

Effects of a self-assessment procedure on VET teachers' competencies in coaching students' reflection skills

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Effects of a self-assessment procedure on VET teachers' competencies in coaching students' reflection skills

Migchiel Riemer van Diggelen



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CONTENTS

Chapter 1 General introduction	9
1.1 Background	9
1.2 Conceptual framework	10
1.2.1 Relevant aspects of self-assessment	10
1.2.2 Coaching students' reflection skills	12
1.3 Context of the study	13
1.4 Problem definition and research questions	15
1.5 Relevance of the study	15
1.6 Overview of the different studies	16
Chapter 2 Development of a procedure for teachers' self-assessment of coaching VET students' reflection skills	19
2.1 Introduction	20
2.2 Theoretical framework	21
2.2.1 Requirements and measures for a self-assessment procedure	22
2.2.2 From requirements and measures to design principles	25
2.3 Development of the self-assessment procedure	26
2.3.1 Participants	26
2.3.2 Formulation of criteria and standards	26
2.3.3 Encouraging learning by the self-assessment procedure	28
2.3.4 Implementation of the self-assessment procedure	29
2.3.5 The elements of the self-assessment procedure	31
2.4 Illustration of the teachers' use of the self-assessment procedure in practice	31
2.5 Discussion	34

Chapter 3 | Teachers' use of self-assessment: the role of criteria and standards, feedback and reflection **37**

3.1	Introduction	38
3.2	Theoretical framework	39
	3.2.1 Criteria and standards	39
	3.2.2 Feedback	41
	3.2.3 Reflection	42
3.3	Method	43
	3.3.1 Context and participants	43
	3.3.2 Data collection	43
	3.3.3 Data-analysis	46
3.4	Results	49
	3.4.1 Teachers' use of criteria and standards for self-assessment and colleague assessment	49
	3.4.2 Teachers' use of feedback	51
	3.4.3 Teachers' use of reflection	56
3.5	Conclusions and discussion	59
	3.5.1 Conclusions	59
	3.5.2 Discussion	60
	3.5.3 Implications for practice	62
	3.5.4 Limitations and suggestions for future research	62

Chapter 4 | VET teachers' assessment of their coaching of students' reflection skills and assessment by their colleagues: results of a longitudinal study **65**

4.1	Introduction	66
4.2	Theoretical framework	67
4.3	Method	70
	4.3.1 Participants and procedure	70
	4.3.2 Instrumentation	71
	4.3.3 Analysis	74
4.4	Results	75
4.5	Conclusions and discussion	81

4.5.1	Conclusions	81
4.5.2	Discussion	81
4.5.3	Limitations and suggestions for further research	83
Chapter 5 What and how do teachers learn from self-assessment: results from a longitudinal study		85
5.1	Introduction	86
5.2	Theoretical framework	88
	5.2.1 Research questions	91
5.3	Method	92
	5.3.1 Participants	92
	5.3.2 Data collection	92
	5.3.3 Data analysis	93
5.4	Results	95
	5.4.1 Learning outcomes	95
	5.4.2 Intentions for learning and planned activities	101
5.5	Conclusions and discussion	103
Chapter 6 Teachers' perceptions of the usefulness of a self-assessment procedure for coaching students' reflection skills		107
6.1	Introduction	108
6.2	Theoretical framework	109
6.3	Method	110
	6.3.1 Context and participants	110
	6.3.2 Instrumentation and analysis	110
6.4	Results	113
6.5	Conclusions and discussion	114

Chapter 7 Conclusions and discussion	117
7.1 Introduction	117
7.2 Main findings and conclusions	118
7.2.1 Development of a self-assessment procedure	118
7.2.2 Teachers' use of self-assessment: the role of criteria and standards, feedback and reflection	119
7.2.3 VET teachers' assessment of their coaching of students' reflection skills and assessments by their colleagues: results of a longitudinal study	120
7.2.4 What and how teachers learn from self-assessment: results from a longitudinal study	120
7.2.5 Teachers' perceptions of usefulness of a self-assessment procedure	121
7.2.6 Overall conclusion of the effect of self-assessment	122
7.3 Discussion of the main findings	122
7.3.1 Usefulness of self-assessment	123
7.3.2 Facilitating professional development	127
7.4 Implications for practice	128
7.5 Limitations and suggestions for follow-up research	129
References	131
Appendix A	141
Summary	143
Samenvatting	155
Dankwoord	167
List of publications	169
Curriculum Vitae	171
ESOE dissertation series	173

CHAPTER 1

General Introduction

1.1 | Background

Ideally, teachers act as professionals who take responsibility for their work and make their own choices. Teachers are supposed to respond to new developments and to experiment with new forms of education and educational contents and to reflect on outcomes. Teachers need to develop themselves on a continuous base and to demonstrate a professional attitude towards their work. Self-assessment as a tool for learning fits really well into the conception of the teacher as a professional (Verloop, 2003). Self-assessment makes teachers responsible for their own learning and is regarded as an essential feature of professional practice (Boud, 1995, p. 15).

In the literature, self-assessment is frequently described as a promising method for teacher learning (Airasian, Gullickson, Hahn, & Farland, 1995; Barber, 1990; Ross & Bruce, 2007). Self-assessment has been argued to stimulate the monitoring capacities of teachers (Crooks, 1988) and to enhance their understanding of what constitutes good practice (Samuel & Betts, 2007). Besides being regarded as positive for the learning by teachers, self-assessment is considered attractive because it is easy to implement in schools and requires relatively little of the scarcely available time of teachers. Despite the popularity and potential benefits of self-assessment, the theoretical and empirical bases supporting the above claims are as yet rather underdeveloped (Ross & Bruce, 2007). To better understand the possibilities, merits and shortcomings of teachers' self-assessment as a tool for learning, there is an urgent need for research into its effects.

The dissertation reports on the effects of a developed self-assessment procedure used by teachers working in Vocational Education and Training

(VET). This procedure was meant to foster the competence development in coaching students' reflection skills. This first chapter deals with the conceptual framework, context, problem definition and research questions, the relevance, and the methodology of the research. The chapter ends with an outline of the studies that comprise this dissertation.

1.2 | Conceptual framework

1.2.1 Relevant aspects of self-assessment

When we learn we question ourselves: 'How am I doing', 'Is this enough?', 'Is this right?', 'How can I tell?', 'Should I go further?' (Boud, 1995). The act of questioning implies the act of judging ourselves and making decisions about the next step. This is self-assessment (Boud, 1995, p.1). Ross and Bruce (2007) locate self-assessment as an important mechanism for facilitating professional growth. In line with the definition of Boud (1995), self-assessment is commonly defined as *an activity in which teachers evaluate their own work by applying criteria and standards to their work and by making judgments with respect to the extent to which they have met these criteria and standards*. The activity of self-assessment can be considered as an integration of self-observations, self-judgments and self-reactions (Ross & Bruce, 2007).

Criteria and standards are a relevant basis for self-assessment. Criteria are descriptions of adequate teacher behaviour within a certain skill domain; they define what is considered to be good. Through the use of criteria, the process of self-assessment, giving and receiving feedback and reflection becomes systematic. In the literature, several effects of criteria are mentioned. For example, criteria can give teachers insight into the strengths and weaknesses of their own practice (Ross & Bruce, 2007) and contribute to their development of conceptions of good teaching (Crooks, 1988; Sadler 1989).

Giving and receiving feedback is an important additional measure for learning through self-assessment. Hattie and Timperley (2007) define feedback as information provided by an agent regarding aspects of one's

performance or understanding. Teachers providing each other with feedback may systematically contribute to self-judgments (Duke & Stiggins, 1990). Feedback can confirm or enrich self-judgments with additional interpretations of the assessed situation (Ross & Bruce, 2007). In a review on formative feedback, Shute (2008) concludes that feedback must be multidimensional, non-evaluative, supportive, in-time, specific, credible, just enough, and authentic. Furthermore, effective feedback needs to address three questions, namely: where the learner is going, where the learner is right now, and how to get there (Hattie & Timperly, 2007; Ramaprasad, 1983; Sadler, 1989). Also, *reflection* is an important measure to enhance the effects of learning through self-assessment. Reflection is a process of framing and reframing experiences (Schön, 1983). Through reflection teachers give meaning to their experiences (Korthagen, Kessels, Koster, Lagerwerf, & Wubbels, 2001; Rodgers, 2002), in this study to their self-assessment and feedback from a colleague. Through reflection teachers understand, relate and integrate new insights, derived from self-assessment, into their frame of reference. In this thesis, feedback and reflection are considered as important means that can contribute to learning through self-assessment.

It is expected that self-assessment also leads to outcomes in terms of intended learning and plans to realize them. The plans to realize the intended learning outcomes can be described in terms of similar learning activities teachers should undertake. There are many models that prescribe how learning by teachers needs to take place (Bakkenes, Vermunt, & Wubbels, 2010), but only a few studies have been conducted on what and how teacher learning at the workplace actually takes place (e.g., Kwakman, 2003; Lohman & Woolf, 2001; Van Eekelen, Boshuizen, & Vermunt, 2005). These studies mainly distinguished the following *learning activities* teachers undertake at the workplace, namely learning by: doing, experimentation, using external sources, interaction with others and reflection on practice. However, these studies only distinguished observable and overt categories and no covert or hidden cognitive categories. Recently, studies have provided more knowledge into the cognitive aspects of how (student-) teachers learn at their workplace (e.g., Bakkenes et al., 2010; Hoekstra, Beijaard, Brekelmans, & Korthagen,

2007; Meirink, Meijer, & Verloop, 2007; Zwart, Wubbels, Bergen, & Bolhuis, 2007). Categories of learning activities found by these studies were: considering one's own practice, getting ideas from others, experiencing friction, struggling not to revert to old ways, and avoiding learning. Experimenting with something and considering one's own practice were the learning activities that teachers most frequently reported on. In this study we consider the above-mentioned learning activities to be relevant for mapping teachers planned learning activities.

1.2.2 Coaching students' reflection skills

Coaching of students' reflection is an important but difficult task to perform by VET teachers. In addition, coaching of students' reflection skills is not a well-defined concept in both theoretical and practical views (Ketelaar, den Brok, & Beijaard, 2012). Coaching is defined here as supporting and/or challenging students to reflect by asking questions, giving feedback and providing tips and hints (Bakker, 2008; Collins, Brown, & Newman, 1989). During coaching, teachers can focus their interventions on different aspects of learning, namely: the task, process, regulation and the self (Hattie & Timperley, 2007). These different aspects comprise the *what* of coaching interventions. *Reflection* in this study is defined as: thinking over what has happened during the learning process while preparing, performing or finalizing learning activities (Ertmer & Newby, 1993; Mansvelder, Beijaard, & Verloop, 2007; Van der Boom, Paas, Van Merriënboer, & Van Gog, 2004; Vermunt, 1992; Vermunt & Verloop, 1999; Zimmerman, 1998, 2000). Reflection on these phases of the learning process comprise the *when* of coaching. Differentiating between the different aspects of what and when of coaching students reflection skills assures that coaching interventions build upon the students' knowledge and understanding (Hattie & Timperley, 2007).

Teachers must prepare their coaching interventions well to determine on what aspects of the what and when of coaching the interventions must be focused. Teachers can prepare their coaching intervention by observing the student. Also, teachers must check by asking questions whether their diagnosis of the what and when of coaching students' reflection skills was

correct (Van de Pol, Volman, & Beishuizen, 2012). Furthermore, there are several aspects related to the *how* of coaching that further impact the effects of coaching interventions on students' reflection (De Ridder, Stokking, McGaghie, & Ten Cate, 2008; Sadler, 1989; Shute, 2008). The teacher must use clear language, choose formulations that invite students to reflect, explicate the meaning of their intervention to avoid misunderstandings, and assure interaction between the teacher and the students. Additionally, the design of the coaching intervention impacts the students' reflection (how of coaching). It is important that the timing of the intervention is adequately chosen and that the teacher varies the amount of support and/or challenge given. Finally, it is important for teachers to consider the conditions under which a student has to reflect. The teacher must assure that the students feel safe, that there is a good working climate, a good contact, and that the relevance of coaching students' reflection is explicated (Mittendorff, den Brok, & Beijaard, 2011).

From a more practical perspective, teachers need to fulfill their coaching role in many different educational settings (Ketelaar, et al., 2012). This dissertation focuses on the coaching role of the teacher in the classroom while students are reflecting. This means that coaching takes place when teachers guide their students: (1) to reflect while/on preparing, performing or ending a task or a project related to their competence development and (2) to reflect on their experiences in their practical workplaces.

1.3 | Context of the study

This study took place in the two highest streams of the school-based study route of Vocational Education and Training (VET) of the sector health. In this type of education, students from 16 till 20 years old are prepared for working as a nurse by following both practical workplace training and school-based learning, equally divided, across their four years of education. Currently, teachers and students in VET are confronted with a huge reform of their education. Since august 2010, each VET school is obligated to start the

implementation of competence-based education (Dutch Inspectorate of Education, 2007). A relevant goal of competence-based education is to prepare students for lifelong learning and to reduce the gap between schools and the labour market (Biemans, Nieuwenhuis, Poell, Mulder, & Wesselink, 2004). Due to this implementation of competence-based education (CBE), teaching practices of schools and teachers are supposed to change (Ketelaar, et al., 2012; Mittendorff, et al., 2011).

Biemans et al. (2004) described the principles underlying the implementation of CBE in the Netherlands. According to these authors, the core of competence-based education is formed by competencies commonly defined as integrated wholes of knowledge, skills and attitudes. The curricula are based on core professional problems and written on a competence base which is defined at a national level. Students' competence development is assessed before, during and after learning. Learning takes place in various, authentic settings. Important is that the students' learning environment must stimulate their self-responsibility and reflection to establish a basis for life-long learning.

The shift to CBE requires a fundamental shift in the role of teachers. The teacher is supposed to switch from the role of an expert who is transferring knowledge to a coach who is guiding students' learning (Ketelaar, et al., 2012; Mittendorff, et al., 2011). The teachers must make the students responsible for their own learning and stimulate them to reflect on their learning experiences. Therefore, teachers must balance their roles as experts and coaches. The shift towards CBE requires a different attitude of both the teacher and the students. The extent to which the role of teachers (and students!) needs to change can easily be overlooked when competence-based education is implemented (Jellema, 2003). This is not a surprise, since implementing new teaching methods is generally an issue of concern. The process of changing teaching practice takes time and new ways of teaching, such as coaching students' reflection, are difficult to translate into daily practice. Research shows that VET teachers consider coaching students' reflection as an important but difficult competence (De Bruijn & Leeman, 2011).

1.4 | Problem definition and research questions

This dissertation starts from the proposition that self-assessment is a potentially powerful tool for teacher learning (see section 1.1). Empirical evidence that supports this proposition is scarce (Ross & Bruce, 2007). The central problem of this dissertation is the following: What are the effects of self-assessment on teachers' competencies in coaching Vocational Education and Training students' reflection skills? To address this problem, the following research questions will be answered in this dissertation:

1. How can a useful self-assessment procedure be developed for VET teachers for coaching students' reflection skills?
2. How do VET teachers use a self-assessment procedure that has been developed for coaching students' reflection skills?
3. How are VET teachers' competencies in coaching students' reflection skills rated by themselves, their colleagues and which trends in scoring are visible over time?
4. What and how do VET teachers learn and intend to learn from (repeatedly) being engaged in a self-assessment procedure used to develop their competencies in coaching students' reflection skills?
5. How do VET teachers value the different aspects of the self-assessment procedure which they used to develop their competencies in coaching students' reflection skills?

1.5 | Relevance of the study

The research presented in this dissertation is relevant from a theoretical and practical perspective. Overall, the research connects literature on teachers' professional learning and literature on self-assessment. Self-assessment as a tool for learning is a promising but rather neglected strategy in research on teacher learning. This dissertation adds to the empirical knowledge base on the effects of self-assessment.

The practical value of this dissertation lies in the development of a self-assessment procedure for teachers to assess their competencies in coaching students' reflection skills. The self-assessment procedure developed in this study can be used by teachers and schools to foster teachers' learning in coaching students' reflection skills. The practical usefulness of this study might also lie in making explicit what we understand by good coaching of students' reflection skills. It may foster discussion among teachers, teacher educators and other practitioners, which will promote the use of a shared language when talking about coaching students' reflection skills.

1.6 | Overview of the different studies

The five research questions will each be addressed in separate chapters. *Chapter 2* will report on a study on the development of a self-assessment procedure for fostering teachers' competencies to coach VET students' reflection skills (research question 1). The study reveals how a self-assessment procedure can be developed by explicating what makes self-assessment useful for learning, formulating design principles for the development of self-assessment and translating these principles into a concrete self-assessment-procedure. In subsequent chapters, the effects of the self-assessment procedure will be reported. The studies presented in these chapters are part of the same longitudinal research in which 24 teachers used the self-assessment procedure repeatedly but focus on different effects.

Chapter 3 presents a study in which it was investigated how teachers use the assessment procedure (research question 2). For that purpose, completed self-assessments forms, video-taped feedback conversations with peers (colleagues) and written reflective reports of 24 teachers were analyzed. This study demonstrates how teachers' use of the self-assessment procedure can be characterized in terms of teachers' use of criteria and standards, feedback and reflection as relevant aspects of the self-assessment procedure that has been developed.

Chapter 4 reports on the way teachers assess themselves are assessed by their colleagues and how these assessments develop or change over time (research question 3). For this purpose, 72 self-assessments and 72 colleague assessments were analyzed that were collected during one and a half year.

Chapter 5 presents the findings on what and how teachers learn from using a self-assessment procedure to develop their competencies in coaching students' reflection skills three times within a period of one and a half year (research question 4). For that purpose, 69 reflective reports of 24 VET teachers were examined.

Chapter 6 deals with teachers' perceptions of aspects regarding the usefulness of the self-assessment procedure (research question 5). A questionnaire was used to investigate how teachers experienced the design principles underlying the self-assessment procedure as being realized in practice and how useful the self-assessment procedure was for them to develop their competencies in coaching students' reflection skills.

Chapter 7 summarizes and discusses the main results of the different studies, followed by some limitations of the study, suggestions for future research, and implications for practice.

The chapters in this dissertation have been written in the form of separate articles. As a consequence, overlap of text exists in the introduction, theoretical backgrounds, designs and limitations of the Chapters 3 to 6.

CHAPTER 2

Development of a procedure for teachers' self-assessment of coaching VET students' reflection skills¹

ABSTRACT

This chapter describes the development of a self-assessment procedure for fostering teachers' competencies to coach Vocational Education and Training (VET) students' reflection skills. Design principles underlying this procedure were derived from literature on conditions for professional learning and quality criteria for assessment. The developed self-assessment procedure consisted of criteria and standards for teachers to assess their own coaching competencies of students' reflection skills, feedback from colleagues on observed lessons, and a format for writing a reflection report about their competencies to be written by the teachers themselves including a reflection on the feedback from their colleagues and goals for future action. A first impression of teachers' use of the self-assessment procedure indicates that feedback from a colleague appears to be useful and that teachers seem to differ strongly in the way they perform the self-assessment procedure, particularly regarding the use of criteria.

¹ This chapter has, in combination with chapter 6, been submitted for publication as: Van Diggelen, M. R., Beijaard, D., & den Brok, P. J. *Development of a procedure for teachers' self-assessment of coaching students' reflection skills and teachers' perceptions of its usefulness.*

2.1 | Introduction

In the educational field many practitioners see self-assessment as an attractive method for fostering teachers' learning. Self-assessment is considered to be easy to develop and implement and to require little of the scarcely available time of hard working teachers. In the literature, self-assessment is described as a promising method for learning by teachers (Barber, 1990; Ross & Bruce, 2007). It is believed that self-assessment enhances teachers' understanding of what constitutes good practice (Samuels & Betts, 2007), stimulates the self-monitoring capacities of teachers (Crooks, 1988), and prepares teachers for lifelong learning (Boud, 1995). Surprisingly, little empirical evidence is available regarding the effects of self-assessment as a strategy for teachers' professional learning (Ross & Bruce, 2007). Research on self-assessment is utterly needed. To develop a sound knowledge base on effects of self-assessment, research must start by explicating what makes self-assessment useful for learning and formulating design principles for the development of self-assessment and translating these principles into a concrete self-assessment-procedure.

This chapter describes the development of a self-assessment procedure for teachers to assess their competencies in coaching Vocational Education and Training (VET) students' reflection skills. The teachers included in our study taught in the two highest streams of the health domain in secondary vocational education, followed by students aged 16 or older. For these students, reflection is an important skill to attain. The literature shows VET teachers in the Netherlands consider the coaching of student reflection as an important but difficult competence (De Bruijn & Leeman, 2011; Mittendorff, den Brok, & Beijaard, 2011).

Through the description of the development of a self-assessment procedure for VET-teachers we hope to contribute to the understanding of which specific design characteristics contribute to the usefulness of self-assessments (Darling-Hammond & Snyder, 2000). It is believed that consulting literature on conditions for teacher learning and literature on

quality criteria for teacher assessment is a good starting point for the development of a self-assessment procedure.

Our research question therefore is: How can a useful self-assessment procedure be developed for VET teachers for coaching students' reflection skills? To answer this question the focus in this study will be on how: (a) design principles based on quality criteria for teacher assessment and conditions for learning can be incorporated into a self-assessment procedure and (b) teachers use of the developed self-assessment procedure.

2.2 | Theoretical framework

In line with Boud (1995), self-assessment is defined as an activity in which teachers apply criteria and standards to their own work and make judgments with respect to the extent to which they have met these criteria and standards. Boud argues that self-assessment not necessarily needs to be an isolated or individual activity; other people who for example give feedback can be included in a procedure for self-assessment as well.

Ross and Bruce (2007) regard self-assessment as an important mechanism for facilitating teachers' professional growth. According to them, self-assessment makes teachers exert control over the interpretation and application of criteria and standards that underlie the self-assessment. In addition, self-assessment emphasizes teachers' own responsibility for their professional development and fits well into current conceptions of the teacher as an autonomous professional to a large extent responsible for his/her own learning and development (Verloop, 2003). It stimulates reflection and may result in insight and/or awareness of aspects of teaching that need to be improved (Airasian, Gullickson, Hahn, & Farland, 1995). Self-assessment can provide teachers with the tools necessary to monitor the quality of their teaching (Crooks, 1988). Through self-assessment, teachers can develop their conceptions of good teaching and their evaluative skills necessary to identify directions for their professional learning (Crooks, 1988; Sadler, 1989).

The work of Boud (1995) indicates that self-assessment can consist of a set of activities combined into a procedure for self-assessment. For fostering professional growth of teachers, it is important that such a procedure is meaningful and useful to teachers (Birenbaum, 2007), including its content or focus. To realize a meaningful and useful self-assessment procedure for teachers, requirements and measures are needed for: (a) the formulation of criteria and standards, (b) measures for learning, and (c) measures for the implementation of the self-assessment. To a large extent these requirements and measures can be derived from the literature on conditions for professional learning and quality criteria for assessment. This process of deriving measures and requirements for the self-assessment procedure is outlined in the next section which will be an integrated description of both streams of literature.

2.2.1 Requirements and measures for a self-assessment procedure

Formulation of criteria and standards. Self-assessment implies the application of criteria and standards to teachers own work to make judgments about the extent they have met these criteria and standards (Boud, 1995). Criteria and standards can focus teachers' attention on aspects of teaching which are relevant for (improvement of) their practice (Crooks, 1988). From the literature on quality criteria for assessment is known that assuring usefulness and meaningfulness of self-assessment implies that criteria and standards cannot only be *derived from theory* but also need to *fit into the specific contexts* of the schools (Darling-Hammond & Snyder, 2000; Uhlenbeck, Verloop, & Beijaard, 2002). Theory offers relevant insights and a framework to base criteria and standards on. Fitness to practice implies that these criteria and standards are recognizable, suitable and relevant to teachers' own practice. Usefulness and meaningfulness are further guaranteed when teachers experience ownership over the criteria and standards (Sadler, 1998). When teachers experience true ownership, they perceive criteria and standards as if they were their own (Pierce, Kostova, & Dirks, 2003). Ownership is furthermore enhanced when the criteria and standards are *accepted* by teachers and when decisions with regard to the

formulation of the criteria and standards are *transparent* to them (Dwyer, 1994, 1998). Ownership is furthermore enhanced when teachers participate in decision-making about the formulation of criteria and standards. Through that, teachers' feelings of control are strengthened and it makes an appeal to teachers' responsibility for their own learning (Verloop, 2003). Participation in decision making also enhances the relevance of criteria and standards, through which teachers will become more motivated for using them.

Requirements for the formulation of criteria and standards can be found in the literature on professional learning as well. First, teachers must have the feeling *their learning preferences and needs are met* by the self-assessment procedure (Day, 1999). This means that they must be actively involved in the design of the procedure, which in turn also positively affects their feelings of ownership.

Second, learning can be regarded as *person- and context dependent* (Uhlenbeck et al., 2002). As a consequence, differences between individuals and contexts should be taken into account when developing a self-assessment procedure. On the one hand this implies that criteria and standards must reflect all teachers' practices in a proper way. On the other hand it implies that criteria and standards cannot be formulated too specific in order to make a flexible use of them possible. Also, in the formulation of criteria a careful balance between describing the practice of teachers and prescribing the direction for learning needs to be found.

Third, learning must be *practice-oriented* (Supovitz & Turner, 2000; Wilson & Berne, 1999). Opportunities to learn for teachers are most powerful if they are connected with authentic experiences (Hawley & Valli, 1999). It is important that there is enough alignment between the self-assessment procedure and teachers' daily practice (Smith & Gillespie, 2007).

Measures for learning. To strengthen the potential of the self-assessment procedure it is important to undertake measures so that learning can occur. These measures can be derived from the literature on conditions for professional learning. A first measure deals with *receiving feedback from peers* (Wilson & Berne, 1999). Such feedback can confirm or enrich self-judgments

with additional interpretations of the assessed situation. Teachers providing each other with feedback may systematically contribute to self-judgments (Duke & Stiggins, 1990).

A second measure deals with *meaning making through reflection on learning* (Hatton & Smith, 1995; Korthagen, Kessels, Koster, Lagerwerf, & Wubbels, 2001; Schön, 1983; Smith & Gillespie, 2007). By conscious reflection teachers are stimulated to give meaning to their self-assessment. Teachers need to understand, relate, extend existing insights or integrate new insights, derived from self-assessment, into their frame of reference.

A third measure deals with the *duration of a self-assessment procedure*. When introducing self-assessment it should not be treated as a single-shot activity (Ball & Cohen, 1999; Smith & Gillespie, 2007). The procedure must be sustainable over time to get teachers used to it and to learn to use the procedure in a proper way. Sustainability will enhance the usefulness of the procedure and lead to a more permanent use of the procedure (Hawley & Valli, 1999; Smith & Gillespie, 2007; Supovitz & Turner, 2000). Garet, Porter, Desimone, Birman and Yoon (2001) argue that longer lasting activities provide more opportunities and possibilities for in-depth learning, to experiment with new things, and to receive feedback.

Measures for implementation. To guarantee the usefulness of the self-assessment procedure, the implementation of the self-assessment procedure must be accounted for. A first measure for the implementation of a self-assessment procedure is that teachers *must perceive the procedure as transparent* (Dwyer, 1996, 1998). When teachers receive proper, sufficient and clear information about the design and purpose of the self-assessment procedure, they may be more committed to invest in the procedure. A second measure for implementation is *practicability* of the self-assessment (Bachman & Palmer, 1996; Uhlenbeck et al., 2002). When designing the self-assessment procedure, choices must be made with consideration of the time teachers have to invest in it, as well as the costs and the benefits for teachers. A third measure for implementation is *proper facilitation in terms of time and resources* (Bachman & Palmer, 1996; Day, 1999; Uhlenbeck et al., 2002). It is

important that teachers are not hindered, frustrated or demotivated by a lack of time or insufficient resources during the implementation of the self-assessment procedure.

2.2.2 From requirements and measures to design principles

The theoretical elements described thus include requirements for the formulation of criteria and standards, measures to promote learning and measures for the implementation of the self-assessment procedure. These requirements and measures can be translated into principles for the design of a self-assessment procedure, in this study regarding the coaching of student reflection by teachers in the domain of Health Vocational Education. In Table 2.1, these design principles are summarized.

Table 2.1 Design principles

<i>Topic of principle</i>	<i>Design principle</i>
Principles for the formulation of criteria and standards	A) Involve teachers in formulating criteria and standards for coaching reflection skills.
	B) Assure that criteria and standards reflect theoretical and practical perspectives on coaching students' reflection.
Principles for encouraging learning	C) Base self-assessment on teachers' own practice.
	D) Provide in collegial feedback.
	E) Provide in meaning making by teachers through reflection.
	F) Use the self-assessment procedure repeatedly and in a longitudinal manner.
Principles related to the implementation of the self-assessment procedure	G) Assure applicability of the self-assessment procedure in terms of time and money.
	H) Facilitate the self-assessment procedure properly.
	I) Ensure that the self-assessment procedure is systematic and transparent.

In the remainder of this chapter, the development, implementation and use of the self-assessment procedure will be described based on the design principles summarized in Table 2.1.

2.3 | Development of the self-assessment procedure

2.3.1 Participants

The self-assessment procedure to be developed was meant for Health Vocational Education and Training schools (VET). In the Netherlands, there are four streams of VET education. Teachers who participated in this study work in the two highest streams of VET and educate their students to become self-regulative and reflective nurses. Teachers from three schools participated in the development of the self-assessment procedure: 5 from school one, 11 from school two and 24 from school three.

2.3.2 Formulation of criteria and standards

This section describes the way criteria and standards were developed and formulated based on the design principles A and B in Table 2.1. In several rounds a framework for criteria and standards was iteratively constructed by pending back and forth between theoretical and practical perspectives on coaching students' reflection skills. The framework was a conceptualization of coaching student reflection skills. In each round the (modified) framework was used to formulate criteria and standards. Finally, this resulted in 23 criteria and four standards for each criterion. This process of formulating criteria and standards will be summarized below.

First, a review of the literature on coaching and reflection was undertaken as a starting point for developing a framework reflecting the *what* and *when* of coaching of reflection skills by students. Based on this review, coaching was defined as the process wherein the teacher supports and/or challenges students to reflect by asking questions, giving feedback and providing tips and tricks (Bakker, 2008; Collins, Brown, & Newman, 1989). During coaching teachers can focus their interventions on different aspects of

learning, namely: the task, process, regulation and the self (Hattie & Timperley, 2007). These different aspects comprise the *what* of coaching interventions. Reflection was defined as: thinking over what has happened during the learning process while preparing, performing or finalizing learning activities (Ertmer & Newby, 1993; Mansvelder-Longayroux, Beijaard, & Verloop, 2007; Van den Boom, Paas, Van Merriënboer, & Van Gog, 2004; Vermunt, 1992; Vermunt & Verloop, 1999; Zimmerman, 1998, 2000). Reflection on these phases of the learning process comprise the *when* of coaching. This review of the literature resulted in seven criteria (see Appendix A: criteria 3-6 and 8, 9, 10).

Second, focus group discussions (Krueger & Casey, 2009) were held to involve teachers in the (re)formulation of criteria pertaining to the *what and when* of coaching students' reflection skills. To integrate theoretical and practical perspectives, a content analysis of the discussions was conducted by comparing these with our theoretical framework (round one). Decisions to (re)formulate the criteria were made by the researcher. Decisions were made based on the potential meaningfulness and usefulness of criteria for teachers' learning. This resulted in two additional criteria (Appendix A: criterion 7 and 11). In general, teachers missed aspects about how to coach in the list of criteria. Therefore the framework was elaborated.

Third, the framework was extended by results from a literature review relating to the *how* of coaching (De Ridder, Stokking, McGaghie, & Ten Cate, 2008; Sadler, 1989; Shute, 2008). Criteria were added that related to: how to prepare, design, communicate and end a coaching intervention and criteria related to conditional aspects of coaching. To involve teachers in the formulation of criteria for these aspects, focus group discussions were again held. In the analysis of the focus-group data a similar procedure was followed as before. The researcher decided to formulate criteria based on their potential meaningfulness and usefulness for teachers' learning. This resulted in 12 criteria related to the *how* of coaching (Appendix A: criteria 1, 2 and 13-22).

Fourth, 3 team principals and 2 persons responsible for professional learning in the schools were interviewed as stakeholders. These stakeholders

suggested that teacher's conceptions of reflection were often restricted to looking back instead of looking forward. Therefore, a 23rd criterion was added (Appendix A: criterion 12), namely: 'I stimulate the cyclical reflection of the student.'

Obviously, standards for the criteria were needed. Often, standards used for formative assessments indicate a level of competence, formulated in terms of consequences for student learning (e.g., Bakker, 2008). Given the complex nature of coaching student reflection skills it was decided to use standards, formulated on a four point scale, that indicate to what extent teacher behavior was realized. An example of a criterion and standards is the following:

"The teacher focuses his coaching on the self: (1) this aspect is hardly realized; (2) this aspect is limitedly realized; (3) this aspect is reasonably realized; (4) this aspect is fully realized."

2.3.3 Encouraging learning by the self-assessment procedure

Measures to encourage learning were based on the design principles C, D, E, F, and G in Table 2.1. The design principle *self-assessment based on teachers' own practice* was translated into teachers' use of criteria and standards for analysing their own coaching competencies. Teachers had to self-assess their coaching competencies of student reflection skills after a lesson in which they coached students. The self-assessment was thus based on their recollections of a lesson. For each criterion, teachers needed to ask themselves to what extent they had met the criterion by rating themselves on standards and think of examples of the criterion in order to justify their score.

Based on the design principle *provision of feedback*, it was decided that teachers had to form a couple with a colleague to conduct peer observation, peer assessment and feedback conversations. The lesson to be observed by a colleague had to be video-taped. The colleague had to use his/her observations for assessing the self-assessor. The colleague received a video-taped lesson to provide the opportunity to observe the lesson again. After the observation and assessment based on the same criteria and standards, a feedback conversation was organized. The feedback conversation

was structured in the following manner: exchange of global impressions of the lesson, clarification of these global impressions, exchange of observations, comparison of judgments, interpretation of differences and similarities in judgments by the self-assessor and verification by consulting the colleague. To guarantee receiving relevant feedback, the feedback conversations had to be held within one week after the lesson taught.

The design principle of *provision in meaning making by reflection* was translated into writing a reflective report. Teachers were instructed to report on their learning experiences. Teachers were asked to report on their learning intentions when starting the self-assessment procedure, their learning from their experiences with the self-assessment procedure and the contribution of the feedback of their colleague to their learning, learning goals and how to achieve these goals. Meaning making through reflection was further enhanced by the inclusion of peer feedback on this reflective report and, based on this feedback, making adjustments before undertaking action. Teachers had to finish this reflective report within a week after the feedback conversation. The whole self-assessment procedure had to be finished within two weeks after the first classroom observation.

To offer our self-assessment procedure repeatedly and in a longitudinal manner, the self-assessment procedure was organized three times with a time-span of three months in between.

2.3.4 Implementation of the self-assessment procedure

To implement the self-assessment procedure adequately, several measures were undertaken based on design principles H, I and J in Table 2.1. *To guarantee applicability* it was important that teachers perceived their investment in the self-assessment procedure in terms of learning benefits. It is well-known that teachers generally experience much workload, which was confirmed during the focus-group meetings. To guarantee the applicability of the self-assessment procedure, it was decided to minimize teachers' investment as much as possible. The duration of a self-assessment round was therefore limited to seven hours per round.

To guarantee a proper facilitation it was decided to integrate the self-

assessment procedure in schools' Human Resources Policy, of which professional development of teachers is an important part. As a result, schools provided teachers with time to develop themselves professionally through the self-assessment procedure. In total, twenty one free scheduled hours for undertaking the self-assessment procedure were provided. In addition, it was decided to facilitate classroom observation and feedback conversations by integrating these elements of the self-assessment procedure into the working schedule of the participating teachers.

To assure the self-assessment procedure to be systematic and transparent a training was set up for the participating teachers. A training session of three hours was developed in which the teachers learned to use and apply the criteria and standards. During the training, video-episodes were observed and discussed. The video episodes contained situations in which a VET teacher coached student reflection. After each fragment, teachers were asked to decide which criteria were applicable to the situation, why, and to indicate to what extent the criterion was realized. After each fragment, teachers' answers were discussed plenary. Teachers received feedback from the researcher on their observations, their judgments of the fragments via the use of criteria and standards and on the argumentation for their judgments. The aim of the training session was to make teachers familiar with the criteria and standards and to prepare them adequately for undertaking the self-assessment procedure. To support a proper performance of the self-assessment procedure, all teachers received a course document which contained all tools, examples of all criteria and examples of questions to be asked during the feedback conversation (John & Graham, 1996).

2.3.5 The elements of the self-assessment procedure

Based on the design principles as described in the previous sections, the developed self-assessment procedure consisted of:

1. a tool based on criteria and standards to be used by teachers to assess their own coaching competencies of students' reflection skills;
2. feedback from peers on observed lessons by using the same tool;
3. a report written by the teachers in which they reflected on their competencies, and feedback from their colleagues, and in which they set goals for future action and described the effort needed for this;
4. feedback from colleagues on this reflective report and, if necessary, the possibility to make adjustments.

2.4 | Illustration of the teachers' use of the self-assessment procedure in practice

To illustrate teachers' use of the self-assessment procedure, reflective reports of six teachers were collected during the first round of the trajectory and analysed following a grounded theory approach (Strauss & Corbin, 1990). The reflective reports of the six teachers were randomly chosen from the total group. In line with the prescribed format of the reflective report a description will be given of teachers' intentions before the start of the self-assessment procedure, their experiences with the self-assessment procedure, their experiences with colleague assessment and feedback, and their intentions for learning as a result of undertaking the self-assessment procedure.

Intentions before the start of the procedure. In the reflective report teachers were asked to report what they wanted to reach by undertaking the self-assessment procedure. The intentions formulated by the six teachers varied from none (three teachers) to intentions regarding their attitude during the self-assessment, difficulties with formulating learning intentions, and

learning to use criteria and standards (the other three teachers). The following quote illustrates a teacher's intentions related to his attitude during the self-assessment: *"I intended to coach as I always do, to give my colleague a representative impression, so that I can receive proper feedback."* The next quote illustrates a teacher who experienced difficulties in formulating learning intentions: *"I find it difficult to formulate intentions, mostly I act upon my intuition."* The final example pertaining to teachers' intentions formulated at the start of the self-assessment procedure illustrates a teacher who formulated a specific intention related to learning to use the criteria and standards: *"I want to coach more on the self and the professional identity of students."*

Experiences with the self-assessment procedure. Teachers used criteria in diverse ways when writing their reflective reports. Two teachers, (not a couple), used the criteria offered to them to structure their reflective reports. They compared their own scores on criteria with the scores of their colleagues on criteria, analysed the differences between these scores and based their intentions for learning on this comparison and analysis of the scores. These teachers used the criteria in an obvious, functional and explicit manner. Both teachers also wanted to learn more about the theory behind the criteria and standards. The other four teachers used criteria more indirectly and implicitly in their reflection. These teachers did not explicitly refer to the criteria to indicate what they had learned from the self-assessment and from the feedback of their colleague. What these teachers reported they had learned related to: (1) the intention to internalize criteria and standards; (2) learning to use the criteria for coaching in action; (3) being able to differentiate more when coaching student reflection skills; and (4) getting more knowledge of the framework underlying criteria through theoretical elaboration. One of these teachers wrote: *"studying the theory of the framework was fun and refreshing."* Another teacher wrote: *"I need more knowledge of the framework, it will help me to understand the concept of coaching students' reflection skills, to recognize it in class and to guide my actions."* These four teachers wrote rather general remarks about intentions to coach students' reflection skills

and demonstrated less explicit knowledge of the criteria than the two other teachers who used the criteria to a large extent.

Experiences with colleague assessment and feedback. All teachers reported learning gains from the feedback of their colleagues. Feedback of a colleague could take the form of a tip, an explanation, an observation or question about teachers' coaching of students' reflection skills. The feedback led to insight, awareness and positive confirmation. The following quotes illustrate experiences with the received feedback: *"My colleague advised me to ask more questions, to wait for the answer and not to give the answer to the students..."*, and *"I am aware of this bottleneck of teacher-centeredness..."* and *"I found the conversation about the lesson very useful, it is a different way of contact with your colleague."*

Intentions for learning based on the self-assessment procedure. The teachers' intentions to learn regarding the coaching of students' reflection skills showed much variety: questioning through, providing time and opportunity for students to think and answer, thinking of creative methods, coaching of student reflection skills more consciously, recognizing aspects of coaching related to the framework, collaborating more with a colleague, receiving feedback, and experimenting in class with different foci. The formulated intentions thus related to different aspects of coaching student reflection skills and differed in specificity, for example: *"I would learn to recognize different foci"*, and *"I would like to ask more questions, to more thoroughly question my students."* The first quote reflects theory underlying the criteria and standards and the second quote reflects an attempt of a teacher to teach in a more student-centered way by asking more thoroughly. The six teachers formulated intentions which reflected theory underlying a criterion, theoretical concepts around teacher-centeredness and student-centeredness and theoretical concepts related to counseling conversation techniques. All concepts are more or less related to coaching students' reflection skills.

2.5 | Discussion

The aim of the present study was to describe the development of a self-assessment procedure for teachers to assess their competencies in coaching Vocational Education and Training (VET) students' reflection skills. Through formulating design principles from literature on quality criteria for assessment and conditions for learning it was tried to develop a useful self-assessment procedure.

This study resulted in the formulation of a self-assessment procedure consisting of: criteria and standards, feedback, reflection and several measures for implementation. The self-assessment procedure was founded in relevant literature and based on a thoughtful and deliberate development. Through the use of design principles, future effects of teachers' use of the self-assessment procedure can be analysed systematically.

Criteria and standards for self-assessment were iteratively formulated via the involvement of teachers and by consulting literature. Theoretical perspectives provided the starting point for developing the framework and formulating criteria and standards reflecting the *what* and *when* of coaching of reflection skills by students (Hattie & Timperley, 2007). Practical perspectives yielded additional criteria and directions for improving the framework by elaborating on the *how* of coaching (De Ridder et al., 2008; Sadler, 1989; Shute, 2008). Finally 23 criteria were formulated. By iterating between theoretical and practical perspectives it was attained that criteria and standards reflected both theory and practice regarding coaching students' reflection, that theoretical knowledge was contextualized to bridge the gap between theory and practice more easily, and that teachers realized feelings of ownership over the criteria.

The principles for encouraging learning were translated in collegial feedback and teachers' reflection. Feedback was included to enrich the self-judgments and reflection was included to let teachers' give new meanings to experiences and to integrate new insights into their existing ones. Some evidence was found for the usefulness of colleague feedback. This points to the added value of colleague feedback for teachers learning through self-

assessment. However, more work is needed to detect why teachers perceive colleague feedback as useful. Whether the written reflective reports were useful for teachers learning remains to be seen and needs further clarification.

During the development of the self-assessment procedure, the researcher was confronted with several design issues. For example, the extent of teacher involvement in decision-making. Teachers were to a large extent involved in the development of criteria and standards but not in decisions regarding the inclusion of their feedback and reflections in the self-assessment procedure and in the development of formats for the feedback conversation and reflective reports. It is arguable that involving teachers also in making these decisions would have enhanced their feeling of ownership.

Realizing a useful self-assessment procedure constitutes more than developing the procedure and dropping it in practice. Careful consideration of implementation issues will likely lead to strong(er) learning outcomes and contribute to teachers' perceptions of usefulness. In this study, it was found important to train teachers for the self-assessment procedure, to facilitate the self-assessment procedure and to arrange an efficient self-assessment procedure in terms of time investment. However, the success of implementation also depends on the opportunities for facilitation offered by the schools and the schools' HRM policies. In practice, it is not self-evident that schools possess such a policy that arranges and facilitates self-assessment. In addition, organizational conditions for professional learning are often not met or strongly depend on the way teachers give meaning to those conditions (Imants & Van Veen, 2010; Slegers & Leithwood, 2010).

The study presented in this chapter was a first step in the development of a sound knowledge base on the development and effects of self-assessment. Research on effects of self-assessment needs to start by explicating a vision on what makes self-assessment useful for learning, to turn these ideas into design principles for self-assessment and to translate these principles into a concrete self-assessment procedure. More specifically, this study illustrates how specific design characteristics may contribute to the usefulness of self-assessment (Darling-Hammond & Snyder, 2000). The

illustration in this study of the way teachers used the self-assessment procedure provides preliminary evidence for this usefulness, although individual differences in teachers learning based on self-assessment might be expected. Ongoing research is needed to gain insight into specific effects of the self-assessment procedure on teachers learning.

CHAPTER 3

Teachers' use of a self-assessment procedure: the role of criteria, standards, feedback and reflection¹

ABSTRACT

This chapter reports on the way teachers assess their own coaching competencies regarding the development of vocational education students' reflection skills. The participating teachers used a self-assessment procedure in which they had to judge themselves with the help of criteria and standards, received feedback from a colleague based on the same criteria and standards, and wrote a reflection report about their learning experiences. To investigate teachers' use of the assessment procedure, completed self-assessments forms, video-taped feedback conversations with peers (colleagues) and written reflective reports of 24 teachers were analyzed. Overall it can be concluded that teachers' use of the self-assessment procedure can be characterized by: (1) slightly positive assessments of teachers about their own performance as well as those they received from their colleagues, (2) constructive peer feedback that was generally accepted by the teachers who were assessed, and (3) clear and informative reflective reports by the teachers mainly focusing on their own actions resulting from the self-assessment. This study shows that teachers can benefit from a self-assessment procedure and improve their competencies in coaching students' reflection skills.

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3.1 | Introduction

Self-assessment is described in the literature as a promising method for teacher learning (Airasian, Gullickson, Hahn, & Farland, 1995; Barber, 1990; Ross & Bruce, 2007). Self-assessment is also considered as an attractive method for fostering teachers' learning, because it can be easily developed and implemented and requires little of the scarcely available time of teachers. It is argued that self-assessment enhances teachers' understanding of what constitutes good practice (Samuels & Betts, 2007), stimulates the self-monitoring capacities of teachers (Crooks, 1988), and prepares teachers for lifelong learning (Boud, 1995). Nevertheless, these beliefs about effects of self-assessment are hardly underpinned by empirical evidence (Ross & Bruce, 2007). Little is known about how teachers use self-assessment. Understanding how teachers use self-assessment is an important prerequisite for promoting this kind of learning.

This study aims to characterize the way teachers assess themselves while using a self-assessment procedure regarding their own coaching competencies of students' reflection skills in the context of secondary vocational education. The previously developed self-assessment procedure used in this study (see Chapter 2) consisted of: (1) a tool based on criteria and standards to be used by teachers to assess their own coaching competencies of students' reflection skills, (2) feedback from peers on observed lessons by using a tool based on the same criteria and standards, (3) a report written by the teachers in which they reflect on their competencies, feedback from their peers, set goals for future actions and describe the effort needed for this, and (4) feedback from peers on this reflective report and, if necessary, the possibility to make adjustments. In this procedure, receiving feedback from colleagues and reflection on judgments of the own competencies (Barber, 1990; Ross & Bruce, 2007) are regarded as both important as well as complementary parts of the self-assessment procedure (see also Chapter 2). This self-assessment procedure was meant to foster teachers' coaching competencies pertaining to health students' reflection skills in Vocational Education and Training (VET). In this type of education, students from 16 till

20 years old are prepared for working as a nurse. In general, reflection is found important for students to become self-regulative learners and reflective practitioners (Boekaerts & Corno, 2005; Butler & Winne, 1995; Perry, Phillips, & Hutchinson, 2006; Winne & Perry, 2000; Zimmerman, 1990). Literature shows VET teachers in the Netherlands consider fostering the coaching of student reflection as an important but difficult competence (De Bruijn & Leeman, 2011; Mittendorff, den Brok, & Beijaard, 2011).

Through the characterization of teachers' use of the self-assessment procedure mentioned above, this study intends to contribute to knowledge about aspects of self-assessment procedures that contribute to teachers' learning and to distinguishing design principles for self-assessment practices that meet these aims. In this study, therefore, the following research question will be answered: How do VET teachers use a self-assessment procedure that has been developed for coaching students' reflection skills? To answer this question, this study will focus on how teachers use criteria and standards for assessing themselves, how they give and receive feedback from colleagues based on these criteria and standards and how they reflect on their self-assessment and the feedback they received.

3.2 | Theoretical framework

3.2.1 Criteria and standards

Criteria and self-assessment are strongly intertwined. Criteria are descriptions of adequate teacher behaviour within a certain skill domain; they define what is considered to be good. Mostly, a criterion refers to a property, quality, characteristic or attribute of a teachers' response (Sadler, 1989). Criteria differ from standards, which point at a particular degree or level of quality (Sadler, 1987). Through the use of criteria and standards, the process of self-assessment becomes systematic. Several effects of criteria on teachers' learning have been mentioned in the literature on self-assessment. For example, criteria have been argued to give teachers insight into the strengths and weaknesses of their own practice (Ross & Bruce, 2007), to assist teachers

to focus their attention on new aspects of their practice (Seidel, Stürmer, Blomberg, Kobarg, & Schwindt, 2010), to support teachers to develop conceptions of good teaching (Sadler, 1989), and to provide teachers with a means to communicate about their practice (Ross & Bruce, 2007). However, to guarantee adequate self-assessment, the formulation of criteria and standards need to adhere to certain requirements.

Firstly, ownership of the criteria and standards by the teachers involved appears to be a prerequisite (Pierce, Kostova, & Dirks, 2003). Ownership contributes to teachers' perceptions of the usefulness and meaningfulness of criteria (Birenbaum, 2007). To realize feelings of ownership, teachers need to participate in the formulation of criteria and standards, which enhances the acceptance of the content of criteria and standards by teachers and makes these more relevant to the teachers (Dwyer, 1994). In other words, ownership strengthens the motivation for using criteria and standards. Secondly, the criteria and standards must be based on both theoretical and practical perspectives (Uhlenbeck, Verloop, & Beijaard, 2002). Criteria cannot only be derived from theory but also need to fit with the specific contexts of the teachers' work and schools. Theory offers relevant insights and a framework to base criteria and standards on; fitness to practice implies that these criteria and standards are recognizable, suitable and relevant to teachers' own practice. Thirdly, teacher self-assessment can be regarded as dependent on the person involved and the context (Uhlenbeck, et al., 2002). As a consequence, differences between individuals and contexts need to be taken into account when developing a self-assessment procedure. On the one hand this implies that criteria and standards must reflect all teachers' practices in a proper way, on the other hand that criteria and standards cannot be formulated too specific in order to make a flexible use of them possible.

Following a previous study conducted by the authors, (see Chapter 2), the three requirements mentioned above were translated into two design principles for the formulation of criteria, namely: (1) the involvement of teachers in the formulation of criteria and standards and (2) the reflection of theoretical and practical perspectives on competent coaching of students'

reflection skills in the criteria (Darling-Hammond & Snyder, 2000; Uhlenbeck, et al., 2002). The formulated criteria related to the “what”, “when” and “how” of coaching students’ reflection skills and are mentioned in Table 3.1 (see: method section). The “what” of coaching students’ reflection skills was comprised by coaching students to reflect on the task, process, regulation and the self (Hattie & Timperley, 2007). The “when” of coaching students’ reflection skills pertained to coaching students while preparing, performing or finalizing learning activities (Van den Boom, Paas, Van Merriënboer, & Van Gog, 2004; Zimmerman, 1998, 2000). The “how” of coaching students’ reflection skills was constituted by the way to prepare, design, communicate, and end a coaching intervention and to conditional aspects of coaching as well.

3.2.2 Feedback

Giving and receiving feedback from peers is considered a powerful way for strengthening self-assessment (Fullan, 2006; Wilson & Berne, 1999). Hattie and Timperley (2007) define feedback as information provided by an agent regarding aspects of one’s performance or understanding. Teachers providing each other with feedback may contribute to self-judgments: feedback from colleagues can confirm or enrich self-judgments with additional interpretations of the assessed situation and thus be an important means to enhance learning through self-assessment (Duke & Stiggins, 1990; Ross & Bruce, 2007).

Up till now most research on feedback, however, has been focused on what constitutes effective feedback provided to students. To be effective, it is argued that feedback needs to address three questions, namely: where the learner is going, where the learner is right now, and how to get there (Hattie & Timperly, 2007; Ramaprasad, 1983; Sadler, 1989). In a review on formative feedback, Shute (2008) concludes that feedback must be multidimensional, non-evaluative, supportive, in-time, specific, credible, just enough, and authentic. Research on effective feedback among teachers is far more scarce than research on effective feedback provided to students. Yet, some reviews

on feedback among teachers have been undertaken (Brinko, 1990; Scheeler, Ruhl, & McAfee, 2004).

The review on feedback by Brinko (1990) shows that effective feedback among teachers needs to be: (1) accurate and supported by irrefutable evidence, (2) a specific message, (3) concrete information, (4) focused on behaviour, and (5) formulated in descriptive terms. Although eminent in teachers' practice, we believe these aspects of effective feedback might not be an adequate reflection of how feedback is actually given among teachers. Scheeler et al. (2004), investigated how feedback is actually provided among teachers. The authors concluded that there are five types of feedback commonly given by teachers: corrective feedback, non-corrective feedback, general feedback, specific feedback and positive feedback. Following these studies, in the present study the following aspects of feedback are considered important for characterizing teachers' use of self-assessment: the use of evidence when giving feedback, the nature of feedback (in terms of its extent of specificity and concreteness), and how the feedback is formulated (i.e. either or not in descriptive and behavioural terms).

3.2.3 Reflection

Reflection on (assessed) performance is considered necessary for teachers' learning (Hatton & Smith, 1995; Korthagen, Kessels, Koster, Lagerwerf, & Wubbels, 2001; Schön, 1983; Smith & Gillespie, 2007). By conscious reflection teachers give meaning to their judgments of themselves. Reflection in a self-assessment procedure is a means to structure and restructure teachers' own practical knowledge.

The product of reflection is often operationalized on several dimensions. Firstly, reflections can range from being narrow to broad (Kelchtermans, 2009). This dimension refers to the content of reflection (Luttenberg & Bergen, 2008). Broadening reflection means that teachers not only reflect on aspects immediately related to their teaching practice, but also on moral or emotional issues that are implied. Secondly, reflections can differ from being superficial to deep (Bain, Ballantyne, Packer, & Mills, 1999; Hatton & Smith, 1995). This dimension refers to the nature of reflection

(Luttenberg & Bergen, 2008). Deep reflection is often associated with reflection on experiences from different practical and/or theoretical perspectives (Kelchtermans, 2009). Thirdly, reflections can differ from being non-critical to critical (Kelchtermans, 2009; Mezirow, 1997). To critically reflect, teachers need to examine their own personal frame of reference from different perspectives. Fourthly and finally, reflections can range from being concrete to abstract (Marcos, 2008). Concrete reflections are clear when they are expressed in behavioral terms and relate to teachers' actions, while abstract reflections are expressed in more general or theoretical terms and often not related to immediate action. This latter dimension underlies the other three dimensions of reflection as well. In this study, all these four dimensions of reflection are considered important to characterize how teachers reflect based on their self-assessment.

3.3 | Method

3.3.1 Context and participants

The present study was carried out in the academic year 2009-2010 in Vocational Education and Training schools (VET) in the Netherlands. In this study, 24 teachers used a previously developed self-assessment procedure to assess their competencies in coaching VET students' reflection skills. The lessons included in our study were in the two highest streams of the health domain, followed by students aged 16 or older. The 24 teachers participating in this study were from two different schools. From one school 20 teachers participated; from the other school 4. The sample consisted of 9 male and 15 female teachers. Their teaching experience ranged from just having finished teacher education to 28 years.

3.3.2 Data-collection

The participating teachers used the self-assessment procedure to develop their professional competencies in coaching students' reflection skills. The 24 teachers performed the self-assessment procedure in couples. Each

teacher performed the role of self-assessor and the role of colleague giving feedback. The characterization of teachers' use of the self-assessment procedure in this study is thus based on 24 self-assessments². For each self-assessment, the following data were obtained: two filled-out assessment forms (one by the self-assessor and one by the observing colleague), videotaped peer feedback on an observed lesson in a face-to-face session, and a written reflection report. Below these different data sources will be described in more detail.

The self-assessment form consisted of 23 criteria and 4 standards per criterion that were iteratively formulated by pending back and forth between theoretical and practical perspectives on coaching students' reflection skills. The standards used indicated to what extent teacher behaviour was realized and were formulated on a four-point scale ranging from one (this behaviour is not realized at all) to four (this behaviour is completely realized).

Table 3.1 provides an overview of the criteria regarding the relevant aspects of coaching students' reflection skills as explained in section 2.2. In the first column, the aspects of coaching are mentioned. The aspects when, what and how aspects of coaching are comprised by different elements. The how aspect of coaching, for example, consists of preparing, designing, communicating, ending a coaching intervention and conditional aspects. In the second column, the criteria are mentioned per aspect of coaching.

² The project coordinator of one of the schools lost the completed self-assessment, colleague assessment and reflective report of one of the teachers. Therefore, 23 self-assessments, colleague assessments and reflective reports were included in the analysis.

Table 3.1 Coaching aspects and criteria for coaching students' reflection skills

<i>Aspects of coaching</i>	<i>Criteria for self-assessment</i>
How? (preparation)	1. I observe students before undertaking a coaching intervention
How? (Design)	2. I ask questions before undertaking a coaching intervention
How?(Communication)	3. I vary my amount of giving support to and challenge of the students
	4. I time my coaching interventions deliberately
	5. I make use of clear language when coaching the students
	6. I make the purpose of my coaching intervention explicit to the students
	7. The words I choose invite students to reflect
	8. I make sure there is interaction between me and my students
How? (Ending)	9. I check if the students understand the effects of my coaching intervention
How? (Conditional)	10. I assure a safe learning climate
	11. I assure a proper working climate
	12. I assure good contact with the students
	13. I state the importance of reflection explicitly
What?	14. I focus my coaching intervention at the assignment to be done by the students
	15. I focus my coaching intervention at the students' learning process
	16. I focus my coaching intervention at the students' regulation of the learning process
	17. I focus my coaching intervention at the self of the students
	18. I focus my coaching intervention at the students' professional identity
	19. I combine foci
When?	20. I stimulate the anticipatory thought of the students
	21. I stimulate the intermediate thought of the students
	22. I stimulate the afterthought of the students
	23. I stimulate the cyclical reflection by the students

The self-assessment form was also used for the observation of a lesson by a colleague. The lesson to be observed by a colleague had to be video-taped. The colleague had to use this video-taped lesson for assessing the self-assessor. After the observation and assessment by the colleague him/herself, a feedback conversation was organized. This conversation was structured as follows: (1) exchange of global impressions of the lesson and clarification of these global impressions, (2) exchange of observations and comparison of the scores on criteria, and (3) interpretation of differences and similarities in

scores by the self-assessor and verification of these by consulting the colleague. Participants were informed about this procedure and trained in its specific aspects during an afternoon session by the first author. To guarantee reception of relevant feedback, the feedback conversations had to be held within one week after the lesson taught. The feedback conversation was also video-taped for analysis purposes.

After the feedback conversations teachers needed to write a reflective report. Teachers were asked to report on their learning intentions when starting the self-assessment procedure and their learning from their experiences with the self-assessment procedure, including the contribution of the feedback of their colleague to this. They were also asked to write about their learning goals and how to achieve these goals. During the training the teachers were instructed how to complete the reflective reports with the help of a good example of such a reflective report. The teachers had to finish this reflective report within a week after the feedback conversation. The whole self-assessment procedure thus had to be finished within two weeks after the classroom observation.

3.3.3 Data-analysis

To analyse the data sources (filled-out assessment forms, video-taped feedback conversations and written reflective reports), category systems for each data source were developed for coding purposes. These category systems were developed in an iterative process of moving back and forth between pre-defined concepts from the literature and data. First, from the data of three couples of teachers (six teachers) initial sets of categories were developed and finalized by comparing them with the literature in order to find confirmation and develop additional categories. Second, data were analysed again and saturation was reached after the analysis of data from seven couples of teachers (n=14). The final category systems are outlined below. In the results section we will further illustrate the meaning of the categories with fragments from feedback conversations and reflective reports of a group of teachers that were selected for this purpose because they represented the trends found in the data well.

Categories for the use of criteria and standards. The main categories developed for categorizing teachers' use of criteria and standards were: "average scoring" and "scoring the what, when and how of coaching students' reflection skills".

First, for each person the frequencies of the use of standards across the 23 criteria were calculated. Then these frequencies were averaged across respondents. Second, to determine teachers' scoring tendencies for the what, when and how of coaching students' reflection skills per aspect of coaching (see Table 3.1), it was coded whether scores were high (standard 3 and 4), low (standard 1 and 2) or varied (no clear emphasis in scoring). Then, per aspect of coaching, frequencies of high, low and varied scoring tendencies were determined across cases.

Occasionally a teacher did not score a criterion, leading to a missing value. Overall there was a limited number of missing values (about 3% of the total scores) and these missing values were not systematic across teachers or specific criteria. Missing values were not included in the analysis.

Categories for teachers' use of giving and receiving feedback. The category system used for the analysis of teachers' feedback consisted of several main categories and subcategories. The first main category was the "length of the feedback conversation" (in minutes). The second main category was the "presentation of feedback"; subcategories concerned whether the feedback was elaborate or limited, concrete or abstract, detailed or superficial and specific or general. The third main category used was the category "interaction". It was determined whether there was interaction or not for the beginning, middle and end of the conversation. The fourth main category was the "constructiveness of feedback". It was established whether the feedback was constructive for learning or not. The fifth main category was the reaction of the self-assessor to the feedback given. It was categorized in subcategories whether the feedback was accepted or not.

Categories for teachers' use of reflection. The category system used for the analysis of teachers' reflection consisted of several main categories and subcategories. The first main category was "the physical appearance" of the

reflective reports. Codes used for categorization were whether the reflections were: (1) elaborate or limited in size; (2) formulated in concrete or abstract terms; (3) specific (and focused on certain topics) or general (and not focused on certain topics); and (4) worked out in detail or superficial and not worked out. The second main category for outlining teachers' use of reflection pertained to the "use of criteria", consisting of two subcategories: qualitative and quantitative use of criteria. Qualitative use could be coded as either or not using criteria and implicit or explicit use of criteria. Quantitative use of criteria could be coded as to a limited or to a large extent. Following the theory on reflection (e.g., Kelchtermans, 2009), the third main category pertained to the "nature of reflections". Codes used were critical or non-critical, broad or narrow and deep or superficial.

Matrices. To display the data of each participant in a systematic manner, matrices were constructed for each data source (Miles & Huberman, 1994). Rows of the matrices were represented by the participants and the columns of the matrices were represented by the main categories of each data source. To determine trends in the use of criteria and standards, feedback and reflection, all matrices were analysed across the participants. Mostly, means and frequency scores were calculated for categories and combinations of categories.

Reliability. Throughout the data collection and data analysis, reliability was ensured by making the process verifiable for the other authors. Each step taken in the analysis has been discussed in detail by the three authors. After agreement on a step, a decision about a follow-up or next analysis step was taken. Also, the reliability of the category systems for the use of feedback and the use of reflection were tested by assessing the inter-rater reliability. Data from a number of teachers (n=8) were independently coded by two raters and then compared for inter-rater reliability (Cohen's Kappa). For the use of feedback a Cohens' Kappa of .74 was calculated and for the use of reflective reports a Cohens' Kappa of .69. Both category systems thus appeared to be sufficiently reliable.

3.4 | Results

3.4.1 Teachers' use of criteria and standards for self-assessment and colleague assessment

Scoring tendencies. On average, teachers scored the first standard 1.9 times, the second standard 5.4 times, the third standard 11.4 times and the fourth standard 3.5 times. This implies that teachers used the third standard most; they assessed themselves as rather competent. For the colleague assessment teachers' average use of standards was: first standard 1.0 times, the second standard 5.6 times, the third standard 9.8 times and the fourth standard 5.6 times. Thus, the colleague assessments of the teachers' competencies were in general rather positive as well.

Scoring tendencies for aspects of coaching students' reflection skills. To describe the scoring tendency per aspect of coaching students' reflection skills, it was determined whether the scores of the self-assessor and the colleague assessor on the aspects of what, when and how to coach students' reflection skills were high, low or varied. The results are presented in Table 3.2 and expressed in percentages.

Table 3.2 Teachers' use of criteria and standards for each aspect of coaching in percentages

	<i>What of coaching</i>		<i>When of coaching</i>				<i>How of coaching</i>								
	SA	CA	SA	CA	<i>Preparation</i>		<i>Design</i>		<i>Communication</i>		<i>Ending</i>		<i>Conditions</i>		
	SA	CA	SA	CA	SA	CA	SA	CA	SA	CA	SA	CA	SA	CA	
High scores	41	43	17	43	74	78	37	42	57	65	73	62	83	87	
Low scores	9	26	39	35	9	4	26	32	4	0	27	38	4	4	
Varied scoring	50	31	44	22	17	18	37	26	39	35	0	0	13	9	

Table 3.2 shows that high standards were generally used for the self-assessment and colleague assessment of the different aspects of coaching. Within this group of high scores some further trends were visible. One trend concerned the preparation aspect of how to coach. Four-fifth of the self-assessments and colleague assessments for criteria that referred to this aspect of how to coach were scored high. Teachers considered themselves as rather competent in the preparation of coaching students' reflection skills through the use of observation and asking questions (see also Table 3.1, criteria 1 and 2); their colleagues confirmed this impression. Another trend involved teachers using high standards to assess themselves for the criterion concerning the ending aspect of coaching students' reflection skills. Teachers considered themselves as skilled in checking whether a student has understood the effects of a coaching intervention (see also Table 3.1, criterion 18); mostly colleagues affirmed these judgments. A final trend found was that more than four-fifth of the self-assessments and colleague assessments for criteria that concerned conditional aspects of coaching students' reflection skills were scored high. Teachers considered themselves to be capable in realizing a safe atmosphere, a good working climate, a good contact with students and explicating the importance of reflection (see also Table 3.1, criteria 19-23); their colleagues acknowledged this impression. The only exception to this general trend of scoring high pertained to the when aspect of coaching. For this aspect of coaching, few high scores were used. Also, Table 3.2 illuminates that several of the aspects of coaching students' reflection had a reasonably distributed scoring pattern. Scores on the how aspect of designing a coaching intervention, for example, were reasonably distributed across high, low and varied scores.

3.4.2 Teachers' use of feedback

Length of the conversation. The length of the conversations between the teachers and their colleagues was on average 46 minutes, ranging from 25 till 74 minutes.

Giving feedback. To describe how teachers used feedback, it was categorized whether the feedback was elaborate or limited, concrete or abstract, detailed or superficial and specific or general; also trends in combinations of these categories were sought. In seventeen feedback conversations, feedback was given in an elaborate way. Thus, in most conversations much feedback was given, consisting of observations and examples as evidence for the scores on criteria, questions, suggestions, tips and tricks and exchange of experiences. In a similar manner, concrete feedback was given in most conversations by using evidence for scores, examples of observed behaviour and phrasing behaviour. Also, in seventeen of the conversations the feedback was brought in a specific manner by focusing on specific aspects of coaching students' reflection skills that, subsequently, consisted of particular messages. For example, in one feedback conversation a colleague tried to provide the self-assessor with the insight that she was teaching in a very teacher-centered way by asking questions, but not providing the time and opportunity for students to answer. Furthermore, by far the majority of feedback conversations was found to be concrete. This means that in most conversations, feedback was brought, by providing illustrations, observations and focusing on teachers actions.

With regard to combinations of teachers' ways of giving feedback in the assessment procedure, one trend was found: in more than half of the feedback conversations the feedback was given in an elaborate, concrete, detailed and specific manner. Thus, in most cases the feedback appeared to be clear and informative.

Direction of the feedback during the conversation. All feedback conversations showed interaction, however, they differed in the degree of interaction. In seven conversations interaction was only found at the end of the conversation. In thirteen conversations interaction was found in the middle and the last part of the conversation. In four conversations the whole conversation was interactive.

Constructive feedback. Most feedback provided by the colleagues was categorized as being constructive. Over 80% of the feedback conversations, feedback was considered to stimulate learning.

Reaction to feedback. To describe how teachers reacted to the feedback it was determined whether teachers accepted the feedback or not or whether they reacted neutral to the feedback. In four-fifth of the 24 feedback conversations, the feedback was accepted. In these conversations, the self-assessor clarified the feedback or reflected on it. In one-fifth of the 24 feedback conversations, the feedback was not accepted. When feedback was not accepted, teachers gave counter arguments, own insights or opinions. Thus, in most feedback conversations teachers seemed to consider the feedback as important for improving their competencies in coaching students' reflection skills.

Illustration of teachers' use of feedback. The fragment presented below is based on observations of the video-tape of the conversation of a teacher (Kari) with her colleague assessor (Peter) and quotes from the actual conversation. The chosen fragment from the feedback conversation illustrates some of the general trends regarding the nature of feedback. We believe it pictures well what elaborate, concrete, detailed and specific feedback, constructive feedback and the acceptance of feedback entails.

Peter: "first I'll shortly introduce my approach for observing and assessing you. When I observed, I've paid attention to what you and your students said to each other. I have noted all important events. Then, I searched in the guiding theory of the self-assessment procedure to try to translate my observations to the actual scoring on criteria and standards. It helped me to prepare this conversation. Well, let's have a look ..."

[Peter is browsing through his notes..., and starts the feedback conversation by outlining the context of the lesson and giving his general impression of the lesson]

Peter: "If I am correct, the goal of your lesson was to work with statements, discuss about the statements with other students and reflect on it to learn. After the observation, I have thought for a while about the meaning of my observations. I found you have a very characteristic style of teaching, very interactively! Also, I found your lesson to be somewhat unstructured and superficial."

Kari: "Oh?" [Kari looks curious, but hesitates to respond]

Peter: "Well let me make it more concrete (...). In the beginning of the lesson, you asked a student to come up with a statement to discuss. The student wanted to read aloud which he did, but the statement remained unclear. Therefore, you asked to read aloud the statement again. Then, you asked the student: "what do you mean exactly?" Before the student was able to respond, other students reacted. You immediately reacted to these students and asked them why they interfered. The students seemed a little disturbed. Then again, you asked the student what he meant. It seemed hard for the student. Again other students interfered; "it is too difficult", someone said. Meanwhile, the student is still hesitating and, again, a student said it is too difficult. Next, you asked the student to explain what it was that makes it difficult, but there is no reaction. You quickly respond by saying: "alright, then we go to the next statement."

Peter: "This example clearly shows your unstructured way of coaching. You do not finish topics. You ask questions, but make students interfere and then you do state the question again. When you ask why-questions, you propose to go to the next statement. It did not turn out why the student found difficulties in proposing a statement. He has not learned to deal with it. You did not make the student reflect on the experience.

[Kari looks thoughtful...and provides room for Peter to continue; Peter gives a further example]

Peter: "Another student brought an experience from practice to the lesson and talked about it. Actually, his statement was based on this experience. You asked the student to explain how the student

responded to the caretaker. Then the student responded. As a reaction you asked why the student reacted in such a way and, again, the student responded. However, you kept on asking why-questions without relating the experience of the student to other situations, experiences or future situations.

[Kari wrinkles her eyebrows, remains silent for a while and looks somewhat displeased; Peter continues]

Peter: “So you ask what the students did and why, but you keep it rather limited. If I were you, I would have asked questions more thoroughly. So, you ask what they have done, why they did this, but keep it short. For example: how would you react in a comparable situation in the future?”

[Now Peter stops talking to check Kari’s reaction]

Kari: “Hmm..yes, well, I recognize your point..I ask questions, but yeah well, now and then there are situations when I don’t know what to ask (...). Well, then I keep silent or move on to the next topic.”

Peter: “Well, it is hard to coach students’ reflection (...).”

Kari: “Actually, you say that I need to ask more thoroughly.”

Peter: “Yes, but you also need to close topics and then introduce new topics properly.”

[At the end of the conversation Kari concludes that she needs to focus more on cyclical reflection (criterion 12, Table 3.1) and to ask more future-oriented questions].

Explanation of teachers’ use of feedback. The described fragment of the feedback conversation shows that Kari received clearly formulated feedback. Peter used examples and observations and formulated his feedback in terms of Kari’s actions (concrete). Also, Peter directed the conversation to a special point; he wanted Kari to know that she needed to question more thoroughly (specific). This point was elaborated on in a detailed manner to make it more clear for Kari (detailed and elaborate). The categorization of this feedback was in line with a trend found in teachers’ use of feedback, namely that feedback was given in an elaborate, concrete, detailed and specific manner. Finally, the

feedback from this conversation was categorized as constructive and the reaction to the feedback as accepted. Kari explicitly stated that she recognized the point made by Peter about questioning more thoroughly (accepted). Therefore, the feedback of Peter was also supportive for Kari's learning (constructive). Earlier it became clear that in 80% of the 24 feedback conversations, the feedback was accepted. In these conversations teachers considered the feedback as important for improving their competencies in coaching students' reflection skills.

3.4.3 Teachers' use of reflection

Physical appearance of the reflective report. Of the 23 reflective reports 91% were concrete, meaning that they were written clearly and stated in behavioural terms. Second, half of the reflective reports were coded as concrete, specific, detailed and elaborate. These reflective reports were formulated clearly, had a focus on a specific topic, were worked out in detail and were elaborate in size. Third, almost one third of the reflective reports were coded as concrete, general, superficial and limited in size. These reflective reports were formulated clearly but not focused on specific topics.

Use of criteria. Many teachers, namely 15 of the 23 teachers, reflected on criteria in their reflective report, part of them to a great (9) and part of them (6) to a moderate extent. Many teachers thus used the criteria to frame their thoughts and to give meaning to their practice.

Nature of reflections. All reflective reports could be described as being non-critical, narrow and superficial. The reflective reports were focused on and restricted to teachers' actions instead of broadening actions to, for example, moral or emotional aspects of teachers' actions (narrow), not undertaken from different perspectives (superficial) and not related to underlying assumptions and personal beliefs (non-critical).

Illustration of teachers' use of reflection. Below, two fragments from two reflective reports are presented to illustrate teachers' use of reflection. The

reflective reports are written by Ann and Nicole. The fragments from these reports are illustrative for large trends in the data in the sense that they illustrate what a concrete, elaborate, specific and detailed reflective report looks like (Ann) and what a concrete, limited, general and superficial report entails (Nicole). The fragments are presented according to the used format of the reflective reports. First, the instructions in the form of a question to answer are given and then, the (a part of) full answers of the two teachers are presented in two columns. The left column contains the actual reflections. The right column contains the argumentation or evidence for the reflection.

A fragment of the reflective report of Ann:

What did you learn from your experiences with the self-assessment procedure? (You may reflect on knowledge, insights, intentions for action, attitudes or emotions).

<u>Reflection</u>	<u>Evidence for reflection</u>
<p>Preparation: This session made me become more aware of the many questions that I ask than I expected in advance.</p>	<p>Preparing the coaching intervention -observing: score 3 -questioning: score 4</p>
<p>Focus of coaching: Also, this self-assessment procedure made me become more aware of the different elements of coaching students' reflection skills I can focus on. I use it more deliberately in class, and have formulated it as a learning point for the near future. I find that I do not focus my coaching on the self.</p>	<p>Focus of the coaching interventions -focus on the assignment: score 3 -focus on the process: score 2 -focus on the regulation: score 3 -focus on the self: score 1 -focus on the professional identity: score 3 -combination of foci: score 4</p>

<p>Reflection:</p> <p>At first I thought that I do not stimulate anticipatory reflection. Also, I do not really stimulate cyclical reflection by the students. To be honest, I also feel this is partly caused by the fact that I coach first-year students.</p> <p>[the teacher reflected in the same way on the designing, communicating, ending and conditional criteria of coaching students reflection skills]</p>	<p>Reflection and the phases of the learning processes</p> <p>I stimulate the anticipatory thought of the students: score 1</p> <p>I stimulate the intermediate thought of the students: score 3</p> <p>I stimulate the afterthought of the students: score 3</p> <p>I stimulate the cyclical reflection by the students: score 2</p> <p>[the teacher continued mentioning scores for designing, communicating, ending and conditional criteria of coaching students reflection skills]</p>
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A fragment of the reflective report of Nicole:

What did you learn from your experiences with the self-assessment procedure? (You may reflect on knowledge, insights, intentions for action, attitudes or emotions).

<u>Reflection</u>	<u>Evidence for reflection</u>
<p>During the feedback conversation, we discovered that we had completed the scores in the same way. The main conclusion was that there were few moments of coaching students'</p>	<p>On the one hand, it was the type of lesson, on the other hand, I do recognize it. It is a learning point for me. I quickly respond to questions and present solutions. I ask</p>

<p>reflection skills.</p> <p>I assure a safe climate in the class and I clearly instruct them.</p>	<p>questions, but do not ask thoroughly. During this lesson, I acted in a teacher-centred way.</p>
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Explanation of teachers' use of reflection. Both selected cases clearly illustrate some general trends. The reflective reports of Ann and Nicole were written clearly and formulated in actions or behavioural terms (concrete). To frame her thoughts and give meaning to her coaching practice, Ann used criteria to a great extent and wrote an elaborate reflective report. Her way of using the criteria in the reflective report also assured that thoughts were formulated in a detailed manner and that she addressed special or characteristic points in coaching students' reflection skills (specific). On the contrary, Nicole her reflective report was rather limited, superficial and general because she used the criteria relatively limited. She mentioned just a few aspects of coaching students' reflection skills and did not focus on particular topics (general). Furthermore, she reported just a few thoughts on the topics which made her reflective report limited in size. Also, she did not provide further details of her experiences or learning (superficial). The nature of both reflective reports can be characterized as restricted to teachers' actions (narrow), not undertaken from different perspectives (superficial) and not related to underlying assumptions and personal beliefs (non-critical).

3.5 | Conclusions and discussion

3.5.1 Conclusions

In this study the question was addressed how teachers use a self-assessment procedure that has been developed for coaching students' reflection skills. To answer this question the study focused on (1) how teachers used criteria and standards, (2) how they give and receive feedback, and (3) how they reflect during a self-assessment procedure for the development of their competencies for coaching students' reflection skills.

It was found that teachers assessed themselves rather positively and that they were also assessed positively by their colleagues. In other words, teachers considered themselves to be competent in coaching students' reflection skills and were also considered as competent by their colleagues. It was also found that teachers mostly provided each other with informative and constructive feedback that was accepted. This implies that classroom observation and the use of criteria and standards were (considered as) relevant tools for giving useful feedback.

In this study it furthermore appeared that most teachers wrote clear and informative reflective reports best characterized by a focus on teachers' actions, though being rather superficial, narrow and non-critical in nature. The use of criteria seemed to lead to clearly written reflective reports with specific messages on which teachers reflected in an elaborate and detailed manner. Teachers who used criteria and reflected on all aspects of coaching wrote reflective reports that could be characterized as elaborate, concrete, specific and detailed. Teachers who did not use criteria or who did not reflect on comparable aspects of coaching wrote reflective reports that could be characterized as limited, concrete, superficial and general. Furthermore, the use of criteria in the reflective reports may have resulted in a focus on teachers' actions in the reflective reports. The criteria, namely, were formulated in terms of concrete teacher activities. When referring to criteria, the reflective reports are therefore automatically focused on teachers' actions which may have resulted in making these reflective reports descriptive and superficial without further meaning making by the self-assessor.

3.5.2 Discussion

In general teachers in Vocational Education and Training (VET) find it difficult to coach their students' on their reflection skills. The question may rise whether teachers' and colleagues' positive scores on the criteria in this study are an accurate or realistic reflection of teachers' competencies in coaching students' reflection skills. It may be that undertaking the self-assessment procedure has resulted in teachers' wishful thinking (den Brok, Bergen, & Brekelmans, 2006). It may also be that teachers need to get used

to their role as self-assessor and colleague assessor in order to assess themselves and their colleagues in a more accurate and critical way. In addition, it seems possible that repetition of the self-assessment procedure by the teachers will make the scores more accurate. Repetition may be an important condition for teachers' professional learning (Day, 1999) and supports teachers to gain more knowledge and understanding of what coaching students' reflection skills entails (Kruger & Dunning, 1999). In general, knowledge influences the ways a teacher perceives and thus judges him/herself.

The findings regarding giving and receiving feedback are in line with the literature on conditions for professional learning in which the importance of colleague feedback for teachers' learning is acknowledged (Day, 1999; Fullan, 2006; Wilson & Berne, 1999). The findings furthermore imply that self-assessors do not respond critically to feedback provided by their colleagues, which may point to the relevance of the right circumstances for feedback conversations. Responding in a critical way to provided feedback requires a safe climate in which the self-assessor feels comfortable enough to question the scores, their interpretations and additional feedback from his/her colleague. Studies on peer coaching emphasize the relevance of the right circumstances to provide feedback for learning and also show that it is difficult for coaches and those who are coached to realize a safe atmosphere (Engelen, 2002; Zwart, Wubbels, Bergen, & Bolhuis, 2009).

In this study, normative categories such as narrow or broad, superficial or deep, and critical or non-critical were used to determine the nature of the reflective reports. For several reasons one may wonder whether such normative or idealistic notions can be realized in practice. First, the existing gap between theory and practice might prevent teachers from seeing immediate learning gains. Second, other studies suggest that most teachers reflect in action-oriented ways rather than in meaning-oriented ways (Oosterheert & Vermunt, 2001; Mansvelder-Longayroux, Beijaard, & Verloop, 2007). This might lead to teachers focusing on immediate learning gains and in writing their reflective reports in a purposeful and efficient way. Third, it seems that many schools can be characterized more by a working or doing

culture for teachers than by a learning or knowing culture (Clandinin, 1986). As a consequence, it is not common for many teachers to act like learners and to develop an attitude of a self-regulative and reflective professional. Finally, it might be that teachers have difficulties verbalizing their thoughts.

3.5.3 Implications for practice

When used consequently, criteria and standards and providing feedback directed through criteria and standards may provide a good starting point for reflection. Results of this study showed that a consequent use of criteria can result in clear and informative feedback. Systematically referring to criteria in reflective reports furthermore seems to lead to teachers producing - and giving in the case of colleague assessors - rich information about their own practice. Results of this study showed that referring to criteria in the reflective reports led to clearly written reports with a focus on specific aspects of coaching students' reflection skills, on which teachers reflected in an elaborate and detailed manner. It thus seems important to encourage teachers to use clear criteria and standards when they assess themselves on relevant aspects of their teaching practice and when they are assessed by their colleagues as part of a self-assessment procedure.

However, the results also indicated that additional measures need to be undertaken to broaden and deepen the self-assessors' reflections and to make colleagues feedback more critically. To enhance the quality of both the self-judgment and the feedback a training is suggested to provide teachers with the necessary knowledge and skills, in this study pertaining to the coaching of students' reflection skills.

3.5.4 Limitations and suggestions for future research

This study had several limitations. First, the research was descriptive and exploratory in nature, and only a limited number of teachers from a specific type of vocational education participated. Results and statements about results need to be interpreted carefully and cannot yet be broadly generalized. Second, the aim of this study was to provide insight into teachers' use of criteria and standards, feedback and reflection during a self-

assessment procedure. The content of feedback and reflection and the extent to which teachers learn from self-assessment have not been included in the analysis; both the content and the extent of learning may also be informative regarding the way teachers actually use the self-assessment procedure.

To further develop the knowledge on self-assessment as a tool for fostering teachers' learning, it seems necessary to study teachers' self-assessments and assessments from their colleagues from a longitudinal perspective to discover how scores develop or change over time. It is also important to investigate the effects of self-assessment on learning and competence development, and relate these effects to design principles that underlie the self-assessment procedure. In such a way it is possible to determine the relevance of specific design principles in terms of their specific contribution to teachers' learning. Further research also needs to focus on what aspects of self-assessment are perceived as useful by teachers.

CHAPTER 4

VET teachers' assessment of their coaching of students' reflection skills and assessments by their colleagues: results of a longitudinal study¹

ABSTRACT

This chapter reports on the way teachers assess themselves, are assessed by their colleagues and how these assessments develop or change over time. The assessments focused on teachers' competencies in coaching health students' reflection skills in the context of secondary vocational education. Both teachers and colleagues completed a rating form three times with three months in between. In total, 72 self-assessments and 72 colleague assessments were available for analysis. This study showed that: (1) repeatedly and longitudinally using criteria and standards did not lead to significant differences in scores across different moments of self-assessment; (2) large individual differences existed between and within teachers in how teachers' perceived their own coaching skills, how these coaching skills were perceived by colleagues, and these differences increased over time; (3) colleagues perceived the teachers' coaching competencies slightly more positive than the teachers themselves; and (4) teachers considered themselves reasonably competent in the how aspect of coaching students' reflection skills, moderately competent in the what and when of coaching students reflection skills and their colleagues agreed upon this.

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Van Diggelen, M. R., den Brok, P. J., & Beijaard, D. *VET teachers' assessment of their coaching of students' reflection skills and assessments by their colleagues: results of a longitudinal study.*

4.1 | Introduction

Self-assessment is described in the literature as a promising method for learning by teachers (Airasian, Gullickson, Hahn, & Farland, 1995; Barber, 1990; Ross & Bruce, 2007). Self-assessment is also considered to be an attractive method for teacher learning, because it can be easily developed and implemented and requires little of the scarcely available time of hard working teachers. To be effective, it is argued that teachers need to be trained for self-assessment (Sluijsmans, Dochy, & Moerkerke, 1999; Topping, 2007), gain experience (Sluijsmans et al., 1999; Topping, 2007), and be able to compare self-judgments with judgments of others, such as their colleagues. Comparing judgments raises the possibility to develop awareness and, through that, learning (Boud, 1995). Quite a number of studies have focused on teachers' perceptions and judgments, how teachers are perceived and judged by others (such as pupils) and how these perceptions or judgments differ from the self-judgment/perception (den Brok, Levy, Rodriquez, & Wubbels, 2002). These studies show that teachers' self-perceptions hardly agree with those of others (den Brok, Brekelmans, & Bergen, 2006). Surprisingly, little is known about becoming aware of these (differences in) perceptions and judgments, the learning it causes and the influence of gaining experience in assessment of these differences in perceptions. Mapping how teachers' assess themselves and how they are assessed by their colleagues is an important prerequisite for promoting teacher learning through self-assessment.

This study aims at gaining insight into how teachers assess themselves, how they are assessed by their colleagues, how these assessments differ and how all these elements develop over time as part of a self-assessment procedure (cf. Boud, 1995; see also Chapter 2). For that purpose, 24 in-service Vocational Education and Training (VET) teachers' completed self-assessment forms and colleague assessment forms as part of a self-assessment procedure were analyzed. Teachers completed this procedure, including the self-assessment and colleague assessment forms, three times within a period of one and a half year. The assessments reported on in this study are focused on teachers' competencies in coaching health students'

reflection skills in the context of secondary vocational education. In this type of education, students from 16 till 20 years old are prepared for working as a nurse. The relevance of reflection for those students parallels current literature in which reflection is found important for students to become self-regulative learners and reflective practitioners (Boekaerts & Corno, 2005; Butler & Winne, 1995; Perry, Phillips, & Hutchinson, 2006; Winne & Perry, 2000; Zimmerman, 1990). Literature shows VET teachers in the Netherlands consider fostering the coaching of student reflection as an important but difficult competence (De Bruijn & Leeman, 2006).

Through describing how teachers assessed themselves, were assessed by their colleagues and how these assessments developed/changed over time, it is hoped to contribute to the development of teachers' actual competencies in coaching students' reflection. Next, it is hoped to contribute to knowledge about the extent to which self-assessment is adequate to improve aspects of coaching students' reflection skills. Furthermore, it is hoped to contribute to knowledge about the extent to which differences in perceptions between the self and colleagues contribute to teachers' learning and to knowledge about distinguishing design principles for self-assessment practices that contribute to realizing all these aims. Therefore, it was attempted to answer the following research question: How are VET teachers' competencies in coaching students' reflection skills rated by themselves, by their colleagues and which trends in scoring are visible over time?

4.2 | Theoretical framework

The aim of self-assessment is to foster teachers' learning. It is regarded as an important mechanism for facilitating professional growth. According to Ross and Bruce (2007), self-assessment makes teachers exert control over the interpretation and application of criteria and standards that underlie self-assessment. Therefore, self-assessment emphasizes teachers' own responsibility for their learning. Self-assessment is commonly defined as an activity in which teachers apply criteria and standards to their own work and

make judgments with respect to the extent to which they have met these criteria and standards (Boud, 1995). Self-assessment and criteria are strongly intertwined. Criteria, then, are descriptions of adequate teacher behaviour within a certain skill domain; they define what is considered to be good. Mostly, a criterion refers to a property, quality, characteristic or attribute of a teachers' response (Sadler, 1989). Criteria differ from standards, which point at a particular degree or level of quality (Sadler, 1987). Through the use of criteria and standards, the process of self-assessment becomes systematic. They provide teachers with a frame of reference to sharpen their perceptions and their interpretations, in this study of coaching situations.

In this study the criteria used pertain to coaching students' reflection skills by teachers (see Chapter 2 for an elaborate description of the development of the criteria and the place of these in the self-assessment procedure). The criteria pertain to the what, when and how to coach. The 'what' of coaching students' reflection skills was comprised by coaching students to reflect on the task, process, regulation and the self (Hattie & Timperley, 2007). The 'when' of coaching students' reflection skills pertained to coaching students while preparing, performing or finalizing learning activities (Van den Boom, Paas, Van Merriënboer, & Van Gog, 2004; Zimmerman, 1998, 2000). The 'how' of coaching students' reflection skills was constituted by the way teachers should prepare, design, communicate and end a coaching intervention and to conditional aspects of coaching as well. The criteria are mentioned in Table 4.1 (see Method section).

Recently, some studies have been undertaken on VET students' perceptions of their teachers' coaching behavior (Ketelaar, Beijaard, Boshuizen, & den Brok, 2012; Mittendorff, den Brok, & Beijaard, 2011). These studies showed that in general teachers were able to create a safe learning environment and to establish a good student-teacher relationship, but had difficulties in showing a student-centered orientation in their lessons (=how). It was difficult for many teachers to assure a lot of student-teacher interactions and to distinguish between different goals of learning in their coaching (=what and when).

To strengthen the potential of self-assessment for teachers' learning, it is important to undertake additional measures for learning. A first measure deals with the duration of self-assessment. When introducing self-assessment it should not be treated as a single-shot activity (Ball & Cohen, 1999; Smith & Gillespie, 2007). The procedure must be sustainable over time to get teachers used to it and to learn to use the procedure in a proper way. Sustainability will enhance the usefulness of the self-assessment and lead to a more permanent use of it (Hawley & Valli, 1999; Smith & Gillespie, 2007; Supovitz & Turner, 2000). Garet, Porter, Desimone, Birman and Yoon (2001) argue that longer lasting activities provide more opportunities and possibilities for in-depth learning, to experiment with new things, and to receive feedback. In this study teachers assessed themselves and were assessed by their colleagues three times in a period of one and a half year (see Chapter 2).

A second measure deals with receiving feedback from peers (Wilson & Berne, 1999). Teachers providing each other with feedback may systematically contribute to self-judgments (Duke & Stiggins, 1990). Such feedback can confirm or enrich self-judgments with additional interpretations of the assessed situation and raises the possibility to develop awareness and, through that, learning (Boud, 1995). From research on teachers' perceptions and judgments it is known, that teachers have on average higher perceptions than others with respect to the areas of interest and that large individual differences can be found in these perceptions (den Brok, Levy, Rodriquez, & Wubbels, 2002). Moreover, differences between teachers and perceptions of others (students) seem hard to change (den Brok, et al., 2006).

A third measure to be undertaken is to train teachers to assure that they perceive the criteria and standards as transparent and systematic (Dwyer, 1996, 1998). It is important that teachers are familiar with the content of the criteria and standards, understand their meaning, are able to relate observations from practice to the criteria and can explain and underscore their judgments with them. Thus, training teachers for self-assessment stimulates the accuracy of assessments (Sluijsmans, 2002) and deliberate use of criteria and standards. In the next section will be described

how the three measures mentioned above were used in this study to foster teachers' learning.

4.3 | Method

4.3.1 Participants and procedure

The research was carried out in 2009-2010 in Vocational Education and Training schools (VET) in the Netherlands. In this study, 24 teachers were engaged in a self-assessment procedure to assess their competencies in coaching VET students' reflection skills (see Chapter 2). The lessons included in our study were in the two highest streams of the health domain, followed by students aged 16 or older. The 24 teachers participating in this study all worked in the two highest streams of VET and were from two different schools. From one school 20 teachers participated; these teachers worked in two teams. In this school, it was a joint team decision to participate in the study. From the other school 4 teachers participated. These teachers worked in different teams. In this school, decisions to participate were made on an individual basis. The sample consisted of 5 male and 19 female teachers. Their teaching experience ranged from just having finished teacher education to 28 years.

The participating teachers undertook the self-assessment procedure in three rounds to develop/change their professional competencies in coaching students' reflection skills. These assessment rounds were organized with three months in between, and they all undertook this procedure in three different assessment rounds (moments) with three months in between.

The 24 teachers performed the self-assessment procedure in couples. Each teacher performed the role of self-assessor and the role of colleague giving feedback. As part of the procedure, both teachers and colleagues completed a rating form to assess their own and each others' coaching competencies. This form was completed three times once in every assessment round.

To make teachers familiar with the rating form and to prepare them adequately for undertaking the self-assessment procedure, a training was set up for them (see also Chapter 2). In a training session of three hours they learned to use and apply the criteria and standards. During the training, video-episodes were observed and discussed. The video episodes contained situations in which a VET teacher coached student reflection. After each fragment, teachers were asked to decide which criteria were applicable to the situation, why, and to indicate to what extent the criterion was realized. After each fragment, teachers' answers were discussed plenary. Teachers received feedback from the researcher on their observations, their judgments of the fragments via the use of criteria and standards and on the argumentation for their judgments. To support a proper performance, all teachers received a course document which contained examples of all criteria.

4.3.2 Instrumentation

Rating instrument: filled-out forms with criteria and scores. The forms used for the self-assessment and the colleague assessment were identical. Only the formulation of the criteria differed. The criteria in the self-assessment form were formulated as, for example, 'I focus my coaching on the self of the student' and the criteria in the colleague assessment form as 'the teacher focuses his/her coaching on the self of the student'. All criteria were based on the coaching framework described in the theoretical framework of this study (see also Chapter 2). The self-assessment form consisted of 23 criteria and 4 standards per criterion (see Table 4.1). The standards used indicated to what extent teacher behaviour was realized and were formulated on a four-point scale ranging from one (this behaviour is not realized at all) to four (this behaviour is completely realized). Table 4.1 provides an overview of the criteria regarding the relevant aspects of coaching students' reflection skills. In the first column, the aspects of coaching are mentioned, while in the second column the criteria are mentioned that relate to each aspect.

Table 4.1 Coaching aspects and criteria for coaching students' reflection skills

<i>Aspects of coaching</i>	<i>Criteria for self-assessment</i>
How?	<ol style="list-style-type: none"> 1. I observe students before undertaking a coaching intervention 2. I ask questions before undertaking a coaching intervention 3. I vary my amount of giving support to and challenge of the students 4. I time my coaching interventions deliberately 5. I make use of clear language when coaching the students 6. I make the purpose of my coaching intervention explicit to the students 7. The words I choose invite students to reflect 8. I make sure there is interaction between me and my students 9. I check if the students understand the effects of my coaching intervention 10. I assure a safe learning climate 11. I assure a proper working climate 12. I assure good contact with the students 13. I state the importance of reflection explicitly
What?	<ol style="list-style-type: none"> 14. I focus my coaching intervention at the assignment to be done by the students 15. I focus my coaching intervention at the students' learning process 16. I focus my coaching intervention at the students' regulation of the learning process 17. I focus my coaching intervention at the self of the students 18. I focus my coaching intervention at the students' professional identity 19. I combine foci
When?	<ol style="list-style-type: none"> 20. I stimulate the anticipatory thought of the students 21. I stimulate the intermediate thought of the students 22. I stimulate the afterthought of the students 23. I stimulate the cyclical reflection by the students

In total, 72 self-assessment and 72 colleague assessment forms were available for analysis. The reliability and validity of the rating instrument were checked by conducting several analyses. Internal consistency of the scales for the what, when, and how of coaching students' reflection skills was determined by calculating Cronbach's Alpha. Table 4.2 reveals that the reliability of these scales appeared to be satisfactory. As the only exception to this trend, the internal consistency of the what scale of self-assessors and the when scale of self-assessors and colleague-assessors on moment 1 appeared to be too low. Since the moments 2 and 3 showed better results for these scales, it was considered to keep them in the analysis across the three moments.

Table 4.2 Internal consistency for the what, when and how scales of coaching students' reflection for self and colleague

	<i>What</i>		<i>When</i>		<i>How</i>	
	<i>Self</i>	<i>Colleague</i>	<i>Self</i>	<i>Colleague</i>	<i>Self</i>	<i>Colleague</i>
Moment 1	.50	.78	.55	.60	.77	.71
Moment 2	.80	.75	.80	.66	.88	.90
Moment 3	.76	.77	.83	.77	.78	.88

To investigate the discriminant validity of the instrument, correlations were computed between the what, when and how scales of coaching students' reflection skills for self-assessments and colleague assessments (cf. Westerhof & De Jong, 2001). Results are shown in Table 4.3.

Table 4.3 Correlations between what, when and how scales of coaching students' reflection skills

		<i>What</i>	<i>When</i>	<i>How</i>
Self- assessment	What	1	.31**	.64**
	When	.31**	1	.51**
	How	.64**	.51**	1
Colleague assessment	What	1	.31**	.40**
	When	.31**	1	.07
	How	.40**	.07	1

** Correlation is significant at the 0.01 level (2-tailed).

Table 4.3 shows that correlations for the scores of self-assessors ranged from .30 to .64. For the scores of the colleagues the correlations ranged from .07 to .39. This means that the scales measured distinct, but related aspects of coaching students' reflection skills.

4.3.3 Analysis

The analysis was started by checking for missing values. Missing values occurred at random. A missing value analysis using the SPSS command 'MVA' was performed to estimate missing values for all teachers, on the basis of all other variables available for the sample and for the individual teacher (regression). To answer the research questions, we first performed a descriptive analysis on the three scales per moment (means and standard deviations). Next, absolute and relative difference scores for the what, when and how of coaching students' reflection skills were computed. Also, the measurement errors¹ of the difference scores were calculated. A measurement error larger than the difference score was considered to be divergent². Scores found to be smaller than the measurement error were considered to be convergent (e.g., den Brok, et al., 2006). Then, the scores of the self-assessors, colleagues and the difference scores were analyzed via a repeated-measures ANOVA. Finally, Scheffé's post-hoc test was used to determine where the differences between the mean scores were significant. The importance of the findings of the repeated-ANOVA were determined by calculating the effect size (Eta-squared).

¹ To calculate the measurement error (m.e.) in the difference scores the equation $m.e. = \sqrt{(se_s^2 + se_c^2)}$ was used; se_s , se_c , = standard error of measurement (se) in scale scores of the perceptions of the self-assessor (s) and the colleagues (c). To calculate the standard error of measurement in the scale scores the equation $se = st\sqrt{1-r}$ was used. St =standard deviation of the scale score, r = reliability of the scale score, represented by cronbach's alpha.

² When a difference score is larger than the measurement error, it can be expected with at least 68% certainty, that this difference score is larger than zero. When a difference score is about twice as large as the measurement error, the expectation has a certainty of more than 95%.

4.4 | Results

Table 4.4 shows the means and standard deviations for the self-assessments and colleague-assessments per scale per moment and across moments (overall mean), including the F – and P-values that represent the effects found with respect to differences between measurements.

Table 4.4 Mean, standard deviation and ANOVA results for what, when and how of coaching for self-assessments and colleague assessments

	<i>Aspect (scale)</i>	<i>Overall mean (sd)</i>	<i>M1 mean (sd)</i>	<i>M2 mean (sd)</i>	<i>M3 mean (sd)</i>	<i>F-value</i>	<i>P-value</i>
Self	What	2.55 (.50)	2.57 (.39)	2.49 (.58)	2,60 (.55)	.30	.74
	When	2.42 (.64)	2.30 (.54)	2,38 (.64)	2,58 (.71)	1.22	.30
	How	2.86 (.43)	2.90 (.37)	2.74 (.54)	2,94 (.34)	1.48	.24
Colleague	What	2.64 (.68)	2.77 (.63)	2.59 (.71)	2.55 (.70)	.74	.48
	When	2.49 (.66)	2.58 (.53)	2.57 (.70)	2.30 (.72)	1.36	.26
	How	2.90 (.53)	2.96 (.37)	2.82 (.67)	2.93 (.52)	.44	.65

Note. Scores can range between 1 and 4

Table 4.4 reveals that both the self-assessors and the colleagues assessed the how aspects of coaching students' reflection rather positive. Thus, teachers considered themselves as competent in the how aspects of coaching students' reflection and their colleagues confirmed this impression. On average, scores by the self-assessors and the colleagues on the what and when aspects of coaching students' reflection were slightly positive. Thus, teachers themselves and their colleagues had the impression that coaching interventions aiming at the what and when aspects of coaching were used to a modest degree.

Table 4.4 also shows that on average the scores given by colleagues were higher than the scores by self-assessors. Colleagues perceived the teachers' competencies in coaching students' reflection slightly more positive than the teachers themselves. Standard deviations for both the self and the colleague on all scales ranged from .34 till .74, indicating that large individual differences existed in scores of both the self-assessors and the colleague assessors for the three scales. Also, standard deviations for moment two and moment three were usually (slightly) larger than the standard deviations for moment one. This means that individual differences in scores of the three scales (slightly) increased in round two and three. The only exception to this trend was the standard deviation for the scores of self-assessors on the how of coaching students' reflection.

A repeated measures ANOVA was conducted to compare scores for the different moments of self-assessment and colleague assessment. As can be seen in Table 4.4, no statistically significant differences between the different moments of measuring were found. To further analyze individual differences in ratings between teachers and between colleagues at the different moments, "development or change trajectories" were created (see Figures 4.1 and 4.2). Figure 4.1 depicts the trajectories of self-assessments for the what, when and how of coaching students' reflection skills during three assessment rounds. Figure 4.2 illuminates this for the colleague-assessments.

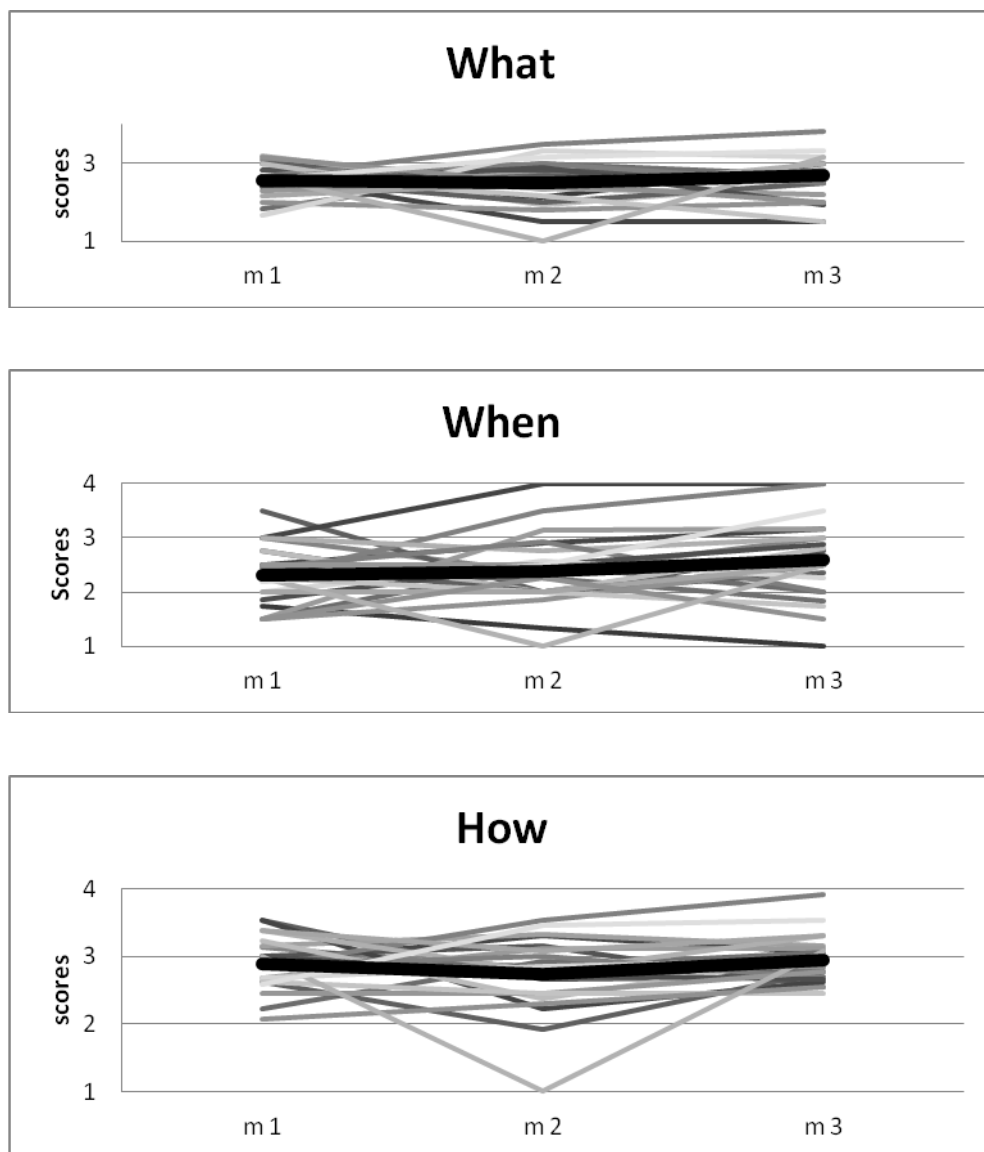


Fig. 4.1 Averaged trajectories of scores of self-assessor for what, when and how of coaching students' reflection skills during three assessment rounds

As can be seen in Figure 4.1, individual differences in the trajectories of self-assessor scores for the what and when of coaching students' reflection skills increased over time and were quite large. For the how of coaching students' reflection skills, individual differences seemed to decrease over time. Figure 4.1 also reveals considerable differences for individual teacher across moments.

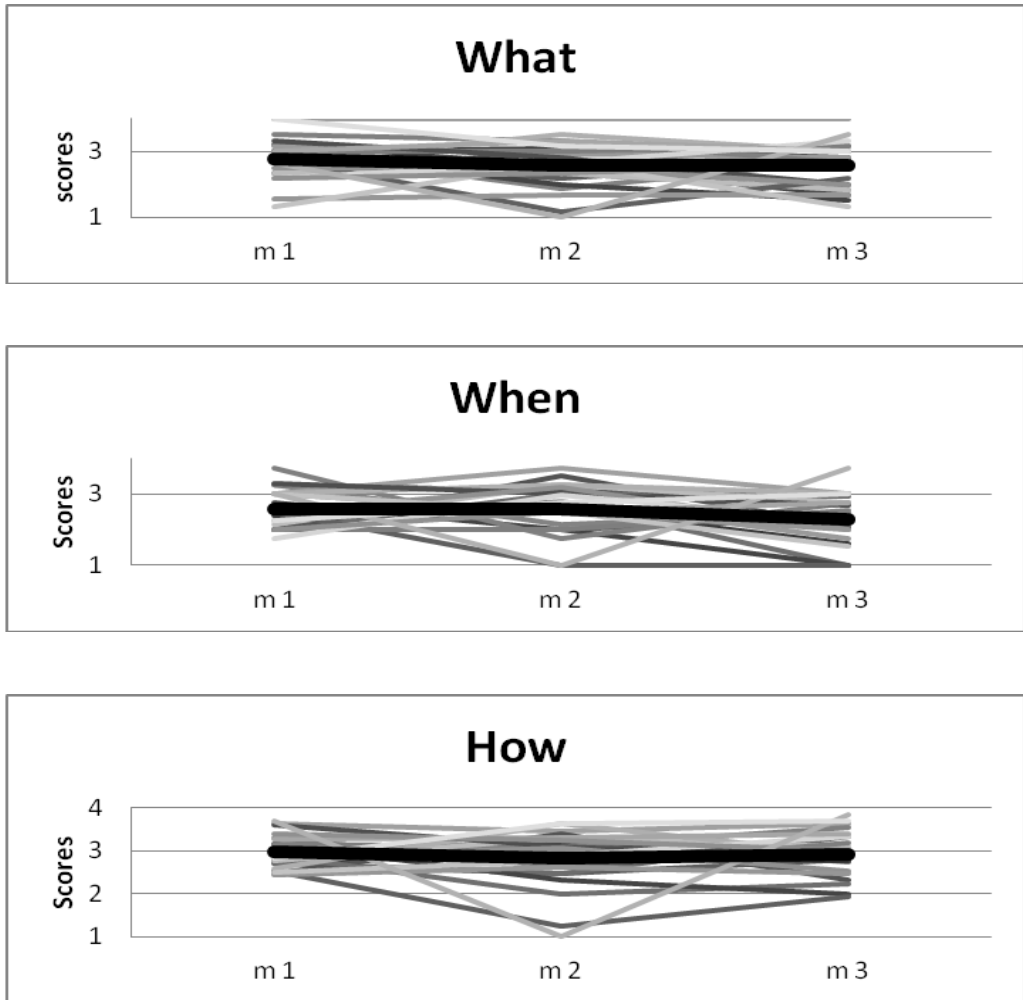


Fig 4.2 Averaged trajectories of scores of colleagues for what, when and how of coaching students' reflection skills during three assessment rounds

Figure 4.2 shows that individual differences in colleague assessments increased over time pertaining to the when and what of coaching students' reflection skills. Individual differences for the how of coaching students' reflection skills were smaller at moments 1 and 3 than at moment 2. Figure 4.2 also shows considerable differences for individual teachers across moments.

Table 4.5 shows the means and standard-deviations for the absolute and relative differences between self-assessments and colleague-assessments per scale across moments (Overall) and per moment (M1, M2, M3), including the F- and P-values.

Table 4.5 Mean, standard deviation and ANOVA for absolute and relative difference scores for self-assessments and colleague assessments per scale across moments and per moment

	<i>Aspect (scale)</i>	<i>Overall mean (sd)</i>	<i>M1 mean (sd)</i>	<i>M2 mean (sd)</i>	<i>M3 mean (sd)</i>	<i>F- value</i>	<i>P-value</i>
Diff (abs)	What	-.09 (.66)	-.20 (.73)	-.10 (.61)	.04 (.62)	.85	.43
	When	-.07 (.87)	-.28 (.69)	-.19 (.90)	.27 (.92)	3.00	.06
	How	-.04 (.46)	-.05 (.49)	-.08 (.46)	-.01 (.43)	.25	.78
Diff (rel)	What	.50 (.39)	.62 (.39)	.46 (.36)	.44 (.43)	1.55	.22
	When	.66 (.56)	.60 (.42)	.70 (.59)	.67 (.67)	.174	.84
	How	.36 (.28)	.37 (.32)	.35 (.28)	.36 (.24)	.03	.98

What can be seen from Table 4.5 indicates that absolute differences for the what of coaching decreased for moment one to moment three and changed in direction. This means that at moment one, on average, colleagues rated themselves higher than self-assessors while at the third moment self-assessors rated themselves higher than their colleagues. The absolute differences for the when of coaching were somewhat larger than the what of coaching, but showed a similar pattern with respect to the direction. Absolute differences for the how remained relatively stable and were very small.

However, when looking at the standard deviations of the difference scores of these three aspects, it can be seen that these were quite large. This means that there was much variation between couples. Table 4.5 also shows that the relative differences (ignoring the direction) were also quite large – as were their standard deviation -, suggesting that self-assessors and their colleagues differed in their assessment and that there was large variation between couples. Both difference scores thus suggest that colleagues and self-assessors hardly reached agreement and that this did not change much over time.

Table 4.6 Standard error of measurement for self-assessment and colleague perception data, Measurement errors (m.e.) of difference scores, mean absolute difference scores and mean difference scores for what, when and how of coaching students' reflection.

	<i>m.e. difference score</i>	<i>Mean absolute difference score (s.d.)</i>	<i>Mean relative difference score (s.d.)</i>
What	.42	-.09 (.66)	.53 (.40)
When	.48	-.07 (.87)	.66 (.56)
How	.26	-.04 (.46)	.37 (.28)

Note: m.e.=measurement error; s.d. standard deviation

The earlier described trends are also reflected in table 4.6. As can be seen from this table, mean relative differences for the what, when and how scales of coaching students' reflection scales were larger than the measurement errors. This means that, on average, a divergence was found between the judgments of teachers and the judgments of colleagues. However, considerable differences were also found in the difference scores. This indicates that perceptions of some teachers only marginally differed from their colleagues and that for other teachers, the perceptions considerably differed from their colleagues. In the case of what, when and how, on average positive and negative divergence/convergence seem to balance each other out, since the mean absolute difference scores were close to zero.

4.5 | Conclusions and discussion

4.5.1 Conclusions

Aim of this study was to gain insight into how teachers assess themselves, are assessed by their colleagues and how these assessments develop or change over time. The assessments were focused on teachers' competencies in coaching health students' reflection skills in the context of secondary vocational education. With regard to the overall picture of how teachers assessed themselves and were assessed by their colleagues it can be concluded that: (1) colleagues perceived the teachers' coaching competencies slightly more positive than the teachers themselves; (2) teachers considered themselves reasonably competent in how to coach students' reflection skills and their colleagues confirmed this impression; (3) teachers considered themselves moderately competent in the what and when of coaching students reflection skills and their colleagues agreed upon this; and (4) on average, relative difference scores concerning the assessments of self-assessors and colleagues were large and did not develop over time, whereas absolute differences scores suggested that the differences in assessments of self-assessors and colleagues changed in direction. Thus, large individual differences were found, both in scores of teachers and colleagues as well as in difference scores between these two. This study showed that repeatedly and longitudinally using criteria and standards did not lead to significant differences in scores across different moments of being engaged in the self-assessment procedure.

4.5.2 Discussion

As became clear from the results, large individual differences were found between teachers in how teachers' perceived their own coaching skills, how these coaching skills were perceived by colleagues, and that these differences increased over time. There are some possible explanations for this finding. Firstly, experiences of the first moment of assessment might have led to more realistic judgments and might have made teachers to observe and judge their own practice and the practice of their colleagues in a more

differentiated or nuanced way. Secondly, it might also be possible that differences (changes) in the motivation of teachers to participate in the procedure have led to more deviations in scores over time. On the one hand, there were teachers participating with affinity with coaching students' reflection skills. Likely, these teachers might be more motivated to invest time and effort in their assessment of coaching students' reflection skills. On the other hand, there were teachers participating who were unwilling or unmotivated for the self-assessment and the colleague assessment. These teachers participated because they were expected to, or felt the moral obligation resulting from the team agreement to participate.

In this study, no significant increase (or decrease) in scores was found for the self-assessment and the colleague assessment over time. It might be that teachers have learned to assess themselves and each other more critically which might have led to using slightly (but not significantly) low(er) scores. The decrease in the use of high scores in round two fits well into this line of reasoning. It might also be that the small sample size has influenced the power of the ANOVA undertaken in this study (Stevens, 1996), leading to a reduced chance to find significant changes. Another possible explanation for the lack of effects or change/development in the scoring may be that perceptions asked for a series of interactions may be less open to changes because such images of the teachers' coaching practice are less susceptible to 'actual' changes in teachers' behaviour (den Brok, et al., 2006). It might also be that teachers need more time to develop their skills in assessing coaching students' reflection skills or that teachers need to repeat the assessment of themselves and their colleagues with less time between the different moments.

It seems that coaching students' reflection is a skill that cannot/does not manifest itself in a consistent and clear way. Coaching is a skill that varies from person to person, from situation to situation and from teacher-student interaction to teacher-student interaction. Additionally, the specific context, and the often implicit goal, determine the effect of a coaching intervention. Consequently, situations in which teachers have to assess themselves and their colleagues are difficult to compare, assessing the

coaching of students' reflection is difficult to learn, and determining the effects and adequacy of a specific coaching intervention should be judged against the specific motivation and goal of that coaching intervention. As a consequence, the questions that arise are whether the rating instrument used was sensitive enough to detect trends or change in scores, whether the intervention was powerful enough to result in changes in teachers' perceptions, or that the lack of effects or change may also be attributable to the different nature of coaching interventions and how teachers deal with using criteria and scores.

The finding of this study that self-assessors on average score lower than colleague assessors is not confirmed by other research (den Brok, et al., 2006). Mostly, teachers' perceptions are higher than the perceptions of others (students). Based on the idea that VET teachers in the Netherlands consider coaching students' reflection as a difficult competence (De Bruijn & Van Kleef, 2006), biases in perception and human judgment might explain this finding. Because of the difficult nature of coaching, the "worse than average effect" can explain that teachers use low scores at first. This tendency means that teachers feel insecure and afraid to be worse than their colleague in performing difficult skills, such as coaching students' reflection. Consequently, self-assessors might use lower scores to protect themselves against possible negative scores of their colleagues (cf. Wubbels & Levy, 1993). Finally, coaching students' reflection skills is a relatively new competence for VET teachers. Therefore, it might be that teachers experienced difficulties in assessing themselves and their colleagues adequately.

4.5.3 Limitations and suggestions for future research

This study was limited in several ways. First, results and statements about results need to be interpreted carefully and cannot yet be broadly generalized because the research was descriptive and exploratory in nature and focused on a limited number of teachers from a specific type of vocational education. Second, determining the effects of teachers' use of self-assessment was in this study limited to researching teachers' self-assessments, colleague

assessments and how these assessments developed or changed over time. Combining or including teachers' perceptions of usefulness of criteria and standards and their actual learning gains from reflection may also be informative with respect to the effects of the use of self-assessment. Third, although large individual differences were found in both the scores of teachers and colleagues as well as in the difference scores between the teachers and the colleagues who formed couples, these differences were not analyzed in a more systematic or in-depth manner, for example, by uncovering the teachers arguments for their scores and relating these to the differences in scores.

To further develop the knowledge on self-assessment effects of self-assessment as a tool for fostering teachers' learning, it seems necessary to determine what its effects are on teachers' professional learning and competence development. It is also important to relate effects of self-assessment on learning and competence development to design principles that underlie the self-assessment procedure to determine the relevance of these principles in terms of their specific contribution to teachers' learning. Further research also needs to focus on teachers perceptions of usefulness of self-assessment and, in the long run, what the effects of self-assessment are on students' learning.

CHAPTER 5

What and how do teachers learn from self-assessment: results from a longitudinal study¹

ABSTRACT

Self-assessment is often considered as a powerful tool for fostering teacher learning, yet little is known about its real effects on learning. This study examined reflective reports of 24 in-service Vocational Education and Training teachers' efforts to develop their competencies in coaching students' reflection skills by using a self-assessment procedure three times within a period of one and a half year. Findings revealed that being engaged in the self-assessment procedure mainly led to raised awareness of new aspects of coaching students' reflection skills and to reported learning outcomes pertaining to the content (what) of coaching students' reflection skills and on conditions for coaching students' reflection skills (how). Learning outcomes showed a cyclical progression consisting of raised awareness, followed by new ideas/insights and confirmation of these ideas, leading to raised awareness again. Finally, it turned out that the teachers were predominantly learning from the self-assessment in a performance-oriented way. This study shows that teachers can benefit from a self-assessment procedure, in this study pertaining to the improvement of their competencies in coaching students' reflection skills. Recommendations are made to improve the design of future self-assessment procedures.

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Van Diggelen, M. R., den Brok, P. J., & Beijaard, D. *What and how do teachers learn from self-assessment: results from a longitudinal study.*

5.1 | Introduction

In the literature, self-assessment is described as a promising method for fostering learning by teachers (e.g., Barber, 1990; Ross & Bruce, 2007). Self-assessment is considered to be easy to develop and implement and to require little of the scarcely available time of hard-working teachers. It is believed that self-assessment enhances teachers' understanding of what constitutes good practice (Samuels & Betts, 2007), stimulates the self-monitoring capacities of teachers (Crooks, 1988), and prepares teachers for lifelong learning (Boud, 1995). Nevertheless, these beliefs about the effects of self-assessment are hardly underpinned by empirical evidence (Ross & Bruce, 2007). Little is known about what teachers actually learn from self-assessment. Understanding what and how teachers learn from self-assessment is an important prerequisite for promoting this kind of learning (Beijaard, Korthagen, & Verloop, 2007). Research on what and how teachers learn through self-assessment is thus badly needed.

The purpose of the present study was to gain insight into what teachers learn and intend to learn from the use of a self-assessment procedure focusing on teachers' competencies in coaching students' reflection skills. For this purpose, 24 in-service Vocational Education and Training (VET) teachers' written reflection reports, that were part of a self-assessment procedure, were analyzed. Teachers completed this procedure, including the writing of reflection reports as part of it, three times within a period of one and a half year. In this study, self-assessment involved teachers evaluating their own work by applying criteria and standards to their work, by making judgments with respect to the extent to which they met these criteria and standards, receiving feedback from colleagues, and reflecting on their self-assessment and colleagues' feedback, in order to improve their own practice in coaching students' reflection skills (cf. Boud, 1995; see also Chapter 2). Thus, in this study it was assumed that teachers learn by being engaged in activities as part of the self-assessment procedure, and make learning results explicit by reflecting on their activities via the written reflection report. Learning results in this study are defined as changes in beliefs and

knowledge and (intended) changes of practices. Teacher learning is thus seen as all changes in cognition and/or behaviour that are the result of self-assessment (Bakkenes, Vermunt, & Wubbels, 2010; Hoekstra, Beijaard, Brekelmans, & Korthagen, 2007; Meirink, Meijer, & Verloop, 2007; Zwart, Wubbels, Bergen, & Bolhuis, 2007). Behaviour is understood as those actions related to coaching students' reflection skills as reported on by the teacher. Cognitions are understood as integrated wholes of knowledge and beliefs including personal goals and emotions (Fenstermacher, 1994; Meijer, Verloop, & Beijaard, 1999; Putnam & Borko, 1997).

As said, the focus of the self-assessment was the domain of coaching of students' reflection skills in the context of VET. Coaching students' reflection skills is an important competence for teachers in Dutch VET education, especially in the health sector. In this type of education, students from 16 until 20 years old are prepared for working as a nurse. The relevance of reflection for those students parallels current literature in which reflection is found important for students to become self-regulative learners and reflective practitioners (Boekaerts & Corno, 2005; Butler & Winne, 1995; Perry, Phillips, & Hutchinson, 2006; Winne & Perry, 2000; Zimmerman, 1990). Literature, however, shows that VET teachers in the Netherlands consider fostering the coaching of student reflection as an important but difficult competence (De Bruijn & Leeman, 2011; Mittendorff, den Brok, & Beijaard, 2011). Although several studies have investigated the current coaching practices (and knowledge) of (VET) teachers (e.g., Mittendorff et al., 2011), most of these studies focused on describing and analyzing such practices, rather than looking at the development of these practices or the learning of teachers related to these practices. The present study aims to contribute to the current studies in the coaching of students' reflection skills and teachers' self-assessment by longitudinally investigating the effects of teachers' recurrent use of a self-assessment procedure on their competencies to coach students' reflection skills. To realize this, the following central question was addressed: What and how do VET teachers learn and intend to learn from (repeatedly) being engaged in a self-assessment procedure used to develop their competencies in coaching students' reflection skills?

5.2 | Theoretical framework

The teachers that participated in this study were all involved in the development of the self-assessment procedure. The development of this procedure has been described previously (see Chapter 2); the procedure itself consisted of: (1) a tool based on criteria and standards to be used by teachers to assess their own competencies for coaching students' reflection skills; (2) feedback from peers on observed lessons by using a tool based on the same criteria and standards; (3) a report written by the teachers in which they reflected on their competencies and feedback from their peers, set goals for future action and described the effort needed for this; and (4) feedback from peers on this reflective report and, if necessary, the possibility to make adjustments. To be effective, it has been argued that the self-assessment procedure must not be treated as a single-shot activity (Ball & Cohen, 1999; Smith & Gillespie, 2007). The procedure has to be sustainable over time to get teachers used to it and to learn to use the procedure in a proper way. Sustainability will enhance the usefulness of the procedure and also lead to a more permanent use of it (Hawley & Valli, 1999; Smith & Gillespie, 2007; Supovitz & Turner, 2000). Garet, Porter, Desimone, Birman and Yoon (2001) argue that longer-lasting activities provide more opportunities and possibilities for in-depth learning, to experiment with new things, and to receive feedback.

The self-assessment procedure was meant to foster teachers' coaching competencies pertaining to students' reflection skills in Vocational Education and Training. Coaching was defined in our previous study (see Chapter 2) as supporting and/or challenging students to reflect by asking questions, giving feedback and providing tips and hints (Bakker et al., 2011; Collins, Brown, & Newman, 1989). During coaching, teachers can focus their interventions on different aspects of learning, namely: the task, process, regulation and the self (Hattie & Timperley, 2007). These different aspects comprise the *what* of coaching interventions. In this study, reflection is defined as thinking over what has happened during the learning process while preparing, performing or finalizing learning activities (Ertmer & Newby, 1993; Mansvelder-

Longayroux, Beijaard, & Verloop 2007; Van de Boom, Paas, Van Merriënboer, & Van Gog, 2004; Vermunt, 1992; Vermunt & Verloop, 1999; Zimmerman, 1998, 2000). Reflection on these phases of the learning process comprises the *when* of coaching. Differentiating between the different aspects of the *what* and *when* of coaching students' reflection skills assures that coaching interventions build upon the students' knowledge and understanding (Hattie & Timperley, 2007).

Teachers must prepare their coaching interventions well to determine on which of the *what* and *when* aspects of coaching the interventions must be focused. Teachers can prepare their coaching interventions by observing the students. Also, teachers must check by asking questions as to whether their diagnosis of the *what* and *when* of coaching students' reflection skills was correct (Van de Pol, Volman, & Beishuizen, 2012). Furthermore, there are several aspects related to the *how* of coaching that further impact on the effects of coaching interventions on students' reflection (Sadler, 1989; Shute, 2008). The teacher must use clear language, choose formulations that invite students to reflect, explicate the meaning of their interventions to avoid misunderstandings, and assure interaction between the teacher and the students. Additionally, the design of the coaching interventions must impact on the students' reflection (the *how* of coaching). It is important that the timing of an intervention is adequately chosen and that the teacher varies the amount of support and/or challenge given. Finally, it is important for teachers to consider the conditions under which a student has to reflect. The teacher must assure that the students feel safe, that there is a good working climate, a good contact, and that the relevance of coaching students' reflection is explicated.

As said, undertaking the self-assessment procedure is assumed to lead to learning outcomes. Bakkenes, et al. (2010) conducted a content analysis of self-reported *learning outcomes* of teachers. The following four types of learning outcomes were found in their study: (1) changes in knowledge and beliefs; (2) intentions for practice; (3) changes in actual teaching practices; and (4) changes in emotions. Changes in knowledge and beliefs were most frequently reported on and changes in teaching practices

were rarely reported on. In particular, becoming aware, getting new insights/ideas and confirmation of ideas were reported on by teachers in their work. Therefore, we expect changes in knowledge and beliefs to be important in our study as well.

It is expected that undertaking the self-assessment procedure also leads to outcomes in terms of *intentions for learning* and *plans to realize* them. These intended learning outcomes parallel the reported learning outcomes by Bakkenes et al. (2010). The plans to realize the intended learning outcomes are similar to learning activities that teachers undertake. There are many models that prescribe how learning by teachers needs to take place (Bakkenes et al., 2010), but only a few studies have been conducted on what and how teacher learning at the workplace actually takes place (e.g., Hoekstra, et al., 2007; Kwakman, 2003; Lohman & Woolf, 2001; Van Eekelen, Boshuizen, & Vermunt, 2005). These studies mainly distinguished between the following learning activities teachers can undertake at the workplace, namely learning by: doing, experimentation, using external sources, interaction with others and reflection on practice. However, these studies included only observable and overt categories and no covert or hidden cognitive categories. Recently, studies have provided more knowledge into the cognitive aspects of how (student) teachers learn at their workplace (e.g., Bakkenes et al., 2010; Hoekstra et al., 2007; Meirink et al., 2007; Zwart et al., 2007). Categories of learning activities reported in these studies were: considering one's own practice, getting ideas from others, experiencing friction, struggling not to revert to old ways, and avoiding learning. Experimenting with something and considering one's own practice were the learning activities that teachers most frequently reported on in these studies. In this study, we consider the above-mentioned learning activities also to be relevant.

Reflection on (assessed) performance is considered necessary for teacher learning (Hatton & Smith, 1995; Korthagen, Kessels, Koster, Lagerwerf, Wubbels, 2001; Smith & Gillespie, 2007). By conscious reflection, teachers give meaning to their judgments of themselves. Reflection in a self-assessment procedure is a means to structure and restructure teachers' own

practical knowledge, to construct and reconstruct experiences, and to integrate theory and practice. A powerful way to reflect is writing reflective reports. Writing fixes thoughts on paper and makes external what is internal (Ong, 1982). In general, written reflection serves several functions (Davis, 2006; Hammond Stoughton, 2007; Wade & Yarbrough, 1996), namely: (1) explicating learning outcomes; (2) giving personal meaning to learning outcomes; (3) integrating learning outcomes with previously gained knowledge and experience; and (4) planning professional learning by formulating intentions for learning and activities to realize these.

5.2.1 Research questions

The aim of this study was to describe the impact of self-assessment on what and how teachers learn as a result of being engaged in a self-assessment procedure performed repeatedly over a period of three assessment rounds. Therefore, we mapped teachers' learning outcomes and activities. The concept of learning outcomes was used to determine what teachers learned from the self-assessment and what they intended to learn after ending the self-assessment. The concept of learning activities was used to establish how teachers wanted to realize their intended learning outcomes. Accordingly, this study attempted to answer the more following more specific research questions:

1. a) What learning outcomes are visible in VET teachers' reflective reports as a result of being engaged in a self-assessment procedure for fostering their skills in coaching students' reflection skills?
- b) What changes in learning outcomes are visible in VET teachers' reflective reports over a period of three self-assessment rounds?

2. a) What intended learning outcomes and learning activities to realize these outcomes do VET teachers report when undertaking a self-assessment procedure for fostering their skills in coaching students' reflection skills?
- b) What changes in intended learning outcomes and planned activities are visible in VET teachers' reflective reports over a period of three assessment rounds?

5.3 | Method

5.3.1 Participants

The present study was carried out in 2009-2010 in Vocational Education and Training schools (VET) in the Netherlands. In this study, 24 teachers used a previously developed self-assessment procedure to assess their competencies in coaching VET students' reflection skills (see Chapter 2). The teachers included in our study taught in the two highest streams of the health domain, followed by students aged 16 or older. The teachers participating in this study all worked in the two highest streams of VET and were from two different schools. From one school, 20 teachers participated; these teachers worked in two teams. In this school, it was a joint team decision to participate in this study. From the other school, four teachers participated. These teachers worked in different teams. In this school, decisions to participate were made on an individual basis. The sample consisted of 9 male and 15 female teachers. Their teaching experience ranged from just having finished teacher education to 28 years.

5.3.2 Data collection

The participating teachers undertook the self-assessment procedure in three rounds to develop their professional competencies in coaching students' reflection skills. The 24 teachers performed the self-assessment procedure in couples. Each teacher performed the role of self-assessor and the role of

colleague giving feedback. For each self-assessment, the reflective report was used to determine what teachers had learned from the self-assessment or what they intended to learn after having finished the self-assessment procedure. In total, there were 69² reflective reports written by the teachers. After each self-assessment, the teachers were asked to report on: (1) learning intentions when starting the self-assessment procedure; (2) learning from their experiences with the self-assessment procedure; (3) learning from the feedback of their colleagues; and (4) their learning goals based on undertaking the self-assessment procedure and how to achieve these goals. During the training prior to the first self-assessments the teachers were instructed how to complete the reflective reports with the help of a good example of such a reflective report. The teachers had to finish this reflective report within a week after the feedback conversation with their colleague. The whole self-assessment procedure had to be finished within two weeks after the classroom observation by both the self-assessor and the colleague assessor.

5.3.3 Data analysis

To analyze the reflective reports a category system was developed. Text fragments pertaining to a specific topic or occurrence were identified for this purpose. Change of topic determined the end of a text fragment and the beginning of a new one. Each text fragment was then coded separately, based on predefined concepts from the literature. Thus, the category system was developed in an iterative process of moving back and forth between predefined concepts from the literature and data. Saturation was reached after analyzing 15 reflective reports. The final category system is outlined below. In the results section we will further illustrate the meaning of the categories with examples from the reflective reports. Next, the developed category system will be briefly described. To determine teachers' learning outcomes (research question one and two), five categories were derived from the literature.

² The project coordinator lost a completed reflective report of one of the teachers. Therefore, reflective reports of 23 teachers were included in the analysis.

Category one, two and three were, respectively, based on the following predefined concepts from the literature: 'awareness', 'new insight/idea' and 'confirmation of an idea'. To further specify the learning outcomes, the subcategories 'what', 'when' and 'how' of coaching students' reflection skills were used (see also Appendix A). The fourth category distinguished was '*intentions for learning*'. Initially, this category was further specified with 'awareness', 'new insight/idea', 'confirmation of ideas' and 'changes in practice' as subcategories. Only, preliminary analysis of the reflective reports revealed that these subcategories were not easily applicable to code the intentions for learning in the written reflective reports. Therefore, these subcategories were not included in the final category system. However, the category 'teachers' intentions for learning' was further specified by using the 'what', 'when' and 'how' of coaching as subcategories. No new subcategories were added based on the data. The fifth category distinguished was '*planned learning activities*' to be undertaken to realize the intentions for learning. For this category, the following predefined concepts were derived from the literature: 'doing', 'experimentation', 'reflection', 'feedback', 'observation' and 'studying sources'. Although considered important, the activities of 'struggling not to revert to old ways' and 'experiencing friction' turned out to be irrelevant for coding the learning activities in the written reflective reports. Also, some changes in labels were made. Considering one's own practice was changed into 'reflection' and 'getting ideas' from others was divided into 'feedback' and 'observation'.

The reliability of the category systems was tested by assessing the inter-rater reliability. Eight reflective reports that contained all main categories and subcategories were independently coded by two raters and then compared for inter-rater reliability (Cohen's Kappa). For awareness, a Cohen's Kappa of .81 was found, for confirmation of an idea a Cohen's Kappa of .83, for insights/new ideas a Cohen's Kappa of .77, for intentions for learning a Cohen's Kappa of .78, and for planned learning activities a Cohen's Kappa of .93. The category systems thus appeared to be sufficiently reliable.

To determine what and how teachers learn and intend to learn, all the 69 reflective reports were analyzed separately by using the category system.

Absolute frequencies were calculated for every coding category across the different reflective reports written per self- assessment round. Also, changes in learning outcomes and intended outcomes over time were determined by comparing absolute frequencies of every coding category across the three self- assessment rounds.

5.4 | Results

The most striking results depicted in Table 5.1 are: (1) teachers mostly reported on learning outcomes related to raised awareness, and (2) teachers mainly reported on outcomes related to conditional aspects of coaching students' reflection skills.

5.4.1 Learning outcomes

Raised awareness. The reported learning outcomes related to raised awareness referred in most cases to the conditional aspects of coaching students' reflection skills. This means that most teachers felt they became more aware of their need to realize a safe climate, a good working climate, good contact, or to explicate the relevance of reflection before being able to coach students to reflect. A teacher wrote in his reflective report: *"Now I know that I must emphasize and explain the relevance of reflection to students."* Also, teachers frequently reported on raised awareness of aspects of the what and when of coaching students' reflection skills. As a result of this raised awareness, they also became aware that they could differentiate their interventions more to direct students' reflection. For the what of coaching students' reflection, teachers became aware that they could differentiate their interventions more between the assignment, learning process, regulation, self and professional identity.

Table 5.1 Number of coded text fragments for teachers' learning outcomes and intentions for learning pertaining to 'what', 'when' and 'how' of coaching students' reflection skills

<i>Category learning outcomes</i>	<i>Subcategory Coaching aspects</i>	<i>No. of text fragments round one</i>	<i>No. of text fragments round two</i>	<i>No. of text fragments round three</i>	<i>Total no. of text fragments</i>
Raised awareness	Preparing	15	15	9	39
	Focus	66	26	37	129
	Phases of reflection	45	12	23	80
	Designing	19	12	13	44
	Communication	42	12	9	63
	Ending	13	4	5	22
	Conditional aspects of coaching	102	40	46	188
Confirmation of ideas	Preparing	3	7	2	12
	Focus	8	22	11	41
	Phases of reflection	5	21	3	29
	Designing	3	9	7	19
	Communication	4	24	2	30
	Ending	2	5	1	8
	Conditional aspects of coaching	12	33	17	62
New idea/insight	Preparing	1	5	3	9
	Focus	4	17	12	33
	Phases of reflection	2	7	4	13
	Designing	0	8	3	11
	Communication	0	6	2	8
	Ending	0	6	2	8
	Conditional aspects of coaching	9	35	8	52

Table 5.1 (continued)

<i>Category learning outcomes</i>	<i>Subcategory coaching aspects</i>	<i>No. of text fragments round one</i>	<i>No. of text fragments round two</i>	<i>No. of text fragments round three</i>	<i>Total no. of text fragments</i>
Intentions for learning	Preparing	2	2	3	7
	Focus	21	23	9	53
	Phases of reflection	13	17	7	37
	Designing	3	11	14	28
	Communication	1	3	3	7
	Ending	1	4	1	6
	Conditional aspects of coaching	35	29	21	85

For the when of coaching, teachers became aware that they could differentiate their interventions more between students' anticipatory thoughts, students' immediate thoughts, students' afterthoughts and cyclical reflection of students. The following example from a report illustrates this raised awareness of the what of coaching students' reflection skills: *"I discovered that I do not always consciously aim at the different foci of coaching interventions. I direct my coaching interventions on the assignment, process and regulation, but my colleague told me that I largely neglect to focus my coaching interventions on the self and the professional identity of students. I should pay more attention to these foci."*The following example illustrates raised awareness of a teacher about the when of coaching students' reflection: *"During my coaching, my awareness of the different phases of reflection is too low."*

The how of coaching students' reflection skills (preparing, designing and communicating coaching interventions) was reported on less frequently than the what and when of coaching students' reflection skills, but was still reported on to a considerable degree. A teacher that raised her awareness of the preparing of coaching students' reflection wrote: *"It seems as if I can make far more use of the observations I make. I observe well, but do not use them explicitly."* A teacher who became more aware of communicative aspects of coaching students' reflection skills wrote in her reflective report: *"My colleague told me that the questions that I ask invite students to reflect. Also, he [the colleague who gave feedback] said that the words I use are clear to students."*

Teachers only occasionally reported on raised awareness about the ending of a coaching intervention, indicating that the teachers were already aware of the fact that it is necessary to end a coaching intervention well. The next quote of a teacher illuminates one of the few examples of raised awareness about ending a coaching intervention: *"I learned from my colleague that asking students to summarize the content of learning is a good way to discover if the students understand the content."*

Developments in raised awareness. Two trends were found in the development of the reported learning outcomes for raised awareness. The first trend was that the number of coded text fragments for the what, when and how of coaching students' reflection was considerably higher in self-assessment round one than in the second and third self-assessment rounds. This means that particularly in round one teachers became alert to: (1) directing their coaching interventions to different aspects of students' learning (what); (2) stimulating reflection during different phases of learning (when); and (3) communicative, design, ending and preparing aspects of coaching interventions, as well as conditions for coaching students' reflection skills (how). The other trend found pertained to the pattern across the three self-assessment rounds for the what and when of coaching students' reflection and conditions for coaching students' reflection. This pattern consisted of a high number of coded text fragments for these coaching aspects in the first round, a considerably lower number in the second round, and again a higher number in the third round. Thus, repeating the self-assessment procedure in a second round led to less raised awareness and repeating it a third time led to more raised awareness again for directing coaching interventions on different aspects of learning, stimulating reflection during different phases of learning and realizing a safe climate, a good working climate, good contact, or to explicate the relevance of reflection before being able to coach students to reflect. Repeating the self-assessment procedure a third time appeared to make teachers more alert to the aforementioned aspects.

Confirmation of ideas. Teachers did not frequently report outcomes relating to the confirmation of ideas. When teachers were confirmed in their ideas of coaching students' reflection skills, the majority of outcomes concerned the what aspect of coaching students' reflection skills and conditions for this. One teacher wrote: *"I already knew before the onset of the self-assessment procedure that I mainly focus my coaching interventions on the self of students. My colleague gave me the same message in his feedback."* The number of outcomes related to ending coaching interventions was found to be particularly low. The other categories – preparing, phases of reflection,

communicating and designing coaching interventions for students' reflection skills – were reported on scarcely, but this number was found to be stable across the categories.

Developments in confirmation of ideas. In general, the number of learning outcomes reported for confirmation of ideas for the what, when and how aspects of coaching students' reflection skills showed a peak in round two. The low number of reported outcomes for the what and when aspects of coaching students' reflection skills in self-assessment round one was comparable to the low number in self-assessment round three. Also, the number of reported outcomes for the how of coaching students' reflection skills was higher in round two than in round one and round three. In round two, therefore, teachers particularly felt they were confirmed in their ideas on the what, when and how of coaching students' reflection skills.

New insights/ideas. Teachers did emphasize new insights or ideas in their reflective reports, but to a modest degree. Only the what of coaching students' reflection skills and conditions of coaching students' reflection skills were reported on regularly. A teacher who developed insight into the what of coaching stated in his reflective report: *“My colleague told me that I focus my coaching interventions on the self most of the times. She advised me to focus my interventions more on the professional identity of students. I think she is right. In that way, students can discover the relevance of something for their profession.”* A teacher who developed insight into a condition for coaching students' reflection wrote: *“I became nervous of the silence after I asked a question. As a consequence, I started talking again in most situations. However, it is not necessary, most students can deal well with silence. It is me who feels uncomfortable when it is silent.”* The remaining categories – preparing, phases of reflection, communicating, ending and designing coaching interventions for students' reflection – were reported little but quite consistently across categories.

Developments in insights/new ideas. A general pattern found was that the number of reported learning outcomes emphasizing new insight/ideas for the what, when and how aspects of coaching students' reflection skills developed from being low in round one to high in round two and low(er) in round three. In round two, therefore, most outcomes indicated a translation of awareness of the what, when and how of coaching students' reflection skills into a new practical or theoretical insight.

5.4.2 Intentions for learning and planned activities

Intentions for learning. The majority of the intentions for learning formulated by the teachers in their reflective reports were related to the what and when of coaching students' reflection skills and the conditions for coaching these skills (how). More precisely, they mostly focused on extending the what and when of students' reflection and on realizing the proper conditions for coaching students to reflect. For example, a teacher formulated her intention to learn with regard to the what of coaching as follows: *"I want to focus my coaching more on the self and the professional identity of students."* An example of a formulated intention to learn pertaining to the when of coaching was: *"I want to distinguish the different phases of reflection in my lesson."* Another teacher's intention to learn concerned the conditions for coaching, namely: *"I want to make the relevance of coaching more explicit."* The number of formulated intentions to learn concerning the how of preparing, communicating and ending a coaching intervention was rather low.

Developments in intentions for learning. The number of coded text fragments for intentions for learning formulated by teachers for the what and when of coaching students' reflection skills were reasonably high in self-assessment rounds one and round two, but decreased in round three. Thus, after performing rounds one and two, teachers mainly intended to direct their coaching interventions on different aspects of learning and to stimulate reflection during different phases of learning. The number of coded text fragments for intentions for learning regarding the how of coaching students'

reflection skills showed a diffuse pattern. On the one hand, the number of reported intentions for learning related to aspects of communicating, preparing and ending coaching interventions were low and remained rather low during the first, second and third self-assessment round. On the other hand, the number of coded text fragments for intentions concerning the conditions for coaching and designing coaching interventions was high in round three. However, both aspects of the how of coaching showed different tendencies. Across the three rounds, the number of reported intentions for conditions of coaching interventions slightly decreased and the number of intentions for designing coaching interventions slightly increased.

Table 5.2 Planned activities for teachers' learning of coaching students' reflection skills

<i>Category</i>	<i>No. of text fragments round one</i>	<i>No. of text fragments round two</i>	<i>No. of text fragments round three</i>	<i>Total no. of text fragments</i>
<i>Planned activities</i>				
Doing	41	62	49	152
Experimenting	11	15	1	27
Reflection	6	13	4	23
Feedback	7	4	3	14
Observation	6	1	3	10
Studying sources	10	3	5	18

Planned activities. Table 5.2 shows that to realize the intentions for learning mentioned above, teachers mainly wanted to learn by doing. Also, the activities of experimenting and reflection were reported on relatively frequently. The activities of observing, giving and receiving feedback and studying sources were reported to a far lesser extent. The following quote is an illustration of learning by doing: “*I am going to check if students understood the goal of my coaching interventions.*” Thus, most teachers reported that they were going to realize an intention without mentioning a clear goal, evaluation, or how to realize this intention more concretely.

5.5 | Conclusions and discussion

The aim of the present study was to gain insight into what and how teachers learn and intend to learn from the use of a self-assessment procedure focusing on teachers' competencies in coaching students' reflection skills. It appeared that teachers mainly reported on raised awareness of new aspects of coaching students' reflection skills. In other words, teachers mainly gained new knowledge about coaching students' reflection skills. To a lesser degree, teachers felt they had learned new theoretical/practical insights concerning coaching of students' reflection skills. Regarding the what, when and how of coaching students' reflection skills, teachers mainly reported learning outcomes pertaining to the what of coaching students' reflection skills and on conditions for coaching students' reflection skills (how). It was also found that offering a self-assessment procedure longitudinally and repeatedly coincides with changes in reported learning outcomes and aspects of coaching students' reflection skills. These changes seemed to suggest that teachers directed their learning from more basic to more difficult aspects of coaching students' reflection skills. These changes also suggest that learning from the self-assessment procedure was cyclical and progressed from raised awareness to new ideas/insights and confirmed ideas to raised awareness again. Finally, it turned out that the teachers demonstrated a performance-oriented way of learning. The teachers mainly wanted to realize their intentions for learning by "doing" or "experimenting".

The relatively high frequency of learning outcomes related to raised awareness in general, and raised awareness of basic aspects of coaching students' reflection skills in particular, can be explained in several ways. Firstly, awareness is inherent to learning through self-assessment and a logical first step in the learning process (Airasian, Gullickson, Hahn, & Farland, 1995; Ross & Bruce, 2007). Secondly, coaching students' reflection is a complex activity for teachers to perform and teachers are not well prepared for this coaching role during teacher training. Research in the Dutch context confirms that teachers in Vocational Education and Training (VET) find it difficult to coach their students on their reflection skills (De

Bruijn & Leeman, 2011; Mittendorff et al., 2011). Therefore, it is reasonable to assume that teachers' frames of reference regarding coaching students' reflection are limited. As a consequence, teachers must first become aware of different aspects of coaching students' reflection skills in order to develop their own frame of reference. The self-assessment procedure assisted teachers in developing a vocabulary that provided them with a framework to sharpen their perceptions and interpretations of coaching situations and hopefully to guide their coaching actions in practice.

To use this new knowledge about coaching students' reflection skills, it is necessary to give personal meaning to it and to integrate it with previously gained knowledge and experience (Wade & Yarbrough, 1996). Thus, after raised awareness, it can be expected that more new insights/ideas and/or confirmation of ideas are developed and reported on by the teachers in the reflective reports written during the second and third self-assessment rounds. As said, patterns in learning outcomes across the three assessment rounds carefully indicated that learning from self-assessment is cyclical in nature and progresses from raised awareness to new ideas/insights and confirmed ideas to raised awareness again. However, the number of reported outcomes related to new ideas/insights and reaffirmed ideas was rather limited when compared to the number of learning outcomes related to raised awareness. The question is whether we would have found more learning outcomes related to new insights/ideas and confirmed insights if the self-assessment procedure had been designed differently, for example by making additions to the guiding questions for writing the reflective reports.

Teachers were instructed to describe their experiences with the self-assessment procedure and to answer the question about what they had learned from the self-assessment and the feedback from their colleague. Teachers were not explicitly instructed to give more meaning to what they had learned from the self-assessment and their colleague. Teachers often responded literally to the question and stuck to reporting what they had learned. In turn, these answers might then reflect teachers' conceptions of learning, their desire to learn something new, and their desire to learn something which is concrete and immediately useful in their coaching

practice. It is generally assumed that a sustainable and longer-lasting self-assessment procedure provides more opportunities for teachers to develop themselves professionally (e.g., Garet et al., 2001). In this study, it turned out that a sustainable and lasting self-assessment procedure mainly led to raised awareness and to a lesser extent to new insights/ideas. It is possible that the period between the three rounds must be shortened to stimulate more insights, that more rounds are necessary, or that more hours per self-assessment round are necessary to foster insightful learning. The question is whether this is realistic or not, since it is often documented that teachers have ample opportunity to deeply reflect due to time constraints in their work environment (Clandinin, 1986; Eraut, 1994; Mansvelder-Longayroux, et al., 2007).

It furthermore turned out that the teachers demonstrated a performance-oriented way of learning. The teachers mainly wanted to realize their intentions for learning by “doing” or “experimenting”. This finding parallels earlier findings from research on teacher learning and that a performance-oriented style of learning best fits teachers’ daily routines in schools (e.g., Bakkenes et al., 2010).

Though this study reveals some important insights into what teachers learn and intend to learn through self-assessment, several design issues limit the value and scope of the findings. First, a limited number of teachers from a specific type of vocational education participated. Results and conclusions need to be interpreted carefully and cannot yet be generalized. Second, in this study, teacher learning was only investigated by analyzing reflective reports. Other methods might show a different picture, for example observations, verbal reflections and students’ perceptions. Third, the analysis of the data has been limited to an analysis across cases. Within-case analysis can provide a more rich or in-depth picture of what and how teachers learn through self-assessment.

This study indicates that teachers can benefit from self-assessment. A self-assessment procedure consisting of criteria and standards to be used for self-assessment and colleague assessment, feedback conversations and writing reflective reports may lead to awareness and understanding of

coaching students' reflection skills. Such a procedure may assist teachers in developing consistent and adequate knowledge structures that provide them with a framework to sharpen their perceptions and interpretations of coaching situations and to guide their coaching actions in practice. However, it also became clear that self-assessment does not always lead to new theoretical or practical insights/understandings. Additional measures need to be undertaken to stimulate learning through writing reflection reports. Firstly, it might be useful to prepare teachers better for writing reflection reports. Teachers can be trained to provide teachers with knowledge about what good reflection entails, give them feedback on the strengths and weaknesses of their reflection reports and how the content of their reflective reports can be broadened and deepened. Secondly, it might be necessary to provide teachers with more structure when writing reflective reports. To realize this, it is important that questions explicitly stimulate teachers to relate aspects they have become aware of and integrate these aspects into existing ideas and, based on that, to develop new insights. Combined with this, it is suggested to assure that teachers quickly gain positive learning experiences with writing reflection reports in order to see the added value of writing the report as a condition for becoming and staying motivated to write reflection reports and to invest effort in reflection.

More research is needed to further develop the knowledge about self-assessment as a tool for fostering teachers' learning and to do this research in different educational contexts under varying conditions (for example, regarding the training of teachers in advance, giving teachers time to do self-assessments and making self-assessment an explicit part of a school's professionalization policy). Further research also needs to focus on what elements of self-assessment are perceived as useful by teachers and, in the long run, what the effects of self-assessment are on students' learning.

CHAPTER 6

Teachers' perceptions of the usefulness of a self-assessment procedure for coaching students' reflection skills¹

Abstract

This chapter focuses on how teachers valued their experiences with being engaged in a self-assessment procedure, including aspects of this procedure, for fostering their competencies in coaching of VET students' reflection skills. For this purpose, a questionnaire was used to investigate the impact and organization of the procedure, its assessment and feedback function and the autonomy teachers experienced. All these aspects were perceived quite positive. This indicates that, in general, teachers positively weighted the self-assessment procedure against their efforts put in it and learning outcomes as a result of assessing themselves. It can be concluded that the self-assessment procedure that has been used was useful, in particular its assessment and feedback element.

¹ This chapter has, in combination with Chapter 2, been submitted for publication as: Van Diggelen, M. R., Beijaard, D., & den Brok, P. J. *Development of a procedure for teachers' self-assessment of coaching students' reflection skills and teachers' perceptions of its usefulness.*

6.1 | Introduction

In the educational field many practitioners see self-assessment as an attractive method for fostering teachers' learning. Self-assessment is considered to be easy to develop and implement and requires little of the scarcely available time of teachers. Self-assessment is described as a promising method for learning by teachers (Barber, 1990; Ross & Bruce, 2007). It is believed that self-assessment enhances teachers' understanding of what constitutes good practice (Samuels & Betts, 2007), stimulates the self-monitoring capacities of teachers (Crooks, 1988), and prepares teachers for lifelong learning (Boud, 1995). Surprisingly, little empirical evidence is available regarding the effects of self-assessment as a strategy for teachers' professional learning (Ross & Bruce, 2007). To develop a sound knowledge base on effects of self-assessment, research must start by explicating what makes self-assessment useful for learning and by formulating design principles for the development of self-assessments and translating these principles into a concrete self-assessment-procedure. In this chapter, it will be investigated how teachers valued their experiences with being engaged in a self-assessment procedure designed according to principles derived from literature on conditions for learning and quality criteria for assessment (see Chapter 2). Therefore, the perceptions of teachers who used the procedure to develop their competencies in coaching students' reflection skills (see also Chapter 3 and 4) were investigated. The teachers included in our study taught in the two highest streams of the health domain in secondary vocational education (students aged 16 or older). For these students, reflection is an important skill to attain. As described in previous chapters, the literature shows VET teachers in the Netherlands consider the coaching of student reflection as an important but difficult competence (De Bruijn & Leeman, 2011; De Bruijn & Van Kleef, 2006; Mittendorff, den Brok, & Beijgaard, 2011).

Through investigating how teachers valued their experiences with the self-assessment procedure, we hope to contribute to the understanding of

which design characteristics contribute to the usefulness of self-assessment (Darling-Hammond & Snyder, 2000). Our research question therefore was: How do teachers value the different elements of the designed self-assessment procedure which they used to develop their competencies in coaching students' reflection skills? Insight in what contributes to teachers' positive perceptions of the usefulness of self-assessment can provide knowledge in how to enhance the motivation of teachers for self-assessment which may result in improved effects of self-assessment on teachers' learning.

6.2 | Theoretical framework¹

Chapter 2 of this dissertation reported on the development of the self-assessment procedure, including the theory that underlied this procedure. This theory pertains to self-assessment for learning, quality criteria and conditions for learning that should be taken into account, and coaching. Also theory regarding relevant elements of the developed self-assessment procedure (i.e., feedback and reflection) has been described in that chapter. The developed self-assessment procedure consisted of the following elements:

1. a tool based on criteria and standards to be used by teachers to assess their own coaching competencies of students' reflection skills;
2. feedback from peers on observed lessons by using the same tool;
3. a report written by the teachers in which they reflect on their competencies and feedback from their colleagues, and in which they set goals for future action and describe the effort needed for this;
4. feedback from colleagues on this reflective report and, if necessary, the possibility to make adjustments.

¹ See Chapter 2 for the theoretical framework of this chapter.

In this chapter teachers' perceptions of the usefulness of the first three elements of the self-assessment procedure mentioned above are reported. It was decided not to include the fourth element, because teachers not systematically did this nor were data available to verify the role of this element in the total procedure.

6.3 | Method

6.3.1 Context and participants

The present study was carried out in the academic year 2009-2010 in Vocational Education and Training schools (VET) in the Netherlands. In this study, 24 teachers used a previously developed self-assessment procedure to assess their competencies in coaching VET students' reflection skills (see Chapter 2). The teachers taught at two different schools. See the previous chapters for more information about this sample.

6.3.2 Instrumentation and analysis

To answer the research question, the teachers were asked to complete a short structured questionnaire after completing the third self-assessment round. In this questionnaire, teachers were instructed to respond to questions that provided us with insight in how teachers experienced using the self-assessment procedure. In the questionnaire, teachers were asked to respond to statements in the form of items pertaining to the training, the main elements of the self-assessment procedure, its underlying design and its impact on their learning. Items about the design of the procedure were based on the design principles as described in Chapter 2. The items could be scored on the following five-point scale: 1) totally invaluable, 2) not valuable, 3) neutral, 4) valuable, 5) very valuable, and 6) not applicable (n/a). We take the position in this study that something that is perceived as valuable based on experiences is a strong indication for its usefulness as well.

An exploratory factor analysis was conducted on the 32 items with orthogonal rotation (varimax). It was decided to use a fixed number of factors.

Based on the scree plot, we decided to distinguish three scales which, together, explained 55% of the variance. In Table 6.1 the scales resulting from the factor analysis are displayed and examples of items of each scale are given. The items that cluster on the same component suggest that factor 1 represents 'impact and organization', factor 2 'assessment and feedback', and factor 3 'autonomy'. Items of the factor 'impact and organization' involved the impact of the self-assessment procedure on teachers' learning and organizational measures taken that contribute to the usefulness of the self-assessment procedure. Items of the factor 'assessment and feedback' concerned all the aspects of the self-assessment procedure relevant for undertaking the self-assessment or the assessment of a colleague and giving and receiving feedback. Items of the factor 'autonomy' pertained to the freedom teachers had to make their own decisions about their professional development regarding their competencies in coaching students' reflection skills.

To examine the internal consistency of the scales, Cronbach's alpha was determined for each scale. After deletion of five items in total (2 items for 'impact and organization', 1 for 'assessment and feedback', and 2 for 'autonomy') an alpha of .93 was calculated for the 'impact and organization' scale, an alpha of .86 for 'assessment and feedback', and an alpha of .79 for 'autonomy'.

Table 6.1 scales, Cronbach's alpha, number of items, and sample items for the scales of the questionnaire

<i>Scale</i>	<i>a</i>	<i>Number of items</i>	<i>Item examples</i>
Impact and organization	.93	16	<ul style="list-style-type: none"> - 'The contribution of participating in this project for my knowledge about coaching students' reflection skills' - 'The information about the project provided before the off-set of the project'
Assessment and feedback	.86	6	<ul style="list-style-type: none"> - 'The structure the criteria and standards provided me to determine my own questions about learning' - 'Observing your colleague to assess his/her coaching competencies'
Autonomy	.79	5	<ul style="list-style-type: none"> - 'The opportunity to determine my own questions about learning to coach students reflection skills' - 'The opportunity to determine my own activities for learning'

To investigate the discriminant validity, scale correlations were calculated (see Table 6.2). Correlation coefficients ranged from .22 to .32, suggesting that the scales were related though sufficiently distinctive (e.g., De Jong & Westerhof, 2001). To determine the value of elements of the self-assessment procedure as perceived by the teachers based on their experiences, descriptive statistics were computed for each scale.

Table 6.2 correlations between scales of the usefulness of self-assessment questionnaire

	<i>Impact and organization</i>	<i>Assessment and feedback</i>	<i>Autonomy</i>
Impact and organization	1		
Assessment and feedback	.29	1	
Autonomy	.32	.22	1

**correlation is significant at $p < 0.01$ (2-tailed)

6.4 | Results

The mean scores of the teachers' on the scales, standard deviations and maximum and minimum scores are depicted in Table 6.3.

Table 6.3 means, standard deviations, minimum and maximum scores of each scale

<i>Scale</i>	<i>Mean</i>	<i>S.D.</i>	<i>Minimum</i>	<i>Maximum</i>
Impact and organization	3.41	.57	2.31	4.44
Assessment and feedback	4.16	.65	2.17	5.00
Autonomy	3.68	.52	2.80	4.60

The average scores on the scales appear to be (rather) high. In particular, the assessment and feedback component was experienced positive. The standard deviations of the scales appear to be small. This means that there were no big differences among the teachers in their perceptions of their experiences with the elements of the self-assessment procedure. In the following, examples of items for each scale are provided that illustrate the range of the scores presented in Table 6.3. For the 'impact and organization' scale, the item 'the contribution of this project to my awareness of my own coaching of students' reflections', scored relatively high. An example of an item with a relatively low score was 'the planning of this project resulting in three assessment rounds within one and a half year'. An example of an item for the 'assessment and feedback' scale that got a relatively high score was 'the questions and feedback provided during the feedback conversation'; an item with a relatively low score was 'the structure the criteria and standards provided me to determine my own questions about learning'. An example of an item for 'autonomy' with a relatively high score was 'the opportunity to determine my own questions about learning to coach students reflection skills provided by this project' and an item with a relatively low score was 'the opportunity to determine my own results of learning to coach students' reflection skills'.

6.5 | Conclusions and discussion

In this chapter, it was investigated how teachers valued the self-assessment procedure. Therefore, a questionnaire was used that covered elements of the self-assessment procedure, its underlying design and its impact on teachers learning. Through that, it was hoped to gain insight in the extent to which teachers perceived (elements of) the self-assessment procedure as valuable based on their experiences with the procedure. The questionnaire used to determine teachers' perceptions appeared to be valid and reliable. The items clustered around three components: impact and organization, assessment and feedback, and autonomy on which all the scores were positive. This indicates that, in general, teachers positively weighted the self-assessment

procedure against their efforts invested and learning outcomes. In particular the assessment and feedback component was positively valued. The self-assessment procedure can thus be considered as having been useful. This conclusion provides evidence for what Ross and Bruce (2007) call the promising nature of self-assessment for teachers' learning and the added value of feedback for self-assessment.

The factor 'assessment and feedback' includes items that concern the design principle "assuring the provision of feedback" (see Chapter 2). Since this factor was experienced quite positive by teachers, evidence was found for the additional value of "feedback from peers" as a measure to enhance learning through self-assessment. This finding is confirmed by research from literature on feedback (e.g., Hattie & Timperley, 2007; Shute, 2007), peer-coaching (Engelen, 2002; Zwart, Wubbels, Bergen, & Bolhuis, 2007) and assessment for learning (Black & William, 1989). This finding also parallels recent findings from Verberg, Tigelaar, and Verloop (in press) who found empirical support for the value of feedback for teachers' learning in their study on the impact of negotiated assessment on VET teachers' learning. Also, the content of the factor 'assessment and feedback' suggests that using criteria and standards, observing teachers and giving feedback was perceived as valuable. Feedback might provide teachers with interaction, exchanging experiences and can confirm or enrich self-judgments with additional interpretations of the assessed situation (Duke & Stiggins, 1990), which appear to be useful in a self-assessment procedure.

The findings of this study imply that developing a self-assessment procedure based on design principles grounded in literature on quality criteria for assessment and conditions for learning, as explained in Chapter 2, may lead to a useful self-assessment procedure. Also, the results indicate that including feedback in a procedure for self-assessment has added value in this respect. However, this study has some limitations which restrict its value. The research was mainly descriptive and exploratory with only a limited number of teachers from a specific type of vocational education who participated. The small sample possibly makes the correlation coefficients less

reliable and makes the factors derived from this study difficult to generalize. Also, understanding teachers' perceptions requires relating these perceptions to what teachers have learned and how teachers have used the self-assessment procedure.

CHAPTER 7

Conclusions and discussion

7.1 | Introduction

The main goal of this dissertation has been to gain insight in the effects of self-assessment on the professional development of VET teachers' pertaining to their competencies in coaching students' reflection skills. Both qualitative and quantitative research methods were used to answer the following research questions:

6. How can a useful self-assessment procedure be developed for VET teachers for coaching students' reflection skills?
7. How do VET teachers use a self-assessment procedure that has been developed for coaching students' reflection skills?
8. How are VET teachers' competencies in coaching students' reflection skills rated by themselves, their colleagues and which trends in scoring are visible over time?
9. What and how do VET teachers learn and intend to learn from (repeatedly) being engaged in a self-assessment procedure used to develop their competencies in coaching students' reflection skills?
10. How do VET teachers value the different aspects of the self-assessment procedure which they used to develop their competencies in coaching students' reflection skills?

Below the answers to each research question will be summarized. Next, an overall conclusion regarding the effects of self-assessment will be presented, followed by a discussion about the usefulness of self-assessment. This chapter ends with some implications for practice, limitations and suggestions for further research.

7.2 | Main findings and conclusions

7.2.1 Development of a self-assessment procedure

The first study, presented in Chapter 2, described the development of a self-assessment procedure for fostering teachers' competencies to coach Vocational Education and Training (VET) students' reflection skills. Through formulating design principles derived from the literature on quality criteria for assessment and conditions for learning it was attempted to develop a useful self-assessment procedure consisting of the following elements:

1. a tool based on criteria and standards to be used by teachers to assess their own coaching competencies of students' reflection skills;
2. feedback from peers on observed lessons by using the same tool;
3. a report written by the teachers in which they reflect on their competencies, feedback from their colleagues, set goals for future action and describe the effort needed for this;
4. feedback from colleagues on this reflective report and, if necessary, the possibility to make adjustments.

Criteria and standards for self-assessment were iteratively formulated through consulting both teachers and literature. This process resulted in 23 criteria pertaining to what, when and how of coaching students' reflection skills. Through founding criteria (and standards) on both theory and practice, it was attempted to contextualize the self-assessment and to realize teachers' feelings of ownership over the criteria. By including feedback and reflection into the procedure for self-assessment and organizing this procedure repeatedly, it was attempted to encourage learning through self-assessment. Finally, it was found important to train teachers to undertaking the self-assessment procedure and to facilitate them properly for doing this efficiently in terms of time investment.

It could be concluded that, through carefully and thoughtfully taking into account important quality criteria for assessment and conditions for learning, it was possible to design an adequate and useful self-assessment

procedure for fostering teachers' learning. A first impression of teachers' use of the self-assessment procedure indicated that feedback from a colleague appeared to be useful for this and that teachers performed the self-assessment procedure differently, particularly regarding the use of criteria.

7.2.2 Teachers use of self-assessment: the role of criteria and standards, feedback and reflection

Chapter 3 described the way teachers assess themselves while using the self-assessment procedure. For this purpose, completed self-assessments forms, video-taped feedback conversations with peers (colleagues) and written reflective reports of 24 teachers were analyzed.

It was found that teachers assessed themselves rather positively, and that they were also assessed positively by their colleagues. Teachers mostly provided each other with informative and constructive feedback that was accepted. Classroom observation and the use of criteria and standards were (considered as) relevant tools for giving useful feedback. Furthermore, it appeared that teachers wrote clear and informative reflective reports best characterized by a focus on their actions. The use of criteria led to clearly written reflective reports with specific messages on which teachers reflected in an elaborate and detailed manner. Teachers who did not use criteria or who did not reflect on comparable aspects of coaching wrote reflective reports that could be characterized as limited, concrete, superficial and general.

From this second study could be concluded that elements of the self-assessment procedure were useful, but that reflective reports could have been written more deeply and critically. The quality of the reflective reports appeared to relate to whether or not using criteria as a basis for reflection.

7.2.3 VET teachers' assessment of their coaching of students' reflection skills and assessments by their colleagues: results of a longitudinal study

Chapter 4 reported on a study on how teachers assessed themselves, were assessed by their colleagues, and how these assessments developed or changed over time. Both teachers and colleagues completed a rating form regarding the criteria to be assessed on three times with three months in between. In total, 72 self-assessments and 72 colleague assessments were available for analysis. It was found that: (1) colleagues perceived the teachers' coaching competencies slightly more positive than the teachers themselves; (2) teachers considered themselves reasonably competent in how to coach students' reflection skills and their colleagues confirmed this impression; (3) teachers considered themselves moderately competent in the what and when of coaching students reflection skills and their colleagues agreed upon this; and (5) on average, relative differences scores concerning the assessments of self-assessors and colleagues were large and did not develop over time, whereas absolute differences scores suggested that the differences in assessments of self-assessors and colleagues changed in direction. Thus, large individual differences were found, both in scores of teachers and colleagues as well as in difference scores between these two.

This third study led to the conclusion that a repeated self-assessment did not lead to significant changes in time, but did make meaningful differences visible between teachers in self-assessments and colleague-assessments as well as differences between individual teachers and in changes over time.

7.2.4 What and how teachers learn from self-assessment: results from a longitudinal study

The purpose of the study described in Chapter 5 was to gain insight into what and how teachers learn and intend to learn from the use of the self-assessment procedure. For this purpose, 72 reflective reports of 24 teachers from three repeated self-assessment rounds were analysed. Findings revealed that being engaged in the self-assessment procedure mainly led to raised

awareness of new aspects of coaching students' reflection skills. To a lesser degree, teachers felt they had learned new theoretical/practical insights concerning coaching students' reflection skills. Regarding the what, when and how of coaching these skills, teachers mainly reported learning outcomes pertaining to what of coaching students' reflection skills and on conditions for coaching these skills (how). Learning outcomes showed a cyclical progression consisting of raised awareness followed by new ideas/insights and confirmation of these ideas leading to raised awareness again. Finally, it turned out that the teachers were predominantly learning from the self-assessment in a performance-oriented way.

Based on this fourth study it could be concluded that repeatedly undertaking the self-assessment procedure was useful for the teachers' learning but mainly led to awareness and learning to improve performance. To encourage more meaningful or meaning-oriented learning additional measures in the self-assessment procedure seem to be necessary.

7.2.5 Teachers' perceptions of usefulness of a self-assessment procedure

Chapter 6 reported on a study that focused on how teachers valued their experiences of being engaged in the self-assessment procedure and what aspects of this procedure they perceived as useful. For this purpose, a questionnaire was used to investigate the impact and organization of the procedure, its assessment and feedback function, and the autonomy teachers' experienced. All these elements were perceived quite positive. According to the teachers the self-assessment procedure was reasonably useful, particularly the assessment and feedback component. Finally, considerable differences were found among the teachers' perceptions of the self-assessment procedure.

It can be concluded from this fifth study that the development of the self-assessment procedure by using design principles based on conditions for learning and quality criteria of assessment (see Chapter 2), has led to positive perceptions of teachers' usefulness of the self-assessment procedure.

7.2.6 Overall conclusion of the effects of self-assessment

The self-assessment procedure as developed and investigated in this dissertation can be characterized as a potentially beneficial and useful tool for fostering teachers' learning. This overall conclusion is based on the following findings. First, criteria and standards appeared to be beneficial and useful for teachers' learning in the sense that they direct teachers' attention, provide them with a vocabulary and the possibility to structure or guide their thoughts when making these explicit in their reflective reports. However, for future self-assessments, it is important to deal adequately with teachers' tendency to use high scores when assessing themselves or their colleagues. Second, teachers value receiving feedback from their colleagues as very positive for their learning, but additional measures are needed for teachers to promote them being a critical friend. Third, the added value of writing a reflective report for teachers' learning was based on the necessity to explicate learning outcomes, intended outcomes and plans to realize them. Fourth, including criteria and standards, feedback, and writing a reflective report as well as undertaking the self-assessment procedure repeatedly is not sufficient enough for promoting teachers' meaning-oriented learning. Additional measures for learning through self-assessment seem necessary to stimulate this kind of learning by teachers and to develop their further understanding of their own competencies of coaching students' reflection skills.

7.3 | Discussion of the main findings

The main goal of this dissertation has been to gain insight in the effects of self-assessment on the professional development of VET teachers' pertaining to their competencies in coaching students' reflection skills. The dissertation started from the proposition that self-assessment is a potentially powerful tool for fostering teachers' learning and that empirical knowledge to support this potential of self-assessment as a tool for teacher learning is scarce (Ross & Bruce, 2007). Against this background a self-assessment procedure was

developed and investigated. In the following the main findings will be discussed in relation to assumptions underlying self-assessment.

7.3.1 Usefulness of self-assessment

The promising nature of self-assessment for teachers' learning is based on the following, related, assumptions (see also Chapter 1 and 2): (1) self-assessment is attractive because it is efficient and easily to apply; (2) self-assessment motivates teachers to learn because it makes them responsible for and owner of their own learning; (3) self-assessment provides teachers with feedback to develop their own competencies to coach; and (4) self-assessment provides teachers with the knowledge and skills to start a more systematic process of informal learning. In this section these assumptions underlying the promising nature of self-assessment will be discussed.

The teachers who participated in this study valued their experiences with self-assessment as positive (see Chapter 6). This indicates that self-assessment is attractive in the sense that it is a beneficial activity despite of the time investment it takes. Based on the findings presented in this dissertation, some remarks have to be made with regard to this attractiveness. First, for effective self-assessment in terms of learning gains an extensive and time-consuming preparation of teachers seems necessary (see also Chapter 3, 4, and 5). Providing teachers with the necessary knowledge and skills for adequate self-assessment – in this study particularly pertaining to the criteria for coaching students' reflection skills, giving feedback and writing reflection reports – requires time, extensive training and exercising in practice. It also important to keep in mind that teachers are not used to take a role of self-assessor and as a critical friend of their colleague based on a systematic procedure. Second, the development of self-assessment in practice itself is difficult to realize and time consuming. The designer has to make many choices in an adequate manner based on a diversity of knowledge and skills. For example, knowledge of the domain of assessment from both theoretical and practical views is needed, knowledge of teachers' learning, and knowledge and skills to make the decisions made explicit and

transparent to teachers. It can be questioned whether all these knowledge and skills are available within schools. Third, arguing or debating about the effectiveness of self-assessment requires a norm. It depends on the norm and related expectations about the results of self-assessment whether self-assessment can be regarded as an attractive means for fostering teachers' learning. Setting such a norm is very person- and context-bound, thus not easy to do in schools where teachers work with so many different backgrounds in so many different teaching and learning situations.

It is also believed that self-assessment motivates teachers to learn because it makes them responsible for their own learning and gives them ownership over their own learning process and the learning results they wish to achieve. It was found in this study that teachers valued self-assessment positively, appreciated being in control of their own learning, received feedback on their practice and determined their intentions for learning themselves (see also Chapter 6). It seems thus reasonable to assume that self-assessment motivates teachers to develop their own competencies, in this study pertaining to coaching students' reflection skills. However, teachers demonstrated different ways of being responsible for their own learning (see Chapter 2 and 4) and differed in what and how they learned from self-assessment (see also Chapter 5). It can be questioned whether this emphasis on teachers own responsibility for and ownership over learning in self-assessment is really useful for teachers' learning or to which extent this has to be nuanced for specific teachers and under what conditions. Some teachers in this study, for example, took the responsibility and prepared themselves well for their role of self-assessor. These teachers also assured that they knew the meaning of criteria and standards for self-assessment, including the underlying theory. Also, these teachers assured that they prepare themselves well for giving feedback in their role as assessor of a colleague. They observed a colleague in the classroom, wrote down their observations and scored their colleague based on these observations and were able to explain why they used a particular standard for scoring the colleague and to give examples of desired coaching behavior. If necessary, these colleagues watched the video-taped lesson again. Other teachers, however,

did not take the responsibility and did not prepare themselves well for their role as self-assessor and assessor of a colleague. These teachers did not study the criteria and standards and the underlying theory, they limited their feedback to observations and did not watch the video or made it their arguments explicit for using a particular standard when scoring their colleague. They did not think about useful examples of desired coaching behavior or tips for improvement as important elements of giving feedback.

To foster teachers' learning, self-assessment needs to provide teachers with effective feedback. Effective feedback is provided when the following questions are answered: "where are you going?", "where are you now?", and "how do you get there?" (Hattie & Timperley, 2007). To what extent does teachers' self-assessment provide them with answers to these questions? Research on the effectiveness of feedback has shown that clear goals are needed to serve the purpose of enhancing learning (Hattie & Timperley, 2007). When goals are too vague or not articulated, it is difficult to know whether teachers' coaching interventions are successful or not (this dissertation). Self-assessment can help teachers to set goals (Chapter 5). It can be argued that formulating personal goals are related to relevant future goals. Therefore, self-assessment may provide teachers with a meaningful answer to the question "where am I going?" However, the question remains whether a meaningful answer is also the 'right' answer? Are teachers themselves able to determine how they are doing and to generate the proper feedback for themselves? Feedback needs to be based on something and it is of little use when there is no initial learning or knowledge, in this study regarding coaching students' reflection skills (Hattie & Timperley, 2007). This caveat of feedback might thus be the case for self-assessment. In a review of student-ratings, Boud and Falchikov (1989) found that high achieving students tended to underestimate their performance and low achieving students' tended to overestimate their performance. Kruger and Dunning (1999) call this the double curse of incompetence, i.e. the knowledge and skills necessary for adequate performance are also necessary for evaluating the quality of that performance. In other words, when teachers do not know what good coaching entails, it is difficult for them to determine how they are doing (assess themselves

adequately) and to determine where they are going to (set the proper learning goals). Consequently, what and how teachers learn might be influenced. Chapter 5, for example, showed that teachers mainly became aware of new things and focused their learning on how to coach students' reflection skills and on conditions for coaching these skills. How to coach students' reflection skills and conditions for this can be considered as more basic aspects of coaching and which can be assessed and developed more easily. For these aspects it is possible for teachers to answer the question how to get there. For more difficult aspects of coaching it seems less easy to decide how to get there.

To enhance the element of feedback in self-assessment it is important to build on a clear notion of a learning progression explicated in a description of the knowledge, skills, understandings, or attitudes that teachers need to develop in an order in which they typically develop them (Forster & Masters 2004). It is also important to build on the kind of difficulties teachers have in making a learning progression and to situate these difficulties in a theory of action which may help to formulate measures that could be taken to improve their practice. To realize this, domain-specific knowledge of what and how teachers learn (and in which order) and knowledge about the difficulties teachers experience as well as how to overcome these difficulties must be known before developing a self-assessment procedure. This implies the existence of a rather broad knowledge base of the domain to be assessed. For coaching students' reflection this is not yet the case.

Finally, it is assumed that being engaged in self-assessment leads to a process of informal learning and provides teachers with the knowledge and skills necessary for informal learning. However, at least three conditions seem necessary to realize such a process of informal learning. First, teachers must feel the will or need to regulate their learning (Boekaerts & Niemivirta, 2000; Endedijk, 2010; Van Eekelen, Vermunt, & Boshuizen, 2006). When teachers expect that it is their working experiences that enhance the quality of their coaching they will not automatically use explicitly formulated criteria and standards to direct and guide their learning. Also, when teachers are satisfied with their current practice or have no affinity with coaching students'

reflection skills, they are unlikely to improve their coaching skills by themselves. Second, teachers must have the opportunity to regulate their own learning (Boekaerts & Niemivirta, 2000; Endedijk, 2010; Vermunt & Verloop, 1999). The environments of many schools do not support teachers to initiate and direct their own learning. Schools are predominantly characterized by a working and doing culture and not or less by a learning culture (Clandinin, 1986). Such an environment asks much discipline and responsibility of teachers to initiate and direct their own learning. Third, teachers need to develop the capacity for regulating their own learning (Boekaerts & Corno, 2005; Oosterheert & Vermunt, 2003; Zimmerman & Schunk, 2001). Self-improvement can be very emotional and teachers must be able to face these emotions and cope with them. In addition, teachers must view themselves as learners and be able to act as efficient learners (Ertmer & Newby, 1993). It can be questioned whether self-assessment realizes all these conditions for informal learning. For example, self-assessment provides teachers with criteria and standards and a framework which they are supposed to internalize into their own frame of reference. Criteria are believed to fulfill the role of anchor points which teachers can use to frame and reframe experiences and to develop their conceptions of coaching students' reflection skills. In Chapter 5, however, it was described that self-assessment mainly led to awareness and to a lesser extent to improved understanding or new insights. This implies that teachers not necessarily use the criteria to reframe their experiences and to give new meaning to their learning. Consequently, informal learning based on internalized criteria and standards seems to be difficult then.

7.3.2 Facilitating professional development

To guarantee the usefulness of a self-assessment procedure, the implementation of this procedure must be accounted for. An important measure for implementation is a *proper facilitation in terms of time and resources* (Bachman & Palmer, 1996; Day, 1999; Uhlenbeck, Beijaard, & Verloop, 2002; see also Chapter 2). It is important that teachers are not hindered, frustrated or demotivated by a lack of time or insufficient resources

during the implementation of the self-assessment procedure. To guarantee a proper facilitation it was decided in this study to integrate the self-assessment procedure in the schools' Human Resources Policy, of which the professional development of teachers is an important part. As a result, schools provided teachers with time to develop themselves professionally through the self-assessment procedure. In total, twenty one free scheduled hours for undertaking the self-assessment procedure were provided. In addition, it was decided to facilitate classroom observation and feedback conversations by integrating these elements of the self-assessment procedure into the working schedule of the participating teachers (Chapter 2). Based on the experiences of the researcher with developing and implementing the self-assessment procedure several remarks can be made regarding its facilitation. First, it appeared to be difficult and time-consuming to integrate the self-assessment procedure in the schools' Human Resources Policy. A lot of actors were involved in determining the long and short term policies of the schools of the participating teachers, which required extensive communication, deliberation and persons to take the lead. Second, integration of the self-assessment procedure in the schools' Human Resources Policy not necessarily meant that the teachers were not hindered, frustrated or de-motivated. Teachers may continue to perceive being engaged in self-assessment as hindering their primary activities when they have a high workload. Also, teachers can experience the investment in their professional development as being disproportionate when compared to the size of their part-time job. Third, integration of the self-assessment procedure in the schools' Human Resources Policy implied that hours were available for teachers to undertake the self-assessment. However, these hours were made available at the cost of other activities teachers needed to perform which may result in frustration by teachers.

7.4 | Implications for practice

The study aimed at gaining insight in the effects of self-assessment for the

professional development of VET teachers regarding their coaching competencies in coaching students' reflection skills. This dissertation provides knowledge and understanding of what contributes to the usefulness of self-assessment. Through investigating how teachers used such a procedure, what and how teachers learned and how they experienced the usefulness of the elements of self-assessment, more is known about the relevance of specific design principles that should underlie (future) procedures for self-assessment in practice. Furthermore, this project provides schools with a self-assessment procedure to be used by teachers to foster their competencies in coaching students' reflection skills.

VET teachers consider coaching students' reflection skills as an important but difficult competence. This study makes explicit what can be understood as 'good' coaching of students' reflection. Through that, discussion among teachers, teacher-educators and other actors involved in the educational practice can be fostered and a common language for the discourse about coaching students' reflection skills can be promoted. This study also provides suggestions for elements in teachers' coaching practice which can be developed. Such knowledge is beneficial to all actors involved in the development of teachers' competencies in coaching students' reflection skills.

7.5 | Limitations and suggestions for follow-up research

The studies reported in this dissertation had several limitations. First, the research was descriptive and exploratory in nature, no pre- and post-test were and/or control group were used in the research design and only a limited number of teachers from a specific type of vocational education participated. Results and conclusions based on these results need to be interpreted carefully and cannot yet be broadly generalized. Second, in this study, teacher learning was only investigated by analyzing reflective reports which are a reflection of teachers' perceptions. Other methods might have resulted in a different picture, for example observations, verbal reflections

and students' perceptions. Third, the analysis of the data has been limited to an analysis across cases. Focusing the analysis on differences between teachers and differences within-cases can provide a more rich or in-depth picture of the effects of self-assessment.

More research is needed to further develop the knowledge about self-assessment as a tool for fostering teachers' learning. This research needs to focus on the role of feedback of self-assessment, the additional value of colleagues or other sources of feedback, differences between teachers in how they use self-assessment, use assessments by others in the context of self-assessment and learn from these aspects separately and in combination. It is also important to determine what barriers exist for teachers to learn from self-assessment in a more meaning-oriented way and how to overcome these barriers in a self-assessment procedure. Furthermore, research can focus on other (more concrete) competence domains, other educational contexts and varying conditions (for example, regarding the training of teachers in advance, giving teachers time to do self-assessments and making self-assessment an explicit part of a school's professionalization policy). Finally, in future studies, it is desired to use more experimental research designs, to focus on what elements of self-assessment are perceived as useful by teachers and, in the long run, what the effects of self-assessment are on students' learning.

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Appendix A: Coaching aspects and criteria for coaching students' reflection skills

<i>Aspects of coaching</i>	<i>Criteria for self-assessment</i>
How? (Preparation)	1. I observe students before undertaking a coaching intervention
	2. I ask questions before undertaking a coaching intervention
What? (Focus)	3. I focus my coaching intervention at the assignment to be done by the students
	4. I focus my coaching intervention on the students' learning process
	5. I focus my coaching intervention on the students' regulation of the learning process
	6. I focus my coaching intervention on the self of the students
	7. I focus my coaching intervention on the students' professional identity
	8. I combine foci
When?	9. I stimulate the anticipatory thought of the students
	10. I stimulate the intermediate thought of the students
	11. I stimulate the afterthought of the students
	12. I stimulate the cyclical reflection by the students
How? (Design)	13. I vary my amount of giving support to and challenge of the students
	14. I time my coaching interventions deliberately
How?(Communication)	15. I make use of clear language when coaching the students
	16. I make the purpose of my coaching intervention explicit tot the students
	17. The words I choose invite students to reflect
	18. I make sure there is interaction between me and my students
How? (Ending)	19. I check if the students understand the effects of my coaching intervention
How? (Conditional)	20. I assure a safe learning climate
	21. I assure a proper working climate
	22. I assure good contacts with the students
	23. I state the importance of reflection explicitly

Summary

Effects of a self-assessment procedure on VET teachers' competencies in coaching students' reflection skills

Ideally, teachers are professionals who take responsibility for their work and choices made. Teachers are supposed to respond to new developments by experimenting with new forms of education and educational contents and to reflect on these. It is important that teachers continuously develop themselves and demonstrate a professional attitude towards their work. Self-assessment as a tool for learning fits really well into the conception of the teacher as a professional. Self-assessment makes teachers responsible for their own learning and is regarded as an essential feature of professional practice.

In the literature, self-assessment is frequently described as a promising method for teacher learning. Self-assessment is defined in this dissertation as an activity in which teachers apply criteria and standards to their own work and make judgments with respect to the extent to which they have met these criteria and standards. Self-assessment not necessarily needs to be an isolated or individual activity; frequently peers are used to give feedback or are other measures undertaken to enhance learning through self-assessment. It is argued that self-assessment can lead to new insights or raise awareness of aspects of practice that need to be improved, stimulate the monitoring capacities of teachers, and enhance their understanding of what constitutes good practice. Despite the popularity and potential benefits of self-assessment, the theoretical and empirical bases supporting these claims are as yet rather underdeveloped. To better understand the possibilities, merits and shortcomings of teachers' self-assessment as a tool for learning, there is an urgent need for research into its effects.

Aim of the different studies in this dissertation was to gain insight in the effects of a developed self-assessment procedure used by teachers working in the two higher streams of Vocational Education and Training

(VET) in the sector Health. This procedure was meant to foster teachers' competence development in coaching students' reflection skills. Reflection is an important skill for VET students, particularly for students in the Health sector. Teachers, however, experience coaching students' reflection as an important but difficult competence. It is supposed that focusing the self-assessment procedure on improving teachers' competencies in coaching students' reflection skills fulfils a need.

The central problem of this dissertation was the following: what are the effects of self-assessment on teachers' competencies in coaching Vocational Education and Training students' reflection skills? To address this problem, the following research questions were answered in this dissertation:

1. How can a useful self-assessment procedure be developed for VET teachers for coaching students' reflection skills?
2. How do VET teachers use a self-assessment procedure that has been developed for coaching students' reflection skills?
3. How are VET teachers' competencies in coaching students' reflection skills rated by themselves, their colleagues and which trends in scoring are visible over time?
4. What and how do VET teachers learn and intend to learn from (repeatedly) being engaged in a self-assessment procedure used to develop their competencies in coaching students' reflection skills?
5. How do VET teachers value the different aspects of the self-assessment procedure which they used to develop their competencies in coaching students' reflection skills?

These research questions were answered in five different studies. The first question pertained to the development of a self-assessment procedure, the other questions to determining the effects of the developed self-assessment procedure.

In the second chapter, the first research question pertaining to the development of a self-assessment procedure for fostering teachers' competencies to coach Vocational Education and Training (VET) students' reflection skills was answered. Through formulating design principles derived from the literature on quality criteria for teacher assessment and conditions for teacher learning a useful self-assessment procedure was developed consisting of the following elements:

1. a tool based on criteria and standards to be used by teachers to assess their own coaching competencies of students' reflection skills;
2. feedback from peers on observed lessons by using the same tool;
3. a report written by the teachers in which they reflect on their competencies, feedback from their colleagues, set goals for future action and describe the effort needed for this;
4. feedback from colleagues on this reflective report and, if necessary, the possibility to make adjustments.

Criteria and standards for self-assessment were iteratively formulated through consulting both teachers (N=40) and literature. Theoretical perspectives provided the starting point for developing the criteria and standards reflecting the *what* and *when* of coaching of reflection skills by students. Practical perspectives derived from the teachers yielded additional criteria and directions for improving with regard to the *how* of coaching. The result of this development process was a set of 23 criteria. Standards were formulated on a four point scale, indicating the extent to which a particular coaching behavior was realized.

Through founding criteria (and standards) not only on theory but also on teachers' own practice, it was attempted to contextualize the self-assessment procedure and to realize teachers' feelings of ownership over the criteria. By including feedback from a colleague and writing a reflection report into the procedure for self-assessment and organizing this procedure repeatedly, it was attempted to encourage learning through self-assessment. Before starting the procedure for the first time, the teachers were trained how to undertake the self-assessment procedure.

Based on this first study it could be concluded that it was possible to design an adequate and useful self-assessment procedure for fostering teachers' learning. A first impression of teachers' use of the self-assessment procedure indicated that feedback from a colleague appeared to be helpful for assessing oneself and that teachers performed the self-assessment procedure differently, particularly regarding the use of criteria.

In the studies presented in the chapters 3 to 6, the effects of the self-assessment procedure were investigated. In these studies 24 teachers from two schools participated. From one school 20 teachers from two teams participated; from the other school 4 teachers. The sample consisted of 9 male and 15 female teachers. Their teaching experience ranged from just having finished teacher education to 28 years. All teachers were also involved in the development of the self-assessment procedure and they all undertook this procedure in three different assessment rounds (moments) with three months in between. The teachers performed these self-assessment rounds in couples.

The study presented in Chapter 3 addressed the question how teachers used the different aspects of the self-assessment procedure. To answer this question the focus was on (1) how teachers used criteria and standards, (2) how they gave and received feedback, and (3) how they reflected on their competencies in coaching students' reflection skills. For this purpose, completed self-assessments forms, video-taped feedback conversations with colleagues and written reflective reports of the 24 teachers, collected during the first assessment round, were analyzed by using category systems for each data source.

It was found that teachers' use of the self-assessment procedure could be characterized by: (1) slightly positive assessments of teachers about their own performance as well as those they received from their colleagues, (2) constructive peer feedback that was generally accepted by the teachers who were assessed, and (3) clear and informative reflective reports by the teachers mainly focusing on their own actions resulting from the self-assessment.

Results of this study indicated that when used consequentially and systematically, criteria and standards have added value for giving feedback and writing a reflective report. However, the results also indicated that additional measures need to be undertaken to broaden and deepen the self-assessors' reflections and to make colleagues feedback more critical. In general, this study showed that teachers can benefit from a self-assessment procedure and improve their competencies in coaching students' reflection skills.

In Chapter 4, the third research question was addressed. This question was as follows: How are VET teachers' competencies in coaching students' reflection skills rated by themselves, by their colleagues and which trends in scoring are visible over time? To answer this question, 72 self-assessments and 72 colleague assessments from three assessment rounds were analyzed. The reliability and validity of the rating instrument were checked by conducting several analyses. Internal consistency of the scales for the what, when, and how of coaching students' reflection skills appeared to be satisfactory. It also appeared from correlations between the what, when and how scales that the scales measured distinct, but related aspects of coaching students' reflection skills. To answer the research questions, first a descriptive analysis was performed on the three scales per moment and across moments (means and standard deviations). Next, absolute and relative difference scores for the what, when and how of coaching students' reflection skills were computed between the scores of the teacher and his/her colleague. Then, the scores of the self-assessors, colleagues and the difference scores were analyzed via a repeated-measures ANOVA. Finally, Scheffé's post-hoc test was used to determine where the differences between the mean scores were significant and effect sizes were calculated.

It was found that colleagues perceived the teachers' coaching competencies slightly more positive than the teachers themselves. It also appeared that teachers considered themselves reasonably competent in how to coach students' reflection skills and moderately competent in the what and when of coaching students reflection skills and their colleagues confirmed

this impression. Furthermore, it became clear that large individual differences existed between teachers in how teachers' perceived their own coaching skills, how these coaching skills were perceived by colleagues, and that these differences increased over time. Also, on average, relative difference scores concerning the assessments of self-assessors and colleagues were large and did not develop over time, whereas absolute difference scores suggested that the differences in assessments of self-assessors and colleagues changed of direction. Thus, large differences were found, both in scores of teachers and colleagues as well as in differences between the two.

This study led to the conclusion that a repeated self-assessment did not lead to significant changes over time, but did make meaningful differences visible between teachers in self-assessments and colleague-assessments as well as differences between couples and changes over time.

In Chapter 5, the research question pertaining to what and how teachers learn and intent to learn from self-assessment was addressed. For this purpose, 69 reflective reports of the 24 teachers from the three repeated self-assessment rounds were analysed. To analyze the reflective reports, a category system was developed in an iterative process of moving back and forth between predefined concepts from the literature and data. The final category system consisted of five main categories: "awareness", "new insight/idea", "confirmation of an idea", "intentions for learning", and "planned learning activities". The fifth main category, planned learning activities, was further specified with 'doing', 'experimentation', 'reflection', 'feedback', 'observation' and 'studying sources'. The reliability of the system was calculated by assessing the inter-rater reliability. The category systems appeared to be sufficiently reliable. To determine what and how teachers learn and intend to learn, all the 69 reflective reports were analyzed separately by using the category system. Absolute frequencies were calculated for every coding category across the different reflective reports written per self- assessment round. Also, changes in learning outcomes and intended outcomes over time were determined by comparing absolute frequencies of every coding category across the three self-assessment rounds.

Findings revealed that being engaged in the self-assessment procedure mainly led to raised awareness of new aspects of coaching students' reflection skills. To a lesser degree, teachers felt they had learned new theoretical/practical insights concerning coaching students' reflection skills. Regarding the what, when and how of coaching these skills, teachers mainly reported learning outcomes pertaining to what of coaching students' reflection skills and on conditions for coaching these skills (how). Learning outcomes showed a cyclical progression consisting of raised awareness, followed by new ideas/insights and confirmation of these ideas, leading to raised awareness again. Finally, it turned out that the teachers predominantly learned from the self-assessment in a performance-oriented way.

Based on this study, it was concluded that repeatedly undertaking the self-assessment procedure was useful for the teachers' learning, but mainly led to awareness and learning to improve performance. To encourage more meaningful or meaning-oriented learning, additional measures in the self-assessment procedure seem to be necessary.

Chapter 6 reported on a study that focused on how teachers valued their experiences of being engaged in the self-assessment procedure and what aspects of this procedure they perceived as useful. For this purpose, an item-based questionnaire was used that covered elements of the self-assessment procedure, its underlying design and its impact on teachers' learning. The 32 items could be scored on the following five-point scale: 1) totally invaluable, 2) not valuable, 3) neutral, 4) valuable, 5) very valuable, and 6) not applicable (n/a). In this study, the position was taken that something that is perceived as valuable based on experiences is a strong indication for its usefulness as well. An exploratory factor analysis with orthogonal rotation (varimax) was conducted on the 32 items. Based on the scree plot, we decided to distinguish three scales which, together, explained 55% of the variance. The items that clustered on the same component suggested that factor 1 represented 'impact and organization', factor 2 'assessment and feedback', and factor 3 'autonomy'. The internal consistency of the scales (Cronbach's alpha) appeared to be high. To investigate discriminant validity, scale correlations

were calculated. It appeared that the scales were related, though sufficiently distinctive.

It was found that all three scales were scored positive by respondents. In general, teachers positively weighted the self-assessment procedure against their efforts and learning outcomes as a result of assessing themselves. In particular, the assessment and feedback component was valued quite positively. It can be concluded that the development of the self-assessment procedure via design principles, based on conditions for learning and quality criteria of assessment led to positive perceptions of teachers' usefulness of the self-assessment procedure.

In Chapter 7, the most important findings and conclusions from the five studies were presented. The self-assessment procedure as developed and investigated in this dissertation can be characterized as a potentially beneficial and useful tool for fostering teachers' learning. This overall conclusion is based on the following findings. First, criteria and standards appeared to be beneficial and useful for teachers' learning in the sense that they directed teachers' attention, provided them with a vocabulary and with the possibility to structure or guide their thoughts when making these explicit in their reflective reports. However, for future self-assessments, it is important to deal adequately with teachers' tendencies to use high scores when assessing themselves or their colleagues. Second, teachers valued receiving feedback from their colleagues as very positive for their learning, but additional measures are needed for teachers to promote them to be a critical friend. Third, the added value of writing a reflective report for teachers' learning was based on the necessity to explicate learning outcomes, intended outcomes and plans to realize them. Fourth, including criteria and standards, feedback, and writing a reflective report, as well as undertaking the self-assessment procedure repeatedly, is not sufficient enough for promoting teachers' meaning-oriented learning. Additional measures for learning through self-assessment seem necessary to stimulate this kind of learning by teachers and to develop their further understanding of their own competencies of coaching students' reflection skills.

Subsequently, the most important findings and conclusions were discussed. This discussion focused on important assumptions underlying the promising nature of self-assessment. The first assumption was that self-assessment is attractive because it is efficient and easy to apply. Results of this thesis indicate that for effective self-assessment in terms of learning gains, an extensive and time-consuming preparation seems necessary, that it takes time for teachers to get used to their role as self-assessor and critical friend and that the development of a self-assessment procedure in itself is difficult and time-consuming. Finally, arguing about the effectiveness of self-assessment requires a norm. It depends on the norm and related expectations about the norm whether self-assessment can be regarded as an attractive means for fostering teachers' learning. Setting such norms are personal- and context bound and thus not easy to do.

The second assumption underlying the promising nature of self-assessment was that self-assessment motivates teachers to learn because it makes them responsible for and owner of their own learning. Based on the positive appreciations of teachers of self-assessment it seems reasonable to assume that self-assessment motivates teachers to develop their competencies in coaching. However, teachers demonstrated different ways of being responsible for their learning and differed in what and how they learned. Based on these findings, it can be questioned to what extent the emphasis on teachers' ownership and responsibility is really useful for teachers' learning or to what extent this has to be nuanced for specific teachers under certain conditions.

The third assumption underlying the promising nature of self-assessment was that self-assessment provides teachers with feedback to develop their own competencies to coach students' reflection. Effective feedback answers three questions: "where are you going?", "how are you going?", and "how do you get there?". Self-assessment provides meaningful answers to where they are going; however, the question remains whether a meaningful answer is the right answer. Are teachers themselves able to determine how they are going and to generate the proper feedback for themselves? What and how teachers learn to coach students' reflection from

self-assessment is influenced by what teachers already know about it. This dissertation showed that it is possible for teachers to determine how to get there when it pertains to basic aspects of coaching students' reflection skills, such as how to coach and conditions for coaching. For more difficult aspects of coaching it seems difficult to decide how to get there.

The fourth assumption underlying the promising nature of self-assessment was that self-assessment provides teachers with the knowledge and skills to start a more systematic process of informal learning. It is argued that realizing such a process of informal learning is not self-evident. Not all teachers feel the will or need to self-regulate their learning, have the opportunity to self-regulate their learning in the school, and develop the capacity to self-regulate their own learning.

Finally, it was discussed how accounting for the implementation of self-assessment turns out in practice. It appeared difficult and time-consuming to integrate the self-assessment procedure in the schools' Human Resources Policy. Finally, hours made available for undertaking the self-assessment procedure were made at the cost of other activities teachers needed to perform.

The studies presented in this dissertation aimed at gaining insight in the effects of self-assessment for the professional development of VET teachers regarding their coaching competencies in coaching students' reflection skills. This dissertation provided knowledge and understanding of what contributes to the usefulness of self-assessment. It also provided schools with a self-assessment procedure to be used by teachers to foster their competencies in coaching students' reflection skills and made explicit what can be understood as 'good' coaching of students' reflection.

Limitations to the study presented in this dissertation pertained to its descriptive and exploratory nature,, the absence of pre- and post-test and/or a control group in the design, and the participation of a limited number of teachers from a specific type of vocational education. Also, teacher learning was only investigated by analyzing reflective reports, being a reflection of teachers' perceptions, and the analysis of the data was limited to an analysis

across cases. Future research might focus on the role of feedback of self-assessment and individual differences between teachers in how they use and what they learn from self-assessment.

SAMENVATTING

Effecten van een zelfbeoordelingsprocedure op de competenties van MBO docenten in het coachen van reflectievaardigheden van studenten

Tegenwoordig worden docenten gezien als professionals die verantwoordelijkheid nemen voor hun werk en de keuzes die zij daarbinnen maken. Van docenten wordt verwacht dat zij inspelen op ontwikkelingen en experimenteren met nieuwe vormen van onderwijs of inhouden en reflecteren op de uitkomsten daarvan. Het is belangrijk dat docenten zichzelf voortdurend blijven ontwikkelen en een professionele houding aannemen ten aanzien van hun werk. Zelfbeoordeling als een manier om van te leren past goed bij deze opvatting over de docent. Zelfbeoordeling geeft docenten verantwoordelijkheid voor hun eigen leren en is een essentieel kenmerk van professionele beroepsuitoefening.

In de literatuur wordt zelfbeoordeling veelvuldig beschreven als een veelbelovende methodiek om het leren van docenten te bevorderen. Zelfbeoordeling is in dit proefschrift gedefinieerd als een activiteit waarbij docenten hun werk evalueren aan de hand van criteria and standaarden en op basis daarvan een oordeel te vellen over de mate waarin zij aan deze criteria en standaarden voldoen. Zelfbeoordeling is niet puur een individuele activiteit: vaak wordt gebruik gemaakt van 'peers' die de zelfbeoordelaar feedback geven en/of worden andere maatregelen getroffen om het leren door zelfbeoordeling te versterken. Zelfbeoordeling kan leiden tot nieuwe inzichten of tot bewustwording van aspecten van de eigen praktijk die ontwikkeling behoeven. Ook kan zelfbeoordeling de monitoringscapaciteiten van docenten stimuleren en leiden tot beter begrip bij docenten van wat een goede praktijk inhoudt. Ondanks de populariteit van zelfbeoordeling en de potentiële opbrengsten ervan voor het leren van docenten, is de theoretische en empirische basis om deze claims te onderbouwen nog niet of nauwelijks ontwikkeld. Om een beter begrip te krijgen van de mogelijkheden, opbrengsten en tekortkomingen van zelfbeoordeling als instrument voor het

leren van docenten is er grote behoefte aan onderzoek naar de effecten van zelfbeoordeling.

Het doel van de verschillende studies in dit proefschrift was dan ook om inzicht te krijgen in de effecten van een ontwikkelde zelfbeoordelingsprocedure die werd gebruikt door docenten uit het Middelbaar Beroepsonderwijs in de sector Verpleegkunde (Beroepsondersteunende Leerweg, niveaus 3 en 4). De zelfbeoordelingsprocedure was bedoeld om de competentieontwikkeling van docenten in het coachen van reflectievaardigheden van studenten te stimuleren. Reflectie is een belangrijke vaardigheid voor MBO studenten, in het bijzonder voor studenten binnen de sector Verpleegkunde. Docenten ervaren het coachen van reflectie als een belangrijke, maar moeilijke competentie. Er wordt dan ook van uitgegaan dat de zelfbeoordelingsprocedure die is gericht op bevorderen van deze coachingscompetentie van docenten in een behoefte voorziet.

De probleemstelling van dit proefschrift luidde als volgt: wat zijn de effecten van een zelfbeoordelingsprocedure op de competentie van docenten in het coachen van reflectievaardigheden van MBO studenten? De probleemstelling werd vertaald in de volgende, meer specifieke, onderzoeksvragen:

1. Op welke wijze kan een bruikbare zelfbeoordelingsprocedure worden ontwikkeld voor MBO docenten voor het coachen van reflectievaardigheden van studenten?
2. Hoe gebruiken MBO docenten een zelfbeoordelingsprocedure die is ontwikkeld voor het bevorderen van de coaching van reflectievaardigheden van studenten?
3. Hoe worden de coachingscompetenties van MBO docenten beoordeeld door zichzelf, hun collega's en welke trends in de tijd zijn zichtbaar in de scores?
4. Wat en hoe leren MBO docenten en zijn zij van plan te leren van het (herhaald) doorlopen van een zelfbeoordelingsprocedure die is gericht op bevorderen van hun competenties in het coachen van reflectievaardigheden van studenten?

5. Hoe waarderen MBO docenten de verschillende aspecten van de ontwikkelde zelfbeoordelingsprocedure?

De onderzoeksvragen zijn in vijf opeenvolgende hoofdstukken beantwoord. De eerste vraag heeft betrekking op de ontwikkeling van de zelfbeoordelingsprocedure, de overige vragen op het bepalen van de effecten van de ontwikkelde zelfbeoordelingsprocedure.

In het tweede hoofdstuk wordt de eerste onderzoeksvraag over de ontwikkeling van de zelfbeoordelingsprocedure beantwoord. Door ontwerpprincipes te formuleren op basis van de literatuur over kwaliteitscriteria voor assessment en condities voor leren van leraren, werd getracht een bruikbare zelfbeoordelingsprocedure te ontwikkelen. De ontwikkelde procedure bestond uit de volgende elementen:

1. een instrument voor docenten gebaseerd op criteria en standaarden, te gebruiken om hun eigen coachingcompetenties te beoordelen;
2. feedback van collega's op een geobserveerde les, eveneens aan de hand van die criteria en standaarden;
3. een format voor het maken van een reflectieverslag, waarin docenten reflecteren op hun competenties in het coachen van reflectievaardigheden van studenten en de ontvangen feedback van hun collega, leerdoelen formuleren en concreet maken hoe ze deze leerdoelen willen realiseren;
4. feedback van een collega op het geschreven reflectieverslag en, indien nodig, de mogelijkheid om het reflectieverslag aan te passen.

Criteria en standaarden voor zelfbeoordeling werden op iteratieve wijze geformuleerd door zowel literatuur als docenten (N=40) te raadplegen. De literatuur (theoretisch perspectief) vormde het vertrekpunt voor het formuleren van criteria en standaarden met betrekking tot het 'wat' en 'wanneer' van coaching van reflectievaardigheden van studenten. Inbreng van docenten (praktijkperspectief) leverde additionele criteria en aanwijzingen op met betrekking tot het 'hoe' van coachen. Het ontwikkelingsproces resulteerde in totaal in 23 criteria. Standaarden werden geformuleerd op een vierpuntsschaal waarop de mate van realisatie van criteria werd gescoord.

Door criteria en standaarden te baseren op zowel de theorie als de praktijk werd geprobeerd om de criteria af te stemmen op de context van de docenten en om hen een gevoel van eigenaarschap van de zelfbeoordelingsprocedure te geven. Door feedback en het schrijven van een reflectieverslag als elementen in de procedure op te nemen en de procedure herhaald aan te bieden, werd beoogd het leren door middel van zelfbeoordeling te bevorderen. Voor de start van de eerste zelfbeoordelingsronde werden de deelnemende docenten getraind in het uitvoeren van de procedure.

Op basis van deze eerste studie werd geconcludeerd dat het mogelijk is om een geschikte en bruikbare zelfbeoordelingsprocedure voor het bevorderen van leren van docenten te ontwerpen.

In het onderzoek waarover wordt gerapporteerd in de hoofdstukken 3 tot en met 6 zijn de effecten van de ontwikkelde zelfbeoordelingsprocedure onderzocht. In dit onderzoek participeerden 24 docenten van twee verschillende scholen. Van de ene school namen 20 docenten uit twee verschillende teams deel, van de andere school waren dat 4 docenten. De groep bestond uit 9 mannelijke en 15 vrouwelijke docenten. De ervaring van de docenten varieerde van het net hebben afgerond van de lerarenopleiding tot 28 jaar ervaring als docent. Alle docenten waren ook betrokken bij het ontwikkelen van de zelfbeoordelingsprocedure en doorliepen de zelfbeoordelingsprocedure in drie beoordelingsrondes. Deze rondes werden met tussenliggende perioden van drie maanden georganiseerd. De docenten werkten in duo's aan de zelfbeoordelingsprocedure.

In Hoofdstuk 3 wordt de onderzoeksvraag naar het gebruik van de verschillende aspecten van de zelfbeoordelingsprocedure door de docenten beantwoord. In deze studie werd onderzocht: (1) hoe docenten gebruik maakten van criteria en standaarden, (2) hoe zij feedback gaven en ontvingen, en (3) hoe zij reflecteerden op hun competenties in het coachen van reflectievaardigheden van studenten. Hiertoe werden door de docenten zelf ingevulde zelfbeoordelingsformulieren, collegabeoordelingsformulieren,

gefilmde feedback gesprekken en geschreven reflectieverslagen van de 24 docentenafkomstig uit de eerste assessmentronde verzameld en geanalyseerd.

Uit de resultaten bleek dat: (1) de docenten zichzelf redelijk positief beoordeelden en ook als zodanig beoordeeld werden door hun collega's, (2) de collega-beoordelaars constructieve feedback gaven die over het algemeen ook werd geaccepteerd door de beoordeelde docenten, en (3) de docenten duidelijke en informatieve reflectieverslagen maakten die voornamelijk gericht waren op hun eigen acties als gevolg van de zelfbeoordeling.

Uit deze deelstudie blijkt dat consequent en systematisch gebruik van criteria en standaarden een meerwaarde op kan leveren voor het geven van feedback en het schrijven van een reflectieverslag. Aanvullende maatregelen lijken echter nodig om de reflecties van docenten te verbreden en te verdiepen en de collega op een meer kritische wijze feedback te laten geven. Meer in het algemeen kon worden aangetoond dat zelfbeoordeling een meerwaarde op kan leveren voor het ontwikkelen van de competenties in het coachen van reflectievaardigheden van studenten.

In hoofdstuk 4 wordt de derde onderzoeksvraag beantwoord. Deze vraag luidde als volgt: hoe worden de competenties van MBO docenten in het coachen van reflectievaardigheden van studenten beoordeeld door zichzelf, hun collega's en welke trends in de scores zijn zichtbaar in de tijd? Om deze vraag te beantwoorden werden 72 ingevulde zelfbeoordelingsformulieren en 72 collegabeoordelingsformulieren van drie beoordelingsrondes geanalyseerd. De betrouwbaarheid en validiteit van het instrument voor zelf-/collegabeoordeling werden gecheckt door verschillende analyses uit te voeren. De interne consistentie van de schalen voor het wat, hoe en wanneer van het coachen bleek voldoende te zijn. Ook bleek uit de correlaties tussen de schalen dat de schalen enigszins overlaptten, maar zich voldoende van elkaar onderscheidden. Voor de beantwoording van de onderzoeksvraag werd eerst een beschrijvende analyse uitgevoerd op de drie schalen per moment (beoordelingsronde) en over de momenten heen (gemiddelden en standaarddeviaties). Vervolgens werden absolute en relatieve verschillen tussen de scores van de docent en de collega voor de drie schalen berekend.

Daarna werd een ANOVA voor herhaalde metingen uitgevoerd. Daarbij werden per moment post-hoc tests gedaan voor verschillen tussen de gemiddelden van de drie schalen en werden effect sizes berekend.

Uit de resultaten bleek dat collega's de competenties in het coachen van studenten iets positiever waardeerden dan de docenten zelf. Ook bleek dat docenten zichzelf redelijk competent achtten in het 'hoe' aspect van coachen, maar vonden dat het 'wat' en 'wanneer' aspect van coaching nog niet zo goed beheerst werden. Dit beeld werd bevestigd door collega's. Daarnaast werd duidelijk dat er grote individuele verschillen bestonden tussen docenten in hoe docenten hun eigen coachingscompetenties beoordeelden, hoe deze competenties werden beoordeeld door hun collega's, en dat deze verschillen in de tijd groter werden. Ook waren de gemiddelde relatieve verschilcores tussen de beoordelingen van docenten en hun collega's groot, maar deze scores ontwikkelden zich niet in de tijd. De absolute verschilcores daarentegen suggereerden dat de verschillen in beoordelingen van zelfbeoordelaars en collegabeoordelaars van richting veranderden.

Uit deze deelstudie bleek dat het herhaald en longitudinaal doorlopen van de zelfbeoordelingsprocedure niet leidde tot significante verschillen in scores over de verschillende momenten heen, maar wel betekenisvolle verschillen zichtbaar maakte tussen docenten in de zelfbeoordeling en collegabeoordeling, evenals verschillen tussen koppels en veranderingen in deze aspecten in de tijd.

In Hoofdstuk 5 wordt de onderzoeksvraag naar wat en hoe docenten leren en van plan zijn te leren via zelfbeoordeling beantwoord. Voor dit doel werden 69 reflectieverslagen geanalyseerd die de 24 docenten schreven tijdens de drie assessmentrondes. Voor het analyseren van de reflectieverslagen werd een categorieënsysteem ontwikkeld in een iteratief proces tussen vooraf gedefinieerde concepten op basis van literatuur en de data.

Resultaten lieten zien dat het uitvoeren van een zelfbeoordelingsprocedure bij docenten voornamelijk leidde tot bewustwording van nieuwe aspecten van het coachen van reflectievaardigheden van studenten. In mindere mate hadden docenten het gevoel nieuwe theoretische

en praktische inzichten op te doen. Voor wat betreft het wat, wanneer en hoe van coachen, rapporteerden docenten voornamelijk leeruitkomsten gerelateerd aan de inhoud (het wat) van coachen van reflectievaardigheden van studenten en leeruitkomsten die betrekking hadden op condities voor het coachen van deze vaardigheden (het hoe). Leeruitkomsten lieten een cyclische ontwikkeling zien van toegenomen bewustzijn naar bevestiging van ideeën en opnieuw naar toegenomen bewustzijn. Ook werd in deze studie bevestigd dat MBO docenten er een voornamelijk op uitvoerings- of toepassingsgerichte leerstijl op na houden.

Op basis van deze deelstudie kon worden geconcludeerd dat herhaald ondernemen van de zelfbeoordelingsprocedure bruikbaar was voor het leren van docenten, maar voornamelijk leidde tot bewustzijn en leren om de uitvoering te verbeteren. Het lijkt nodig aanvullende maatregelen in de zelfbeoordelingsprocedure in te bouwen om meer betekenisvol en betekenisgericht leren te stimuleren.

Hoofdstuk 6 rapporteert over de vijfde onderzoeksvraag naar hoe docenten hun ervaringen met de zelfbeoordelingsprocedure waardeerden en welke aspecten van de procedure door hen bruikbaar werden bevonden. Hiervoor werd een vragenlijst afgenomen die elementen van de zelfbeoordelingsprocedure, het onderliggende design en de impact op leren bevatte. De 32 items konden worden gescoord op een vijfpuntsschaal variërend van totaal niet waardevol (1) tot erg waardevol (5). In deze studie werd het standpunt ingenomen dat wanneer iets, gebaseerd op ervaringen, als waardevol wordt ervaren dit ook een sterke indicatie vormt voor de bruikbaarheid ervan. Er werd een factoranalyse met orthogonale rotatie (varimax) uitgevoerd op de 32 items. Besloten werd om drie factoren te onderscheiden, die gezamenlijk 55% van de variantie verklaarden. Factor 1 bleek een 'impact en organisatie' factor te zijn, factor 2 'assessment en feedback', en factor 3 'zelfstandigheid'. De interne consistentie van de schalen (Cronbach's alpha) bleek hoog. Om de discriminante validiteit te bepalen werden correlaties berekend. De schalen overlaptten maar waren voldoende onderscheidend.

Uit deze studie kwam naar voren dat alle drie schalen positief werden gescoord door de docenten. Over het algemeen wogen voor docenten de leeruitkomsten die het resultaat waren van het uitvoeren van de zelfbeoordelingsprocedure dus op tegen de inspanningen die zij daarvoor moesten verrichten. Op basis van deze deelstudie kon worden geconcludeerd dat het ontwikkelen van een zelfbeoordelingsprocedure via ontwerpprincipes, gebaseerd op condities voor leren en kwaliteitscriteria met betrekking tot assessment, leidde tot positieve percepties van docenten van de zelfbeoordelingsprocedure in termen van bruikbaarheid ervan.

In hoofdstuk 7 worden de belangrijkste bevindingen en conclusies van de 5 deelstudies gepresenteerd. De zelfbeoordelingsprocedure zoals ontwikkeld en onderzocht in dit proefschrift kan worden gekarakteriseerd als een potentieel bruikbaar instrument met meerwaarde voor het bevorderen van leren van docenten. Deze conclusie is gebaseerd op de volgende bevindingen. Ten eerste bleken criteria en standaarden gunstig en bruikbaar voor het leren van docenten, doordat zij de aandacht van docenten stuurden, hen van een vocabulaire voorzagen en het mogelijk maakten om gedachten van docenten te structureren en richting te geven tijdens het schrijven van een reflectieverslag. Echter, voor toekomstige zelfbeoordelingsprocessen is het van belang om op adequate wijze om te gaan met de neiging van docenten om hoge scores te gebruiken bij zelfbeoordeling en beoordeling van collega's. Ten tweede beschouwden docenten het ontvangen van feedback van collega's als erg positief voor hun leren, maar blijken wel aanvullende maatregelen nodig te zijn om docenten te stimuleren zich als een 'critical friend' op te stellen. Ten derde bleek de toegevoegde waarde van het schrijven van een reflectieverslag gebaseerd op de noodzaak om leeruitkomsten, intentionele uitkomsten en geplande leeractiviteiten te expliciteren. Ten vierde werd duidelijk dat het invoegen van criteria en standaarden, feedback en reflectie in een zelfbeoordelingsprocedure en het herhaald aanbieden van een dergelijke procedure niet voldoende zijn om betekenisgericht leren te bevorderen. Aanvullende maatregelen lijken nodig om dit soort leren te bevorderen.

Aansluitend worden in hoofdstuk 7 de belangrijkste bevindingen en conclusies bediscussieerd. Deze discussie spitst zich toe op belangrijke aannames die ten grondslag lagen aan het veelbelovende karakter van zelfbeoordeling. De eerste assumptie was dat zelfbeoordeling aantrekkelijk is, omdat het efficiënt en makkelijk toepasbaar is. Resultaten van dit proefschrift wijzen uit dat voor effectieve zelfbeoordeling in termen van leeruitkomsten een uitvoerige en tijdrovende voorbereiding noodzakelijk lijkt, dat het tijd vraagt van docenten om aan hun rol van zelfbeoordelaar en ‘critical friend’ te wennen en dat het ontwikkelen van een zelfbeoordelingsprocedure een complexe en tijdrovende activiteit is. Ten slotte vereist het bepalen van de effectiviteit van zelfbeoordeling een norm. Het is afhankelijk van de norm en daaraan gerelateerde verwachtingen of zelfbeoordeling kan worden beschouwd als een aantrekkelijke methode voor het bevorderen van leren van docenten. Zulke normen stellen is erg persoonlijk en contextgebonden en daarom niet eenvoudig om te doen.

De tweede assumptie onderliggend aan het veelbelovende karakter van zelfbeoordeling was dat zelfbeoordeling docenten motiveert om te leren, omdat het hen daarvoor zelf verantwoordelijk maakt en hen een gevoel van eigenaarschap geeft over hun leren. Gebaseerd op de positieve waarderingen van docenten lijkt het aannemelijk te veronderstellen dat zelfbeoordeling inderdaad docenten motiveert om hun eigen competenties (in dit onderzoek: het coachen van reflectievaardigheden van studenten) te ontwikkelen. Docenten demonstreerden verschillende manieren van omgaan met de verantwoordelijkheid voor het eigen leren en verschilden in wat en hoe zij leerden. Gebaseerd op deze bevinding kan de vraag worden gesteld in hoeverre de nadruk op eigenaarschap van docenten en de eigen verantwoordelijkheid voor leren werkelijk bepalend zijn voor het leren van docenten en in hoeverre dit moet worden genuanceerd voor specifieke docenten in specifieke situaties.

De derde assumptie die ten grondslag lag aan het veelbelovende karakter van zelfbeoordeling was dat zelfbeoordeling docenten voorziet van feedback om hun eigen (coachings) competenties te ontwikkelen. Effectieve feedback beantwoordt drie vragen: “waar ga je naar toe?”, “hoe gaat het?”, en

“hoe kom je daar”? Zelfbeoordeling voorziet in betekenisvolle antwoorden op de vraag waar docenten naar toe gaan, maar de vraag rijst of een betekenisvol antwoord ook het juiste antwoord is. Zijn docenten zelf in staat om te bepalen waar ze staan en om geschikte feedback voor zichzelf te genereren? Wat en hoe docenten leren wordt beïnvloed door wat een docent al weet over iets. Dit proefschrift liet zien dat het mogelijk is voor docenten om te bepalen hoe ze ergens komen wanneer het basisaspecten van het coachen van reflectievaardigheden van studenten, zoals het hoe van coachen en meer specifiek condities voor coachen. Voor moeilijkere aspecten van het coachen lijkt het moeilijk voor docenten te zijn om te bepalen hoe ergens te komen.

De vierde assumptie onderliggend aan het veelbelovende karakter van zelfbeoordeling was dat zelfbeoordeling docenten voorziet van de noodzakelijke kennis en vaardigheden om een meer systematisch proces van informeel leren op te starten. Er werd gesteld dat het realiseren van een dergelijk proces van informeel leren niet vanzelfsprekend is. Niet alle docenten voelen de wil of behoefte om hun eigen leren te reguleren, hebben de mogelijkheid binnen hun school om dit te doen en ontwikkelen de capaciteit voor zelfregulatie van hun eigen leren.

Ten slotte werd bediscussieerd hoe de implementatie van een zelfbeoordelingsprocedure in de praktijk uitwerkt. Uit dit onderzoek blijkt dat het moeilijk en tijdrovend is om een zelfbeoordelingsprocedure in het professionaliseringsbeleid van een school te integreren. Ook ging het beschikbaar stellen van uren voor professionalisering ten koste van ander activiteiten die docenten moesten uitvoeren.

Het doel van de studies gepresenteerd in dit proefschrift was om inzicht te verkrijgen in de effecten van een zelfbeoordelingsprocedure op de professionele ontwikkeling van MBO docenten gericht op de ontwikkeling van hun competenties in het coachen van reflectievaardigheden van studenten. Dit proefschrift draagt bij aan kennis en begrip over de bruikbaarheid van zelfbeoordeling. Ook voorziet dit proefschrift scholen van een concrete zelfbeoordelingsprocedure die gebruikt kan worden door docenten om hun competenties in het coachen van reflectie te verbeteren en is duidelijk

geworden wat onder goede coaching van reflectievaardigheden van studenten kan worden verstaan.

De beperkingen van dit onderzoek lagen vooral in het beschrijvende en exploratieve karakter van de studies, het ontbreken van een voor- en nameting en een controlegroep in het onderzoeksdesign, en de deelname van een beperkt aantal docenten afkomstig uit een specifieke onderwijscontext. Voorts werd het leren van docenten maar op basis van een enkele databron (reflectieverslagen) geanalyseerd en beperkten de analyses zich tot cross-case analyses. Toekomstig onderzoek zou zich kunnen richten op de rol van feedback bij zelfbeoordeling en individuele verschillen tussen docenten in hoe ze zelfbeoordeling gebruiken en wat ze ervan leren.

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Self-assessment, formatief beoordelen, professioneel leren van docenten, werkplek leren, leren van ervaring, leren door reflectie, de relatie tussen theoretische en praktische perspectieven en didactische vraagstukken rondom coachen van reflectie; stuk voor stuk interessante onderwerpen die verband hielden met een onderzoeksproject dat in 2007 voorbij kwam. Douwe Beijaard en Perry den Brok boden mij de gelegenheid om mijn nieuwsgierigheid te bevredigen. We zijn nu voorjaar 2013; ik ben nog steeds nieuwsgierig. Toch heb ik de inhoudelijke, persoonlijke en professionele ontwikkeling die ik zocht gevonden. Hier hebben mijn begeleiders een grote rol bij gespeeld. Douwe en Perry, bedankt voor jullie begeleiding. Ik heb jullie begeleiding altijd als aangenaam, constructief en leerzaam ervaren.

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Migchiel

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CURRICULUM VITAE

Migchiel van Diggelen was born on 17-7-1979 in Koudum. After finishing VWO in 1998 at the Lauwers College in Buitenpost, the Netherlands, he studied psychology at the University of Groningen in the Netherlands. In 2005 he graduated in Child and Youth Psychology. After his graduation, Migchiel started working as a teacher in Higher Vocational Education and Training. He also finished several courses in teacher education. In September 2007 he started a PhD project at the Eindhoven School of Education (ESoE) of the Eindhoven University of Technology, the Netherlands, of which the results are presented in this dissertation. Alongside his PhD project, Migchiel worked as a teacher educator in the minor Education and Communication and the master Science Education and Communication of ESoE. Since January 2012 Migchiel has been employed at the Eindhoven School of Education as a teacher trainer and researcher.

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