, the subjects brought up for discussion and eight reflection reports
- what the student explicitly learned from peers
- personal findings with regard to cooperation in the group and with the coach
- learning objectives for the next period in the peer meetings or for working in professional practice

***Material***

The reflective essays of third and fourth-year students were analyzed in order to answer the research questions. At the first peer meeting, the students were informed about the investigation but did not receive any specific instruction regarding the role of the meetings. All third and fourth-year students participating in peer meetings (n = 84) were asked to present an anonymous copy of the reflective essay.

***Analysis***

To gain an insight in the different ways students experience learning and participation in peer groups a phenomenographic analysis was carried out. [20] Phenomenographic analysis is a methodological approach to educational research in which the object of study is the variation in human meaning, understanding, conceptions, awareness or ways of experiencing a particular phenomenon. [20] In this study we investigate in which way students experience, understand participation in a peer group, as the particular phenomenon.

The reflective essays were analyzed to the point of saturation for expressions of personal learning and the role of peer meetings. [21] As usual in phenomenographic research each expression is interpreted within the context of the group of expressions as a whole, in terms of similarities to and differences from other expressions.

The first author conducted the content analysis of the reflective essay and developed the coding scheme. The data were coded using open coding techniques

[21], which entailed assigning names to items and combining related items into categories. Each category (primary outcome) reveals something distinctive about the way of understanding the role of the peer group and the categories are logically related. [20]

The coding scheme was independently crosschecked by the third author who coded a number of reflective essays. Differences in coding were discussed with the first author, which resulted in adjustments to the learning interaction items. The number of codes decreased from 25 to17. The code definitions were made more explicit and some items were combined. The findings were then discussed with the second and fourth authors.

## Results

### *General*

Seventy percent of the students (n = 59) participated. Saturation was reached after analyzing 26 reflective essays (n = 26). The coding process resulted in three categories of expression (Table 1): (1) learning experiences, (2) interactive learning and (3) conditions for a well-functioning group.

**Table 1 Learning in peer meetings**

| (1) learning experiences | (2) interactive learning | (3) conditions for effective functioning |
|---|---|---|
| Personal learning | Interactive discussion | Structural conditions |
| Deeper thinking about oneself | Letting off steam | Safety & openness |
| More perspectives | Sharing | Group composition |
| Emotions | | Group size |
| | | Coach |
| Skills | Interactive Training | Social conditions |
| Practising | Stimulate each other's thinking | Complying with agreements |
| Empathy development | Role models for each other | Social etiquette |
| | Training opportunity | |
| Professional learning | | |
| Discovering their profession | | |

***(1) Learning experiences***

In their reflective essays students reported that peer meetings helped them to better understand themselves, their skills, their professional thinking and their ability as beginning professionals. These expressions (Table 1 (1)) were divided into three subcategories: (a) personal learning experiences, (b) learning experiences relating to skills and (c) professional learning experiences.

***(a) Personal learning experiences***

Students reported that sharing experiences resulted in personal learning experiences which they interpret as personal growth. Students also reported that peer meetings helped them towards (i) deeper thinking about themselves:

*I have learned that there are certain patterns in my thinking, feeling and acting. Those patterns that occur time and again […] I am very preoccupied with expectations of other people in the adjustments I have to make. I have to change that […].* (student 1)

Students also think that they obtain (ii) additional perspectives on the subjects introduced for discussion:

*My opinion is broadened in several areas by new points of view and I can understand how others look at something and why. Sometimes someone is so convincing that my opinion changes, in any case I gained more insight into the thoughts of other people … into what's going on in their minds.* (student 18)

Students reported that they were preoccupied with (iii) emotions and how they could best deal with them:

*Time and again I realize that I am worrying for no reason. All the same, it still happens every time. For one reason or another, I'm not able to maintain my self-confidence at certain times. For me, this has everything to do with uncertainty and fear of failure*. (student 14)

***(b) Skills***

Participation in peer meetings creates an opportunity to experiment with skills such as learning to make mistakes, establishing distance, learning to be honest or to give your opinion. Students felt that practising these skills supported their personal and professional growth. They also reported becoming aware of their own skills and abilities when meeting clients during their internship. Thus two subcategories were identified in the skills category: (i) practising and (ii) empathy development.

The following student illustrates (i) practising: making mistakes is an opportunity to learn.
*No one is perfect; you are allowed to make mistakes. Only then can you develop yourself. So I can practise and if I do something wrong I can try to change my behaviour as a consequence.* (student 7)
Another student reported that clarifying experiences provided an opportunity to establish a distance from herself and from the experience.
*During peer meetings you actually try to look at yourself from the outside. It provides a better way of analyzing.* (student 13)

Students also mentioned experiences where they were able to put themselves in the patient's position and develop empathy (ii):
*I better understand the needs of that boy who is unsure of himself* [client, MS] *because of a better understanding of myself […]* (student 10)

***(c) Professional learning experiences***
In this category, students reported about learning experiences regarding their participation in peer meetings, which stimulated learning about professional functioning as a novice professional and freed them from difficulties they felt during the internship: discovering their profession.
*By bringing up a situation without actually knowing what the problem was, it felt like a relief after the peer meeting. Because of this discussion I was later able to discuss what preoccupied me during the internship and to accept the situation.* (student 21)

***(2) Interactive learning***
In this category, students referred to interactions in the peer meetings. Students reported that they learned through processes of (a) interactive discussion and (b) interactive training.

***(a) Interactive discussion***
This category contains two subcategories. Students mentioned that speaking about their experiences on a regular basis in peer meetings enabled them to *let off steam* and *share feelings:*
*During the peer meeting one has the opportunity to let off steam, to ask questions and to hear from each other what's going on. Most of the time the peer meeting is a resting point during the week.* (student 13)

Understanding the experiences and feelings of group members encourages self-confidence. One student reported:
*It was nice to share experiences of the internship with fellow students. I had a difficult start to my internship. I was left to my own devices, which was very unpleasant as in the beginning I needed coaching and assurance. It made me very restless and I always felt insecure about my actions and skills. I eventually brought this problem up in the peer meeting. I really needed the help of the group.* (student 17)

***(b) Interactive training***
Students reported that working in peer meetings gave them the opportunity to learn from the skills and experiences of others by facilitating discussion and interaction. Students thought that interactive training enhanced awareness of themselves and others by reacting to one another, (i) thereby stimulating one another's thinking:
*I was encouraged to look at myself because I was 'forced' to think about my own thinking, feeling and acting and to talk about it in the group […] Because of the questions from others I gave much more thought to the feelings and thoughts I had in that situation. I got a better view of myself.* (student 23)

In this way, differences between group members in terms of skill level and knowledge and contributions to group processes contributed to the interactive training process in the group. Students reported that they learned from each other by being (ii) role models for each other:
*I learned a lot from other students asking questions* [reflection skill, MS]. *Some students were able to phrase their questions in a professional manner. They made intriguing connections that I hadn't thought of. I learned a lot from them.* (student 19)

In addition, students mentioned that working together gave them the opportunity to (iii) develop their skills. Students mentioned that they trained themselves to listen better, to ask questions that were technically good, and to analyze the experience. One student reported that she wanted to train herself to listen better and ask questions:
*I find it difficult to listen objectively to someone's experiences without developing my own opinion. I realized that I thought in terms of problem solving too soon. When I started to clarify the experience, I asked in more depth […]* (student 24)

***(3) Conditions for effective functioning***

In addition to the categories identified above, the reflective essays also contained expressions where students referred to conditions necessary for a well-functioning group. Students identified two kinds of condition: (a) structural conditions and (b) social conditions.

***(a) Structural conditions***

Students reported that peer meetings only functioned satisfactorily if the group functioned well. Safety was an important factor.

*Only when the basis is satisfactory can peer meetings begin to work, which means that there is trust among the peers, that they keep to what is agreed on and that they discuss difficulties openly.* (student 22)

Students also experienced group composition and size as factors affecting the functioning of the group:

*As a negative issue this implied that the balance was sometimes lost in discussing a problem. Sometimes the quieter group members could barely participate because of the more dominant members*. (student 25)

Students working in a larger group than they were accustomed to reported that they no longer felt comfortable:

*After the group was split up I generally experienced a better and more relaxed level of cooperation […] It was possible to have a more intensive discussion of the problem and everyone had more of a chance to participate*. (student 21)

Finally, students frequently referred to the role of the coach who guided the peer meetings. The coach played an important role in encouraging reflection skills, depth of analysis, understanding and creating a safe learning environment. The expressions imply that

*She let us solve and clarify the problems by ourselves. She only helped us when we got stuck. So she wasn't dominant in guiding […] She gave us a lot of space […] The atmosphere improved and I felt comfortable […] Also, the feedback we received was very pleasant […].* (student 1)

***(b) Social conditions***

In almost all of the reflective essays, students referred to social conditions, which they saw as being essential for a well-functioning group. They mentioned that adhering to agreements and social etiquette, such as respect for one another, regard for one another and listening to one another, are important for an acceptable atmosphere.

*Having regard for all the others, creating a safe environment. Everyone listened well to each other and worked hard to put the person who brought up the subject at ease.* (student 3)

## Discussion and conclusion

Students reported that they learned about their own personal and professional behaviour from participation in peer meetings. They even mentioned that discussing such subjects in the group gave them a better understanding of their behaviour. The role of peer meetings in this reflective process was also shown in student reports about the benefits of interactive discussions and the development of interpersonal skills. However, the students reported that conditions for effective peer meetings had to be met for these meetings to be beneficial.

These findings are in line with studies on the effects of collaborative learning. It appears that learning together helps students to understand themselves better, to refine their critical and professional thinking, as well as their ability as beginning professionals.[15,17] The literature also suggests that working together contributes positively to personal and professional learning experiences. [10,16]

The presence of multiple perspectives on any one experience also corresponds to Kelchterman and Hamilton's proposed framework of teaching dimensions. [22] An awareness of the possibility that there is more than one perspective in any interaction is a positive indication of the quality of reflection. These can be perspectives on moral issues regarding the justification of actions, or perspectives arising from different emotional responses to the situation, but might also be technical perspectives that arise in a given situation.

The findings on interactive learning in peer meetings tie in with study findings which indicate that social interaction promotes the development of students' reflection skills. [5,7,8,17] The engagement of peers helps participants realize that they

are not alone. Finding support within the group structure makes them believe that they can rely on each other. Dealing with one another generates, maintains and restores positive feelings of wellbeing, self-confidence and commitment, thereby possibly creating a positive atmosphere which has a positive effect on learning processes. [23]
The finding that the quality of group functioning is a prerequisite for quality of learning is in line with other literature which suggests that an affective learning climate during meetings will only be achieved if the atmosphere is perceived as trustful, safe and secure. [24,25] In addition, Gokhale points out that the coach must view teaching as a process to develop and enhance the student's ability to learn. [15] In our investigation, all the peer meetings were intensively guided by a coach and students perceived the coach as playing an important role in encouraging learning and creating a safe learning environment. However, the coach's actual influence on learning processes cannot be identified. As Van Velzen et al. [26] and Boendermaker et al. [27] also state, more research is needed to explore the influence of the coach. The style of coaching (directive vs. liberal) and the coach's ability to create a safe environment can be factors involved in increasing students' reflection ability, as part of their professional attitude, through peer meetings.

The findings of this investigation are mainly based on expressions by students about learning with respect to gaining skills and changing behaviour. Korthagen suggests that this is a superficial type of reflection. [2] Other research also shows that reflection often consists of superficial reports of events and a businesslike analysis. [11,12,25] Training reflective skills should be aimed at a better understanding of skills and behaviour, which would include personal elements. Although students report personal aspects, it remains unclear whether participation in peer meetings results in the desired deeper reflective skills.

The strength and limitations of this study should be taken into account when interpreting the results. A first strength is the phenomenographic design. With this kind of methodological approach a range of meanings and perceptions is generated representing learning experiences in an area where there is a lack of empirical facts. The outcomes give positive indications of the role peer meetings can play in students' learning experiences in relation to professional practice. Secondly, the explorative nature of the study gives deeper insight into the diversity of the learning experiences of students when participating in peer meetings. Students

reported that peer meetings were a valuable condition and effective learning method for their professional development. Thirdly, in line with research about portfolio content [12,13] , the content of the reflective essays in this study gave an insight into the individual learning processes of students. The reflective essay encourages the student to reflect on the learning process as a whole in terms of his or her professional development over a certain period.

One limitation is that the research was conducted in only one school. In our qualitative, explorative study this seems acceptable because the objective was to achieve an initial understanding of personal learning expressions and the role of peer meetings. A second limitation is that the student population was restricted to females. Ninety-eight percent of speech therapist students are female. A more heterogeneous group in terms of gender and type of training might have shown greater variation in items, implying saturation at a later point in time and resulting in a greater variety of expressions. [21]

Our main conclusion is that there is a strong indication that students feel positively about learning experiences with regard to reflective skills developed through peer meetings. Confirmation is needed from research in broader target groups. The quality of the reflective skills acquired in peer meetings also needs further study. There is a rather strong indication regarding the quality of peer meetings. Further clarification is needed about the coach's role. This investigation has generated useful criteria for such further research.

The outcomes of our study may also have implications for the use of peer meetings in educational and clinical practice. The findings give promising indications that peer meetings create an interactive learning environment in which students can learn about themselves, their skills and their abilities as novice professionals. These learning experiences may foster the development of their professional behaviour.

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# 3

**What students learn from a professional development course: a qualitative study**

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## Abstract

Most curricula for medical education and professional health sciences include the development of professional behaviour. Training in reflection is therefore an essential component of professional education. Only a few studies, however, have evaluated the learning outcomes of the professional development courses in which reflection on experiences is an essential component.

The aim of the study was to shed light on student learning outcomes after participation in a professional development course. A qualitative content analysis was carried out on reflective essays by first and second-year speech therapy students about their personal learning based on reflection.

After participation, students described learning outcomes relating to personal and professional awareness about (1) themselves as a person, (2) themselves in relation to others, and (3) themselves as professionals.

After taking part in a professional development course featuring a tightly-structured set of reflection exercises, students reported an improved ability to reflect on professional behaviour.

## Introduction

The development of professional behaviour has become an explicit objective in medical and other health-related curricula. Adequate professional behaviour requires lifelong evaluation, analysis and adaptation. To this end, learning to reflect personally on professional experiences is essential for acquiring and maintaining balanced professional functioning. [1] Education enhancing professional development should therefore provide opportunities for students to reflect on their experiences and professional practice in order to develop and improve their professional functioning. In this study we examined the learning outcomes of a professional development course in which students were encouraged to reflect on their professional experiences in order to stimulate professional development.

### *The reflective process*

Reflection is a very personal process. The learning gained through this process may be specific to the individual and the context in which reflection occurred. Reflection for the purpose of analysing, understanding and developing professional behaviour can be regarded as a cyclical process. [2] Personal reflection occurs in response to one's own experiences and those of others, resulting in an awareness of thoughts and/or feelings. A critical analysis of these thoughts and feelings then takes place in the context of existing knowledge. [3] Rogers clarifies the ambiguity surrounding the concept of reflection and outlines the most common definition of reflection - a process that allows the student to 'integrate the understanding gained into one's experience in order to enable better choices or actions in the future as well as enhance one's overall effectiveness'. [4]

The major outcome of reflection is learning. [5] Reflection usually encourages students to think in new ways and to develop alternative explanations for experiences. Several authors have delineated several learning outcomes of the reflective process. [5-8] These include a new understanding of situations of uncertainty or an explicit confirmation of existing perspectives. The outcome of the reflective process can generate a more balanced view of all relevant dimensions, self-awareness, critical review, deeper understanding or learning, and consequently improves professional behaviour.

The authors also describe possible emotional outcomes such as a change in feelings, attitudes and values. All these outcomes suggest that learning happens through the

process of reflection and that the expected outcomes of reflection are learning and enhanced personal and professional functioning. [1,4,8]

***Areas of professional behaviour and reflection***

In the analysis, development and understanding of professional behaviour in a specific situation reflection can shed light on the attitude of professionals and on professional behaviour and can provide an opportunity to adjust professional functioning. [1,8] In daily practice, professional behaviour is reflected in the way professionals deal with their tasks, with others and with themselves. Van de Camp et al. have developed a framework in which elements of professionalism can be understood in four areas of professional behaviour: towards the patient, other professionals, oneself and the public. [9] This framework can be used to help students recognize and develop professional behaviour.

Developing professional behaviour in an educational context means that students have to learn, develop and train reflective skills by reflecting on their own experiences. The literature reveals several learning methods to encourage students to develop reflective skills and reflective learning. Dewey [10], Schön [6] and Mezirow [11] suggest a number of strategies to accomplish the goal of developing reflective skills and learning. In particular, Schön proposes the use of what he terms 'reflective practica' to train professionals in reflection. [6] These practices encourage participants to develop habits of reflective learning such as listening, clarifying and presenting experiences.

Other common methods are the use of reflective journals [12] , or portfolios. [3,13] Writing about their experiences may enable students to make explicit the knowledge, thoughts and feelings that is implicit in their actions.

Critical incidents are used to promote reflective learning. [14] They focus on important events that influence a particular student's professional development. Critical incidents can be used for self-reflection or can be analysed in group meetings. In both cases they provide meaningful material as a point of departure for analysis and discussion. Branch states that the educational value of critical incidents is most pronounced if they are used as a focus for group reflection. [14] Driessen et al. also mention the use of experiences. [2] Experiences provide a framework to help students broaden and deepen their analysis of challenging situations in order to enhance their professional functioning.

The use of reflection models to enhance reflective ability will also stimulate an

awareness of moral aspects of professional experiences [15,16] , or refine critical thinking and personal growth. [17]

Another method that appears to foster reflection is working in small groups. Some studies revealed that reflection in a group setting is an important part of the learning process. [18,19] Social interaction promotes reflection and the sharing of ideas, thereby helping professionals to improve and refine their functioning. Working together in a group improves reflective skills and deepens critical thinking. Shared learning gives students the opportunity to learn from each other's skills and experiences. [20,21]

Schön suggests that the key to reflective practice is the role of the teacher. The teacher seeks to guide students in developing their reflective processes such as reflective thinking, listening, clarifying and imitating. [22] Other authors also emphasize the teacher's role in creating affective climate among students and in this way fostering reflective thinking. [18,23]

As mentioned above, although many learning outcomes of reflection are documented in the literature, research on the learning outcomes of reflection methods incorporated into professional development courses has been rather poor. This study aims to gain an insight in the learning outcomes of a course designed to develop professional behaviour through learning to reflect on experiences. The course combined different methods for fostering reflection: personal reflection on experiences, group discussions, written reflections after each peer meeting, and compiling a portfolio. We analyzed the learning outcomes described by speech therapy students in the first two years of a continuous professional development course. We used a phenomenographic analysis as a qualitative method for investigation. [24] The following research questions were formulated:

1) Which learning outcomes do students report after participating in the professional development course?
2) Do the outcomes under 1) relate to areas of professional behaviour?

## Methods

### *Context and participants*

The study was carried out among students of the Department of Speech Therapy at the Hanze University of Applied Sciences Groningen. Students were encouraged to reflect on their professional experiences during a two-year professional development course. The course was designed to train students in reflection in order to make them aware of themselves as professionals and in relation to others, thereby fostering professional development. Students learned to verbalize personal aspects, to be accountable for their own functioning and to relate this to future professional behaviour.

### *The professional development course*

The professional development course was characterized by intensive coaching and a tightly structured set of reflection exercises. Central to the course was the training of specific reflection skills such as *clarifying*, *analysing*, *asking questions* about other students' experiences and *generalizing* the outcomes of reflection to professional practice. Questioning the whys and wherefores of experiences promotes self-awareness, refines critical thinking, creates deeper or new understanding or learning, and develops new perspectives. [2] Two-hour small group meetings were organized every other week throughout the year. Each group consisted of approximately ten students. In the first two study years, topics such as group dynamics, assertiveness, children's values and moral standards, and the role of emotions in treating seriously ill patients were used for practise reflection. At the end of the second study year, these topics were gradually replaced by students' personal experiences and the student's role as a starting professional assumed far greater importance.

After each meeting students wrote a personal reflection, which was structured in accordance with the ABC model. In the first step (A), students answered the question 'what touched me in the meeting?' This involved an experience or incident during the meeting. Secondly (B), the students analysed why it had touched them. They discussed their thoughts and feelings, and how these related to their own behaviour and attitudes in situations discussed during the meeting. In the third step (C), students described personal conclusions, intentions and/or personal insights. Teachers and peers provided feedback between the meetings.

The first-year students wrote a reflective essay twice during the year, in which they reflected on their personal and professional development process. Second-year students wrote reflective essays four times during the year in which they reflected on their personal learning experiences.

***Material***

The research question was explained to the students during the group meeting and before they wrote the reflective essay. The students were asked to answer the question 'What did you learn from the professional development course?' in detail. The first (n = 50) and second-year students (n = 35) were asked for permission to use their final reflective essays for research purposes. Anonymity was guaranteed and students were assured that the results of coding would not affect their course assessment.

***Analysis***

A phenomenographic analysis was carried out to gain an insight in the different ways students experienced participation in the professional development course. [24] The reflective essays were analysed for personal learning outcomes to the point of saturation. [25] A coding scheme was developed by the first author during the analysis. Related codes were assigned core labels relating to dimensions. To avoid personal bias a second independent person working as teacher in the professional development course was involved in analysing the data. The coding scheme, core labels and dimensions were cross-checked against the independent coding of a number of reflective essays, and differences in coding were discussed. The consensus resulted in an adjustment of the core labels and dimensions. Finally, the relevance of the coding scheme and the choice of core labels and dimensions were discussed with the other two authors until agreement was reached.

## Results

*Response*

Ninety percent of the students (n = 77) responded, with 49 reflective essays by first-year students and 28 by second-year students available for analysis. The reasons for reflective essays not being available are unknown. The length of the reflective essays varied from half a page to two and a half pages. Saturation was reached after analysing 42 reflective essays: 25 by first-year students and 17 by second-year students. No learning outcomes were solely confined to a particular year. Because of a correspondence of meanings, learning outcomes were combined into a number of categories - core labels - with a broad meaning. Dimensions within the core labels were identified to allow for greater nuance regarding student learning outcomes (Table 1). The learning outcomes assigned to reports by first and second-year students resulted in the same core labels: (1) oneself as a person, (2) oneself in relation to others, and (3) oneself as a professional.

Apart from the learning outcomes divided in the three core labels 25 students also mentioned that they felt forced writing reflections after each session and they mentioned the teacher's role. The teacher created an atmosphere during the sessions in which openness was possible. Students also mentioned that the teacher intervened in group discussions to improve and encourage a deeper understanding of the topics presented for discussion. Students valued the feedback to allow their personal reflections positive.

**Table 1 Learning outcomes**

| Core label | |
|---|---|
| **oneself as a person (1):** professional behaviour towards oneself | a. conscious dimensions (P)erson<br>b. skills dimension (P)erson<br>c. self-knowledge dimension (P)erson |
| **oneself in relation to others (2):** professional behaviour towards other professionals | a. consciousness dimension (O)ther<br>b. social dimension<br>c. skills dimension (O)ther |
| **oneself as a novice professional (3):** professional behaviour towards the patient | a. skills dimension (P)rofessional<br>b. professional dimension<br>c. ethical dimension |

*The core labels*

**Core label 1: Oneself as a person**

Under the core label 'oneself as a person', students reported learning outcomes for processes of personal awareness. These outcomes can be divided into three dimensions: (a) awareness, (b) skills and (c) self-knowledge.

**(a) Personal awareness dimension**

Students had both positive and negative perceptions regarding becoming aware of themselves as a person. For example:

*...because of reflection, I developed this year; I learned things about myself of which I was not aware; I had never done anything with my feelings and emotions...* (student 1.8)

While most students were positive about their learning outcomes, some reported resistance to writing reflection reports, to having to be open about themselves in written reflections or in the group, and to giving meaning to their own experience.

*During the reflection group meeting you have to put yourself in a vulnerable position. Especially in the beginning this is strange and it doesn't feel very good …* (student 1.35)
A second-year student (2.21) reported:
*I had difficulties verbalizing what I wanted to write. The longer I waited, the worse it became. It seems that my attention wasn't enough. I felt forced to write.*

**(b) Skills dimension**
The second dimension contains student learning outcomes referring to skills they learned or wanted to learn. Most skills referred to were reflection skills such as clarifying, analysing, asking questions about the experiences of other students and generalizing.
*What I have learned during reflection practice is to talk about my feelings and relate these to my behaviour* [reflection skills: clarifying and linking thoughts or feelings about personal actions, MS] *and give my opinion ……* (student 1.11)
And a second-year student (student 2.16) reported:
*I have learned to analyse personal feelings or thoughts better and I am better at comparing my experiences with other common experiences …*

**(c) Self-knowledge dimension**
In the third dimension, students mentioned insights about themselves, which they noticed explicitly during group meetings or when writing a reflection. Students formulated learning objectives based on these personal insights. This self-knowledge was stimulated through feedback. Students learned to provide and receive feedback and attributed significance to what other persons' thought about their conduct.
*... I always felt bad when I received feedback. Then I recognized during the reflection meetings that I also find it very difficult to give someone feedback, especially if it is bad news. I have to learn both ...* (student 2.24)

**Core label 2: Oneself in relation to others**
This core label covers learning outcomes where students reported on learning processes realized in relation to the other group members. These learning outcomes were divided into three dimensions: (a) consciousness, (b) social and (c) skills.

**(a) Consciousness dimension**

The first dimension includes student learning outcomes with regard to being aware of oneself in relation to group members. Students reported that interactive learning was stimulated by working together.

*... I am more open to cooperation and less inclined to take things over and do it my way. I frequently participate in discussions in the group and give my opinion, but also leave others an opportunity to speak up.* (student 2.21)

**(b) Social dimension**

Other text fragments belong in the second dimension, where students reported becoming more socially conscious by participating in the group. They learned to deal correctly with questions from peers. For example, one student (2.8) wrote:

*... that everyone has his own way of communicating ……..., and as a result I am aware that different people do things differently, which helps me to handle such differences.*

**(c) Skills dimension**

Working in the reflection group gave students an opportunity to develop their own skills and to learn from the skills and experiences of others by facilitating discussion and interaction. They can safely practise these skills in the interactive learning environment of the group. For example, by engaging in discussion, training themselves to ask questions and analysing an experience together. Students mentioned these points as skills they will have at their disposal in future professional practice.

*Sometimes I can't give my opinion very quickly. I want to learn to do this because it is also very important for the others to hear what my opinion is about a subject. In this way you learn to see more perspectives and that gives me a good feeling during the reflection meetings …* (student 1.47)

**Core label 3: <u>Oneself as a professional</u>**

All the learning outcomes concerning *oneself as a professional* referred to the professional attitude and behaviour of speech therapists. This core label was also divided into three dimensions: (a) skills, (b) professional and (c) ethical.

**(a) Skills dimension**

This dimension includes learning outcomes about acquiring reflection skills

during the first and second year which relate to professional practice. For instance, students practise their ability to deal with patient diversity.
One student (1.10) wrote:
*I experienced the rose of Leary (behaviour model which makes it transparent that behaviour evokes behaviour) as especially significant because later as a speech therapist I will encounter patient behaviour and I now know how I should behave to change the behaviour of that other person ...*

**(b) Professional dimension**
By working and discussing together, students were able to relate personal findings to the profession of speech therapist. Students improved their understanding of their personal limitations when working as a professional.
One student (2.11) wrote:
*From what I have learned, especially the things which concern me as a speech therapist, I also gained an insight into the (im)possibility of working with very ill patients. Of course I don't know for sure, but I do know that there is a high risk that I would lose myself in all the emotions I am confronted with when working with very ill patients.*

**(c) Ethical dimension**
Students reported their thoughts about ethical concerns relating to their future practice as a speech therapist. They thought about the right way to act when confronted with ethical questions in their professional practice. They reported that they became aware of their own norms and values.
*By discussing these subjects* [child abuse and working with foreigners, MS] *I became conscious for the first time that I could also come across such things ... that I must learn to handle that ...* (student 2.15)

## Discussion

Three areas of learning experiences were mentioned by students: (1) oneself as a person, (2) oneself in relation to others, and (3) oneself as a professional. This variety of student learning outcomes is in line with other findings in the literature. The areas correspond to the professional behaviour themes identified by Van de Camp. [9] After participating in the professional development course, students showed insights into their learning outcomes towards *the patient* when discussing the way they dealt with patient diversity. Students showed professional behaviour towards *other professionals* when discussing differences in their opinions about professional learning outcomes or each other's questions. The learning outcomes in which students refer to their ability to reflect on their own behaviour, to analyse their own learning outcomes and to use these conclusions to adapt their professional behaviour correspond most closely to the theme of professional behaviour towards *themselves*. The ethical dimension of our third core label can be linked to professional behaviour towards *the public*. The student learning outcomes mentioned an awareness of how personal norms and values can influence professional choices in practice.

The student's perceptions were based on a course which combined several teaching methods designed to stimulate reflection on experiences. This combination does not appear to be a barrier to learning. Indeed, we can hypothesize that the diversity of methods meets the needs of a range of students. Each of the teaching methods may have disadvantages. Platzer et al. found evidence that some students have difficulty exposing themselves to the judgement of others. [26] Combining small group discussions with personal written reflections after the group session may overcome this reluctance. Some will learn best by writing, some by speaking and some by doing or creating. In other words, reflective writing about experiences may enable some students to learn more effectively from experiences than from working in a group, while other students had difficulties with the written reflections and were more comfortable working together in the group. [4,5] They reported that participating and working group wise enhanced their ability to engage in reflection on personal learning outcomes or theoretical subjects. These findings are in line with the literature suggesting the value of working and reflecting together. [4,19,20]

A further strength of combining written and verbal reflections is that it gave students the opportunity to learn specific skills required for reflection, such as

critical analysis, problem-solving and self-awareness, both verbally and in writing. The student learning outcomes suggest that acquiring and developing these reflection skills on both levels seem to promote learning through reflection. This is in accordance with outcomes of studies where teaching methods were employed to develop reflective skills and to generate learning through reflection. [2,27]

In terms of implications for practice, the design of the professional development course and the literature suggest that professional development groups should be guided by a teacher who has the ability to create and maintain a positive atmosphere and a trusting learning climate. [18] Teachers on professional development courses must be well-trained and competent and can play a key role in either facilitating or inhibiting reflective practices. [27] Teachers should demonstrate the interpersonal skills needed to foster a learning climate in which students can learn through reflection without becoming defensive and in which their feelings of resistance are reduced. [7,18] Boud and Walker suggest that in order to be reflective a person needs to be open-minded and motivated, but engaging in reflection may also lead to self-doubt, negative feelings or insecurity. [7] Teachers should be competent enough to coach and support their students as they struggle with personal or professional issues of reflection.

One strength of this study is its explorative design. Learning outcomes were explored in an area where evidence is lacking. The results show the diversity of learning outcomes by combining several teaching methods all aimed at fostering learning through reflection and training in reflective skills. A second strength is that the learning outcomes give positive indications of the role of longitudinal professional development courses in training students to reflect on professional experiences in order to foster professional behaviour.

A possible weakness in our findings is the lack of clarity about the influence exerted by professional development teachers on the student learning process, but in this study it is acceptable, because the study was aimed to gain an insight in students' perceptions. Future research should focus on more in-depth analysis of the role coach. A second limitation is that the study was conducted in a single school with a solely female student population. Greater heterogeneity in terms of gender might have generated a greater variety of items, implying saturation at a later point in time and resulting in a greater variety of learning outcomes. [25]

The outcomes of our study can have implications for the use of professional development courses in practice. The findings give promising indications that combining several reflection methods create an interactive learning environment in which students can learn through reflection about themselves, their skills and their abilities as novice professionals.

## Conclusion

The study was conducted to examine the learning outcomes of students who had participated in a two-year professional development course, which was characterized by intensive coaching and a tightly structured set of exercises in reflection. Students who took part in the professional development course mentioned learning outcomes towards *the patient* (oneself as a novice professional) and towards *other professionals* (oneself in relation to others), as well as professional behaviour to *themselves* (oneself as a person) and to *the public* (oneself as a novice professional). It seems that the combination and diversity of teaching methods for reflection does meet the needs of a wide range of students and therefore provide ample opportunities to stimulate the development of professional behaviour.

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*Begeleiden van reflectieve processen is het scheppen van ruimte, waarbinnen mensen hun bewustzijn - van de hen omringende wereld en van hun eigen plaats daarin - kunnen verruimen, verdiepen, verrijken en ordenen.*

*Voor de docent betekent dat een reflectieve ruimte scheppen waarbinnen mensen hun professionele identiteit in relatie tot zichzelf kunnen ontdekken en worden in denken en doen.*

# 4

**Teacher competencies essential for facilitating reflective learning in small groups: development of a student rating scale to evaluate teachers**

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## Abstract

Teaching students in reflection call for specific teacher competencies. We developed and validated a rating scale focusing on Student perceptions of their Teachers' competencies to Encourage Reflective Learning in small Groups (STERLinG).

We applied a conscientious procedure to reduce an initial list of 241 items pertaining to teacher competencies to 47 items. Subsequently, we validated the instrument in two successive studies. In the first study, we invited 679 medical and speech & language therapy students to assess the teachers of their professional development groups with the STERLinG. Principal Components Analysis (PCA) with varimax rotation was used to investigate the internal structure of the instrument. In the second study among 791 medical, dental and speech & language therapy students, we performed a confirmatory factor analysis using the Oblique Multiple Group Method (OMG), to verify the original structure.

In study 1, 463 students (68%) completed the STERLinG. The PCA yielded three components: *supporting self insight*, *creating a safe environment* and *encouraging self regulation*. The final 36-item instrument explained 44.3 percent of the variance and displayed high reliability with alphas of 0.95 for the scale, and 0.91, 0.86 and 0.86 for the respective subscales. In study 2, 501 students (63%) completed the STERLinG. The OMG confirmed the original structure of the STERLinG and explained 53 percent of the total variance with high alphas of 0.96 for the scale, and 0.94, 0.90 and 0.90 for the respective subscales.

The STERLinG is a practical and valid tool for gathering student perceptions of their teachers' competencies to facilitate reflective learning in small groups considering its stable structure, the correspondence of the STERLinG structure with educational theories and the coverage of important reflection domains. In addition, our study may provide a theoretical framework for the practice of and research into reflective learning.

## Introduction

In recent years the development of professional behaviour has become a vital part of medical education.[1-3] A prerequisite to developing professional behaviour is the ability to reflect on experiences and on one's own behaviour in a professional work situation.[1,4,5] An effective method to facilitate this learning process is to practise reflection on own experiences in small groups.[6,7,8] Since personal connotations are inherent in this kind of reflection, the small group setting needs to be trustworthy and safe.[9] This implies that the facilitators of these groups need specific teacher competencies.[10] To be able to assess and improve these specific competencies, an instrument measuring teacher performance is needed. This study describes the development and validation of a questionnaire to assess teachers' competencies essential for facilitating reflective learning.

In medical curricula, teachers have different roles - such as information provider, facilitator and assessor - depending on the setting.[10] In a lecture the main role is information provider, in an oral exam the main role is assessor and in small groups - for example tutorial groups or groups aimed at practising refection - the teacher's main role is facilitator.[9,10-14]
Each role requires a specific set of competencies, depending on the educational aims.[10] For example, in tutorial groups the tutor's role for facilitating learning is needed to stimulate new understanding, collaborative and self-directed learning.[11,12] The facilitator's role implies stimulating students to develop and share alternative views and helping them to play an active role in planning, monitoring and evaluating their learning processes.[12] However, the facilitator's role for guiding reflective learning in small groups requires different teacher competencies. In reflective learning groups, students acquire reflective skills: they analyze their experiences by comparing theory and professional practice, including their own personal feelings and professional behaviours.[9,15,16] The analysis of these experiences should lead to a synthesis with existing behaviour and choices in order to adjust that behaviour.[16] This means that the focus in reflective learning groups is on higher order skills.[17] As such an analysis also implies sharing personal experiences and feelings with group members, an open and trustful learning environment is a prerequisite for reflective learning.[8,9] These essential features call for specific teacher competencies. More than, for instance, tutors who guide group processes with an

emphasis on rational reasoning, teachers who facilitate reflective learning groups have to (1) help students make their experiences more explicit and concrete, (2) help students investigate emotions that influence professional behaviour, (3) stimulate interactions among students with a focus on improving students' reflective skills and (4) stimulate skills such as active listening.[8,9,15,18-22] In addition, an open and trustful learning environment is a prerequisite for reflective learning. Teachers have to stimulate their students to be reflective and students need to be open-minded and open about themselves and others.[8,9]

Although there is a wide literature on teaching reflection, there is neither a comprehensive theoretical framework of teacher competencies essential for facilitating reflective learning in small groups nor an instrument for rating these kinds of competencies. The aim of this study was to develop and validate an instrument to assess student perceptions of teachers' competencies to facilitate reflective learning in small groups. This article describes the development and validation of the STERLinG (Student ratings of Teacher competencies Encouraging Reflective Learning in small Groups) scale. Conform recommendations by statisticians, we did not only validate the STERLinG using exploratory analysis, we also performed confirmatory factor analysis on a new set of data to verify the structure found.[23]

## Methods

### *Context*

The instrument was developed at the University Medical Center Groningen and the Department of Speech and Language Therapy of the Hanze University of Applied Sciences Groningen and validated among medical, dental and speech & language therapy students.

These students participate in small-group sessions (7-10 students per group) focussing on professional development. The aim of these sessions is to stimulate students to become aware of themselves as professionals and their professional skills in order to encourage the development of professional behaviour. The courses are characterized by a set of exercises which stimulate students to reflect. During the sessions students report personal experiences or introduce themes from professional practice. These personal experiences come from situations in which the students interacted with doctors, nurses and/or patients/clients.

The students discuss, analyze and reflect on these professional experiences or professional themes in order to develop their professional behaviour. All sessions are facilitated by a teacher. The facilitating role of the teacher implies involving all students, helping the group develop collaborative and personal reflection processes. The teacher also stimulates the group questioning the whys and wherefores of experiences to promote self-awareness, critical thinking and deeper or new understanding. For medical and dental students 6 sessions are scheduled per year and for speech & language therapy students 16 sessions. Each session lasts two hours.

## Instrument development

To develop the questionnaire, we started searching for instruments assessing teacher competencies in small groups. We screened potentially relevant instruments for appropriate items, which resulted in a pool of 221 items that seemed relevant for assessing teacher competencies related to reflective learning. In addition, we formulated 20 items on the basis of our own teaching experiences. This resulted in an initial list of 241 items which were discussed and screened on face validity by the co-authors (Table 1). After removing ambiguous and repetitive items and items not pertaining to the development of reflective skills and learning through reflection, 80 items remained.

Subsequently, 17 teachers involved in teaching or developing professional development courses rated the relevance of each item for describing teacher competencies that facilitate reflective learning in small groups. Their expertise is either based on curriculum development (N=3) or on teaching professional development courses for medical (N=9) or speech & language therapy students (N=5). They rated each item twice on a 5-point Likert scale. First, they judged the items on their relevance for 'facilitating learning in small groups in general' (1 *'not relevant'* to 5 *'highly relevant'*). Second, they indicated to which degree the items pertained specifically to 'fostering reflective skills, in particular for small group settings that focus on the development of professional behaviour' (1 *'not specific'* to 5 *'very specific'*). Items were retained if at least 50% of the teachers assigned scores of 4 or 5 to 'facilitating learning in small-groups in general' and to 'fostering reflective skills, in particular for small group settings that focus on the development of professional behaviour'. This process resulted in a further reduction of the pool to 47 items. This final set of 47 items constituted the preliminary instrument for

assessing student perceptions of teacher competencies essential for facilitating reflective learning in small groups.

**Table 1. Development & validation procedure**

| Stages | Number of items | Participants | Method |
|---|---|---|---|
| Development | | | |
| Start item selection | 241 | Principal researcher | literature search |
| Face validity analysis | 80 | Co-authors/ researchers | selection using expert knowledge and experiences |
| Face validity analysis | 47 | 17 faculty members | measurement based on relevance ratings |
| Study 1 | | | |
| Validation | 36 | 463 students | exploratory research using Principal Component Analysis with varimax rotation |
| Study 2 | | | |
| Validation | 36 | 501 students | confirmatory research using the Oblique Multiple Group Method (OMG) |

## Validation of the instrument

***Participants***

Study 1. The participants in the validation process (N=679) were third-year medical students from the University of Groningen (N=350) and first (N=97), second (N=92), third (N=79) and fourth-year (N= 61) speech & language therapy students from the Hanze University of Applied Sciences Groningen.

Study 2. The participants in this phase of the validation process (N= 791) were first (N=49), second (N=53) and third year (N= 50) dental students (N=152) and second year medical students (N= 413) from the University of Groningen, and first (N=77), second (N=81) and third year (N= 68) speech & language therapy students from the Hanze University of Applied Sciences Groningen.

***Procedure***

In both studies participation was voluntary and anonymous. To avoid neutral answers, a 4-point Likert scale (1 'not at all applicable' to 4 'highly applicable') was used. All students inserted their completed instruments into separate envelopes and sealed them. Subsequently, one of the students collected the envelopes and returned them to the researcher's mailbox.

Study 1. The students were informed about the study by their teachers during one of their small group meetings. To prevent socially desirable answers due to the presence of their current teacher, the students were asked to rate the performance of their previous year's teacher. The instruction read: 'score the degree to which each item was applicable to last year's teacher'. Since this was impossible for first-year students, they were asked to complete the instrument with their present teacher in mind. To avoid socially desirable answers, the teacher of the first-year students was not in the room at the time they completed the instrument.

Study 2. The coordinators of the professional development courses informed the teachers about the study. At the end of the last session of the course, the teachers asked their students to complete the instrument. At the top of the questionnaire students were informed of the nature of the study. The instruction read: 'score the degree to which each item was applicable to your teacher'. To prevent socially desirable answers due to the presence of their teacher, teachers left the room when students completed the questionnaire.

## Data analysis

Study 1. We used Principal Components Analysis (PCA) to investigate the internal structure of the instrument. We applied an orthogonal rotation as we did not have an explicit theory about possible higher order competencies essential for facilitating reflective learning in advance and hence no theoretical basis for knowing whether these competencies would be correlated.[24] After inspecting the normality of the distribution of the scores and performing transformation where necessary,[25,26] we performed PCA with varimax rotation applying the three psychometric criteria and four interpretability criteria as recommended recently.[27] The psychometric criteria concerned (1) the scree plot, (2) eigenvalues >1.5, and (3) each component explaining at least an approximate additional five percent of the variance. The interpretability criteria read that (1) each component contains at least three variables with significant loadings (at least 0.40); (2) variables loading on the same component measure the same construct; (3) variables loading on different components measure different constructs; and (4) the rotated factor pattern demonstrates a simple structure, which means that the items do not load significantly on more than one component. As recommended, we did not only investigate the interpretability of the best solution according to the psychometric criteria investigated, but also those of solutions with one or two components more and less. As a 1-factor solution carries the risk of underfactoring,[27] we decided beforehand to exclude this solution from the interpretability analysis. We also decided to eliminate items with non-significant loadings in order to reduce completion time and thus respondent burden.

The interpretation process for each solution started with the elimination of double-loading items. If the other interpretability criteria were met, the analysis was rerun without the double-loading items *and* without items loading non-significantly (loading < 0.4), to determine whether the classification of items and the interpretation of factors remained the same. We applied researcher triangulation to minimise subjectivity in and maximise validity of the interpretation. Therefore, 5 educationalists and 4 teachers of professional practice independently interpreted the factors for all relevant solutions. Subsequently, they conferred on their findings and reached consensus regarding the best factor solution.

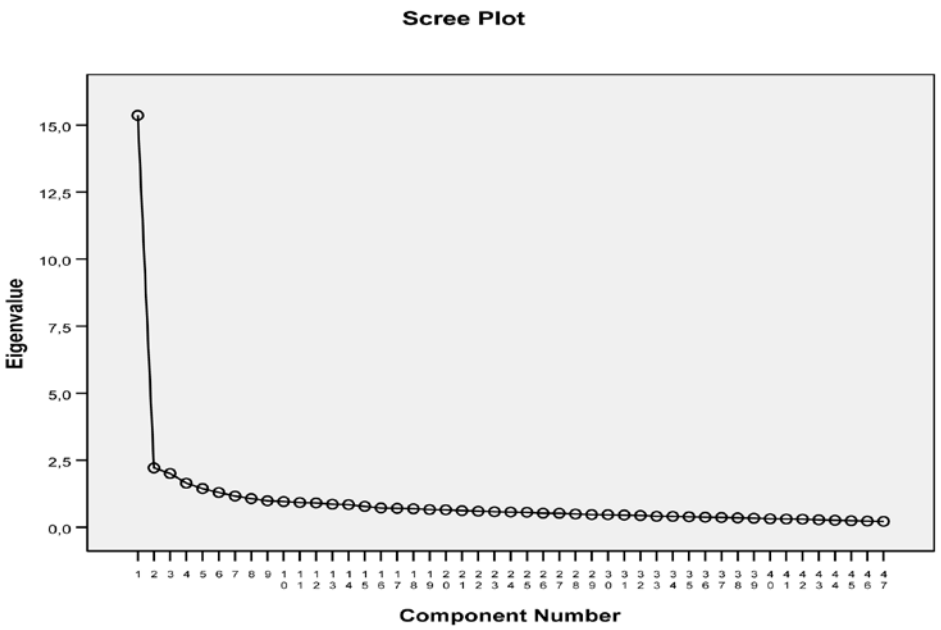
Finally, internal consistency was calculated for each subscale and for the whole instrument using Cronbach's alpha. Internal consistency is good when the alpha is around 0.80.[26]

Study 2. We performed a confirmatory factor analysis - the Oblique Multiple Group Method (OMG) - to verify the original 3-factor STERLinG structure.[28] The first step in the OMG comprises constructing scales by simply combining the items assigned to the same scale. Subsequently the correlation of each item with each scale is calculated. Items should correlate strongest with the scale to which they are assigned. If this is not the case and items correlate stronger with other scales, this indicates they were wrongly assigned. The item should then be assigned to the scale with which it correlates most.

## Results

Study 1. The total response rate in study 1 was 68% (N=463) (Table 1). Of these respondents 56% (N=257) were medical students. The gender distributions of both respondent samples were representative for that of the student populations at the universities under study, with 68% of the medical respondents being female and 32% male, and 99% of the speech & language therapy respondents being female. The scree plot showed a sharp point of inflection (psychometric criterion 1) after the first factor and a small bend after the third (Figure 1).

**Figure 1**



Four factors had initial eigenvalues >1.5 (psychometric criterion 2), with values ranging from 1.63 to 15.34 and with two factors accounting for more than or approximately five percent of the variance (psychometric criterion 3). We chose the 3-factor solution as the starting point for our interpretability analysis. The 1-factor solution was excluded from the interpretability analysis because of the risk of underfactoring. Of the 2, 3, 4 and 5 factor solutions, only the 3-factor solution satisfied the interpretability criteria.
The 3-factor solution explained 41.7 percent of the total variance. As this solution initially had three items loading on two components, we removed these items. Additionally, five items not loading significantly on any factor were removed. The analyses were repeated without these items. These analyses again yielded two double-loading items and one item without significant loading. After removal of these three items the analyses were rerun once more. The resulting 3-factor solution which contained 36 items demonstrated a simple structure (interpretability criterion 4), and the assignment of items to components and their interpretation remained the same (Table 2). The final, 3-factor solution explained 44.3 percent of the total variance. The initial eigenvalues of the final 3-factor solution were 11.8, 2.1 and 1.9. After rotation, the components explained 19.65 percent, 12.36 percent and 12.29 percent of the variance, respectively.

The followed procedure of psychometric analyses resulted in the final Student ratings of Teacher competencies Encouraging Reflective Learning in small Groups scale (STERLinG). The first component contained teacher competencies referring to stimulating self-insight through developing reflection skills, stimulating personal awareness and helping students improve their critical thinking. The panel interpreted this component as *supporting self-insight* (18 items). The second component mainly focused on providing the necessary conditions for creating a positive atmosphere, which means a trusting and safe environment. This component was labelled as *creating a safe environment* (7 items). The third component contained teacher competencies which focus on stimulating students to take an active role in their own learning processes and to take responsibility for their personal and professional learning. Teachers encourage this by providing feedback on the students' attitudes and by stimulating them to give constructive feedback on group performance. Furthermore, teachers stimulate the development of learning objectives related to professional behaviour. This component was named *encouraging self-regulation* (11 items).

The reliability (Cronbach's α) of the 36-item instrument was 0.95. The α's of the three scales were 0.91 for *supporting self-insight*, 0.86 for *creating safe environment* and 0.86 for *encouraging self-regulation*.

**Table 2. Factor loadings for the final 3-factor solution**

| Item (no) | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | h2* |
| My teacher…** | | | | |
| Helps me recognize personal feelings (1) | **.74** | .19 | .07 | .59 |
| Helps me be aware of emotions that influence my behaviour (2) | **.70** | .22 | .09 | .55 |
| Helps me investigate my behaviour from a distance (3) | **.67** | .09 | .22 | .50 |
| Makes me aware of the possibility of conflicting feelings (4) | **.66** | .08 | .15 | .46 |
| Helps me to better understand myself (5) | **.62** | .34 | .04 | .50 |
| Helps me to develop personal awareness (6) | **.60** | .26 | .33 | .54 |
| Helps me to express my feelings (7) | **.60** | .28 | .13 | .45 |
| Makes me aware that analysis of experiences is an ability that helps me cope with difficult situations (8) | **.58** | .06 | .24 | .40 |
| Stimulates me to pay attention to contradictory feelings (9) | **.58** | .23 | .13 | .41 |
| Stimulates personal insight (10) | **.56** | .22 | .33 | .47 |
| Helps me to take a closer look at my thinking habits (11) | **.52** | .25 | .21 | .38 |
| Holds up a mirror to myself (12) | **.52** | .26 | .17 | .37 |
| Helps me recognize a starting point from which to move to new behaviour (13) | **.52** | .29 | .21 | .40 |
| Helps me to put experiences into perspective (14) | **.52** | .03 | .37 | .41 |
| Stimulates in-depth analysis of aspects of significant events (15) | **.51** | .25 | .25 | .39 |
| Makes me aware that there is no right or wrong answer in event analysis (16) | **.47** | .32 | .21 | .37 |
| Helps me make my experiences concrete (17) | **.47** | .19 | .37 | .39 |
| Helps me to be aware of the cultural influences on my opinions (18) | **.42** | .01 | .28 | .26 |
| My teacher…** | | | | |
| Develops trusting relationships with the students (19) | .21 | **.73** | .17 | .60 |
| Makes me feel safe (20) | .38 | **.72** | .08 | .68 |
| Establishes a safe learning environment in the group (21) | .29 | **.72** | .05 | .61 |
| Has an open relationship with the students in the group (22) | .12 | **.72** | .13 | .57 |
| Shows commitment with the students of the group (23) | .17 | **.67** | .24 | .54 |
| Affirms my self-worth (24) | .32 | **.60** | .19 | .50 |
| Is willing to accept feedback from students | .15 | **.56** | .24 | .38 |
| My teacher…** | | | | |
| Stimulates me to take responsibility for my own learning process (26) | .23 | .09 | **.69** | .48 |
| Encourages me to develop my own learning objectives (27) | .24 | .13 | **.59** | .42 |
| Stimulates me to take responsibility for my personal development (28) | .36 | .07 | **.58** | .48 |
| Stimulates me to take responsibility for my professional development (29) | .06 | .07 | **.57** | .34 |
| Helps me develop professional awareness (30) | .15 | .16 | **.57** | .37 |
| Stimulates me to give constructive feedback about our group's performance (31) | .30 | .12 | **.53** | .39 |
| Gives feedback on my attitude (32) | .08 | .26 | **.53** | .35 |
| Stimulates me to summarize what we had learnt from significant analysis (33) | .35 | .07 | **.48** | .36 |
| Stimulates me to ask questions (34) | .09 | .36 | **.48** | .37 |
| Stimulates me to make choices (35) | .28 | .23 | **.47** | .36 |
| Stimulates me to assess my own performance (36) | .36 | .19 | **.46** | .38 |
| Initial eigenvalues | 11.8 | 2.1 | 1.9 | |
| Variance explained after rotation | 19.7% | 12.4% | 12.3% | |

* communalities

** Scale names: Supporting self insight (items 1-18), Creating safe environment (items 19-25), Encouraging selfregulation (items 26-36)

Study 2. The total response rate in study 2 was 63% (N=501). Of these respondents 55% (N=278) were medical students, 16% were dental students (N=80) and 29% (N= 143) were speech & language therapy students. The gender distributions of our respondent samples were representative of the student populations at the respective universities with 80% of the medical respondents being female and 20% male, 62% of the dental respondents being female and 38% male and 100% of the speech & language therapy students being female.
The STERLinG structure identified in study 1 explained 53 percent of the total amount of variance of the data set used in study 2. The a priori assignments were almost entirely supported by the data (Table 3). Only 1 of the 36 items loaded somewhat higher on another scale than expected (item 14 'My coach helps me to put experiences in perspective ' from the first scale *support self insight*), but the difference in loading was negligible. As the content of this item fitted better into the first scale and a new OMG with this item in another scale did only result in a negligible amount of additional variance explained (0.1%), we decided to retain this item in the original subscale. The reliability (Cronbach's $\alpha$) of the 36-item instrument was 0.96. The $\alpha$'s of the three scales were 0.94 for *supporting self-insight*, 0.90 for *creating safe environment* and 0.90 for *encouraging self-regulation*.

## Table 3. Factor loadings OMG

| Item (no) | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| My teacher…* | | | |
| Helps me recognize personal feelings (1) | **.52** | .36 | .41 |
| Helps me be aware of emotions that influence my behaviour (2) | **.51** | .34 | .33 |
| Helps me investigate my behaviour from a distance (3) | **.49** | .39 | .35 |
| Makes me aware of the possibility of conflicting feelings (4) | **.46** | .31 | .33 |
| Helps me to better understand myself (5) | **.49** | .35 | .35 |
| Helps me to develop personal awareness (6) | **.49** | .41 | .35 |
| Helps me to express my feelings (7) | **.47** | .35 | .36 |
| Makes me aware that analysis of experiences is an ability that helps me cope with difficult situations (8) | **.45** | .41 | .36 |
| Stimulates me to pay attention to contradictory feelings (9) | **.49** | .34 | .32 |
| Stimulates personal insight (10) | **.48** | .43 | .34 |
| Helps me to take a closer look at my thinking habits (11) | **.50** | .39 | .29 |
| Holds up a mirror to myself (12) | **.43** | .34 | .33 |
| Helps me recognize a starting point from which to move to new behaviour (13) | **.44** | .36 | .33 |
| Helps me to put experiences into perspective (14) | **.38** | .39 | .33 |
| Stimulates in-depth analysis of aspects of significant events (15) | **.47** | .39 | .36 |
| Makes me aware that there is no right or wrong answer in event analysis (16) | **.41** | .36 | .37 |
| Helps me make my experiences concrete (17) | **.40** | .39 | .35 |
| Helps me to be aware of the cultural influences on my opinions (18) | **.37** | .28 | .29 |
| My teacher…* | | | |
| Develops trusting relationships with the students (19) | .34 | **.56** | .38 |
| Makes me feel safe (20) | .41 | **.57** | .37 |
| Establishes a safe learning environment in the group (21) | .37 | **.57** | .39 |
| Has an open relationship with the students in the group (22) | .34 | **.58** | .43 |
| Shows commitment with the students of the group (23) | .29 | **.54** | .41 |
| Affirms my self-worth (24) | .37 | **.54** | .39 |
| Is willing to accept feedback from students (25) | .26 | **.50** | .33 |
| My teacher…* | | | |
| Stimulates me to take responsibility for my own learning process (26) | .40 | .40 | **.48** |
| Encourages me to develop my own learning objectives (27) | .38 | .39 | **.48** |
| Stimulates me to take responsibility for my personal development (28) | .42 | .41 | **.51** |
| Stimulates me to take responsibility for my professional development (29) | .36 | .40 | **.50** |
| Helps me develop professional awareness (30) | .38 | .37 | **.46** |
| Stimulates me to give constructive feedback about our group's performance (31) | .37 | .43 | **.45** |
| Gives feedback on my attitude (32) | .28 | .31 | **.40** |
| Stimulates me to summarize what we had learnt from significant analysis (33) | .33 | .31 | **.39** |
| Stimulates me to ask questions (34) | .34 | .40 | **.45** |
| Stimulates me to make choices (35) | .37 | .37 | **.46** |
| Stimulates me to assess my own performance (36) | .40 | .44 | **.48** |
| Variance explained | 53% | | |

* Scale names: Scale names: Supporting self insight (items 1-18), Creating safe environment (items 19-25), Encouraging self-regulation (items 26-36)

## Discussions and Conclusions

A reliable and valid questionnaire was developed to assess teacher competencies essential for facilitating reflective learning in small groups: the STERLinG scale. The structure of the STERLinG identified in study 1 was confirmed using a new data set in study 2.
The final 36-item STERLinG consists of three components with high reliability: *supporting self-insight, creating a safe environment* and *encouraging self-regulation*. The first component contains teacher competencies focusing on the content of teaching reflection, such as training and stimulating students to engage in reflective thinking. The second component comprises teacher competencies aimed at establishing a safe and trustworthy environment. The third component concerns teacher competencies aimed at learning students to apply reflective skills autonomously in order to prepare them for professional practice.

Our three components corresponded closely with educational theories, which present three educational functions as vital to achieving high-quality learning: cognitive, affective and metacognitive functions. Teaching activities should stimulate students' learning activities in all three educational functions.[29,30] The cognitive educational function refers to presenting and clarifying the subject matter. The first component of the STERLinG *supporting self-insight* resembles this educational function as it focuses on the main goal of teaching reflection, namely providing insight in how to reflect and helping students to apply these insights.
The affective educational function has to do with creating and maintaining a positive motivational and emotional learning environment.[29,30] The second component corresponds with this educational function as it focuses on creating a safe environment and supporting students in coping with emotions that arise when analyzing personal experiences.
The metacognitive educational function focuses on directing, guiding and monitoring cognitive activities, regulating learning and mood states.[29,30] The third component of the STERLinG corresponds with this function as it also concerns higher order teacher competencies. *Encouraging self-regulation* is aimed at stimulating students in taking responsibility for their professional development processes and stimulating the group to autonomously develop collaborative and personal reflection processes.

The correspondence between the three components of the STERLinG and the three educational functions supports the construct validity of the STERLinG.

The three domains of teacher competencies measured by the STERLinG cover recurring themes in the literature on teaching and learning reflection. The importance of stimulating reflective learning and self-awareness of students, as addressed in our component *supporting self-insight*, is widely described.[1,4,5,15,21] In addition, a safe and trustworthy learning environment, corresponding with our component *creating a safe environment*, is mentioned as a prerequisite for reflective learning.[8,9,18,31] Also, the aspects included in our component *encouraging self-regulation* are frequently addressed in literature: several studies indicate that working together encourages participants to take responsibility for their own learning, which results in increased understanding of their professional thinking and their skills as beginning professionals.[4,8,9,21,31,32] Although the significance of the above-mentioned aspects has been emphasized in literature, apparently these three essential domains have not been brought together before. Therefore, our study may not only indicate that all three kinds of teaching aspects are vital to high quality reflective education, but also provide a theoretical framework for the practice of and research into reflective learning.

Several instruments have been developed to assess the quality of teaching activities of tutors and clinical teachers.[11-14,33] The STERLinG is an important addition to these existing instruments, as it enables the assessment of specific teacher competencies needed for reflective teaching - for example stimulating students to focus internally in order to promote self-awareness and personal understanding. Furthermore, the STERLinG focuses explicitly on teacher competencies that create a safe (reflective) learning environment to enable students to deal with personal aspects. Future research might focus on the numbers of respondent ratings needed for reliable judgements of teacher competencies.

A strength of our study is the thorough methodology that we applied. First, our integrated methodological approach to investigating the instrument structure, combining several psychometric and interpretability criteria and using researcher triangulation, reduced the risk of over and underfactoring and increased the chances of finding a valid instrument structure.[27] The resulting component structure

corresponded closely with educational theories and reflection literature. In addition, subsequent confirmatory research verified the STERLinG structure as stable and replicable. The fact that our sophisticated approach yielded a theoretically meaningful instrument structure, which proved to be replicable in confirmatory research, not only supports the validity of the STERLinG structure, but also the validity of the trichotomy *supporting self-insight*, *creating a safe environment* and *encouraging self-regulation* as a credible theoretical framework for the practice of and research into reflective learning.

A limitation of our study might be the generalizability of the conclusions. The educational context and the content of the professional development courses may have emphasized specific reflective skills or reflective teaching competencies. However, the facts that our study was a multi-site study and that we applied a conscientious procedure of item collection and selection – educationalists, teachers of professional development courses and students of two universities of different disciplines participated in item-selection and reduction – reduce the risk of being too specific. In addition, the fact that our instrument structure corresponds with existing educational theories supports the validity of our instrument and its applicability in a variety of small group settings aimed at facilitating reflective learning.

The STERLinG was developed to assess teacher competencies essential for facilitating reflective learning *in small groups*. Since students are also supervised individually in practical training situations, facilitating reflective learning does not always take place in small group settings. Further research should focus on adjusting the STERLinG to settings within which students are taught individually in reflective learning, while preserving its structure *supporting self-insight, creating a safe environment* and *encouraging self-regulation*.

In conclusion, the STERLinG can be recommended for use in small group settings as a practical and valid tool for assessing teacher competencies and identifying those competencies that need to be improved in order to achieve high-quality reflective learning processes. The fact that the three STERLinG components were confirmed in confirmatory research and correspond with the educational functions necessary for achieving high-quality learning, supports the construct validity of the

STERLinG. In addition, the STERLinG provides coverage of important reflection domains. Apparently in reflection literature these important domains essential for teaching reflection have not been brought together before. Our study provides a theoretical framework for the practice of and research into reflective learning.

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# 5

## Student perceptions of teachers' competences that encourage reflective learning in small groups

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## Abstract

To achieve, maintain or improve teachers' competencies essential for high-quality reflective learning in small groups, it is important to assess students' perceptions of their teachers' competencies.

The aim of the study was to measure students' perceptions of their teachers' competencies to encourage reflection in small groups and to analyze differences between teachers from different curricula. Students from three curricula completed the STERLinG (Students rating Teacher competencies in Encouraging Reflective Learning in small Groups) questionnaire: speech and language therapy (n=143), medicine (n=278) and dentistry (n=80). The questionnaire measures teacher competencies to facilitate reflection. It contains 36 items on a five-point Likert scale, grouped into three sub-scales: *supporting self-insight* (18 items), *creating a safe environment* (7 items) and *encouraging self-regulation* (11 items). Teacher performance was considered excellent (item score ≥3.75), good (3.25-3.75), in need of attention (2.75-3.25) or insufficient (<2.75). Differences between curricula were analyzed with ANOVAs.

The competencies of teachers to *create a safe environment* were all valued as *good* or *excellent* and those to *encourage self-regulation* were all valued as *good*. The lowest scores were found in the subscale *supporting self-insight.* Twelve competencies were valued as *needing attention.* Speech and language therapy teachers were rated significantly higher on 26 competencies than were dental teachers.

When stimulating reflective learning in small groups, teachers seem competent to create a safe environment and to encourage students to take responsibility for their learning. Most deficiencies were found in the competencies of teachers to stimulate students' reflective skills. Therefore, training programmes should focus on teacher competencies aimed at supporting self-insight.

## Introduction

The ability to reflect on experiences and on one's own behaviour is a prerequisite to developing professional behaviour. [1-3] The small group setting seems an effective educational learning environment for developing the reflective skills of students. [4,5] To facilitate reflection, teachers of small groups need to be competent in three domains: *supporting self-insight*, *creating a safe environment* and *encouraging self-regulation*. [6] The first domain, *supporting self-insight*, relates to teacher competencies that focus on the content of reflection. This domain includes competencies such as encouraging students to engage in reflective thinking, providing them insight in how to reflect and helping them to apply these insights. In doing so, teachers stimulate students to make their experiences explicit and investigate emotions that influence professional behaviour. The analysis of these experiences should lead to a synthesis with existing behaviour and choices in order to adjust that behaviour. The second domain, *creating a safe environment*, relates to establishing a safe and trustworthy environment, which is a prerequisite for reflective learning. Teachers need to create an atmosphere in which group members feel free and safe to explore their feelings and emotions and in which they do not feel silenced, inhibited or intimidated. [7] The third domain, *encouraging self-regulation*, involves teachers' competencies that encourage students to take responsibility for their own reflective learning. Those competencies relevant to this domain include encouraging students to direct and monitor their own reflective learning. Teachers do so by stimulating students to verbalize what they know, do not know or need to know based on the analysis of professional experiences.

There is a conceptual framework describing the teacher competencies essential to facilitate reflective learning in small groups [6]; however, there are no data showing how competent teachers are in practice. Facilitating reflection in small groups is a complex skill. First, it places high demands on teachers' competencies, as the focus is on higher order skills such as analyzing experiences by comparing theory and professional practice, including personal feelings and professional behaviour. [8,9] Second, for a successful learning process, teachers need to perform well in all three domains.

The results from several qualitative studies indicate that students did not always perceive teachers' guidance as helpful towards engaging them in reflection. Platzer

et al.[7] described that students felt psychoanalyzed when teachers stimulated them to reflect, which made them leave the group. Boud and Walker [10] observed that teachers focused too strongly on the larger (medical) context of the experience and thus failed to engage students in meaningful personal reflective thinking. There are also indications that teachers' competencies may fail to create a safe environment. In some situations, students felt threatened because teachers used probing questions to stimulate them to reach deeper levels of reflection such as analysis and critical synthesis. [11] Teachers may also fail to encourage students to take responsibility for their own reflective learning when they insufficiently stimulate their students to summarize in their own words what they have learnt. [12] In general, teachers' competencies may fail to facilitate reflective learning in small groups, but we lack quantitative data to gain insight in the extent and nature of possible deficiencies. Therefore, this study focuses on students' perceptions of their teachers' competencies to encourage reflection in small groups.

To facilitate reflective learning in small groups, the focus is on the analysis of professional experiences. However, curricula differ in the design and implementation of reflective activities, and this might be of influence on teachers' performance. For instance, Aronson [13] described that a more structured teaching approach provides more chances to stimulate students to reflect in deeper and more meaningful ways. A structured approach includes, for instance, clear definitions of learning goals and an appropriate method to stimulate reflection; examples of this are the critical incident method or storytelling. [4,13] Structuring reflective learning also implies providing regular feedback moments for students. A last element in structuring reflective learning concerns scheduling sufficient time for reflective activities. [13,14] Differences in teaching reflection might influence teachers' competencies. The aim of this study was to measure students' perceptions of their teachers' competencies to encourage reflective learning in small groups and to analyze differences between teachers from different curricula. Our research questions were (1) what are students' perceptions of their teachers' competencies that stimulate reflection in small groups and (2) are there differences in teachers' competencies between different curricula?

## Methods

### *Context and respondents*

Students from three different curricula participated in the study: 226 speech and language therapy students (77 first-year students, 81 second-year students and 68 third-year students); 413 second-year medical students; and 152 dental students (49 first-year students, 53 second-year students and 50 third-year students). All students in each of these curricula participated in small groups in which the professional experiences of students are used to foster reflective learning. In all curricula, teachers facilitated these small-group sessions. Each group consisted of 7-10 students and each session lasted two hours. Besides these similarities between the three curricula, there were also some differences between them. These differences concerned the number of sessions during the year, the use of reflection approaches to analyze professional experiences, the focus on specific reflection skills (clarifying, analyzing, asking questions and generalizing), homework (number of written reflections), the frequency of formal feedback moments and the number of groups that one teacher facilitates (Box 1).

**Box 1. Characteristics of the curricula**

| | Speech and language therapy | Medical | Dental |
|---|---|---|---|
| Sessions per year | 16 | 6 | 6 |
| Use reflection models | + | + | + |
| Focus on specific reflection skills | + | - | + |
| Number of written reflections | 16 | 2 | 6 |
| Peer feedback on written reflections | 16 | 0 | 0 |
| Teacher feedback on written reflections | 16 | 2 | 6 |
| Number of groups one teacher facilitates | 5-8 | 1 | 2-3 |

### *Procedure*

All speech and language therapy teachers (n=5), medical teachers (n=32) and dental teachers (n=7) were informed about the study by the coordinator of their

professional development course and consented to the study. The students assessed their present teacher at the end of the last session of the course. They were informed that participation was anonymous and voluntary. To prevent socially desirable answers, the teacher left the room until the students had completed the questionnaires. Per group, one of the students inserted the completed questionnaires in an envelope, sealed it and delivered it to the mailbox of the researcher.

***Instrument***

The STERLinG (Students rating Teacher competencies in Encouraging Reflective Learning in small Groups) questionnaire was used to investigate teacher competencies that stimulate reflective learning in small groups. [6] The questionnaire contained 36 items, which had to be answered on a five-point Likert scale (1 – strongly disagree, 5 – strongly agree), grouped into three sub-scales: *supporting self-insight* (18 items), *creating a safe environment* (seven items) and *encouraging self-regulation* (11 items). *Supporting self-insight* measures the extent to which the teacher encourages students to engage in reflective thinking, provides them with insight in how to reflect and helps them to apply these insights. *Creating a safe environment* measures the extent to which the teacher creates a safe and trustworthy learning environment during the small group discussions. *Encouraging self-regulation* measures the extent to which the teacher stimulates students to apply reflective skills autonomously in order to prepare them for professional practice. The STERLinG questionnaire was found to display high reliabilities with alphas of 0.95 for the scale, and 0.91, 0.86 and 0.86 for the respective subscales.

The STERLinG structure was found to correspond closely with educational theories and with recurring themes in the literature on teaching and learning reflection. That plus the fact that the STERLinG structure was found to be stable and replicable supports the STERLinG questionnaire as a valid tool.

***Interpretation of the item score***

The outcomes of the STERLinG procedure can be used to pinpoint specific strengths and weaknesses of the teaching staff. To do this, one needs to inspect the responses to individual items. We consider items with a mean score of ≥3.75 as *excellent*, items with a mean between 3.25 and 3.75 as *good* and items with a mean between 2.75

and 3.25 as *in need of attention*. All items with a mean below 2.75 indicate *insufficient* teaching competencies.

***Analysis***

The mean scores and standard deviations were calculated for each item of the three subscales of STERLinG. Differences between perceived teacher competencies from different curricula were analyzed by means of ANOVAs.

## Results

***Descriptives***

The response rates were 63% for the speech and language therapy students (N=143), 67% for the medical students (N=278) and 53% for the dental (N=80) students. With regard to the speech and language therapy and dental student populations, the gender distributions in the samples were representative for the entire population at the respective institutions: 100% female, and 62% female vs 38% male, respectively. The gender distribution in the sample of medical students (80% female vs 20% male) was slightly different from the general medical student population: more female students participated.

***Students' perceptions of their teachers' competencies***

The list of students' perceptions of their teachers' competencies is given in Table 1. The lowest scores were found in the subscale *supporting self-insight* with item 18 ('helps me to be aware of the cultural influences on my opinions') as lowest. Several items were valued as *in need of attention.* The highest scores were found in the subscale *creating a safe environment.* Students valued all teachers' competencies in this subscale as *good* or *excellent.* Item 25 ('is willing to accept feedback from students') was rated highest. In the subscale *encouraging self-regulation*, all items were valued as *good*. Item 26 ('stimulates me to take responsibility for my own learning process') was rated highest.

***Differences between the three curricula***

The competencies of speech and language therapy teachers were valued highest in all three subscales: for 35 items, average scores were >3.25. Dental teachers were valued as least positive in all three subscales: for 23 items, mean scores were

**Table 1. Mean scores (M) and standard deviations (SDs), and differences between teachers of different curricula**

| | | SLT | | Medicine | | Dentistry | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Item (no) | M | SD | M | SD | M | SD | F (df) | p< |
| | My teacher…[a] | | | | | | | | |
| 1 | Helps me recognize personal feelings | 3.75 | .71 | 2.94 | .93 | 2.88 | .88 | 46.684 (2, 498) | .001 |
| 2 | Helps me be aware of emotions that influence my behaviour | 3.69 | .65 | 2.92 | .90 | 2.84 | .80 | 46.946 (2, 498) | .001 |
| 3 | Helps me investigate my behaviour from a distance | 3.74 | .72 | 3.27 | .94 | 3.15 | .86 | 18.870 (2, 299)[b] | .001 |
| 4 | Makes me aware of the possibility of conflicting feelings | 3.51 | .78 | 3.00 | .90 | 3.19 | .87 | 16.609 (2, 497) | .001 |
| 5 | Helps me to better understand myself | 3.48 | .83 | 2.96 | .88 | 2.99 | .90 | 17.883 (2, 497) | .001 |
| 6 | Helps me to develop personal awareness | 3.71 | .69 | 3.22 | .88 | 3.25 | .85 | 18.063 (2, 283)[b] | .001 |
| 7 | Helps me to express my feelings | 3.36 | .85 | 2.79 | .88 | 2.61 | .95 | 25.860 (2, 498) | .001 |
| 8 | Makes me aware that analysis of experiences is an ability that helps me cope with difficult situations | 3.83 | .74 | 3.52 | .90 | 3.36 | .97 | 10.353 (2, 199)[b] | .001 |
| 9 | Stimulates me to pay attention to contradictory feelings | 3.47 | .77 | 2.97 | .91 | 2.95 | .94 | 16.854 (2, 497) | .001 |
| 10 | Stimulates personal insight | 3.76 | .67 | 3.44 | .89 | 3.41 | .91 | 7.707 (2, 258)[b] | .001 |
| 11 | Helps me to take a closer look at my thinking habits | 3.71 | .75 | 3.09 | .90 | 3.15 | .84 | 26.308 (2, 497) | .001 |
| 12 | Holds up a mirror to myself | 3.45 | .84 | 3.06 | .93 | 2.65 | .94 | 20.606 (2, 496) | .001 |
| 13 | Helps me recognize a starting point from which to move to new behaviour | 3.09 | .75 | 2.83 | .86 | 2.63 | .84 | 8.668 (2, 496) | .001 |
| 14 | Helps me to put experiences into perspective | 3.59 | .70 | 3.55 | .88 | 3.36 | .90 | 2.173 (2, 260)[b] | n.s. |
| 15 | Stimulates in-depth analysis of aspects of significant events | 3.68 | .67 | 3.25 | .94 | 3.32 | .88 | 13.024 (2, 275)[b] | .001 |
| 16 | Makes me aware that there is no right or wrong answer in event analysis | 3.80 | .84 | 3.32 | .94 | 3.46 | 1.04 | 12.244 (2, 254)[b] | .001 |
| 17 | Helps me make my experiences concrete | 3.91 | .67 | 3.53 | .87 | 3.61 | .91 | 10.405 (2, 254)[b] | .001 |
| 18 | Helps me to be aware of the cultural influences on my opinions | 3.25 | .87 | 2.70 | .87 | 2.58 | .96 | 21.835 (2, 493) | .001 |
| | My teacher… [a] | | | | | | | | |
| 19 | Develops trusting relationships with the students | 3.99 | .86 | 3.65 | .89 | 3.39 | 1.08 | 11.090 (2, 236)[b] | .001 |
| 20 | Makes me feel safe | 3.94 | .84 | 3.30 | .90 | 3.22 | 1.02 | 25.870 (2, 253)[b] | .001 |
| 21 | Establishes a safe learning environment in the group | 4.08 | .77 | 3.54 | .82 | 3.46 | .94 | 21.478 (2, 251)[b] | .001 |
| 22 | Has an open relationship with the students in the group | 3.88 | .79 | 3.74 | .79 | 3.61 | .99 | 2.579 (2, 234)[b] | n.s. |
| 23 | Shows commitment with the students of the group | 3.92 | .83 | 3.91 | .77 | 3.70 | 1.02 | 1.903 (2, 226)[b] | n.s. |
| 24 | Affirms my self-worth | 3.77 | .78 | 3.40 | .80 | 3.30 | .97 | 10.758 (2, 238)[b] | .001 |
| 25 | Is willing to accept feedback from students | 4.08 | .76 | 3.94 | .78 | 3.80 | .96 | 3.032 (2, 234.0) | n.s. |
| | My teacher… [a] | | | | | | | | |
| 26 | Stimulates me to take responsibility for my own learning process | 3.83 | .75 | 3.73 | .83 | 3.35 | .93 | 8.420 (2, 247)[b] | .001 |
| 27 | Encourages me to develop my own learning objectives | 3.73 | .84 | 3.68 | .83 | 3.34 | .90 | 6.177 (2, 498) | n.s. |
| 28 | Stimulates me to take responsibility for my personal development | 3.67 | .73 | 3.57 | .87 | 3.42 | .85 | 2.360 (2, 287)[b] | n.s. |
| 29 | Stimulates me to take responsibility for my professional development | 3.65 | .72 | 3.66 | .86 | 3.38 | .82 | 3.948 (2, 497) | n.s. |
| 30 | Helps me develop professional awareness | 3.72 | .74 | 3.63 | .78 | 3.51 | .83 | 1.846 (2, 498) | n.s. |
| 31 | Stimulates me to give constructive feedback about our group's performance | 3.80 | .79 | 3.41 | .86 | 3.30 | .85 | 13.074 (2, 297)[b] | .001 |
| 32 | Gives feedback on my attitude | 3.39 | .97 | 3.61 | .92 | 3.46 | 1.01 | 2.698 (2, 497) | n.s. |
| 33 | Stimulates me to summarize what we had learnt from significant analysis | 3.43 | .85 | 3.16 | .90 | 3.21 | .99 | 4.083 (2, 496) | n.s. |
| 34 | Stimulates me to ask questions | 3.75 | .79 | 3.57 | .89 | 3.65 | .90 | 2.057 (2, 498) | n.s. |
| 35 | Stimulates me to make choices | 3.48 | .77 | 3.30 | .85 | 3.38 | .99 | 1.968 (2, 242)[b] | n.s. |
| 36 | Stimulates me to assess my own performance | 3.76 | .82 | 3.59 | .83 | 3.64 | .92 | 1.753 (2, 498) | n.s. |

SLT: speech and language therapy

[a] Scale names: *Supporting self-insight* (items 1-18), *Creating safe environment* (items 19-25), *Encouraging self-regulation* (items 26-36)

[b] Brown-Forsythe test was performed because homogeneity of variance test produced significant outcomes

>3.25 (Table 1). In the subscale *supporting self-insight*, speech and language therapy teachers were rated on five items as *excellent,* 12 items were valued as *good* and only one item was seen as *in need of attention*. Medical students rated 10 of their teachers' competencies as *in need of attention* and one item as *insufficient*. The competencies of dental teachers were rated on seven items as *in need of attention* and four items as *insufficient.*

Speech and language therapy teachers were rated significantly higher on 23 competencies than were dental teachers. In the subscale *supporting self-insight*, on 17 out of the 18 items speech and language therapy teachers' competencies were significantly higher than those of medical and dental teachers. No significant differences were found for only one item: 'helps me to put experiences into perspective' (item 14). With respect to *creating a safe environment*, speech and language therapy teachers were assessed significantly higher on four out of the seven items: 'develops trusting relationships with students' (item 19), 'makes me feel safe' (item 20), 'establishes a safe learning environment in the group' (item 21) and 'affirms my self-worth' (item 24). With respect to *encouraging self-regulation,* speech and language therapy teachers were assessed significantly higher on two of the 11 items than were medical and dental teachers.

## Discussion and conclusion

The aim of this study was to assess students' perceptions of their teachers' competencies to encourage reflection in small groups and to analyze differences between curricula. Students perceived their teachers' competencies quite positively except for competencies regarding *supporting self-insight.* Comparing the teachers of the three curricula, we observed that most significant differences were found on the subscale *supporting self-insight.* Speech and language therapy teachers received the highest scores and medical teachers received the second highest.

Students perceived their teachers as most competent on the subscales *creating a safe environment* and *encouraging self-regulation*. A possible explanation of this outcome is that these competencies represent more general teacher competencies needed to guide small group learning. [15] Also, in tutorial groups, teachers stimulate learning by creating a positive atmosphere and helping students in planning, monitoring and evaluating their learning process. [16,17] Teachers involved in reflective learning

usually already have experience with small groups and it can be expected that they are competent in several aspects of the *creating a safe environment* and *encouraging self-regulation* dimensions.

Teachers' competencies are scored highest in the speech and language therapy curriculum. A possible explanation for this outcome might be the stronger structured curriculum. The speech and language therapy curriculum had more sessions (16) compared to the other curricula (six each). Teachers guided more groups per year and there was an explicit focus on *training* of skills needed for good critical reflections including a large number of written reflections according to an established format. The higher frequency of sessions and facilitating several groups provided speech and language therapy teachers more opportunities to train their competencies. Cruess & Cruess recommend implementing sessions on a regular basis as part of longitudinal curriculum since this promotes the development of reflection. [14]

Self-regulation of learning is affected by perceptions of social contacts between teachers and students. [18] More sessions provided speech and language therapy teachers and students more opportunities to get to know each other, for the teachers to give feedback and for them to fine-tune their approach to students' self-regulation. This may also have contributed positively to the perceptions of speech and language therapy students of their teachers' competencies.

In the speech and language therapy curriculum, there was an explicit focus on *training* of skills needed for critical reflections. Henderson et al.[4] and also Aronson [13] mentioned that a focus on teaching reflective skills is necessary to facilitate reflective learning. Therefore it is conceivable that speech and language students have a more positive perception of their teachers' competencies concerning the development of reflective skills.
Strict requirements concerning the number of written reflections provide teachers more chances to help students to engage in reflection. Speech and language therapy students write 16 reflections according to an established format, whereas dental and medical students write six or fewer reflections per year. Structuring written reflections and regular feedback moments seems to be positively related to students' perceptions of their teachers.

Our results seem to reveal that continuity and structure of reflective learning enhance teachers' competencies to facilitate reflective learning in small groups. However, a limitation of this study is that the number of participating speech and language therapy teachers (n=5) and dental teachers (n=7) was very restricted, and this might have biased the outcomes. To investigate if a more structured approach really matters, the design of future studies will have to include sufficient numbers of teachers.

Students' perceptions of the student-teacher relationship seem to influence the development of reflective learning. [18] Further research should investigate if students learn better if they have higher scoring teachers.

To conclude, supporting students' self-insight seems to be the hardest part of facilitating reflective learning. We suggest that teacher training programmes should focus on competencies entailing how to encourage students to engage in reflective thinking, provide them insight in how to reflect and help them to apply these insights.

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De enige manier om de wereld te begrijpen ……. is door verhalen te vertellen. De wetenschap brengt alleen kennis van de werking der dingen. Verhalen brengen begrip. (Marcel Möring  Uit: In babylon p.85)

# 6

## Students' excuses for not responding to unprofessional situations in clinical practice

Mirabelle Schaub-de Jong, Janke Cohen-Schotanus, Marian Verkerk

## Abstract

We teach medical students to value their professional choices taking into account their knowledge and professional norms, given circumstances. From the perspective of accountability, being an important aspect of reflective professionalism, we expect students to react to unprofessional situations. In practice, however, it appears they have difficulties to do so. In this study we explored whether students recognize unprofessional situations, which excuses they have for not responding to such situations and the role of supervisors and peers in their excuses.

We used the method of online focus groups, which meant a web-based interactive moderated discussion. Sixteen medical students in the second year of their Master's degree participated anonymously during their clerkship in two separate groups. Four vignettes describing unprofessional situations were used to stimulate the online discussions. A thematic analysis of the written contributions was conducted.

Students recognized the unprofessional situations described in the vignettes and added their own experiences in similar situations. Excuses they mentioned for not reacting were: *being dependent on the supervisor for feedback and assessment, not feeling safe, wanting to meet the expectations of others, feeling insecure about own cognitive abilities* and *not feeling responsible.* Themes students mentioned about their supervisors and peers, which fuel their excuses were: *not being communicative, not having an open attitude, not creating room for discussion, transgressive behaviour, not supporting the institutional culture* and *not maintaining a good relationship*.

Students mentioned several excuses for not responding to unprofessional situations. The validity of these excuses seems to be dependent on the behaviour of their supervisors and/or peers. If supervisors are open-minded and supportive the excuses are less valid. In order to teach students to be accountable for their professional behaviour, we advise discussing unprofessional situations and focusing in particular on the validity of excuses for not responding.

## Introduction

Medical students learn to account for their professional choices in balancing 'doing things right' (according to medical knowledge and norms) and 'doing the right things' given the circumstances in which the choices are made. [1,2] They are taught to value professional situations in terms of normative reasons: is their behaviour acceptable according to knowledge, norms and values, given the circumstances. In doing so students learn to recognize and apply professional norms in actual professional situations. In the context of clinical practice professional norms for instance are respect for the person, respect for the privacy of the patient and responsibility.

During clerkships students participate in complex and sometimes unprofessional situations and may experience gaps that consecutively arise between espoused values and actual practice. [3] From the perspective of accountability we expect students to react to unprofessional situations. In practice, however, it appears that they have difficulties to do so. [4,5]

A possible explanation why students do not react to unprofessional situations is that students do not recognize the professional norms for a situation. In that case they lack the knowledge of normative reasons that justify professional behaviour. Our first research question is if students do recognize unprofessional situations described on the vignettes.

In case students *do* recognize unprofessional situations there must be other, motivating, reasons for not reacting. [6] Some of these motivating reasons can count as excuses for not reacting on unprofessional situations. We wondered which motivating reasons students use for their excuses not to react to unprofessional situations.

There are external circumstances that can make the excuses offered, more or less valid. Until now, research has focused on determining external circumstances as institutional culture, time constraints, high workload. [7,8] Also the role of supervisors and/or peers [9, 10] or the role of assessors [11] seems to play an important role in constructing students' professional behaviour. This is of interest as professional behaviour is seen as being constructed or suppressed through inter-personal interaction with other professionals or supervisors. [3] Our study explores the external circumstances related to the excuses given. We focus on the role of supervisors and/or peers in excuses because they play an important role in the

training of medical students. [4,12] Summarized: in this study we explored whether (1) students recognize unprofessional situations described on the vignettes, (2) which excuses they have for not responding to such situations and (3) the role of supervisors and peers in their excuses.

## Methods

### *Context and participants*

The study was conducted at the Faculty of Medical Sciences of the University of Groningen in the Netherlands. The focus of part of the curriculum is on teaching students accountable professionalism. Students are trained to reflect upon and react to the unprofessional behaviour of themselves and others. While studying for their Master's degree students participate in clerkships at the University Medical Center or at affiliated hospitals. Students in the second year of their Master's degree (N=395) were asked to participate in the study because they have sufficient experience of clerkships. All students received a letter explaining the online focus group study being conducted over the period of a week. Participation was rewarded with a 25-euro gift voucher. The first 16 students who reacted were assigned to one of the two online focus groups. Each group consisted of eight students.

### *Procedure: Online focus groups*

We used a qualitative approach by way of 'online focus groups', or web-based interactive moderated discussion. [13,14] This method was chosen because (1) during clerkships the students could not easily get together in person because of the various locations of the hospitals (2) the students could contribute to the group discussions from their individual locations in the affiliated hospitals at a time and in a place that suited them, (3) the students could choose how much time they needed to react, giving them more time to reflect and (4) as the study was online and anonymous the students could freely discuss sensitive topics. [13]

Precautions were taken to guarantee the anonymity of the participants and the confidentiality of their contributions to the online discussions. All participants received a letter with background information about the study, an individual login name and a password corresponding to the group in which they participated. The

participants had anonymous access to their discussion group. Only the participants of a particular group were able to view the anonymous contributions of the members of their own group.

Four vignettes describing less desirable professional behaviour were developed as stimuli for the online discussions and further questions were added (Table 1), in order to prompt the participants to describe their own experiences of unprofessional situations, their reasons for not reacting to such situations and the role of their supervisors and peers. The vignettes focused on the subjects: *disrespect, violation of patient's privacy, transgressive behaviour, demonstrating a lack of responsibility*. These subjects were also mentioned in small group discussions where students reflect on their professional experiences. On days 1, 3, 4 and 5, a vignette representing undesirable professional behaviour was posted together with some questions. On day 2, additional questions based on the vignette of day 1 were posted. Both groups received the same vignettes and questions. All of the members of each group answered the questions and were invited to react to each other's contributions. On day 2, a reminder was sent to the participants who had not yet responded. All of the vignettes posted were open for responses until day 7. The first author acted as moderator during this week and posted additional questions if the participants' views need clarification.

## Table 1 Script: unprofessional situations and questions online focus group

**Day 1 Introduction**
You have learned in the lessons about professional behaviour that you must respect the patient and his/her personal data. During your clerkship, you hear a student mentioning patients by name in the staff room. Another student and a resident are also participating in the conversation. You feel that they are gossiping. It bothers you, but you do not say anything.

**Questions day 1**
1. Do you recognize this situation from your own clerkship? Have you experienced similar situations where the unprofessional behaviour of others has bothered you, but where you did not say anything? Why didn't you say anything? Which factors in your environment determine whether you do or don't say anything?
2. How does your supervisor or doctor influence you in such situations?
3. You can respond to the comments of the other members of your group.

**Day 2 Introduction**
In the case from day 1 the student finally decides not to react to what he/she considers to be unprofessional behaviour.

**Questions day 2**
1. How do you react if you see your peers behaving unprofessionally? How is your own behaviour influenced by such behaviour?
2. How do you react if you see doctors/supervisors, specialists or nurses behaving unprofessionally? Does it depend whether you are dealing with your peers or other professionals? Why is this?
3. Have you ever behaved unprofessionally? Why was this? What was the role of your supervisor here? How does the atmosphere in the department play a part in this?
4. You can respond to the comments of the other members of your group.

**Day 3 Introduction**
Imagine you are observing an operation during your clerkship at the gynaecology department. The five students present are given the opportunity to practise performing an internal examination on the anaesthetized patient. It is unclear whether the patient has given prior consent to this. You feel uncomfortable about this and do not want to do it. You know that it is unacceptable and yet you still do it.

**Questions day 3**
1. Have you ever experienced such a situation? Can you describe this situation? Do you have similar examples from during your clerkship in which you find something unacceptable, but do what is asked of you anyway? Give concrete examples of interactions with patients.
2. How do you react in such situations and why?
3. How does your supervisor influence your behaviour? What do you expect from your supervisor? And what role should your supervisor have here?
4. You can respond to the comments of the other members of your group.

**Day 4 Introduction**
It is an important duty of supervisors to create a safe working climate not just for their patients but also for students. Imagine that you regularly experience comments of a sexual nature ('For such a pretty thing like you...') or intimidating behaviour from doctors (you are not asked to join them for lunch but must instead take care of some extra chores). How do you react to this?

**Questions day 4**
1. Have you ever experienced this? Have you had comparable experiences? How do you react in such situations?
2. How does your supervisor influence your behaviour in such situations? What part do your peers play?
3. Imagine that you raise this situation in a peer group discussion and are advised to discuss this behaviour with your supervisor. How do you follow this advice in practice and what could prevent you from doing this?

**Day 5 Introduction**
You are on duty with a peer student. Your peer was supposed to have performed a CTG on Ms B. three hours ago, but has forgotten to do it. Now, three hours later, the student does perform the CTG. The results are good and although the CTG was performed too late, this has no negative effects for the patient. Your fellow student informs neither the patient nor the resident that the CTG was performed too late, and your fellow student does not make a note of this in the patient's file. You find this unacceptable. You are not sure whether to say something, and if so to whom? You finally say nothing.

**Questions day 5**
1. Have you ever experienced this? Have you experienced comparable situations? What reasons do/did you have for saying nothing when you should have done?
2. How does your supervisor influence your behaviour in such situations? What role do your peers play? Can you describe this influence? What role do other professionals have in this, for example, nurses?

**Day 6 &7 Introduction**
On day 6 & 7 you can describe any further topics/example that are relevant to the topics discussed last week.

*Analyses*

The first author conducted the content analysis of the written contributions. The written reactions to the vignettes and related questions were analyzed per research question. The analysis used multiple close readings to focus on (1) students recognizing unprofessional situations, (2) identifying their excuses (motivating reasons) for not responding and (3) the role their supervisors and peers played during their clerkship in these situations. Recurrent themes were identified, which entailed assigning names to quotes and combining related quotes into themes. [15] This coding process was independently cross-checked by eight educationalists, three physicians and one teacher in nursing, all of whom are involved in medical educational research. They received at random one of the two written descriptions of the online focus groups, and coded the contributions in this group. They then discussed their findings and adjusted and refined the coding scheme. The final step in the analysis involved drawing up the entire taxonomy with the major themes of each of the four domains defined by the research questions and quotes to illustrate this.

## Results

*General*

All of the students (N=16) commented on the posted vignettes, both to each other and in response to additional questions of the moderator (Table 2).

**Table 2 responses per group per day**

| Posted comments | group 1 | group 2 |
|---|---|---|
| Day 1 | 15 | 14 |
| Day 2 | 26 | 22 |
| Day 3 | 17 | 18 |
| Day 4 | 14 | 14 |
| Day 5 | 15 | 10 |
| Day 6 | 0 | 4 |
| Day 7 | 0 | 0 |

The findings of the analysis are presented below along with some representative quotes from the students' written contributions to illustrate the themes that emerged. Each theme is illustrated by representative quotes. The entire taxonomy with distributions of the themes over the domains is presented in Table 3.

**Table 3 Students' excuses and role of supervisors/peer students**

| Domain | themes |
|---|---|
| **Excuses** | Dependent on the supervisor for feedback and assessment<br>Wanting to meet the expectations of others<br>Not feeling safe<br>Feeling insecure about own cognitive abilities<br>Not feeling responsible |
| **Role of supervisors** | Not being communicative<br>Not having an open attitude<br>Not creating room for discussing<br>Transgressive behaviour<br>The institutional culture |
| **Role of peers** | Not maintaining good relationships |

***Recognizing unprofessional situations***

Students recognized that the professional standards of respect for the person, respect for the privacy of the patient and showing responsibility were violated in the unprofessional situations in the vignettes. They also added their own experiences in similar situations.

**Student group 2:**

*Accidentally not anonymizing patient data and taking it anywhere with you or leaving it behind (I also do it myself)*

***Themes for not responding to unprofessional situations***

The narratives relating to the second research question described excuses for not responding to unprofessional situations.

A first theme was *being dependent on the supervisor for feedback and assessment.* Students explained that their dependent position in the hierarchy in the medical setting made it important for them to maintain good relationships with their supervisors. Their excuse for not responding to unprofessional situations was reinforced by the fact that their study progress depended on their supervisors: commenting upon supervisors' behaviour could jeopardise their evaluations.

**Student group 1:**

*I think it's hard to comment upon a supervisor because you don't want to spoil the atmosphere, especially given the assessment structure which we as students are subject to...*

*The supervisor is the boss. If he wants to teach me something, I do it. You are dependent; you want to learn.*

A second theme was *not feeling responsible* for what is going on. These were situations which the students perceived as unprofessional but where they assumed that their feedback would have little or no effect. They therefore felt no *responsibility* to provide feedback or said that it was not their task to provide feedback. In the quote below, the student questions whether he or she has a normative reason for responding to this behaviour. He or she did perceive the supervisor's attitude as negative but decided not to respond.

**Student group 2:**

*Sometimes it is perfectly obvious that someone [supervisor MS] does not want feedback. I then won't even try, however rude and unprofessional that person's behaviour is, because you only get a rude and unprofessional response, and I don't want that. In such cases I find that as a student my responsibility is limited...*

A third theme was *wanting to meet the expectations of others.* Students observed the unprofessional behaviour of peers or supervisors, but did not react, because they felt they were expected to meet the expectations of others and uphold the norms and values of the group, even if this resulted in unprofessional behaviour.

**Student group 2:**

*But if everyone does it* [behaves unprofessionally, MS] *it's strange if you're the only one to hold back.*

In some narratives students tried to withdraw from *wanting to meet the expectations of others*, but this had consequences for their position in the group.

**Student group 2:**

*I didn't particularly enjoy myself during the clerkship. I promised myself I wouldn't to join in with the others when they were joking and laughing about patients, but then you're not part of the group. I was really glad when I finished the clerkship.*

The fourth theme *feeling insecure about their own cognitive abilities* showed up in descriptions where students felt uncertain about their own (medical) knowledge, although they knew there was a normative reason for reacting to the unprofessional behaviour of supervisors.

**Student group 1:**
*…that you're aware that you yourself don't know everything...*

A last theme students mentioned as an excuse was *not feeling safe*. They perceived the learning environment and the interaction with their supervisor as threatening. In this situation the student again knew that he or she had a normative reason for responding, but the attitude of the supervisor affected his or her excuse.
**Student group 2:**
*I didn't dare provide feedback to a physician about a very bad breast examination he had carried out, because I was afraid he would put me down with disparaging remarks.*

***The role of supervisors/peers***
The last research question focused on the role of supervisors or peers. The students' excuses for not reacting to unprofessional situations appear to depend on situations in which they were confronted with less desirable behaviour on the part of their supervisors or peers. The descriptions of these two roles were separated to improve our understanding. We have first described the students' narratives on the role of their supervisor followed by their narratives on the role of their peers.

***Role of supervisors***
The students said that whether they reacted to unprofessional situations was affected by the quality of the learning atmosphere created by the supervisor. They also mentioned that how they perceived the interaction with their supervisors had an enhancing or a constraining influence on their reasons for not reacting to the unprofessional behaviour of others or whether they discussed their own unprofessional behaviour.
**Student group 1:**
*Some doctors are a bit more approachable…with them you are more likely to admit a mistake than with others who are not so approachable.*

With regard to the role of their supervisors, the students mentioned the themes of *not being communicative* and *not having an open attitude.* The theme of *not being communicative* related to descriptions of the quality of the supervisor's communication skills.

**Student group 2:**
*If someone communicates openly and gives you room for feedback, it's easier to respond than if a doctor is arrogant.*

*Not having an open attitude* related to the supervisors' attitudes to their students. The students mentioned that their rudeness and negative interaction with them made them feel uncomfortable. They did not dare to refuse tasks that they perceived as unprofessional.

**Student group 2:**
*At that moment, I didn't have the nerve to tackle this situation and therefore didn't dare to follow my gut response, which was not to do the DRE and thus contradict the supervisor.*

On the other hand, if the supervisors were friendly and positive this had a positive influence on the students' well-being.

**Student group 1:**
*It depends a bit on which physician accompanies you. If a doctor is very relaxed and accessible, and you're comfortable with him or her...*

In other narratives the students mentioned a third theme of *not creating room for discussion*. The supervisors' willingness to receive feedback created room for students to discuss unprofessional situations. Most of the time students perceived there was no room for discussion.

**Student group 2:**
*Some doctors are very approachable and welcome feedback. I would dare open my mouth to them.*

In the rare situations in which the supervisors did create opportunities for students to learn to apply professional behaviour the students were too stunned to make use of the opportunity.

**Student group 2:**
*So far in my clerkships, only one doctor has asked for feedback about her performance... You're really just dumbstruck, but if more doctors would follow her example it would be much easier for students to give feedback.*

A fourth theme of *transgressive behaviour* was found in descriptions of belittlement or sexual harassment. Some students felt that remarks made by their supervisors violated their personal boundaries.

**Student group 1:**
*I can't believe the comments some doctors sometimes make, for example, an orthopaedist who asked me whether, if he gave me a g-string, I would wear it…*

A fifth theme focused on the supervisor's role within *the institutional culture* of a specialty. Students perceived differences in culture between institutions/ departments and in the supervisor's attitude and professional behaviour. These differences became visible in clinical interactions with patients, family or students.
**Student group 2:**
*I think whether you experience something as unprofessional behaviour depends a bit on the department where you are doing your clerkship. For example, surgeons seem more blunt than internists, but that is rather typical of their profession.*

Within a specialty the institutional culture was modelled on the supervisors' behaviour. Students perceived the institutional culture through the behaviour of their supervisors, and they adapted their professional attitude and actions according to the desirable institutional culture of a particular specialty.
**Student group 1:**
*I think you often, consciously or unconsciously, adapt to the culture of your environment...*
**Student group 2:**
*In a few minutes doing a quick physical examination: this is, quite bluntly, because that's how the surgeon did it and therefore how you are expected to do it.*

***Role of peer students***
The contributions from the focus group concerning the role of peer students revealed only one theme: *not maintaining good relationships.* During their clerkship the students worked together with peers. The students mentioned that their relationship with their peers enabled them to let off steam and share feelings, both of which motivated them not to react to an unprofessional situation involving one of their peers.
**Student group 2:**
*If I see my peers behaving unprofessionally... whether I would say anything really depends on our relationship. I can't remember a single time when I did dare to say anything.*

## Discussion and Conclusion

During clerkships students experience unprofessional situations and they recognize the professional norms of what is right or wrong. Students indicate that they will not always react to unprofessional situations even though they know they should. The excuses for not reacting are: *being dependent on the supervisor for feedback and assessment, not feeling safe, wanting to meet the expectations of others, feeling insecure about my own cognitive abilities* and *not feeling responsible.* Some important themes students mention relating to their supervisors and peers that affect their excuses are: *not being communicative, not having an open attitude, not creating room for discussion, transgressive behaviour* and *the institutional culture*.

From a perspective of accountability it is undesirable that students do not react to unprofessional situations. Medical students are taught to be accountable for their professional choices. They should recognize and apply professional norms in actual situations. They are also taught to clarify and analyse unprofessional situations. In practice, however, they are often faced with unprofessional situations and it appears that they have difficulties to react. [4,5] They put forward motivating reasons not to react to these unprofessional situations and access them as excuses. Recognizing excuses and assessing the validity is of ample importance for the reflection process of students.

The question is when excuses (*feeling insecure about one's own cognitive abilities, not feeling safe* or *not being responsible*) can count as valid. Students mentioned that their own medical knowledge was insufficient to react to an unprofessional situation. In this situation students' excuse for not reacting can be considered as valid as they did not know or were insecure of what was right to do. Students sometimes recognized an unprofessional situation upon which they did not react with the excuse that they did *not feel safe*. For instance in situations where they are subject to assessment based on their behaviour. The validity of this excuse depends on the actual ground for *not feeling safe*: is it an unchecked feeling or depending on factual experiences with supervisors. An excuse like *not being responsible* may be more or less valid when it relates to unprofessional behaviour of staff or residents. A student might not feel protected by the established medical hierarchy to speak up as they are lowest in ranking [4] and moreover, the whole premise of medical training and medical practice has been located within the master apprentice model. This means that experience, responsibility and knowledge are imbedded in status

and authority. [16] However, the validity again depends on the actual ground for *not being responsible:* is it an unchecked feeling or depending on factual experiences with the institutional culture. Investigating the validity of students' excuses provide a deeper understanding of the conflict of potentially opposing professional norms (dignity and respect for the patient), professional duties (obedience in the face of the supervisor) and students' need to gain experience in order to become a good doctor. Therefore the validity of students' excuse within this area of conflicting interest deserves further investigation.

The question of the validity of excuses also applies to excuses that relate to the role of supervisors and/or peers. For instance, some students mentioned that the supervisor requested that they carry out unnecessary physical examinations 'for educational reasons'. The students believed that they were excused for not reacting because of 'fear of low grades upon refusal to carry out the examination'. One can imagine that in situations where the supervisor is a poor role model (*not being communicative, not having an open attitude, not creating room for discussion, transgressive behaviour*) the circumstances can count as aggravating, and the excuses given could thus be considered valid. On the other hand, in situations where supervisors are a good role model such excuses may prove less valid.
Role models are an important source for learning professional behaviour. Particularly poor role models seem to have a great impact on students' professional behaviour. [8,9,17-19] In our study in some cases students' professional choices were negatively influenced by their supervisor. It is these supervisors who develop and shape the values and behaviour of medical students by providing cues for what is acceptable within the clinical practice. [20] There are indications that students being exposed to unprofessional situations might copy their supervisor's undesirable behaviour. [11,20,21] The consequences of not reacting to unprofessional situations and using (invalid) excuses for students' professional behaviour should be further investigated.

During clerkships, the ability to reflect is a prerequisite to prevent students to develop unprofessional behaviour. The professional competence of students to make choices regarding unprofessional situations needs to be fostered. Therefore, it is important that there is time to reflect on unprofessional situations. [19,21] There are convincing indications that small group discussions aimed at analyzing

unprofessional situations can be beneficial for students' professional development. In the social interaction of the group students learn to understand themselves better and to refine their critical and professional thinking. [22] Reflection will be stimulated by discussing beliefs, values and difficulties students encounter during their clerkship. [1] Students can also discuss the validity of their excuses and determine if they are indeed blameworthy for not responding or not. We believe that discussing the validity of excuses for not responding to unprofessional situations will also improve students' accountability. We suggest that supervisors should be trained to stimulate this process by (1) allowing discussions about professional and unprofessional situations and (2) creating opportunities to apply professional behaviour in practice.

A limitation of this study might be the fact that the data were collected from only one medical school and that the descriptions were based on students' experiences from one clerkship. However, students from nine different hospitals participated, which increased the variety of situations the students had experienced. A further limitation is that the self-selection of participants may cause a bias towards less positive experiences. However, the aim of our study was to achieve a deeper understanding of students' excuses rather than a generalization of experiences. Future studies should focus on further exploration of students' excuses in more diverse institutions and clerkships.

The method used in this study was online focus groups. A possible advantage of this method is the anonymity of the participants. Anonymity presumably reduces social desirable answers, particularly regarding the sensitivity of topics discussed.[13] A second advantage is the 24/7 availability of the website for the individual members of the online focus groups (a-synchronicity). The participants were free to log in during the week at any time to their convenience. The a-synchronous mode also allowed them to react to each. Further, the absence of time-pressure allows responses that are lengthier and more detailed. In sum, the a-synchronous mode presumably benefits the quality of the data because of the high equality of participation.

In conclusion, we recommend to train and support students to react to unprofessional situations so they can account for their professional behaviour

in daily situations in clinical practice. This includes checking and discussing the validity of their excuses for not responding to unprofessional situations. At the same time supervisors have to be aware that their behaviour may evoke students' excuses for not reacting to professional situations.

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# 7

# General Discussion

## Introduction

Professionalism has become an explicit objective in medical and health-sciences curricula, and reflective competence is regarded as an essential element of a person's professional development. [1-3] The literature describes diverse pedagogical approaches, educational goals and methods for teaching and learning reflection. [3-5] There is some evidence that the small-group setting may be an effective educational learning environment for developing students' reflective skills [6,7], but there is no established format for the effective facilitation of reflective learning in such a setting. In addition, little is known about whether professional reflective skills acquired in the academic setting are sustained in a professional environment.

The aim of this dissertation has been to investigate the conditions that may facilitate students' reflective learning specifically in small groups and professional practice. For this purpose, five studies were carried out looking into, respectively, the role of small-group settings, the teaching and learning methods used, the teachers' competences, evaluation of teachers' competences and the difficulty students experience in responding to unprofessional situations in practice. In this final chapter we discuss the main findings in relation to the literature and look at the methodological considerations, future perspectives and practical implications.

## Main findings

The students perceived small-group settings (peer meetings) as positive with regard to fostering the development of their reflective skills. Peer meetings created an interactive learning environment in which they learned about themselves, their skills and their abilities as novice professionals. Students stated that discussing professional experiences in the group gave them a better understanding of their behaviour. The positive role of peer meetings was also evident in the student reports on the benefits of interactive discussions and the development of interpersonal skills. However, the students also mentioned conditions for a well-functioning group, such as the role of the coach and the group's composition and size (Chapter 2).

Students participating in a professional development course reported learning outcomes relating to personal and professional awareness. These learning outcomes

correspond to the professional behaviour themes of *the patient, other professionals, themselves and the public*, as identified by Van de Camp et al. [8] Regarding the use of different reflective methods, the students' learning outcomes suggest that individual students tend to prefer one particular reflection method to others. Some students learned more effectively from reflective *writing* than from group discussion about experiences, while other students reported the opposite (Chapter 3).

In the first two studies the students referred to the role of the teacher instructing the small group in creating a safe environment or encouraging reflection, for example. It is possible that to teach students reflective skills calls for specific teacher competences. As there was no instrument for rating teachers' competences, an instrument was developed to assess the competences essential for facilitating reflective learning in small groups: the STERLinG scale. This instrument comprised three domains of competences vital to high-quality reflective learning: *supporting self-insight, creating a safe environment* and *encouraging self-regulation*. These three STERLinG components were confirmed in our research. The three domains of teacher competences measured by STERLinG cover recurring themes in the literature on teaching and learning reflection, and correspond with the educational functions necessary for achieving high-quality learning. STERLinG proved to be a practical and valid tool for examining, in small-group settings, which teaching competences need improvement or to be changed to optimize student's reflective learning (Chapter 4).

STERLinG was used to assess students' perceptions of their teachers' competences. As curricula differ in the design and implementation of reflective activities, differences between teachers following different curricula were analysed. The main finding was that for teachers the most difficult aspect of facilitating reflective learning is supporting students' self-insight. If there are strict requirements concerning an established format for teaching reflection, this seems to provide teachers with more opportunities to help students engage in reflection and develop reflective skills (Chapter 5).

The final study carried out showed that students do have difficulty responding to unprofessional situations in professional practice. The findings reveal that students experience and recognize unprofessional situations when they are on clerkships,

but they do not always react to unprofessional situations even though they know they should. They gave several excuses for not responding to unprofessional situations, the validity of which seems to depend on the behaviour of their supervisors and/or peers, as the students claimed that their supervisors and peers influence their excuses (Chapter 6).

## Discussion of main findings

The general impression from the results of our studies is that reflective skills can be taught and learnt. This would be in line with international literature recommending certain pedagogical approaches to promote the development of reflective skills. [3-5] The literature states that students should first acquire sufficient knowledge of reflection before their reflective skills are trained [5] and that the basis for reflective learning is preferably real professional experiences. [6] It is also said to be necessary to choose teaching methods that suit the group when teaching reflective skills. [5] A choice needs to be made between, for instance, the use of written or oral exercises and the use of new social media such as online reflective storytelling. [4] Despite the availability of these pedagogical methods, it is important to acknowledge that professional reflective competence develops in varying ways and depends on the individual. A person's professional reflective competence may be closely linked to personality traits such as sensitivity and intellectual capacities. [9] In other words, some students are more talented than others when it comes to developing reflective competence.

However, even talented students need to develop their reflective competence, which means adequate methods for teaching reflective skills are necessary. From this perspective, the findings of our studies are useful because they pinpoint conditions in which reflective learning can be optimally facilitated: the use of small groups, having competent teachers to instruct these groups and facilitating supervisors in the clinical environment. Considering these main findings, the following topics will be discussed below:

- the conditions facilitating reflective learning in small groups
- the role of teachers

***Conditions facilitating reflective learning in small groups***

There can be little doubt that a small group is an important condition for facilitating reflective learning. This finding in our research is in line with international literature. [6,7,10] The students in our study perceived a small-group context as a stimulating learning environment in which to share their professional experiences. Working together in the small group helped them reflect on their professional experiences, helped to stimulate collaborative learning and helped them understand themselves better, in other words, refined their reflective competence. However, the students also mentioned possible disadvantages of working in small groups, such as the composition and size of the group. In our study almost all small groups aimed at reflective learning were restricted to 5-7 students, but a few students had been placed in a larger group (10 students). Some of the students from these larger groups reported that they did not feel comfortable expressing themselves in discussions and that working in a larger group negatively affected their feeling of wellbeing. Students in smaller groups stated the opposite. As well as group size, group quality (the composition of the group) might also be important. Students mentioned, for instance, the negative impact of dominant, talkative or silent group members. Platzer et al. also state that the group's composition and size might affect its functioning. [10] In larger groups, students may find it more difficult to share personal experiences and feelings, as they are more likely to feel silenced or intimidated by the more talkative students. It is therefore of interest to identify the relative importance of group size and group quality in future research.

The findings regarding the learning outcomes of students following a relatively tightly structured professional development course - including many sessions, training in reflective skills, frequent feedback and the use of different stimuli to encourage reflection - pose the question of whether learning outcomes are enhanced by the structuring of reflective learning.

The international literature advises that a clear structure for teaching reflection skills be established because it helps students reflect more deeply and enhances their reflective learning. [4-6]

In our study, students said they preferred one reflection method to another: some mentioned that they learn best by writing, others by speaking and others again by doing or creating. Rogers therefore argues that the use of one method to foster reflection may be insufficient to achieve high-quality reflective learning. [11] Some

students seem to learn more effectively from reflective writing than from group discussion of experiences. Other students may find reflective writing difficult and will be more comfortable discussing their experiences in the group. Baernstein and Fryer-Edwards (2003) compared different approaches to fostering reflection: writing about a critical incident, engaging in a one-to-one interview or a combination of the two. [12] They concluded that an interview with a tutor was the most effective way to foster reflection. A combination of different reflection methods might therefore be effective in facilitating reflective learning. The concept of using different and appropriate reflective methods in small groups is in line with the international literature [4,5], and an explorative study showed that the use of different methods of reflection (writing, discussion, small groups and the use of visual clues) stimulated student reflection. [13]

Together, these findings provide little guidance for an optimal approach to designing a reflective learning course. Consequently, the extent and nature of the structure of reflective courses delivered in small groups needs to be established in future research, and there is also a need to identify effective ways to stimulate reflection and establish useful combinations of effective stimuli.

***The role of teachers***

Teachers play an important role in fostering and facilitating the reflective competence of students, not only during their formal preclinical teaching in small groups but also during their clinical practice. Sandars stated that the potential of reflective learning in students may not be fully realized without the support of teachers. [4] In the preclinical stage, the teacher's support is essential, as the reflective competence of individual students develops in various ways, which means that only teachers are able to provide the necessary individual support. [14] In the clinical stage teachers are important role models and can support and stimulate the reflective competence of students in real-life situations. [15-17]

This role is rather specific, as facilitating reflection in small groups is a complex skill. This is because the focus is on higher-order skills such as analysing experiences by comparing theory and professional practice, as well as both personal feelings and professional behaviour. [18,19] Despite the importance of the teacher's role, no instrument was available to assess the competences of the teachers of small reflective groups. As existing instruments do not take into account the focus

on higher-order skills, the STERLinG scale was developed to assess teachers' competences in three domains: *supporting self-insight*, *creating a safe environment* and *encouraging self-regulation.* For a successful learning process, teachers need to perform well in all three domains. The STERLinG structure was found to correspond closely with educational theories and recurring themes in the literature on teaching and learning reflection.

In evaluating teachers' performances using the STERLinG it appeared that the students perceived their teachers as most competent in *creating a safe environment* and *encouraging self-regulation.* This finding is to be expected as these competences represent more general teacher competences needed to guide learning in small groups such as tutorials. [20] Furthermore, most of the teachers of the reflective groups in our studies were experienced, so one can assume they possessed these general teacher competences. The students' perceptions of teacher competences that focus on the nature of reflection (*supporting self-insight*) are in general less positive. The students perceived their teachers as less competent in encouraging them to engage in reflective thinking. In other words, *supporting students' self-insight* seems to be the most difficult aspect of facilitating reflective learning, which may have implications for teachers who facilitate reflective learning in small groups. As most deficiencies appeared in the domain of *supporting self-insight*, it would seem that training programmes are needed here. Speech and language therapy teachers received positive ratings for *supporting self-insight*, which indicates that training would be expected to be effective.

If students are taught reflective skills, this should result in reflective professional behaviour in professional practice. In practice, however, students' professional development is influenced by their experiences of others behaving unprofessionally and the consequences of this. [21] Students experience gaps that consequently arise between espoused values and actual practice. [22] It is therefore of interest to assess the extent to which students exhibit reflective professional behaviour during clerkships and whether they do respond to unprofessional situations. The results show that students do not always react to unprofessional situations, even though they know they should. We also found indications that negative experiences of supervisors' unprofessional behaviour influenced students' professional behaviour, that is, they did not respond to unprofessional situations. Students put forward

reasons for not reacting to these unprofessional situations and use them as excuses. In the literature it is argued that students exposed to such negative situations may themselves become non-reflective professionals [23] or they may copy their supervisor's undesirable behaviour. [24]

There are also indications that unprofessional behaviour during medical training may influence future behaviour in clinical practice. [25,26] In a study conducted by Papadakis et al. it was concluded that disciplinary action taken by medical boards against practising physicians was associated with preceding unprofessional behaviour at medical school. [27] In the study by Teherani et al. several domains of unprofessional behaviour were predictive of later unprofessional behaviour. [25] For instance, lack of responsibility, unreliability, lack of self-awareness and diminished capacity for self-improvement were identified as problematic areas for students' professional development and predictors of future behaviour after graduation.

In our study, the students' use of excuses for not responding to unprofessional situations can be considered problematic with regard to the development of reflective professionalism. The absence of reflective competence in professionals is mentioned as a barrier to students developing professional behaviour. [23]
A clinical curriculum based on reflective professionalism and accountability should therefore provide time to reflect, and the students' real-life experiences from their clerkships should form the basis of such reflection. In the clinical environment these experiences may be complex and involve the student and patient as well as the student's peers and supervisors. This complexity may mean that students find themselves in professional situations where they do not react, as our results show. A specific aspect of reflective learning should therefore be that students learn to unravel the reasons why they did not react and to investigate the validity of their excuses for not reacting in order to prevent unprofessional behaviour in the future.

This can be achieved in several ways, the first of which would be specific practice sessions that focus on how to act and react in unprofessional situations. In such sessions students would learn to become aware of and recognize both their own excuses and those of others and would learn to question the validity of such excuses. They would become aware, for example, that in a situation in which there is ample room for reflection and in which the supervisor is communicative, has an

open attitude and creates space for discussion, their reasons are no longer valid excuses.
Secondly, small-group discussions appear to be a useful method for enhancing moral aspects of the professional environments in which students operate, allowing students to raise difficulties and discuss beliefs, responsibilities, values and norms.[28] Small-group discussions create an interactive learning environment in which students are given the opportunity to question the validity of their excuses. This may foster professional responsibility, self-awareness and the capacity for self-improvement. If students are able to assess the validity of their excuses, they are likely to make different decisions when faced with unprofessional situations in the future. Thirdly, supervisors should be trained to stimulate the development of reflective competence in students during clinical practice by (1) allowing discussions about professional and unprofessional situations and (2) creating opportunities to behave professionally in practice.

## Methodological considerations

*Design*
Qualitative and quantitative methods were used to explore the conditions that may facilitate students' reflective learning. Qualitative methods were used to gain a detailed understanding of the meaning students give to their experiences and provided depth, detail and nuance to the research issues. Different sources of information from individual students were used (reflective essays, portfolios), which can be assumed to reveal a broad range of issues from the student perspective concerning the meaning and interpretation of conditions that may facilitate their reflective learning.

Furthermore, online focus groups provided the opportunity for anonymous discussions and were particularly useful for exploring new, sensitive topics and thus gaining insight into a range of perspectives and opinions and a broader understanding. For example, the online discussions explored and provided an understanding of students' experiences of unprofessional situations in clinical practice.

The results derived from the application of qualitative methods are only an indication of the meaning students give to the conditions that facilitate their

reflective learning. The first two qualitative studies were only conducted in the Speech & Language Therapy Department. This seems acceptable because the objective of these qualitative studies was to gain an initial understanding of learning experiences and the role of peer meetings. Speech & Language Therapy students have quite some experience of reflective learning, which makes them suitable sources for information regarding learning experiences and small-group learning.

A quantitative method was used to identify teachers' competences. The conclusions from the analysis of reflective essays and portfolios were combined with the large body of knowledge regarding teaching and learning reflection to develop an instrument (STERLinG), which includes the competences required for teachers instructing small groups in reflective learning. The development and validation of STERLinG enabled us to apply the findings to different groups of teachers working in different curricula.

Two multi-site studies were conducted relating to STERLinG: the first looking at its development and the second actually applying it. In the first study we consciously used a procedure of item collection and selection, with educationalists, teachers of professional development courses and students from different disciplines at two different universities participating. In the second study, which focused on students' perceptions of their teachers' competences in encouraging reflection in small groups, students involved in three different curricula participated. The thorough methodology that we applied and the large number of participants from different curricula strengthened the generalizability of our results.

As mentioned above, we chose the reflective essays, portfolios and online focus groups as our sources of information because we wanted to understand students' experiences by identifying their perspectives on the research issues. The literature mentions several benefits of portfolios as valid tools for investigating learning processes. [29] Portfolios provide valid insights into the individual learning process, such as improvements in knowledge and understanding, increased self-awareness and engagement in reflection. [30] However, portfolios and reflective essays were one part of the assessment of students' professional development that could have influenced our findings. Requiring students to express their beliefs and feelings

may lead them to produce assignments that are acceptable but not necessarily truthful. [31,32] The use of reflective essays in the studies on learning experiences and the role of peer meetings (Chapters 2 and 3) is acceptable as these studies aimed to gain an understanding of students' perceptions rather than to examine the quality of these reflections.

The most obvious advantage of using the online focus group methodology is that it enabled access to students who would otherwise be difficult to include. It provided the students with a convenient way of joining the group discussions. The students could contribute to the group discussions from their individual locations in the affiliated hospitals at a time and place that suited them. Self-disclosure, defined as 'revealing personal information to others', is a key objective in focus groups and a lack of self-disclosure is often mentioned as a barrier to effective group discussions. [33] The anonymity afforded by the online focus groups was important when it came to obtaining honest and thoughtful answers to the sensitive topics discussed. Furthermore, the students could choose how much time they needed to respond, giving them more time to reflect.

One point of criticism is the possible self-selection of participants for the online focus group. This might have caused a selection bias towards students with less positive experiences. Another possible drawback is the lack of nonverbal clues, unanswered additional questions from the moderator and a heightened potential for misinterpretation of the written responses, leading to the assumption that there is a negative impact on the group dynamic in an online environment. However, other studies have shown that although online focus groups may differ from the traditional forms, there is no conclusive evidence that the internet is an impoverished environment. [34]

## Future perspectives

### *Depth of reflective learning*

The focus of the studies was on conditions that may facilitate reflective learning specifically in small groups and professional practice. Although the students described different learning outcomes according to personal and professional awareness, the quality of their reflections was not examined. This raises the

question whether adequate facilitation of reflective learning leads to qualitatively better reflection. The same applies to the findings regarding learning experiences in small groups. It is therefore of importance to investigate the conditions in relation to the quality of reflection. Quality can be operationalized as the 'depth of students' reflection processes', that is, the extent to which students move beyond the mere description of events and attempt to find possible reasons for and relationships between events or consider different opinions and thereby professional learning experiences. [34] The 'onion model' can be useful for exploring the depth of students' reflection processes as it provides a framework for exploring levels of performance (behaviour, competences, beliefs, identity and mission) upon which reflection can take place. [35]

With regard to teachers' competences, it is also of interest to investigate their relationship with learning effects. The development of reflective learning seems to be influenced by the perception of the student-teacher relationship. [14] For example, students' fear of judgement and evaluation by teachers might influence the reflective process. One should therefore investigate whether students' perceptions of their teachers' competences are related to a better mastery of reflective skills. In this respect, it is of interest to look at whether students with experience in reflective learning in small groups require a teacher at all later on in their training. This relates to both the creation of the necessary learning environment in which reflective learning is stimulated and the acquisition of reflective skills. This question is of interest, as some curricula deliberately require students to work without supervision in small reflective groups in order to train them to behave as reflective professionals.

***Issues concerning STERLinG***

The need for the further validation of STERLinG as a generally applicable instrument has already been mentioned. In future, STERLinG should be applied to a large variety of curricula with courses that focus on reflective learning and include large numbers of students and teachers. This could possibly help answer the question of how many student responses are required to provide teachers with valid feedback, because small groups aimed at reflective learning are sometimes very small (5 to 7 students per group), and teachers sometimes only instruct one such group per year. It is also of interest to investigate whether STERLinG alone

is a useful instrument for providing feedback to teachers or whether it should be compared with a variety of feedback sources. Such an investigation might also look into whether the feedback is useful and actually results in better teacher performance. It is possible that some teachers feel their ratings were poor because of problems with the group dynamic itself, rather than because they failed to facilitate reflective learning.

If it is to be useful as a routine instrument for feedback, STERLinG should be shortened. The literature shows that applying short inventories increases response rates because they take less time to complete. Moreover, the number of missing values is also reduced. [36,37] Furthermore, scales may help prevent survey fatigue, which leaves more space for additional data collection. [38]

***Reflective professionals in practice***

An important condition for students to develop reflective professionalism is that they learn to be accountable for the choices they make. They therefore need to develop the skills to understand the difference between their own perspective and that of others, and to respond well to the situation with which they are faced. At present, the literature only identifies the fact that students do use excuses for not reacting to unprofessional situations. Given this fact, a deeper understanding is needed of the way students deal with behaviours that may potentially conflict with professional norms (dignity and respect for the patient), professional duties (obedience to the supervisor) and their need to gain experience in order to become a good doctor. This leads to the general question of whether reflective professionalism is applied in practice and which conditions, such as a good supervisor-student relationship, are therefore needed to facilitate the professional competence of students in practice. In order to gain more understanding of students' professional competence in practice, factors such as clinical experience, gender and how to encourage reflective professional behaviour need to be investigated.

## Practical implications for the facilitation of reflective learning

The main topic addressed in this dissertation was the study of conditions that may facilitate students' reflective learning, especially in small groups and professional practice. From the conditions that we investigated (small groups, professional

development course, teachers and applying professional behaviour in practice) we can ascertain that teachers in charge of small reflective groups need to be competent in three domains: *supporting self-insight*, *creating a safe environment* and *encouraging self-regulation*. Supporting students' self-insight seems to be the most difficult aspect of facilitating reflective learning. The evaluation, feedback and training of teachers should therefore focus on competences that encourage students to engage in reflective thinking, that provide them with an understanding of how to reflect and that help them to apply this understanding.

Although it seems plausible that students' reflective learning is facilitated by the way a small group functions, the structure of a professional development course or students' responses to unprofessional situations, more research is needed to confirm and quantify these findings. Therefore, we can only suggest that small groups foster the development of reflective skills, that a prerequisite for the proper functioning of small-group discussions is to create a safe and trusting learning environment and that a professional development course featuring a tightly structured set of reflection exercises might stimulate reflective learning. Finally, to teach students to be accountable for their professional behaviour in practice, we advise creating opportunities to discuss unprofessional situations, teaching students to focus in particular on the validity of excuses for not responding, and training supervisors to stimulate the development of the reflective competence of students during clinical practice.

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## Summary

Professionalism has become an explicit objective in medical and health-sciences curricula, and reflective competence is regarded as an essential element in its development. The literature describes diverse pedagogical approaches, educational goals and methods for teaching and learning reflection. There is some evidence that the small-group setting may be an effective educational learning environment for developing students' reflective skills, but there is no established format for teaching reflective skills in small groups. The aim of this dissertation has been to investigate conditions that may affect students' reflective learning specifically in small groups and professional practice. For this purpose, fifth studies were carried out. The first three looked into, respectively, the role of small-group settings, the teaching and learning methods used and the teachers' competences. For the third study we developed an instrument (STERLinG) to assess teacher competence in teaching reflective skills to small groups. The fourth study measured students' perceptions of their teachers' competencies to encourage reflective learning in small groups and analyzed differences between teachers from different curricula. The fifth study was carried out to gain a better understanding of the difficulties students experience in responding to unprofessional situations in practice.

**Chapter 1** provides an overview of current views on professionalism. A review of the literature on professionalism led to the decision to view professionalism as 'reflective professionalism'. This implies that students are able to reflect critically on their professional behaviour and can account for the professional choices they make when caring for patients by referring to standards within a given context and professional environment. This reflective professionalism is a second-order competence, which means it is a reflective and evaluative competence that can only be expressed via other competences. Reflective professionalism is therefore only possible once a professional has developed reflective competence alongside the technical competence that makes him or her accountable for their decisions. From the perspective of reflective professionalism, reflection can be defined as a cyclical process of analyzing, questioning and reframing experiences, professional or otherwise. This process includes considering how and why decisions were made, the underlying beliefs and values of both individuals and institutions, assumptions about roles, abilities and responsibilities and accountability for one's decisions. The literature discusses various expected learning outcomes of reflective learning. As the aim is to create a learning environment that facilitates reflective learning

in students, our studies focused on the expected outcomes of reflective learning, namely, (1) enhancing students' self-awareness; (2) helping them recognize how their feelings shape their behaviour; (3) creating a deeper understanding of how this behaviour affects their interaction with clients, patients and colleagues; and (4) gaining an understanding of how their professional values, needs, motives and attitudes influence their professional practice. These four outcomes encompass basic elements of reflective professionalism, because students are expected to become more aware of the many moral and emotional aspects of their daily practice.

The literature describes several reflection methods for encouraging reflective learning and stimulating the development of reflective skills, which include reflective journals, portfolios, critical incidents or reflection models. A further method that is important when it comes to encouraging and enhancing reflective learning and the development of reflective skills is participation in small groups. Although it is recognized that small groups are important for developing reflection skills, we do not know if participation in small groups stimulates students' reflective learning.

The chapter concludes with some thoughts on the difficulties students have with developing professional behaviour in their clinical practice. External factors such as institutional culture, time constraints, high workload or the role of supervisors and/or peers influence the students' professional behaviour. It is not known how students react to unprofessional situations from the perspective of reflective professionalism.

We do know from the literature that learning and working together in peer meetings fosters reflection, but these findings are based on experienced professionals. The aim of the study in **Chapter 2** aimed to gain an understanding of the role of peer meetings in students' experience of learning reflective skills. The following questions were considered: (1) what do students say about peer meetings with respect to learning about their personal experiences? and (2) what role do students say peer meetings had in their learning experiences? A qualitative analysis of the learning reports in the portfolios of third- and fourth-year students (N=84) was undertaken. The data were coded using open coding. The students reported that they learned about their own personal and professional behaviour from participating in peer meetings. They even mentioned that discussing such subjects

in the group gave them a better understanding of their personal and professional behaviour. The role of peer meetings in this reflective process was also evident in student reports about the benefits of interactive discussions and the development of interpersonal skills. However, students reported that the conditions for effective peer meetings had to be met in order for these meetings to be beneficial. The findings indicate that peer meetings foster the development of reflection skills as part of professional behaviour.

**Chapter 3** presents the results of a qualitative study of the learning experiences of Speech and Language Therapy students (N=85) who had participated in a two-year professional development course. This course combined small group sessions with intensive coaching, feedback, a tightly structured set of reflection exercises and the training of specific reflection skills. The following questions were explored in the study: (1) which learning outcomes do students report after participating in the professional development course? and (2) is the outcome of question 1 related to aspects of professional behaviour? A qualitative content analysis was carried out of reflective essays written by first- and second-year Speech Therapy students about what they had learnt in terms of reflection. After they had participated in the course, the students listed learning outcomes relating to personal and professional awareness about (1) themselves as a person, (2) themselves in relation to others and (3) themselves as professionals. These three areas correspond with the professional behaviour themes identified by Van de Camp et al. (2006). The course combined several teaching methods and was designed to stimulate reflection on experiences within small groups. The students reported that participating and working in a group enhanced their ability to reflect on both personal learning outcomes and theoretical subjects. Some students mentioned that reflective writing about their experiences enabled them to learn more effectively from these experiences than working in a group would, while other students had difficulties with the written reflections and were more comfortable working in the group. The findings give promising indications that combining small group sessions with different reflection methods creates an interactive learning environment in which students can learn from reflection about themselves, their skills and their abilities as novice professionals.

In **Chapter 4** the teacher competences essential for facilitating reflective learning are identified with the aid of an instrument developed to measure this: Student

perceptions of their Teachers' competences to Encourage Reflective Learning in small Groups (STERLinG). We applied a conscientious procedure to reduce an initial list of 241 items pertaining to teacher competences to 47. The instrument was then validated in two successive studies. In the first study, we invited 679 medical and Speech & Language Therapy students to assess the teachers of their professional development groups using STERLinG. Principal Components Analysis (PCA) with varimax rotation was used to investigate the internal structure of the instrument. In the second study, of 791 medical, dental and Speech & Language Therapy students, we performed a confirmatory factor analysis using the Oblique Multiple Group Method (OMG) to verify the original structure.
In study 1, 463 students (68%) completed the STERLinG. The PCA yielded three components: *supporting self-insight*, *creating a safe environment* and *encouraging self-regulation*. The final 36-item instrument explained 44.3% of the variance and displayed high reliability with alphas of 0.95 for the scale, and 0.91, 0.86 and 0.86 for the respective subscales. In study 2, 501 students (63%) completed the STERLinG. The OMG confirmed the original structure of the STERLinG and explained 53% of the total variance with high alphas of 0.96 for the scale, and 0.94, 0.90 and 0.90 for the respective subscales.
In this study the instrument structure was validated in several ways. First, it was validated by the literature: the structure was found to correspond with learning theories about the educational functions essential to achieving high-quality learning. In addition, the three components that the PCA yielded include the recurring themes in the literature on reflection when it comes to the optimization of reflective learning. This structure therefore seems to provide a comprehensive synthesis of universally applicable learning theories and the existing literature on teaching and learning reflection. Second, the structure was confirmed as valid in a subsequent study using a new data set. This study provided a theoretical framework for the practice of and research into reflective learning.

The aim of the study in **chapter 5** was to investigate students' perceptions of their teachers' competence in encouraging reflection in small groups and to analyze differences between curricula. Students from three curricula completed the STERLinG: Speech & Language Therapy (n=143), Medicine (n=278) and Dentistry (n=80). The educational settings differed in how the reflective learning was structured. The STERLinG measures the teachers' competence in facilitating reflection in small groups, and a teacher's performance was considered excellent

(item score≥3.75), good (3.25-3.75), in need of attention (2.75-3.25) or insufficient (<2.75). Differences between curricula were analyzed with ANOVAs. The results revealed that the competence in *creating a safe environment* was rated as *good* or *excellent* and that of *encouraging self-regulation* all as *good*. The lowest scores were on the subscale s*upporting self-insight.* Twelve competences were found *needing attention.* Speech & Language Therapy teachers rated significantly higher on 26 competences than dental teachers.
Speech & Language Therapy teachers were perceived most positively and dental teachers least positively in all three scales. For all three curricula the teachers stimulating reflective learning in small groups proved competent to create a safe environment and encourage students to take responsibility for their learning. The most deficiencies were found in their competence to stimulate students' reflective skills, and this seems to be the hardest part of facilitating reflective learning. Therefore, training programmes should focus on teacher competences aimed at supporting self-insight.

The study in **Chapter 6** explored students' excuses for not responding to unprofessional situations. Medical students are taught to value their professional choices and take into account their knowledge and professional norms given the circumstances. From the perspective of accountability, which is an important aspect of reflective professionalism, we expect students to react to unprofessional situations. In practice, however, they appear to have difficulty doing so. In this study we explored whether students recognize unprofessional situations, which excuses they have for not responding to such situations and the role of supervisors and peers in their excuses. The method of online focus groups was used to answer the research questions; this consisted of a web-based interactive moderated discussion. Sixteen medical students in the second year of their Master's degree programme participated anonymously in two separate groups. Four vignettes describing less desirable professional behaviour of supervisors and/or peers were developed as stimuli for the online discussions, and further questions were added. A thematic analysis of the written contributions was conducted. The results showed that the students recognized the unprofessional situations described in the vignettes and added their own experiences in similar situations. They gave several excuses for not responding to unprofessional situations: *being dependent on the supervisor for feedback and assessment, not feeling safe, wanting to meet the expectations of others, feeling*

*insecure about one's own cognitive abilities* and *not feeling responsible.* The students mentioned a number of important aspects of their supervisors' and peers' behavior that influence their excuses, namely, *not being communicative, not having an open attitude, not creating space for discussion, transgressive behaviour, not supporting the institutional culture* and *not maintaining good fellowship*. The validity of these excuses seems to depend on the behaviour of supervisors and/or peers. It would be fair to question whether such excuses are valid in accounting for the professional choices made, i.e. not responding to unprofessional situations. If a student's knowledge is indeed insufficient or there are clear safety issues the excuse may be valid. The question of validity also applies to the use of excuses that depend on the role of supervisors and/or peers. For instance, if supervisors are open-minded and supportive the excuses seem to be less valid. If one wishes to teach students to be accountable for their professional behaviour, we advise discussing unprofessional situations with a particular focus on the validity of excuses for not responding.

In **Chapter 7** the most important research findings are summarized and discussed. An important finding was that students perceived small-group settings (peer meetings) as positive with regard to fostering the development of their reflective skills. Students also perceived participating in a professional development course as positive for their professional development, as they reported a broad range of learning outcomes relating to personal and professional awareness. Teaching students reflective skills calls for specific teacher competences, and for teachers instructing small groups in reflective learning the most difficult aspect is supporting students' self-insight. Teachers should be trained in these competences. Finally, students experience and recognize unprofessional situations when they are on clerkships, but they do not always react to such situations even though they know they should. They gave several excuses for not responding, but these excuses may not always be valid. To prepare students better to behave as reflective professionals, they must be taught to check and discuss the validity of their excuses for not responding to unprofessional situations. At the same time, supervisors have to be aware that their behaviour may evoke excuses from the students for not reacting to professional situations.
Qualitative and quantitative methods were used to explore the conditions that may facilitate students' reflective learning. Although the qualitative methods generated a more detailed understanding, the results derived are only an indication of the

meaning students give to the conditions that facilitate their reflective learning. A quantitative method was used to identify teachers' competences. The thorough methodology that we applied and the large number of participants from different curricula strengthened the validity of STERLinG.

The results of the studies in this dissertation may have implications for the facilitation of reflective learning. From the conditions that we investigated (small groups, professional development course, teachers and applying professional behaviour in practice) we can ascertain that teachers in charge of small reflective groups need to be competent in three domains: *supporting self-insight*, *creating a safe environment* and *encouraging self-regulation.* Supporting students' self-insight seems to be the most difficult aspect of facilitating reflective learning. Although it seems plausible that students' reflective learning is facilitated by the way a small group functions or the structure of a professional development course, more research is needed to confirm and quantify these findings. Future research should focus on whether adequate facilitation of reflective learning leads to qualitatively better reflection or whether students' perceptions of their teachers' competences are related to better mastery of reflective skills.

## Samenvatting

Een belangrijk onderdeel van beroepsopleidingen is het ontwikkelen van professioneel gedrag. Het kunnen reflecteren op eigen functioneren en op dat van anderen is hierbij noodzakelijk. Leren reflecteren kan door participatie in kleine groepen (intervisie) waarin beroepservaringen systematisch geanalyseerd worden in een veilig en vertrouwelijk leerklimaat. Er is nog weinig inzicht welke factoren van invloed zijn op het leren reflecteren in kleine groepen. Daarom is het centrale onderwerp in dit proefschrift: onderzoeken welke factoren een rol spelen bij het faciliteren van reflectief leren ten behoeve van de professionele ontwikkeling zowel in kleine groepen als in de professionele praktijk.
Ter beantwoording van deze vraag zijn een vijftal studies uitgevoerd. In vier studies is specifiek aandacht besteed aan de rol van de intervisiegroep, een onderwijsprogramma ten behoeve van professionele ontwikkeling en de competenties van docenten. Om de docent competenties te beoordelen is een instrument ontwikkeld: de STERLinG. Tenslotte is een vijfde studie uitgevoerd om meer zicht te krijgen in de moeilijkheden die studenten ondervinden in het reageren op onprofessionele situaties in de praktijk.

In **hoofdstuk 1** wordt een overzicht gepresenteerd van de literatuur over professionaliteit. In dit proefschrift wordt een keuze gemaakt om professionaliteit op te vatten als reflectieve professionaliteit. Tevens wordt professionaliteit opgevat als kwaliteit van gedrag. Dit betekent dat studenten moeten kunnen reflecteren om zich te kunnen verantwoorden voor hun beslissingen in relatie tot de professionele context waarin patiëntenzorg wordt gegeven. Reflectieve professionaliteit vindt plaats in de complexe (medische) context van werken met patiënten/cliënten of andere professionals en moet daarom worden opgevat als een tweede orde competentie. Dit betekent dat deze competentie alleen tot uitdrukking kan komen in de uitoefening met andere competenties. Dat wil zeggen dat een professional over de uitvoering van patiëntenzorg verantwoording moet kunnen afleggen, bijvoorbeeld over de manier waarop rekening is gehouden met sociale context. Voor het kunnen verantwoorden zijn kennis en vaardigheden met betrekking tot reflectie noodzakelijk. Reflectie wordt gedefinieerd als een cyclisch proces van analyse, vragen stellen en parafraseren van professionele ervaringen.
In de literatuur worden verschillende leeruitkomsten beschreven die door reflectief leren worden verkregen. In het reflectie onderwijs aan studenten wordt de nadruk gelegd op: (1) het vergroten van het bewust worden, (2) herkennen

hoe gevoelens het gedrag beïnvloeden (3) bevorderen van inzicht in hoe het eigen gedrag de relatie met cliënten, patiënten en collega's kan beïnvloeden (4) bevorderen van inzicht in hoe professionele waarden, behoeften, motieven en houding de professionele uitoefening beïnvloeden. Deze vier aspecten omvatten de basiselementen voor een reflectieve professionaliteit.
In de literatuur worden verschillende methoden beschreven om het reflecteren te stimuleren: "reflective journals", portfolio's, kritische incidenten, reflectiemodellen. Ook wordt het oefenen van reflectie in kleine groepen als bevorderlijk aangemerkt voor het stimuleren van het reflectieve leren. Er is echter nog weinig bekend of dit daadwerkelijk het reflectieve leren van studenten stimuleert. Tevens is nog onbekend welke condities belangrijk zijn voor het begeleiden van kleine groepen. Aan het einde van hoofdstuk 1 worden enkele studies besproken waarin barrières worden beschreven die studenten en professionals ondervinden bij het toepassen van professioneel gedrag in de klinische omgeving. Externe factoren zoals tijdgebrek, de institutionele cultuur of hoge werkdruk blijken van invloed, evenals de rol van opleiders en collega's. Onbekend is hoe studenten vanuit het perspectief van reflectieve professionaliteit reageren op onprofessionele situaties.

In de literatuur worden verschillende methoden beschreven om het reflecteren te stimuleren. Eén manier is het deelnemen aan intervisie. Hierbij vindt in kleine groepen systematische analyse en reflecterend leren plaats aan de hand van ingebrachte beroepservaringen. Onbekend is of deelname aan intervisie door studenten een bijdrage levert aan de ontwikkeling van reflecteren en daarmee aan professioneel gedrag. Daarom is in **hoofdstuk 2** onderzocht: (1) welke leerervaringen beschrijven studenten na deelname aan intervisie? (2) wat vinden studenten van de rol van de intervisie groep? Voor het beantwoorden van de onderzoeksvragen is gebruik gemaakt van fenomenologisch kwalitatief onderzoek. Het ging hierbij om het exploreren van de ervaringen van studenten ten aanzien van intervisie onderwijs. De leerverslagen van 3e en 4e jaars studenten logopedie die deelnamen aan intervisie (n=84) werden hiertoe geanalyseerd.
De uitkomsten waren in drie categorieën onder te verdelen: (1) persoonlijke leerervaringen. Deelname aan intervisie groepen zette studenten aan tot reflectie over zichzelf, persoonlijke vaardigheden en hun mogelijkheden als beginnende professionals; (2) interactief leren. Het participeren in de groep bevorderde een bewustwordingsproces over zichzelf in relatie tot de ander en maakte het mogelijk

reflectieve en communicatieve vaardigheden te trainen; (3) functioneren van groepen. Sommige studenten deden uitspraken over groepsgrootte, veilig en vertrouwd voelen en sociale omgangsvormen. Opvallend was dat studenten in een brede range van uitspraken een positieve perceptie van participatie aan intervisie aangaven. Enkele studenten percipiëren daarbij als voorwaarde een veilige en vertrouwde omgeving in de groep om tot reflectie te komen.

In **hoofdstuk 3** worden de resultaten van een kwalitatieve studie beschreven. Het doel van de studie was om inzicht te krijgen in de leerervaringen van studenten na deelname aan een onderwijsmodule *reflectie en professionele ontwikkeling*. Studenten van de opleiding logopedie studiejaar 1 en 2 (N=85) hebben gedurende twee jaar deelgenomen aan deze onderwijsmodule. De onderwijsmodule kenmerkt zich door een combinatie van kleine groepen en intensieve begeleiding, feedback, het expliciet aanleren van reflectieve vaardigheden waarbij gebruikt gemaakt wordt van diverse reflectiemethoden. De leerverslagen na het eerste en tweede studiejaar zijn geanalyseerd en gecodeerd op het voorkomen van leerervaringen ten aanzien van de persoonlijke en professionele ontwikkeling. Na analyse blijkt dat studenten zowel persoonlijke als professionele leerervaringen beschrijven. Deze leerervaringen zijn onder te verdelen in leerervaringen ten aanzien van (1) zichzelf (2) zichzelf in relatie met anderen en (3) zichzelf als professional. Deze drie gebieden komen overeen met thema's rondom professioneel gedrag zoals geïdentificeerd door Van de Camp et al. (2006).
Het zowel individueel als gezamenlijk aanleren van reflectievaardigheden lijkt het reflectieve leren positief te stimuleren. Een mogelijke verklaring kan gevonden worden in de opzet van het onderwijs. In het onderzochte onderwijs van logopedie worden namelijk de reflectievaardigheden enerzijds individueel geoefend door het schrijven van reflectieverslagen en portfolio's. Met behulp van individuele reflectieopdrachten traint de student zijn reflectievaardigheden in het onder woorden brengen, analyseren en generaliseren van het eigen gedachtespoor. Anderzijds worden reflectievaardigheden in kleine reflectiegroepen geoefend met behulp van verschillende reflectiemethoden. In de groep, lerend van elkaar, wordt een ervaring in samenhang met theoretische concepten kritisch beschouwd vanuit meerdere perspectieven en in een professionele context besproken. De uitkomsten van dit onderzoek geven aan dat studenten positief zijn over het gevolgde onderwijs gezien de brede range aan leerervaringen. Vervolgonderzoek

moet uitwijzen of dit komt door een van de gebruikte reflectiemethoden of door een bepaalde combinatie van methoden.

Om het reflectieve leren in kleine groepen optimaal te laten functioneren is het van belang dat de docentfuncties voor dergelijke groepen goed vervuld worden. In **hoofdstuk 4** werd een instrument ontwikkeld gericht op de evaluatie van deze docentfuncties. De reden was dat tot nu toe deze functies voor het begeleiden en stimuleren van reflectieve processen in deze groepen niet zijn omschreven. Op basis van literatuur en praktijkervaringen werd een initiële lijst van 241 docentfuncties samengesteld. Vervolgens beoordeelden de coauteurs de items op relevantie (face-validity), hetgeen de lijst tot 80 items reduceerde. Deze items werden nogmaals beoordeeld op relevantie door docenten (n= 17) betrokken bij de uitvoering van professionaliseringsonderwijs, wat resulteerde in een instrument van 47 items. Vervolgens beoordeelden geneeskunde en logopedie studenten hun docenten met dit instrument. De interne structuur van de vragenlijst werd onderzocht met Principale Componenten Analyse (PCA) met varimax rotatie. De PCA leverde drie componenten op: *bevorderen van zelfinzicht*, *stimuleren van zelfstandig leren* en *creëren van een veilig klimaat*. De structuur van het instrument sluit aan bij onderwijskundige leertheorieën, waarin drie onderwijsleerfuncties van belang zijn voor het bereiken van een hoge kwaliteit van leren. Verder worden in het instrument diverse onderwijsaspecten samengebracht die in de reflectieliteratuur worden aangemerkt als belangrijk voor het begeleiden en stimuleren van reflectieve processen. Het feit dat deze aspecten van onderwijs in reflectie zijn samengebracht op een manier die past bij onderwijskundige leertheorieën, ondersteunt de validiteit van het instrument. De vragenlijst (STERLinG) kan daarom worden aanbevolen als een valide instrument ter beoordeling en bevordering van deze docentfuncties. Bovendien biedt de gevonden structuur een theoretisch kader voor onderzoek en onderwijs ten behoeve van het stimuleren van het reflectieve leren.

Met behulp van de STERLinG is in **hoofdstuk 5** onderzocht hoe goed de docenten-functies in praktijk worden gebracht . Tevens is onderzocht of de docenten (coaches van groepen gericht op het leren reflecteren op professionele ervaringen) van de opleidingen geneeskunde, tandheelkunde en logopedie verschillen in hun score op de STERLinG. De verschillen tussen de docenten van de opleidingen werd onderzocht met ANOVA's. De opleidingen verschillenden in de mate waarin

het reflectieve leren wordt gestructureerd (bijv. veel bijeenkomsten, feedback momenten en expliciet aanleren van reflectieve vaardigheden). De resultaten toonden aan dat de hoogst beoordeelde items zich bevonden in het tweede domein *creëren van een veilig klimaat.* De laagst beoordeelden items in het eerste domein *bevorderen van zelfinzicht*. Uit de resultaten bleek dat logopedie studenten hun docenten hoger beoordeelden in alle drie de domeinen. Een mogelijke verklaring is dat de docenten van de opleiding logopedie waarschijnlijk meer ervaren zijn in het begeleiden van het reflectieve leren in kleine groepen: ze begeleiden meerdere groepen in verschillende studiejaren. Daarnaast is het de vraag of de structurering van het reflectieve leren een rol speelt. Binnen de opleiding logopedie wordt in hoge mate gestructureerd (veel bijeenkomsten, veel feedback, expliciete training op reflectievaardigheden) dit in tegenstelling tot de geneeskunde en tandheelkunde opleiding. Bij alle drie opleidingen lijken docenten weinig moeite te hebben met het creëren van een veilig klimaat en zijn ze in staat het zelfstandig leren van studenten te bevorderen. Het aanleren van reflectieve vaardigheden blijkt het moeilijkste onderdeel te zijn voor docenten. De uitkomsten van het onderzoek indiceren de noodzaak van trainingsprogramma voor docenten gericht op het aanleren van reflectieve vaardigheden bij studenten.

De studie in **hoofdstuk 6** had als doel te onderzoeken welke redenen studenten hebben om niet te reageren op onprofessionele situaties in de praktijk. Tijdens de medische opleiding nemen studenten deel aan onderwijs over professioneel gedrag. Onderwerpen die hierbij aan de orde komen zijn het respectvol omgaan met patiëntgegevens, collegialiteit, integriteit en professioneel handelen. Nu blijkt, dat er in de praktijk situaties zijn waarin studenten weten hoe ze zouden moeten of willen handelen, maar dat niet doen of niet durven. Een mogelijke verklaring waarom studenten niet reageren is dat ze het onprofessionele in de situatie niet herkennen. Een andere verklaring zou kunnen zijn dat de student het onprofessionele in de situatie wel herkent maar niet reageert volgens de gestelde professionele norm, omdat hij in een bepaalde omstandigheid of in een psychologische staat was die hem motiveerde anders te handelen. In deze situaties gaat het om excuses, die afhankelijk van de omstandigheden legitiem kunnen zijn. Er is echter nog onvoldoende bekend of co-assistenten onprofessionele situaties herkennen, welke excuses ze hebben om niet te reageren en welke rol opleiders of mede studenten hierin spelen.

Met behulp van een groepsdiscussie (online focus groups) op internet zijn deze vragen onderzocht. Zestien medische studenten uit het tweede master jaar hebben vrijwillig deelgenomen aan de internetdiscussie. Zij hebben gereageerd op korte casussen, die onprofessionele situaties beschreven. Studenten konden reageren op de casus en de bijbehorende vragen. Daarbij konden studenten ook reageren op de antwoorden van andere groepsleden. Indien nodig stelde de onderzoeker aanvullende vragen. Gevonden werd dat studenten de onprofessionele situaties op de vignetten herkenden en aanvulden met eigen voorbeelden. Studenten beschreven verschillende redenen (excuses) om niet te reageren op onprofessionele situaties. De geldigheid van de excuses lijkt afhankelijk te zijn van de rol van de opleider en de medestudenten. Bijvoorbeeld in situaties waarin het gedrag van opleider als negatief werd ervaren reageerden studenten niet, omdat ze bang waren voor een negatieve beoordeling. De rol van medestudenten bleek eveneens van invloed op genoemde excuses. Studenten noemden dat een goede relatie met de medestudent belangrijk was voor het delen van gevoelens en het stoom afblazen tijdens het co-schap. Dit motiveerde studenten om niets te zeggen wanneer ze onprofessionele situaties van medestudenten opmerkten. Deze uitkomsten werpen de vraag op wanneer zijn excuses legitiem en wanneer niet. In situaties waarin opleiders op een positieve en constructieve manier begeleiden zouden excuses om niet te reageren wel eens minder legitiem kunnen zijn dan in situaties waarin de manier van begeleiden niet constructief is. Wanneer we studenten willen trainen in het verantwoording af leggen voor professioneel gedrag is het noodzakelijk dat studenten leren om kritisch te zijn ten aanzien van de eigen overwegingen om wel of niet reageren op onprofessionele situaties. Intervisie groepen moeten daarom alleen focussen op de systematische analyse van ingebrachte beroepservaringen maar dienen ook de legitimiteit van excuses in de analyse te betrekken. Toekomstig onderzoek zal zich verder richten op het onderzoeken van de genoemde excuses in grotere groepen.

In **hoofdstuk 7** worden de belangrijkste bevindingen en conclusies van dit proefschrift samengevat en besproken. Een belangrijke bevinding is dat studenten deelname aan intervisie als positief ervaren voor de ontwikkeling van reflectieve vaardigheden. Tevens wordt deelname aan een onderwijsmodule *reflectie en professionele ontwikkeling* als positief ervaren gezien brede range van leerervaringen op zowel persoonlijk als professioneel gebied. Het begeleiden van kleine groepen

vereist specifieke competenties van de docent. Het blijkt dat juist het aanleren van reflectieve vaardigheden een moeilijke competentie is voor docenten. Docenten zouden hierin getraind moeten worden. Uit het onderzoek in de klinische praktijk blijkt dat studenten wel degelijk onprofessionele situaties herkennen, maar daar veelal niet op reageren. Ze hebben excuses, maar die zijn niet altijd legitiem. Om studenten beter op te leiden tot reflectieve professionals zouden ze niet alleen professionele situaties moeten leren analyseren maar ook moeten leren de argumentatie te ontrafelen voor het niet reageren op onprofessionele situaties. Aan het einde van dit hoofdstuk is aandacht besteed aan de methodologie van de onderzoeken die deels kwalitatief deels kwantitatief van aard waren. Zo is beargumenteerd dat de kwalitatief studies nieuwe inzichten opleverde op onbekend terrein maar tegelijkertijd moet worden vastgesteld dat de resultaten als hypothetisch moeten worden beschouwd. Anderzijds is de ontwikkeling en de toepassing van de STERLinG in kwantitatief onderzoek gedaan, waardoor dit instrument als valide kan worden beschouwd. De praktische relevantie voor de onderwijspraktijk is vooral daarin gelegen dat docenten die het reflectieve leren van studenten begeleiden competent moeten zijn op drie domeinen: *bevorderen van zelfinzicht*, *creëren van een veilig klimaat* en het *stimuleren van zelfstandig leren.* Toekomstig onderzoek zal zich verder richten op de vraag of adequate facilitering van het reflectieve leren zal leiden tot kwalitatief betere reflectie en of studenten beter gaan reflecteren wanneer ze hun docent als competenter ervaren.

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Terugblikkend op een periode van onderzoek vallen mij een aantal aspecten op. Ten eerste het grote verschil in dynamiek tussen onderwijs en onderzoek. In het onderwijs is de dynamiek hectisch en vraagt om een snelheid van handelen en er is veelal sprake van een vlot dynamisch proces. De dynamiek in onderzoek verloopt anders: de snelheid van handelen en denken gaat in pieken en lijkt geconcentreerder. Antwoorden en oplossingen ontwikkelen zich in een rustiger tempo. Daarnaast is er nog een derde dynamische wereld: het thuisfront met zijn eigen snelheid van handelen en denken. Het afstemmen van deze drie dynamische werelden op mijn eigen mogelijkheden was niet altijd gemakkelijk. En zonder hulp van anderen rondom het uitvoeren en volhouden en afronden van mijn onderzoek, het uitvoeren van onderwijs of het mogelijk maken van alles bij elkaar, was het niet gelukt. Aan het einde van mijn leerproces wil ik dan ook woorden geven aan wat anderen voor mij hebben betekend in uitvoeren van onderzoek en het voltooien van dit proefschrift.

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Ik ben veel dank verschuldigd aan de studenten geneeskunde, tandheelkunde en logopedie. Studenten logopedie hebben belangeloos hun portfolio's voor mijn onderzoek beschikbaar gesteld. Daarnaast hebben alle studenten diverse malen vragenlijsten ingevuld en meegewerkt aan online focusgroepen. Zonder de medewerking van studenten geneeskunde, tandheelkunde en logopedie uit Groningen was dit proefschrift niet tot stand gekomen.

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Zonder paardrijden was er geen proefschrift gekomen. Hoewel deze opmerking vragen kan oproepen is de uitleg vrij simpel. Reflectie vraagt om een integratie van denken, voelen, willen en handelen. Het schrijven van een proefschrift over reflectie legt echter een grote nadruk op het denken, terwijl het voelen/ervaren toch ook een wezenlijk onderdeel van het promoveren is. Om de balans te hervinden in het denken, voelen, handelen en willen is paardrijden een voorwaardelijke conditie. Paardrijden kan niet vanuit het hoofd, maar vraagt om integratie van handelen vanuit balans. Paardrijden helpt om nieuwe perspectieven te zien, versnelt het proces van bewust worden en reduceert stress. Paardrijden doe je alleen, maar ook met anderen. Daarom wil ik Janneke, Tineke, Jeike en Henriet heel erg bedanken voor alle belangstelling voor het verloop van het onderzoek. Het samen rijden en de gezelligheid die dat bracht waren onmisbaar in de afgelopen periode.

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**Curriculum Vitae**

Mirabelle Schaub-de Jong is geboren op 23 juli 1964 te Amsterdam en groeide op in Zwolle. Na de middelbare school studeerde ze mondhygiëne in Utrecht. Als mondhygiëniste werkte ze bij diverse tandartspraktijken, de schooltand verzorging en bij afdeling mondziekten/kaakchirurgie UMCG. Na het behalen van MO A en B Nederlands in Groningen was ze enige tijd werkzaam als docent Nederlands, maar maakte in 1996 de overstap naar de Academie voor Gezondheidsstudies Hanzehogeschool Groningen. De eerste jaren bij de opleiding Mondzorgkunde waar zij onderwijs ontwikkelde en als docent werkzaam was. Na een korte tijd bij de Pabo was zij vanaf 2000 is betrokken bij de onderwijsontwikkeling, coördinatie en onderwijsuitvoering van reflectie en intervisie onderwijs van de afdeling logopedie.
Tijdens haar werk als docent studeerde ze humanistiek aan de Universiteit voor Humanistiek te Utrecht waar ze afstudeerde op een exploratieve studie naar morele dilemma's bij verzorgenden in verpleeghuizen. Zij heeft naast haar werk bij logopedie als humanistisch geestelijk verzorger een kleine eigen praktijk voor zingevingvragen.
Sinds 2007 heeft zij promotieonderzoek gedaan naar het faciliteren van het reflectieve leren ten behoeve van het stimuleren van professioneel gedrag. Naast een aantal publicaties heeft zij samen met collega's een workshop ontwikkeld waarin het kunnen reflecteren direct aan de professionele ervaring is gekoppeld. Tevens verzorgt ze voordrachten over het ontwikkelen en vormgeven van reflectie onderwijs.

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