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**Differing Teacher and Student Perceptions
of Feedback during Mentoring Sessions
about Internship Performance**

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Preface

Fascinating I have always found the world of education, wherein the interactions between teachers and their students individually or as a group form such an essential part of the learning environment. Part of this interaction is the ever-present consideration in the communication process of where how to say what when, to the group or individually, in order to get the best out of the reciprocal dyadic relationship, that hopefully brings out the utmost of the students' academic performances, as well as their social emotional development, at all times balancing between steering and guiding.

Feedback is considered an essential component of this dynamic domain of communication. Therefore, working out this topic for my master thesis has been an exciting quest to fulfill.

Writing this thesis couldn't have led to this result without the support of several persons:

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I conclude my master's education Child and Educational Studies at the University Leiden with impressive and pleasurable memories.

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Abstract

This study has made a serious attempt to uncover in which domains of feedback misperceptions arise during the mentoring process of feedback by means of reciprocal communication between mentors and their students, what possible causes are of these misperceptions, and which effect this miscommunication has on the actual usage of feedback. The domains have been examined regarding differences and possible mutual relations between and within the student populations, as well as between the student populations and their corresponding mentors.

Feedback functions as a powerful instrument when it is actually brought into practice by the students to progress and develop themselves towards academic and social maturity during their self regulated study process. However, during the past few years the problem has gradually come to the surface that the received feedback is interpreted by the students in a different manner than apparently was meant by the teacher or mentor. This difference in perception of the given and received feedback has therefore been studied in detail by this study, because of its crucial importance in the student's self regulated learning process. In line with this is studied which part four different mentoring styles play in this communication process, as well as which elements enhance the ultimate usage of the received feedback.

The study comprised four third-year groups (two MBO groups and two HBO groups) with a total of 68 students (37 MBO Teaching Assistant students and 31 HBO Teacher Primary School students) and their four corresponding mentors of a secondary and a higher vocational school in the province of North Holland, The Netherlands. The educational settings of all groups studied were identical, namely based on the internships of the students.

Of the four groups and their corresponding four mentors, three groups and their three mentors showed significant differences in perception concerning various feedback domains, while the perception of the mentoring styles were significantly different between all four groups and their four corresponding mentors.

Clarity is marked by both student populations as the most important influencer of the usage of feedback. Both the MBO as the HBO students indicated the mentoring style Imperator to have a positive effect on Clarity.

The two groups MBO students recognized in their mentors the mentoring style Initiator, and at the same time the MBO students indicated the mentoring style Initiator to have a significant influence on the actual usage of feedback.

The two groups HBO students recognized in their mentors the mentoring style Initiator, and the way the mentoring styles are perceived by the HBO students is significantly affected by their fit with the education.

During this study also the robustness of the three questionnaires was examined, with the question if the questionnaires are valid instruments to be utilized in MBO and HBO settings, and it can be stated that the validity and reliability of the questionnaires has been proven solid for usage in MBO and HBO populations.

INTRODUCTION

The central theme of this master thesis is the concept feedback, which plays an essential and crucial role in the process of formative assessment. Effective feedback is the strongest influencer of the student's learning process (Hattie, 2009). These promising words almost seem to ensure that any and all feedback is effective, or would more nuances and aspects be needed to guarantee its successful application? This study is all about the pursuit of practical outcomes regarding how to create a powerful and effective feedback process, with as outcome its successful application by the recipients.

The quest starts with the inquiry from the perspective of the mentor's and students' perception of the given and received feedback and in what way and to what extent the given and received feedback is perceived differently by both parties, as well as to unravel which elements of feedback decrease and enhance its effectiveness, measured by the extent of its successful application by the students. Due to the divine and thin dividing line between mentoring and teaching, this article refers with both terms 'mentor' and 'teacher' to the mentoring teacher, like the job characteristic of the current term 'teacher' includes.

In chapter one the theoretical framework explicates the different angles of feedback and its different aspects involved during the feedback process. In line with this the messenger's style of feedback is taken into consideration by the portayal of four different mentoring styles and their corresponding way of communicating feedback to recipients, and since the mentoring styles noticeably differ in their ways of communication and their corresponding amount of trust, clarity and feasibility in the mentoring relationship, also these aspects are described in the light of the effectiveness of feedback, whereupon the sub research questions are stated. Consequently in chapter two the method is presented, regarding the sample, the eductional settings of the MBO and HBO student populations during the students' internship situations, and furthermore the way the study has been carried out is presented, as well as the questionnaires, the elucidation of the data analysis and the data inspection. Subsequently chapter three describes the results in a quite elaborated manner, as examined within and between the two student populations, as well as between the mentors and the students. The thesis ends with chapter four, where the conclusion and discussion are presented, with the presentation of the sought after practical outcomes regarding how to create powerful and effective feedback practices, that are the result of this journey.

1. THEORETICAL FRAMEWORK

1.1 A Powerful Learning Environment Through Formative Assessment

“Assessment refers to all those activities undertaken by teachers, and by their students in assessing themselves, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged. Such assessment becomes ‘formative assessment’ when the evidence is used to adapt the teaching work to meet the needs.” (Black & Wiliam, 1998).

In an Assessment for Learning (AfL) environment students are presented at the onset of a unit of study with clear goals and the assessment method(s), communicated to them in an unambiguous manner, about what and how they are expected to learn or produce in order to meet the criteria drawn up to pass the assessment. These two components, clear goals and type of assessment, are the two pillars of an effective AfL process. The clarity in goals forms the common ground on which teachers and students can exchange knowledge and insight, with the mutual objective for the students to expand their knowledge and competences to the prior set goals.

Black and Wiliam (Black & Wiliam, 1998) compare the learning process that occurs in the classroom to the process of connectionism, with certain amounts of input from the outside being fed in or making demands, hopefully leading to an acceptable and satisfactory amount of the students’ output. Between the input and the output lies a somewhat intangible field, namely the rather elusive learning process that takes place in the classroom, the vital and essential place where the input becomes output. Following, what goes on inside the black box in terms of formative assessment can be described as the ongoing process of formative assessment, by means of its powerful and essential component feedback.

The process of feedback can be metaphored as the teacher continuously having a finger on the pulses of the students’ academic development. Feedback is a constant practice of scaffolding and monitoring the students’ learning process, through reciprocal teaching with a high frequency of asking questions (Boshuizen, Bromme and Gruber, 2004, p. 164), during which the teacher will discover the pre-knowledge of the students about the topic and in this process eliminate possible misconceptions in order to build upon the right fundament, the so-called diagnostic assessment (Dochy, Heylen & Van de Mosselaar, 2002, p. 22). Furthermore through scaffolding and monitoring the teacher will guide the students through their self-regulated learning process by providing effective feedback about the strong and weak points of their study progress with a strong element of feed forward, so the student can improve his

standard of work in a structured way. The ultimate aim of external feedback is the student's strengthening of the skill of internal feedback, self-assessment and self-reflection, so the student's self-regulated learning process will be optimized. Students can only practice self-regulated learning with internal feedback when they have a sufficiently clear picture of the targets that their learning is meant to attain, to contain an overarching rationale, an overview. When pupils acquire such an overview of the learning aims, they become more committed, as well as more effective as learners, and it enhances the students' ability to reflect on one's own ideas (Black & Wiliam, 1998).

What influences students most is not the teaching, but the way students perceive the demands of the assessment system, the alleged 'hidden curriculum'. This absolutely unexpected conclusion was drawn in the early 1970s from studies of student learning. Students described all aspects of their study as being completely dominated by the way they perceived the demands of the assessment system. Knowing that the type of assessment strongly influences the students' design of their learning process, it has therefore become the tool for the educational system by which its proper and sound utilization the students are motivated to design their learning process towards that of deep-level-learning (Gibbs & Simpson, 2004-05). AfL practices have in common that they emphasize the role of students as active learners in the assessment of their learning, since the role of assessment is to be a tool for monitoring student progress and in scaffolding the students' learning (Pat-El, Tillema, Segers & Vedder, forthcoming).

Since feedback is a constant tailored practice of scaffolding and monitoring the students' learning process, the way in which formative assessment is communicated to the student is a crucial element in the entire formative assessment process. The way the mentor meets the needs of the students by effective monitoring and scaffolding through corresponding effective ways of communication, forms the groundwork for the students' successful self regulated learning. As the tone sets the music, the skilled mentor sets the quality of the feedback, which in turn leads to its actual usage by the students, with sequentially positive learning outcomes.

1.2 Mentoring And Formative Assessment Through Feedback

The aim of effective feedback is to communicate successfully in which direction change and development is needed for the recipient, in order to reach the beforehand clearly communicated goals. What is the best way to communicate feedback, in order for the recipient to come out of the mentoring session feeling motivated and encouraged, ready to put

the received words into action? Delivering the appropriate feedback during a mentoring session requires tailored comments, by which the student develops towards Vygotsky's well-known zone of proximal development. The student's perception of his / her feasibility of the set targets, as discussed during the mentoring session, is an important criterion regarding the quality of the feedback and its success or failure. Tailored comments take into account the present situation of the student and the next step in development towards goal attainment. The aim of the feedback session is to motivate the student, so he / she comes out of the mentoring session feeling encouraged. However, if the standard discussed is perceived by the student as unattainable, the effect will be discouragement, with as possible outcome the student's drop-out of the programme. Therefore the factor feasibility is an important one to always consider during the mentoring session.

Sensitivity is needed on the side of the mentor to monitor closely during the mentoring session the student's perception of the feasibility of the set goals. Other characteristics of the mentoring relationship with the mentee include honesty, openness, sensitivity, enthusiasm, sense of humor, organization, self-awareness, and reflexivity, which should lead to improved teaching skills and student learning. The (avoidance of) ambiguity in the feedback received and clarity of directions, offered for future improvement seem to matter most to the students. Often several stakeholders are involved in assessment of learning to teach, and framing factors are either implicitly or explicitly used differently (Tillema, 2009). Therefore divergence in criteria needs to be avoided, and alignment in perspectives and a shared valuation of standards between multiple assessors is regarded as a necessary component of the multiple feedback process. Assessment for learning throughout the practiced teaching and corresponding mentoring programme requires a shared understanding to facilitate learning, which will help the student teachers to analyze their practice and will help identify gaps or directions for improvement (Tillema, Smith & Leshem, 2011).

The complexity of effective mentoring lies among other things in the inevitable assessment aspect of the mentoring relationship, which is somehow like a double-edged sword, with on one hand the mentor acting as a supporting human scaffold through formative assessment, while at the same time a summative assessment must be passed (free interpretation of Tillema & Smith, 2007).

Feedback can be provided by different perspectives, like (1) Reflection versus Action, by offering space for experiencing or inquiring as mode for reflection, assuring reflection to become an internal instead of an external learning goal; (2) Supervising versus Mentoring, through working with students as communities of learners, coaching instead of instructing;

(3) Delivery or Inquiry, by not using a telling-method, but waiting to discover, accepting students' initiatives, dealing with students differently (Tillema & Kremer-Hayon, 2005).

1.3 Formative Assessment And Feedback

"The most powerful single influence enhancing the student's achievement is feedback."
(Hattie, 2009, p. 12)

Feedback is information, provided by an agent (e.g. teacher, peer, book, parent, self, experience) regarding aspects of one's performance or understanding. Feedback can appear in different forms like the teacher's or parent's provision of corrective information, a peer's provision of an alternative strategy, a book can provide information to clarify ideas, a parent can provide encouragement, and a learner can look up the answer to evaluate the correctness of a response. Feedback is thus a consequence of performance. (Hattie & Timperley, 2007). Effective feedback must answer three major questions asked by a teacher and/or by a student: Where am I going? (What are the goals?), How am I going? (What progress is being made toward the goal?), and Where to next? (What activities need to be undertaken to make better progress?). These questions correspond to notions of feed up, feedback, and feed forward (Hattie & Timperley, 2007).

Bottom line, where anyone is trying to learn, feedback about their efforts has three elements: (1) the desired goal; (2) the evidence about their present position; (3) and some understanding of a way to close the gap between the two (Sadler, 1989). The state of students' understanding has to be monitored by observation of the students' talk, writing, and actions through which students develop and display the state of their understanding, by overseeing discussions, the observation of activities, and the marking of written work, alongside a careful listening to the talk, the writing, all the actions through which pupils develop and display the state of their understanding (Black & Wiliam, 1998).

Good feedback is the most vital element in the teaching and mentoring process. Nicol and Macfarlane (2006) define good feedback practice as referring to anything that might strengthen the students' capacity to self-regulate their own performance, and their synthesis of research literature has led to seven principles of good feedback: (1) helps clarify what good performance is (goals, criteria, expected standards); (2) facilitates the development of self-assessment (reflection) in learning; (3) delivers high quality information to students about their learning; (4) encourages teacher and peer dialogue around learning; (5) encourages positive motivational beliefs and self-esteem; (6) provides opportunities to close the gap

between current and desired performance; and (7) provides information to teachers that can be used to help shape teaching.

Feedback acts as a double-edged sword, since it provides information to both the student as the mentor. It reflects on the practice of the mentor as to what extent the scaffolding process functions successfully for the student's development, and it also reflects on the effectiveness of the learning skills and strategies of the student.

This study tries to uncover which aspects of feedback (trust, clarity, and feasibility), and the way in which the feedback is communicated (by the practice of which mentoring style) relate to the actual usage of feedback by the students, and hereby gives evidence of the quality of the given feedback. When feedback is put into action, the right tailored way has been discovered for this individual student regarding how to communicate what when effectively.

1.4 Crucial Components Underlying The Feedback Process

As important as the somewhat technical elements of feedback are the underlying concealed characteristics, that occur in a more elusive spectrum, namely the domain of communication, with a sender conveying a message to a recipient. Correspondingly Brinko (1993) adds a more cognitive and psychological dimension to the components of the feedback process, and she brings in elements that emphasize the process of the bidirectional feedback cycle, whereby the recipient responds to the feedback source, who in turn responds to the recipient, who responds to the source, and so on. This is why educators are advocating feedback systems in which the recipient plays an active role, since good feedback allows for response and interaction. Therefore one's self is an important component to consider in the (effectiveness of the) feedback process. Brinko (1993) addresses therefore the five W-questions: Who (the players in the feedback-process), What (the information that is fed back), When (the occasion upon which the information is fed back), Where (the location in which the information is fed back is psychologically safe), and How (the manner in which the information is given and received). With regard to the content of feedback, the so-called 'What', it is stated that the content can be perceived differently by different people.

When we look at the recipient's side, the factor oneself is a crucial element of the feedback process that can't be ignored, since it's the recipient that interprets the feedback, and subsequently, based on his / her subjective reception of what was said and how it was said, the various mentioned elements are processed internally and set against own concepts and ideas. This processing of the received feedback filters and interprets the different aspects of

information and combines it with already present knowledge and ideas. Also during this process the different factors are set against present ideas and concepts, and any new information that leads to a cognitive clash with already present ideas and beliefs are thrown out (free interpretation of Tillema, 2000). Most of this internal process occurs subconsciously, and therefore it's the most slippery element of the feedback process and corresponding communication.

As a result of these mentioned subjective student characteristics, the student's perceived fit with the education is studied, regarding its influence on the perceived feedback and the perceived mentoring styles. Also in this perspective, the educational background, MBO or HBO, is an important element to be considered looking at the student's self aspects. In line with this it's important enough to present a random selection of Brinko's (1993) list of variables that have proven themselves effective during the feedback process when paid appropriate attention to. Feedback is more effective when: (1) it is sensitive to the recipient's locus of control, because individuals with an internal locus of control respond better to feedback that is derived from the task and/or self-discovery; (2) it is sensitive to the recipient's self-esteem, because individuals low in self-esteem rely more on feedback from external sources; (3) negative information is "sandwiched" between positive information; (4) it creates a moderate amount of cognitive dissonance, because a moderate discrepancy in the amount of cognitive dissonance facilitates change, whereas small and large amounts don't; (5) Feedback is more effective when given as soon as possible after performance, and (6) it reduces uncertainty for the recipient, by increasing knowledge through a reduction in uncertainty by eliminating half of the alternative or competing explanations for behavior.

The dialogue between mentors and students should be thoughtful, reflective, focused to evoke and explore understanding, and conducted in such a way that all students have an opportunity to think and to express their ideas (Black & William, 1998). It's all about tailored comments, precisely fitting the needs of the student's individual learning process, providing the right comments at the right time, in the right doses. Concisely, the core of feedback lies in tailored communication.

1.5 Perception Of Feedback

Perception and its interpretation lie in the eyes of the beholder.

Before examination of the perception of feedback occurs, the conception of the task should be explored. The way of learning and the corresponding feedback must be clear to the student, because whatever feedback is given to the student, it will be interpreted in the light of the

students' conceptions of what the teacher really wants or what the task really consists of (Gibbs & Simpson, 2004-05). These two concepts, conception and perception, are closely intertwined with each other and therefore mutually and reciprocally dependable of each other, because the conception forms and influences the perception.

Numerous different aspects play an important role in the forming of the accurate conception of the task. The students' and mentor's Theory of Mind (ToM) plays an important role in this process, because when a student draws inference from what is presented by the mentoring teacher about the task, he/she immediately and almost automatically forms a mental network representation of the narrative (Kendeou, van den Broek, White & Lynch, 2009). This formed representation has to be in line with the individual's ToM, which is an innate potential ability in humans, requiring social and other experiences over many years to bring to fruition. ToM-development is a social skill found already by 7 to 9 months of age. One of the most important milestones in ToM-development is gaining the ability to understand different mental representations of situations different from their own. Language is fundamental to ToM-development (Astington & Jenkins, 1999). It's because of the subjectivity of both the students' as the mentoring teachers' ToM that clarity in communication plays such an important role, in order for all involved to have the same interpretation, the same framework, with as much elimination and avoidance of wrong assumptions as possible.

Carless (2006) explores in his study the different perceptions of students and tutors with regard to the assessment and feedback process and these differing viewpoints are represented as barriers that distort the potential for learning. Carless conceived of the students' response to feedback being unpacked through three interlocking components: (1) Discourse: the term 'discourse' reflects on feedback often being communicated in academic discourse, which students don't have full access to; (2) Power: 'power' refers to the authoritative position of the feedback deliverers, with a judging component, and (3) Emotion: 'emotion' is all about the student being personally and emotionally involved by investing their time and effort in the task that is reflected on by means of feedback, so when feedback is negative, it can reflect in a negative way on the student's self-perception.

To elaborate some more on the domain of discourse, since discourse covers the domain of dialogue between the teacher/tutor and the student, and it's precisely this area that has been proven to be a domain vulnerable to misinterpretation, and therefore in need of clear and explicit communication about the assessment procedures and openness to student questions. A way to avoid misinterpretation and to close this communication gap could be in

the form of assessment dialogues between teachers/tutors and students, to discuss together the assessment process itself as a general concept. Assessment dialogues have an important role to play in reinforcing what is going on at feedback, without too easily assuming students are at the same wavelength as the teachers. As well can be included in this assessment dialogue the perception of the feedback, assessed by the student, so precise and detailed feedback is given to the mentoring teacher about various aspects of the feedback process. This way the mentor can receive a clear picture of his/her feedback and how it is perceived by the recipient. Any blind spots regarding the mentor's feedback performance can be eliminated successfully this way and at the same time the mentor's manner of feedback delivery can be adjusted effectively when the assessment results have proven this to be recommendable.

Concluding from his study four domains of differing perceptions have been brought to the surface: (1) the amount of detail of feedback; (2) the usefulness of feedback; (3) the extent to which students are only interested in grades; and (4) the fairness of marking procedures (Carless, 2006). Therefore feedback should be given through dialogue instead of by means of information transmission, so the students don't only receive initial feedback information, but also have the opportunity to engage with the teacher in discussion about that feedback (Nicol & Macfarlane-Dick, 2006).

Is feedback perceived differently by the mentors and their mentor group of students? Is the mentoring style as practiced by the mentor perceived differently by the mentors and their mentor group of students? These questions lay at the core of this study, meanwhile trying to find explaining answers concerning these differences in perceptions, and their practical outcomes in turn.

1.6 Self-Regulated Learning And Feedback

During the last two decades the characteristic of student learning has made a remarkable shift from a simple acquisition process, for the most part based on the teacher's transmission, to a process whereby students actively construct their own competences and knowledge, with the focus on conceptual understanding, higher-order cognitive and meta-cognitive skills, better known as Self-Regulated Learning (SRL) (Nicol & Macfarlane-Dick, 2006; De Corte, Verschaffel, Entwistle & Van Merriënboer, 2003, p. xii). The core assumptions of this way of student-centered learning are active engagement in learning and self regulated learning, with the learner being responsible for the management of learning (Lea, Stephenson & Troy, 2003). Consequently, a current interpretation of the concept of a powerful learning environment implies for the teacher to guide the students in their self regulated learning

process of knowledge acquisition and construction, to monitor and scaffold the students' learning process. This changed characteristic of the learning process and environment has had serious consequences for the teacher-student character and mutual relationship, because the path of transmission teaching has been abandoned and has been replaced by forms of interactional support, due to with a new reciprocal teaching-learning balance has to be found in the educational system, formed by a well-adjusted mode of monitoring and scaffolding by different forms of formative assessment, such as dialogue, reciprocal teaching, the frequency and quality of questions asked by the teacher (Boshuizen et al., pp. 164-166).

Self-regulation requires that the student has in mind some goals to be achieved against which performance can be compared and assessed. Feedback is information about how the student's present state (of learning and performance) relates to the specific goals and standards, and in turn good external feedback will lead to effective internal feedback, self-reflection, and the development of error-detection skills, as well as the promotion of self-regulated and self-directed learning. The student's internal feedback relates to the cognitive, motivational, and behavioral levels of learning, by practicing effective self-assessment, and is derived from a comparison of current progress against desired goals. It is these comparisons that help the students determine current modes of engagement should continue as is, or if some type of change is necessary, such as reinterpretation of the task, or an adjustment of internal goals, tactics and strategies. Even revision of domain knowledge or motivational beliefs could be possible, which in turn might influence subsequent self-regulation (Nicol & Macfarlane-Dick, 2006). Feedback is a vital part in the process of scaffolding and monitoring the student's learning process and it may be obvious that it takes a well-functioning, dyadic partnership of mentoring teachers and students to make it succeed.

1.7 Different Styles of the Mentoring Dialogue: Steering versus Guiding

The mentoring dialogue is formed by the function and communication style of the mentor, highly likely to differ during the different stages of the mentoring sessions, fitting and adapting to the mentee's developmental needs, namely that of (1) listener, enhancing the student's awareness regarding the experienced events, by bringing implicit knowledge to a more explicit level, that of (2) mirror, offering reflection on the observed actions to the student, that of (3) instructor, by conceptualizing the acquired knowledge and experience, and that of (4) supporter, by stepping back and encouraging the student's experimenting on the built knowledge and insights (Garvey, Stokes & Megginson (2009), pp. 101-106). These different stages of the mentoring dialogue can be performed in different ways by choosing the

mentoring style that fits best concerning this exact mentoring situation. Also the mentoring style is adapted to the student's needs and character, so the feedback will have most chance of success.

In line with this different mentoring styles can be recognized, such as (1) the Instructional style, by giving directions, where the progress is determined against the targets being set, and a regular checking whether targets are being met, or (2) the Relational style, which can be compared to *laissez-faire*, with everything put in the hands of the students, and inviting personal mastery, or (3) the Situational style, with the mentor acting as a coach to stimulate learning, usage of reflection, with the articulation of shared goals (Tillema & Smith, 2007.) Different mentoring styles can also be classified by direct and indirect supervisory styles, with bringing in information through telling and criticizing versus bringing out information through asking and listening. Also an additional distinction can be made regarding the activeness of the input during the mentoring sessions, with the emphasis on which person brings in the topics to be discussed (Crasborn, Hennissen, Brouwer, Korthagen & Bergen, 2011). The term directive is often compared to terms as assessing, appraising, instructing, confirming, expressing one's own opinion, offering strategies, and giving feedback, whereas the less directive style is described with terms as asking questions, guiding to developing alternatives, reacting empathetically, summarizing, and listening actively (Hennissen, Crasborn, Brouwer, Korthagen & Bergen, 2008).

Consequently a quartering of mentoring styles can be made by combining the degrees of activeness and directiveness. This results in a degree of overlap with the threefold, mentioned of the styles Instructional, Relational, and Situational, resulting in four mentoring styles: Initiator, Imperator, Encourager, and Advisor.

1.8 Four Mentoring Styles

This elucidated quartering distribution refers to a two-way combination of directiveness or non-directiveness and activeness or passiveness during the mentor sessions. The degree of directiveness refers to the mentor's amount of steering the mentee into the right direction (by strongly giving clear directions), and the degree of activeness refers to the person who introduces the topics during the mentor sessions (when a mentor mostly introduces the topics during the session, the style is labeled as active). The mentoring style Initiator refers to non-directive skills and an active introduction of topics, the mentoring style Imperator refers to a high degree of both directiveness and activeness, the mentoring style Encourager refers to non-directiveness and passiveness, and the mentoring style Advisor refers to directiveness and

passiveness (Crasborn et al, 2011). Important to add to this is that the mentor often switches in his/her mentoring role, depending on the needs of the student at that particular moment, since mentoring is tailorism, with adjustments in approaching the student in an adaptive manner. Certainly a mentor often possesses the characteristics of one more dominant mentoring style, with components of other styles alongside to a lesser degree, but the quality of good mentoring lies in the ability to switch to another approach where and when needed. The question has yet remained unanswered which mentoring style has been proven to give the most success with regard to the fruit of the mentoring style being students actually using the given feedback, and probably this is a highly subjective and personal matter, since not one mentoring style fits all, but again it relies on tailorism.

This study tries to find answers to the question if and in what way the four mentoring styles relate to trust, clarity, and feasibility and to what extent the mentoring styles relate to the usage of feedback as a result of successful communication, so hopefully practical recommendations can follow these outcomes.

1.9 Research questions and hypotheses

This study is a search for explanatory factors that could enlighten possible causes of differing perceptions between students and teachers and can hopefully enlighten the factors that result to practicing feedback and mentoring in an effective way to enhance the students' learning process, feedback that leads to acceptance and internalization with action, with implementation.

The general research question of this study is:

“To what extent do the perceptions of mentoring styles and feedback coincide and differ between the mentors and their mentor group of students, as well as between and within the two student populations, and which factors of the feedback domains (trust, clarity, and feasibility) and the four mentoring styles relate to the tangible usage of feedback?”

This overall question is divided into the following research sub questions.

1. “Is there a difference in perception of feedback and mentoring style between and within the two student populations?”
2. “Do the four different mentoring styles relate to using feedback, and is there a difference between the two student populations?”
3. “Do Trust, Clarity, Feasibility relate to the usage of feedback, and is there a difference between the two student populations?”

4. “Do the four mentoring styles relate to the amount of Trust, Clarity, and Feasibility in the mentoring relationship, and is there a difference between the two student populations?”
5. “Is there a difference in the mean scores on Feedback and the mentoring styles between the two student populations and the fit with the education, and is there an interaction effect between these predictors?”
6. “Is there a difference between the mentor groups and their mentors’ perception of the mentoring style?”

On the sidelines the robustness of the three questionnaires is examined during this study, by answering the following sub research question:

7. “Are the three questionnaires valid instruments to be utilized in MBO and HBO settings?”

2. METHOD

2.1 Sample

This study researches the perception of formative assessment in a competence based learning environment, regarding the students' functioning in their internships in educational settings, as Primary School teaching assistants and Primary School teachers. The sample comprised four third-year groups, two MBO groups in the domain Teaching Assistant, and two HBO groups in the domain Teacher Primary School, and their corresponding mentors of a secondary and a higher vocational school in the province of North Holland, The Netherlands. The MBO and HBO populations differ in three main areas: (1) the length of the educational programme, since the MBO programme is three years and the HBO programme is four years, (2) the educational background of the MBO and HBO students differ concerning their previous education, since most of the MBO students come from a four-year VMBO (level 3 or 4), containing theoretical education extended with some practical school subjects, while most HBO students come from a five-year HAVO, containing only theoretical subjects, and (3) the design of their curriculum, since the three-year MBO curriculum focuses on the practical side of the profession, supplemented by different theoretical subjects, while the four-year HBO curriculum includes a considerable amount of theoretical elements in their programme, supplemented by internship practice.

The educational settings of all groups were identical, namely based on the internships of the students. However, the role of the mentors differ in two important manners, namely (1) the character of the assessment, being formative and/or summative, and (2) the mentoring session performed individually or group wise. Regarding these two mentoring aspects the following can be stated: the MBO-mentors have individual mentoring sessions with the students, and assess the degree of competences attained during the internship both formatively as summatively, whereas the HBO mentors only assess their students formatively during group classes, while other assessors express the judgmental aspect of the assessment, summatively.

Of the total of 68 students 37 MBO Teaching Assistant students (26 female, 11 male) had an average age of 20 years (ranging from 19 to 22, a mode of 19, Sd .863) and 31 HBO Teacher Primary School students (31 female, 1 male) had an average age of 22 years (ranging from 20 to 24, mode of 20, Sd 1.387). The four mentors (2 female, 2 male) had an average age of 46 years (ranging from 44 to 50, SD 2.5), and have a range of working experience as

an MBO-/HBO teacher of 6 to 28 years (mean 18 years, Sd.9.092) and as a mentor of 2 to 6 years (mean 4.67, Sd. 2.309).

2.2 Design

The design of this study is that of a questionnaire study, during which two relatively identical student populations and their mentors (both in the domain of Primary School Education) are compared with each other. This design has been chosen in order to compare differences in perceptions between the two student populations and their mentors, while controlling the research setting as much as possible regarding potential lurking variables. Also this comparative setting creates the possibility to elaborate more on the findings, involving characteristics of the two student populations, such as the education's curriculum and the educational background of the students.

The printed teacher and student questionnaires were administered by hand during regular lessons, with the researcher being present during this process to eliminate possible misconceptions. The teacher questionnaire was to be administered by the teacher, also being the mentor of this mentor group of students and the student versions were to be administered by the corresponding mentor group of students.

2.3 Instruments

The questionnaires contained a number of open questions, several control variables, and a quantity of identically phrased closed questions, with some adaptation with regard to the status of student or mentoring teacher applicable. The closed questions were measured on a Likert scale of 1 to 5 (1= strongly disagree, and 5 strongly agree), all based on the measurement of the students' and teachers' perception of formative assessment, based on their average impression. Below the parts of the questionnaires are explained some more in detail.

2.3.1 Assessment for Learning Questionnaire (Appendix A)

The Teacher and Student Assessment for Learning Questionnaire consists of the TAfL-Q and SaFL-Q (Pat-El, R. J., Tillema, Segers, M. & Vedder, P. Construction and structural validation AFL-Q, forthcoming). In the TAfL-Q the 28 items were divided over two scales: (1) *Assessment as a Monitor*; and (2) *Assessment as a Scaffold*. In the SaFL-Q the 28 identical items, only rephrased to the student's perspective, were also divided over two scales: (1) *Receiving Feedback*; and (2) *Using Feedback*. In the study of Pat-El et al (forthcoming) the Cronbach's Alpha were for the scales *Receiving Feedback* .89, and for the scale *Using*

Feedback .83. In this present study the Cronbach's Alpha is for the scale *Receiving Feedback* .918, and for the scale *Using Feedback* .803. The two scales are theoretically closely related, since *Receiving Feedback* measures the students' perception of receiving feedback from their teacher or mentor (the degree of receiving clues, guidelines), where *Using Feedback* measures the students' perception of the actual usage of the received feedback (the usage of feedback to obtain clarity about the subject matters, as well as the development of the student towards the aimed goal). The teachers are respectively mirror wise asked to what amount they perceive their own *Monitoring* and *Scaffolding* of the student's development.

2.3.2 Usage of Feedback Instrument (Appendix B)

The Usage of Feedback Instrument (Tillema et al (2007); adjusted for this study by Korver) contained 29 questions, all with identical questions, only rephrased to the person addressed, to be divided over five scales: (1) *Feedback Acceptance* (student version) or *Feedback Deliverance* (mentor version); (2) *Following Recommendations* (student version) or *Providing Recommendations* (mentor version); (3) *Clarity*; (4) *Trust*; and (5) *Feasibility*.

The scales are theoretically closely related, since *Feedback Acceptance* and *Feedback Deliverance* assesses the perception of the student's acceptance of the feedback (the degree of susceptibility and reception of the received feedback) and the mentor's deliverance of the feedback, and *Following Recommendations* and *Providing Recommendations* assess the student's action that follows the given recommendations (the degree to which the received feedback has become an internal part of the student's belief system) and the perception of the mentor of the provision of these recommendations. The three scales *Clarity*, *Trust*, and *Feasibility* are content wise identical for mentor and students, only different question wise regarding the perspective of receiver or deliverer of the feedback. The scale *Clarity* measures the overall clarity of the feedback (clarity of the communication as well as clarity of the goals to be attained), the scale *Trust* refers to the degree of trust present in the mentor mentee relationship (trust in the mentor's insight and advices, trust in the justness of assessment criteria), and the scale *Feasibility* refers to the perception of student's achievability to obtain the required goals (the level of discouragement and motivation after a feedback session). The Cronbach's Alpha for the scales is: *Feedback Acceptance* .904, *Following Recommendations* .901, *Clarity* .853, *Trust* .872, and *Feasibility* .817.

2.3.3 Mentoring Style Questionnaire (Appendix C)

The Mentoring Style Questionnaire (Crasborn et al (2011); Tillema et al (2007); adjusted for this study by Korver) contained 24 content wise identical questions, for mentor and students, only rephrased to the person addressed, divided over four scales: (1) *Initiator*; (2) *Imperator*; (3) *Encourager*; and (4) *Advisor*. The four mentoring are inspired by and based on the MERID-model, the distribution of Crasborn, F., Hennissen, P., Brouwer, N., Korthagen, F., Bergen, T. (2011). This distribution refers to a two-way combination of directiveness or non-directiveness and activeness or passiveness during the mentor sessions. The degree of *Directiveness* refers to the mentor's amount of steering the mentee into the right direction (by strongly giving clear directions), and the degree of *Activeness* refers to the person who introduces the topics during the mentor sessions (when a mentor mostly introduces the topics during the session, the style is labeled as active).

The mentoring style *Initiator* refers to non-directive skills and an active introduction of topics, the mentoring style *Imperator* refers to a high degree of both directiveness and activeness, the mentoring style *Encourager* refers to non-directiveness and passiveness, and the mentoring style *Advisor* refers to directiveness and passiveness. The Cronbach's Alpha for the scales is: *Initiator* .592, *Imperator* .845, *Encourager* .702, and *Advisor* .769.

2.3.4 Control variables

The questionnaire started with open and MC-questions about different control variables, such as birth year, gender, nation of origin, prior education, years of work experience, measured at the categorical level.

2.3.5 Open questions

In the student version a number of open questions were asked about the underlying motivation to work in the education domain, as well as the underlying motivation to finish the education, the importance of earning a diploma, etc., whereas the teacher version asked open questions like the usage of reflection during feedback moments with the students, the usefulness of formative assessment, what do I pay attention to during the feedback sessions, etc.

Subsequently after the composition of the questionnaires, they were administered by a small pilot of the intended population to check the items regarding the content, phrasing, and based upon their comments the items have been adjusted, whereupon the questionnaires were ready to be submitted.

2.4 Procedure

To make sure that the perception was measured and not the actual assessment, the dates of the questionnaire administration were set at the end of the school year, yet before the actual final assessment of the students had taken place. The two participating MBO and HBO schools were approached by the researcher with the question if they were interested in participating in a survey about feedback, conducted under third-year students and their mentors about the perception of feedback during their internships. The contact persons arranged the contacts between the researcher and the mentors who were interested in participating with their groups, and consequently dates were arranged for the administration of the questionnaires during regular classes.

At the set dates, the MBO and HBO students and their corresponding mentors were asked to complete the questionnaires. The researcher told the students and mentors briefly about the topic of the questionnaire, and explicated that several closed questions showed a somewhat repetitive character, which was necessary for the reliability of the survey, to control for random hits in answering as much as possible. The respondents were assured of anonymity of their data and the commitment that feedback of the results would be provided via a report to the contact persons of the participating schools. After that the researcher gave the students and mentors instructions on how to complete the questionnaire, explicating the Likert scale by showing the example, which was shown on the questionnaire, on how to answer a question. Also the necessity to choose one answer and not to fill in more than one answer was strongly emphasized. Conclusively all respondents were asked to fill out the questionnaire individually, anchored in self-reflection and in their own perceptions, based on the award of a valuation on the five-point Likert scale from an average of a situation described.

During the silent administration the researcher walked through the classroom to be available in case of questions or ambiguities, meanwhile collecting the questionnaires that were finished. The administration went well all four times, because there was a high level of commitment present. The students and mentors sincerely wanted to contribute to this study, and this reflected upon the vital atmosphere during the administration.

The overall involvement and commitment in participation was highly present in all groups, and this was characterized by several students writing small comments next to their answers, or writing an exclamation mark or a smiley face, whenever they experienced a strong agreement with the question, as a token of emphasizing their answer. After collection

of all questionnaires, all respondents were sincerely thanked and all data were entered into the statistics computer program SPSS 17.

2.5 Data analysis

Per student population the means and standard deviations are computed for all variables. Also the percentual outcomes are shown regarding several background variables. The Pearson's correlation coefficient is calculated for all variables per student population. The Pearson's correlation coefficient is a measure of the strength of the linear relationship between two variables. The value can range from -1 to 1. A correlation coefficient of +1 or -1 means that there is a linear relationship between two variables, which means that one variable is derived completely from the other due to a linear relationship, and shows a statistical correlation.

Various factor analyses were performed, after having recoded the negatively phrased items, to check if the theoretical composition of the variables was correct, compared to the data computations by means of a Principal Component Analysis (Appendixes 1, 2, and 3). Performance of the factor analysis is a search for the identification of common themes that together form the construct, based upon the data, and it shows the inter-correlation between the variables (Field, 2005).

To study if differences in the perception of feedback and mentoring styles present themselves in this study between the two student populations, as well as between and within MBO and HBO student populations, various independent two-tailed t-tests will be performed, to compare the means of the data with a significance at the level of $p < .05$. The assumptions for the t-test are the following and will securely be checked prior to testing: (1) normal data distribution (2) data are measured at interval level; (3) homogeneity of variance; (5) the data are measured independently of each other; and (6) the response variable is a categorical one. The relevance or effect size is then calculated using Cohen's d, where a value from 0.2 represents a small effect, a value from 0.5 a medium effect, and a d from 0.8 represents a large effect. The larger the effect size, visually displayed in percentages, the more the population significantly differs from the other population, and the smaller the amount of overlap between the two populations.

Multiple regressions were performed to analyze how in the two student populations the four mentoring styles and the feedback aspects Trust, Clarity, and Feasibility relate to using feedback. Assumptions for multiple regression are: (1) All variables are numeric and the relationship between two variables is theoretically causal; (2) The relationship is linear between the dependant and independent variables; (3) There is homoscedasticity, indicating

that the distribution of residuals is divided as far as possible across the area, and the residuals are equal for all possible values of the independent variables, as well as normally distributed;

(4) There is multicollinearity, meaning that there is a high correlation between the independent variables, signifying that both independent variables explain almost the same variance in the dependent variable. The proportion of explained variance indicates how successful a prediction of the variable is, while with the multiple regression keeping the other variable constant. The values of the effect size R^2 are as following: a value from .02 represents a small effect, a value from .15 a medium effect, and an R^2 from .35 represents a large effect.

Multiple variance analyses were computed to scrutinize if there is a difference between the mean scores of Feedback, Trust, Clarity, Feasibility, and the mentoring styles between the two student populations and the fit with the education and if there is an interaction effect between these predictors. The following assumptions are ensured before performance of the multiple ANOVA: (1) All samples are independent and random; (2) Each group comes from a normally distributed population, and the tested variables are normally distributed, (3) There is homogeneity in variance, checked by the Levene's test, by a non-significant p-value of $> .05$, which indicates that the groups did not differ significantly at variance; (4) There is equality in group size. The effect size is indicated by the eta square rating, which varies between 0 and 1, where 0 indicates no differences in average scores between the groups.

The differences in the perception of feedback and mentoring styles between the four mentors and their corresponding four mentor groups are computed and interpreted by hand. This process of data-examination had to be computed by hand, without usage of the SPSS-programme, because t-tests couldn't be performed to test for significance in differences between the four groups and their mentors. In line with this the mean differences have been calculated, studied and interpreted. The starting point for the determination of significance has been set at a difference of $\geq .4$, ($p < .05$) indicated by *, and a difference of $\geq .6$ ($p < .01$) indicated by **. These starting points for significance have been chosen, based on the computed outcomes by SPSS of the t-tests, as were previously performed between the four mentor groups. The significance in outcomes of these t-tests started at the point of a mean difference between the groups at around $> .34$ ($p < .05$), and the computed significance ($p < .001$) between groups started at the point of a mean difference between the groups at around $> .65$.)

On the sidelines the robustness of the three questionnaires is examined during this study, by answering if the three questionnaires are valid instruments to be utilized in MBO and HBO settings. This will be measured by the computed outcomes of the factor analyses, which computes the correlations between the items according to the data, thus providing a statistical view on the theoretical design of the variables, and the Pearson's correlation coefficient, which shows the strength in correlation between the items per variable, as well as the strength of the linear relationship between the variables.

2.6 Data inspection

The distribution according to the performed factor analyses on the three parts of the questionnaire (the Assessment for Learning Questionnaire (Appendix A), the Usage of Feedback Instrument (Appendix B), and the Mentoring Style Questionnaire (Appendix C)) shows a strong distribution into the first few components, and from that point on it tails out into quite smaller distributions to the following four or five components. Subsequently, the components towards the end of the tail have been hosted in the larger components. Since a factor analyses is performed as an exploratory tool and can be used to guide the researcher to make various decisions, and not for the computer to make them (Field, 2009), it has been decided to maintain the theoretical distribution, yet with the confirmation of the profound perspective by the factor analyses. The factor analysis gave a deeper perspective on the theoretical distribution by highlighting mainly two things by usage of the rotation method: (1) the confirmation of the theoretical distribution into the drawn scales, as well as (2) a clear perspective on the distribution of the items into a subset of the theoretically drawn set of variables, which is proven to be closely related to the former theoretical distribution as well. Therefore it has been decided, since the factor analyses clearly confirmed the theoretical distribution into different perspectives, to make usage of both angles of distributions in the act of data analysis, and to treat the scales and subscales as separate variables.

The reliability analyses confirm the above by showing a relatively high amount of homogeneity of the scales (Table 1), by deletion of one dubious item of the scale Initiator.

Table 1

The scales of the student questionnaires, with examples of the items, number of items, and Cronbach's Alpha

Sale	Examples of items	No. of items	Cronbach's Alpha
SAFL-Q <i>Receiving FB</i>	My mentor encourages me to look back on my learning process and to think about what I can do differently next time.	16	.918
SAFL-Q <i>Using FB</i>	I know which points I need to work on to improve my results.	12	.803
UFI <i>FB Acceptance</i>	During the feedback discussion with my mentor, we discuss the learning process that led to my current level of functioning.	16	.904
UFI <i>Following Recommendations</i>	The feedback I receive from my mentor is specific, detailed enough for me to act upon.	13	.901
UFI <i>Clarity</i>	The feedback I receive from my mentor is clear.	9	.853
UFI <i>Trust</i>	I rely on the instructions and advice of my mentor, because for me they indicate the right course.	10	.872
UFI <i>Feasibility</i>	The goals, as mentioned by my mentor don't discourage me, because I know I can reach them.	10	.817
MSQ <i>Initiator</i>	During the feedback session my mentor asks me to reflect on my actions, so I come to insights by myself.	5	.592
MSQ <i>Imperator</i>	My mentor asks me, with regard to the assignment, how I think I will perform the task.	6	.845
MSQ <i>Encourager</i>	My mentor steers me in no way through instructions or advice.	6	.702
MSQ <i>Advisor</i>	During the feedback session I mostly come with the topics discussed and my mentor responds strongly by steering guidance and advice regarding my development.	6	.769

The mean scores for the student variables were computed to check the normality of the distribution. These values are examined with regard to mean, standard deviation, minimum, maximum, standardized skewness and kurtosis, with values between -3 and 3 to be considered as normal, and furthermore the shapes of the histograms and the QQ-plots were studied (Table 2). If a variable isn't normally distributed, the points in the Normal QQ plot lines are not straight ones and the points in the Detrended QQ plot won't display a systematic pattern (De Vocht, 2009). The histograms of the numerical variables with the drawing of the normal distribution line show the pattern of a normal distribution, and besides the QQ plots

look approximately normally distributed, because the data points lie nicely on the line or properly against it.

Table 2

Frequency table of the student variables (no missing values, N=68)

Scale	Mean	Mode	Min	Max	SD	St.Skewness	St.Kurtosis
SAFL-Q <i>Receiving FB</i>	3.34	3.00	1.44	4.69	.74	-1.23	-1.18
SAFL-Q <i>Using FB</i>	3.63	4.08	1.75	4.58	.55	-2.88	1.56
UFI <i>FB Acceptance</i>	3.46	3.57	1.86	4.50	.63	-2.59	.03
UFI <i>Foll Recommendations</i>	3.46	4.00	1.50	4.79	.72	-2.81	.29
UFI <i>Clarity</i>	3.50	3.78	1.78	4.67	.66	-2.04	-.54
UFI <i>Trust</i>	3.50	4.00	1.40	4.60	.75	-3.40	.58
UFI <i>Feasibility</i>	3.40	3.80	1.70	4.70	.63	-2.05	-.09
MSQ <i>Initiator</i>	3.45	3.40	1.80	5.00	.63	-.81	.93
MSQ <i>Imperator</i>	3.35	4.00	1.00	5.00	.83	-2.15	.05
MSQ <i>Encourager</i>	2.55	2.17	1.33	4.67	.73	3.08	1.48
MSQ <i>Advisor</i>	3.20	3.83	1.50	4.50	.71	-1.61	-.66

The Missing Values Analyses (list wise and pair wise) show that the missing values are under 3% and therefore won't influence the data analyses negatively. To meet the condition of the required normality, the extreme values and outliers are inspected. The outlier analyses show that several variables have extreme values, of which some respondents recur in more variables, and also the identification of unusual cases brings one respondent to the light with extreme scores. Yet, closer examination of these outliers and extremes has shown a relevant and conscious way of responding with an obvious design and without any arbitrariness, which shows they have obviously experienced the mentoring and feedback in a more extreme way than the rest of the respondents. For that reason, since the values of the standardized skewness and kurtosis are not deviating it is decided to leave all values intact.

3. RESULTS

Preliminary to the various data analyses the variable correlations will be presented. Following, the scores of the two student populations will be described with regard to the means, modes, minimum and maximum scores, and the standard deviations, as well as percentual information about several background variables. Consequently the results of the data analyses will be described per research question and per distinct student population, and they will furthermore be scrutinized in light of the perceptions of the mentors and their mentor groups.

3.1 The Strength Of Linear Relationship Between Variables

The correlations between the variables, as computed by the Pearson correlation coefficient (Table 3), show for the MBO population that all variables mutually correlate significantly ($p < .01$) in a positive manner. This significance indicates that there is a strong linear dependency between the variables, only with the exception of the variable Encourager, which significantly correlates negatively ($p < .01$) with all other variables.

The correlations for the HBO population show that all variables, but Initiator and Receiving Feedback, correlate significantly ($p < .01$) in a positive manner (Table 3), and this significance indicates that there is a strong linear dependency between the variables. The fact that the variables Initiator and Receiving Feedback don't positively correlate in a significant way, shows that the HBO population (which perceives the mentoring style Initiator, low in directiveness, and high in activeness regarding input for mentoring sessions, as the one present in their educational situation) doesn't perceive Receiving Feedback and the mentoring style Initiator as having a significant linear correlation and mutual dependency. Also for this population counts the same exception of the variable Encourager, which significantly correlates negatively ($p < .01$) with all other variables.

The fact that concerning both student populations the variable Encourager correlates negatively with all other variables is a logical outcome, backed up by the theoretical construction of this variable, since all variables are about actively contributing to the student's development by practicing feedback, while the mentoring style Encourager is passive both in providing feedback through giving guidelines and advice, as in bringing up topics for the mentoring sessions.

Table 3

Correlation variables

	Rec FB	Using FB	FB Acc	Foill Rec	Clarity	Trust	Feasibility	Initiator	Encourager	Imperator	Advisor
Rec FB	MBO HBO	1 1									
Using FB	MBO HBO	.742** .791**	1 1								
FB Acc	MBO HBO	.741** .661**	.758** .621**	1 1							
Foill Rec	MBO HBO	.572** .694**	.690** .652**	.840** .929**	1 1						
Clarity	MBO HBO	.702** .678**	.790** .702**	.937** .897**	.909** .901**	1 1					
Trust	MBO HBO	.542* .673**	.634** .590**	.877** .931**	.942** .954**	.858** .794**	1 1				
Feasibility	MBO HBO	.687** .615**	.673** .580*	.884** .964**	.894** .941**	.871** .855**	.822** .908**	1 1			
Initiator	MBO HBO	.469* .316	.533* .468*	.642** .578*	.628** .553*	.656** .638**	.607** .462*	.656** .578*	1 1		
Encourager	MBO HBO	-.555** -.559*	-.533** -.474*	-.818** -.739**	-.747** -.765**	-.820** -.613**	-.747** -.806**	-.720** -.732**	-.654** -.521*	1 1	
Imperator	MBO HBO	.721** .671**	.734** .522*	.775** .788**	.701** .715**	.817** .743**	.647** .713**	.739** .708**	.766** .501*	.779** -.611**	1 1
Advisor	MBO HBO	.555** .635**	.640** .528*	.776** .844**	.739** .787**	.762** .728**	.761** .796**	.727** .838**	-.746** -.622**	.743** .738**	1 1

** Pearson two-tailed significance at $p < .001$ * Pearson two-tailed significance at $p < .01$

3.2 Mean Scores Of The Two Student Populations

3.2.1 MBO

The MBO students rated as highest the variables Using FB, followed by Imperator, Trust, Clarity, Feedback Acceptance, and Initiator. The lowest rating is given to the variable Encourager, followed from low to high by Feasibility, Receiving Feedback, Advisor, and Following Recommendations (Table 4).

Table 4

Frequency table of the student population MBO (N=37, no missing values)

Scale	Mean	Mode	Min	Max	SD
<i>Receiving FB</i>	3.49	3.00	2.00	4.69	.72
<i>Using FB</i>	3.71	4.08	2.50	4.42	.53
<i>FB Acceptance</i>	3.61	2.21	2.21	4.36	.60
<i>Foll Recommend</i>	3.53	3.86	1.57	4.43	.71
<i>Clarity</i>	3.64	3.78	1.78	4.56	.67
<i>Trust</i>	3.65	4.10	1.90	4.44	.71
<i>Feasibility</i>	3.47	3.70	2.10	4.30	.58
<i>Initiator</i>	3.58	3.40	1.80	5.00	.67
<i>Imperator</i>	3.67	4.00	1.00	5.00	.81
<i>Encourager</i>	2.41	2.33	1.33	4.67	.77
<i>Advisor</i>	3.50	3.83	1.50	4.50	.67

Additional to these quantitative data the percentual information about the open questions are provided. Of the MBO students 65% have wanted to work in an educational setting since they were young, 78% is motivated to attain their diplomas, while 100% sees personal value in attaining a diploma. The personal fit with the education is answered by 50% with yes and no. After graduation 8% of the students wants to find a job in their profession, 84% wants to continue their school careers by starting another education, and 8% wants to do something else.

3.2.2 HBO

The HBO students also rated as highest the variable Using FB, followed by Following Recommendations, Feasibility, Clarity, Trust, and Initiator. Also the HBO population has given the lowest rating to the variable Encourager, followed from low to high by Advisor, Imperator, Receiving FB, and FB Acceptance (Table 5).

Table 5

Frequency table of the student population HBO (N=31, no missing values)

Scale	Mean	Mode	Min	Max	SD
<i>Receiving FB</i>	3.17	3.63	1.44	4.31	.75
<i>Using FB</i>	3.52	3.75	1.75	4.58	.56
<i>FB Acceptance</i>	3.27	3.57	1.86	4.50	.63
<i>Foll Recommend</i>	3.38	3.64	1.50	4.79	.72
<i>Clarity</i>	3.34	3.67	2.22	4.67	.62
<i>Trust</i>	3.33	3.40	1.40	4.60	.76
<i>Feasibility</i>	3.34	3.60	1.70	4.70	.68
<i>Initiator</i>	3.30	3.40	1.80	4.20	.54
<i>Imperator</i>	2.97	3.67	1.50	4.00	.69
<i>Encourager</i>	2.73	2.83	1.50	4.50	.64
<i>Advisor</i>	2.85	2.83	1.50	3.83	.57

Additional to these quantitative data the percentual information about the open questions follows. Of the students 77% have wanted to work in an educational setting since they were young, 97% is motivated to attain their diplomas, while 100% sees personal value in attaining a diploma. The personal fit with the education is experienced by 77% of the students. After graduation 87% of the students wants to find a job in their profession, 3% wants to continue their school careers by starting another education, and 10% wants to do something else.

3.3 “Is there a difference in perception of feedback and mentoring style within and between the two student populations?”

The perceptions within the two MBO and the two HBO groups, regarding feedback and mentoring styles of their mentors, are proven by t-tests to be identical, without any significant differences. This means that both MBO groups perceive the same amount of mean feedback as well as the same mean mentoring style, with no significant differences, and exactly the same goes for the two HBO groups. By these results two identical student populations are formed, the MBO and the HBO student populations.

Table 6

Differences between the MBO (N=37, no missing values) and HBO (N=31, no missing values) populations regarding feedback acceptance and the mentoring styles Imperator and Advisor

Scale	<u>MBO</u>		<u>HBO</u>		df	t	p	Cohen's d
	M	SD	M	SD				
<i>FB Accept</i>	3.61	.60	3.27	.63	66	2.29	.025	.62
<i>Imperator</i>	3.67	.81	2.97	.67	66	3.78	.001	1.29
<i>Advisor</i>	3.50	.69	2.85	.57	66	4.25	.001	1.17

There is a significant difference between the students of the MBO and HBO in their average perception of the acceptance of feedback (Table 6), with the MBO students expressing a higher average degree of Feedback Acceptance than HBO students. Also there is a significant difference between the students of the MBO and HBO student populations in their average perception of their mentor fitting characteristics of the mentoring styles Imperator and Advisor. The MBO students express a higher average degree of their mentor fitting the mentoring styles Imperator and Advisor than the HBO students.

3.4 “Do the four different mentoring styles relate to using feedback, and is there a difference between the two student populations?”

Table 7

Multiple regression analysis: Mentoring styles as predictors of using feedback for the MBO population (R=.764, R² =.583, F=11.194).

Scale	B	t	p
<i>Initiator</i>	-.091	-.642	.526
<i>Imperator</i>	.348	2.322	.027
<i>Encourager</i>	-.175	-1.282	.209
<i>Advisor</i>	.096	.659	.514

The mentoring style Imperator is a significant predictor of using feedback for the MBO population. The mentoring styles Initiator and Encourager show a non-significant negative contribution to the usage of feedback (Table 7).

Table 8

Multiple regression analysis: Mentoring styles as predictors of using feedback for the HBO population (R=.598, R² =.358, F=3.617).

Scale	B	t	p
<i>Initiator</i>	.193	.943	.354
<i>Imperator</i>	.174	.882	.386
<i>Encourager</i>	-.118	-.629	.535
<i>Advisor</i>	.171	.688	.498

None of the mentoring styles are significant predictors of using feedback for the HBO population. The mentoring style Encourager shows a non-significant negative contribution to the usage of feedback (Table 8).

3.5 “Do Trust, Clarity, Feasibility relate to the usage of feedback, and is there a difference between the two student populations?”

Table 9

Multiple regression analysis: the feedback elements trust, clarity, and feasibility as predictors of using feedback for the MBO population (R=.795, R² =.632, F=18.859).

Scale	B	t	p
<i>Trust</i>	-.123	-.766	.449
<i>Clarity</i>	.746	.942	.001
<i>Feasibility</i>	-.011	-.012	.957

For the MBO students the usage of feedback can be predicted by the amount of Trust, Clarity, and Feasibility, since the three elements together account for an R² of 0.632, indicating 63.2% of explained variance. However, Clarity is the only significant predictor of the three. Trust and Feasibility show no significant prediction of Using Feedback, but even contribute in a negative way (Table 9).

Table 10

Multiple regression analysis: the feedback elements trust, clarity, and feasibility as predictors of using feedback for the HBO population (R=.712, R² =.508, F=9.276).

Scale	B	t	p
<i>Trust</i>	.208	.873	.390
<i>Clarity</i>	.674	2.851	.008
<i>Feasibility</i>	-.255	-.824	.417

For the HBO students the usage of feedback can be predicted by the amount of Trust, Clarity, and Feasibility, since they together account for an R² is 0.508, indicating 50.8% of explained variance. Also for the HBO population goes that only the element Clarity is the significant predictor of the three and the element Feasibility shows a non- significant negative prediction of Using Feedback, by contributing in a negative way (Table 10).

3.6 “Do the four mentoring styles relate to the amount of Trust, Clarity, and Feasibility in the mentoring relationship and is there a difference between the two student populations?”

3.6.1 The influence of the four mentoring styles on the feedback element Trust

Table 11

Multiple regression analysis: the influence of the mentoring styles on the feedback element Trust for the MBO population (R=.816, R² =.665, F=15.887).

Scale	B	t	p
<i>Initiator</i>	.190	1.110	.275
<i>Imperator</i>	-.127	-.703	.487
<i>Encourager</i>	-.365	-2.212	.034
<i>Advisor</i>	.492	2.791	.009

The mentoring style Advisor is a significant positive predictor of trust for the MBO students, whereas the mentoring style Encourager is a significant negative predictor of trust. The mentoring styles Initiator and Imperator show no significant prediction of Trust, however, worthwhile noticing the mentoring style Imperator to have a non-significant effect on Trust (Table 11).

Table 12

Multiple regression analysis: the influence of the mentoring styles on the feedback element Trust for the HBO population (R=.899, R² =.808, F=27.406).

Scale	B	t	p
<i>Initiator</i>	-.188	-1.237	.227
<i>Imperator</i>	.141	.960	.346
<i>Encourager</i>	-.604	-4.345	.000
<i>Advisor</i>	.609	3.299	.003

The mentoring style Advisor is a significant positive predictor of trust for the HBO students. The mentoring style Encourager is a highly significant negative predictor of Trust, and shows to have far more effect on the HBO population than on the MBO population. The mentoring

styles Initiator and Imperator show no significant prediction of Trust, however, the mentoring style Initiator shows a non-significant effect on Trust (Table 12).

3.6.2 The influence of the four mentoring styles on the feedback element Clarity

Table 13

Multiple regression analysis: the influence of the mentoring styles on the feedback element Clarity for the MBO population ($R=.877$, $R^2=.769$, $F=26.649$).

Scale	B	t	p
<i>Initiator</i>	.005	.039	.969
<i>Imperator</i>	.301	2.140	.040
<i>Encourager</i>	-.330	-2.563	.015
<i>Advisor</i>	.202	1.469	.152

The mentoring style Imperator is a positive significant of Clarity for the MBO population. The mentoring style Encourager has a significant negative effect on Clarity. The mentoring styles Initiator and Advisor show no significant prediction of Clarity (Table 13).

Table 14

Multiple regression analysis: the influence of the mentoring styles on the feedback element Clarity for the HBO population ($R=.824$, $R^2=.680$, $F=13.789$).

Scale	B	t	p
<i>Initiator</i>	.296	1.854	.175
<i>Imperator</i>	.336	2.184	.038
<i>Encourager</i>	-.095	-.649	.522
<i>Advisor</i>	.255	1.317	.199

For the HBO population only one mentoring style is a significant predictor of Clarity, namely the mentoring style Imperator. Imperator can be regarded as a positive predictor of Clarity. The mentoring styles Initiator, Encourager, and Advisor show no significant prediction for Clarity, but Encourager influences Clarity in a non-significant negative way.

3.6.3 The influence of the four mentoring styles on the feedback element Feasibility

Table 15

Multiple regression analysis: the influence of the mentoring styles on the feedback element Feasibility for the MBO population (R=.804, R² =.646, F=14.593).

Scale	B	t	p
<i>Initiator</i>	.141	.984	.333
<i>Imperator</i>	.159	1.052	.301
<i>Encourager</i>	-.160	-1.160	.255
<i>Advisor</i>	.261	1.776	.085

None of the mentoring styles show a significant prediction of Feasibility for the MBO population. The mentoring style Encourager has a non-significant negative effect on Feasibility.

Table 16

Multiple regression analysis: the influence of the mentoring styles on the feedback element Feasibility for the HBO population (R=.883, R² =.780, F=23.063).

Scale	B	t	p
<i>Initiator</i>	.071	.483	.633
<i>Imperator</i>	.085	.603	.552
<i>Encourager</i>	-.328	-2.443	.022
<i>Advisor</i>	.654	3.671	.001

The mentoring style Advisor is a highly significant predictor of Feasibility for the HBO population. The mentoring style Encourager shows a significant negative effect on Feasibility. The mentoring styles Initiator and Imperator show no significant prediction of Feasibility.

3.7 “Is there a difference in the mean scores of feedback and the mentoring styles between the two student populations and the fit with the education, and is there an interaction effect between these predictors?”

3.7.1 “Is there a difference in the mean scores of feedback between the two student populations and the fit with the education, and is there an interaction effect between these predictors?”

Table 17
Influence of student population on Feedback aspects

Scale	<i>df</i>	<i>Error df</i>	F	p	η^2
<i>Receiving FB</i>	1	62	12.352	.001	.166
<i>Using FB</i>	1	62	7.528	.008	.108
<i>FB Acceptance</i>	1	62	10.543	.002	.145
<i>Foll Recommend</i>	1	62	5.169	.026	.077

The factor ‘student population’ has a significant main effect on all four aspects of Feedback, especially regarding receiving ($p < .01$), using ($p < .01$), and accepting Feedback ($p < .01$) (Table 17).

Table 18
Influence of fit with the education on Feedback aspects

Scale	<i>df</i>	<i>Error df</i>	F	p	η^2
<i>Receiving FB</i>	1	62	9.344	.003	.131
<i>Using FB</i>	1	62	5.074	.028	.076
<i>FB Acceptance</i>	1	62	6.802	.011	.099
<i>Foll Recommend</i>	1	62	10.813	.002	.149

The factor ‘the way the students experience a fit with the education’ has a significant main effect on all four aspects of Feedback, especially regarding receiving Feedback ($p < .01$), and following recommendations ($p < .01$) (Table 18).

There are two interaction effects, on receiving feedback ($F(1,62) = 9.070, p < .01, \eta^2 = .128$), and on using feedback ($F(1,62) = 6.029, p < .05, \eta^2 = .089$).

3.7.2 “Is there a difference in the mean scores of the mentoring styles between the two student populations and the fit with the education, and is there an interaction effect between these predictors?”

Table 19

Influence of student population on mentoring styles

Scale	<i>df</i>	<i>Error df</i>	F	p	η^2
<i>Initiator</i>	1	62	3.583	.063	.055
<i>Imperator</i>	1	62	20.187	.000	.246
<i>Encourager</i>	1	62	6.160	.016	.090
<i>Advisor</i>	1	62	20.016	.000	.244

The factor ‘student population’ shows a highly significant main effect on the mentoring styles Imperator ($p < .001$), and Advisor ($p < .001$), as well as a significant main effect on the mentoring style Encourager ($p < .05$). The factor ‘student population’ shows no significant main effect on the mentoring style Initiator (Table 19).

Table 20

Influence of fit with the education on mentoring styles

Scale	<i>df</i>	<i>Error df</i>	F	p	η^2
<i>Initiator</i>	1	62	.026	.872	.000
<i>Imperator</i>	1	62	4.352	.041	.066
<i>Encourager</i>	1	62	4.547	.037	.068
<i>Advisor</i>	1	62	3.495	.066	.053

The way students experience a fit with the education has a significant main effect on the mentoring styles Imperator and Encourager. The factor ‘fit with the education’ shows no significant main effect on the mentoring styles Initiator and Advisor (Table 20).

The combination of student population and the fit with the education provide no significant interaction effects on the mentoring styles.

3.8 “Is there a difference between the mentor groups and their mentors’ perception of the mentoring style?”

The difference in perception of feedback and mentoring styles between the four mentor groups and their four mentors have been studied by examination and comparison of the mean scores (Table 21). Hereby Group 1, 2, 3 and 4 represent the difference in mean scores regarding the various variables between the mentor’s and the mentor groups’ perception. Herewith the mean score of the mentor group is compared to the mean score of the group’s mentor to detect any possible differences in perception.

Table 21

Frequency table of the mean differences in perception of feedback and mentoring styles between the four mentor groups and their corresponding mentors ($\geq .4$ difference; ** $\geq .6$ difference), with positive values representing a higher appreciation by the mentors than the students*

Scale	Mean Diff group 1	Mean Diff group 2	Mean Diff group 3	Mean Diff group 4
<i>Receiving FB</i>	.55*	.17	1.02**	.72**
<i>Using FB</i>	.40*	.08	.37	.33
<i>Acceptance</i>	.52*	-.33	.25	.08
<i>Foll Recommendations</i>	.45*	-.09	.29	.75**
<i>Clarity</i>	.38	-.33	.41*	.51*
<i>Trust</i>	.56*	-.05	.80**	.36
<i>Feasibility</i>	.58*	-.31	-.38	.38
<i>Initiator</i>	-.13	-.63**	-.04	.52*
<i>Imperator</i>	.89**	.96**	.43*	.61**
<i>Encourager</i>	.20	.04	.43*	1.17**
<i>Advisor</i>	.19	-.03	.47*	.79**

Group 1 shows a difference in perception between the students and their mentor on seven of the eleven domains, of which six domains with a difference of $\geq .6$. This indicates that the mentor gives rather higher rates than the students on feedback. The mentor perceives the mentoring style Imperator as far more present than the students.

Group 2 gives a relatively realistic perception of both students and the mentor with nine relatively corresponding mean rates. The only two differences concern the perception of the

mentoring styles, with Emperor giving a mean difference of $\geq .6$, and Initiator a mean difference of $\geq -.06$. This means with regard to Emperor that the mentor perceives himself or herself as far more directive and active than the students identify, and with regard to Initiator that the students perceive the mentor as more passive than the mentor does. Striking is the underestimation in scores of the mentor on five feedback domains, by rating lower than the students on these feedback elements.

Group 3 provides a difference in perception of six of the eleven domains, of which two domains with a difference of $\geq .6$. Remarkable are the strongly differing rates regarding receiving feedback and trust, with the mentor giving much higher rates than the students.

Group 4 demonstrates a difference in perception on seven of the eleven domains, of which five are $\geq .6$. Notable are the high differences on the domains receiving feedback, following recommendations, Encourager, and Advisor. Evidently the mentor regards himself or herself as more passive and non-directive as the students perceive him or her.

When the diverse domains are examined, most differences occur with reference to Emperor and receiving feedback, followed by Encourager, Trust, Advisor, following recommendations, and Initiator. The least differences in perceptions concern the domains: using feedback, clarity, and feasibility.

Examining Table 6 more closely, it is somewhat striking that of the total of 44 mean differences, 34 scores show a positive difference, representing a more positive appreciation of the domain by the mentors, compared to the students' perception. And, when scrutinizing some more in detail, by ruling out the mentor of Group 2, who tends to perceive his / her feedback relatively the same way his / her students do, the results of the Groups 1, 3 and 4 show that of the 33 total of the mean differences of these three groups, 30 mean differences are perceived in a more positive way by the mentors compared to the perception of their mentor group. This indicates that, generally speaking, the mentor tends to overrate his / her effort in the feedback process, while the students' perception shows a clearly lower score of the received feedback.

3.9 “Are the three questionnaires valid and reliable instruments to be utilized in MBO and HBO settings?”

The robustness of the three questionnaires was examined and it can be stated that the validity and reliability of the questionnaires has been proven solid for usage in MBO and HBO populations. Regarding the validity, the Pearson's correlation coefficient shows a significant positive correlation between all variables, but for the variable Encourager, which significantly

correlated with all other variables in a negative manner. The reliability analyses show a relatively high amount of homogeneity of the scales, with Cronbach's Alpha scores that vary from .592 to .918 (Table 1).

4. CONCLUSIONS AND DISCUSSION

“To what extent do the perceptions of mentoring styles and feedback coincide and differ between the mentors and their mentor group of students, as well as between and within the two student populations, and which factors of the feedback domains (trust, clarity, and feasibility) and the four mentoring styles relate to the tangible usage of feedback?”

This study has been a search for explanatory factors that could enlighten possible causes of differing perceptions between students and teachers and can hopefully enlighten the factors that result to practicing feedback and mentoring in an effective way to enhance the students’ learning process, feedback that leads to acceptance and internalization with action, with implementation.

The performed data analyses have certainly provided answers by which the stated research question and corresponding sub research questions could be answered. Below the conclusions of this study are given, linked to the three domains of the sub research questions, and categorized into two domains: Mentoring Style and Feedback. Following some brief reflection on some of the open questions is presented. Consequently, some practical outcomes for feedback practices are offered, as derived from the outcomes.

4.1 Conclusions

The first domain of sub research questions studied *if there are differences in perception of feedback and mentoring style between and within the two student populations, as well as if there are differences between the mentor groups and their mentors’ perception of the mentoring style*, and the results have visibly revealed the (dis)similarities.

4.1.1 Mentoring Style

The mean ratings given to the mentoring styles by the two MBO groups and the two HBO groups are proven to be identical. Also a common impression of the MBO and HBO students is the fact that they both perceive the mentoring style Encourager as not present in the feedback practice of their mentors. The mentoring style Encourager stands for non-directive and passive, and this is not recognized by either one of the student’s populations. Thus, in spite the fact that all four groups have different mentors, the two MBO and the two HBO

groups both perceive the same mentoring style in their mentors. Clearly the students agree in the perception of the mentoring style of their mentors.

However, the perceptions give a high amount of discrepancy between the mentors and the mentor groups, concerning which mentoring style the mentor practices. The largest and most frequent difference in perception concerns the mentoring style Emperor, with the mentor recognizing himself or herself in this style, while the students perceive this to a far lesser extent or not share this perception of style at all. To my idea this reflects to some sort of blind spot, better known as 'the window of Johari'. The way people see themselves isn't necessarily the way other people see you, and by means of asking feedback of one's performance the blind spot can be reduced, and the perceptions of oneself and of the other person can be brought closer together.

4.1.2 Feedback

There is a difference in perception between MBO and HBO students with regard to the acceptance of feedback, with the MBO students expressing a higher mean degree of acceptance, compared to the HBO students.

Of the seven domains of feedback only one mentor shares relatively the same perception as the students, with no great differences in ratings. The other three mentors show an average of misconception on four of the seven domains, all with a positive overrating, compared to the students ratings. Also the domains receiving feedback, trust, and following recommendations are overrated by the three mentors, in comparison to the students' ratings. Carless (2006) touched this domain of dialogue of the feedback process, which has proven itself vulnerable to misinterpretation. During the feedback process a necessary starting point for the communication and the academic discourse is the establishment of common ground regarding specific concepts and definitions, reflected on and discussed during the feedback sessions. Therefore clear and explicit communication is essential, as well as openness to student questions. The usage of good instruments like assessment dialogues between teachers and students, as well as the use of reflection tools like feedback forms for the mentee to administer, can provide precise and detailed information about the mentor's feedback skills.

The second domain of sub research questions studied *if Trust, Clarity, Feasibility, and the four mentoring styles relate to the usage of feedback, and if there is a difference between the two student populations, as well as if the mentoring styles relate to trust, clarity, and feasibility and if there is a difference between the two student populations.*

4.1.3 Predictors Of Feedback

Clarity is for both student populations the most important influencer of the usage of feedback, with a stronger effect of this aspect for the MBO population. Hattie (2009) speaks about the importance of clarity regarding the way in which the communication skills of both parties refer to what is said, how and when, as well as to the uniformity in and clarity of definitions concerning the concepts that the information is exchanged about during the formative assessment.

Both the MBO as the HBO students indicate that the mentoring style Imperator has a positive effect on Clarity. The mentoring style appears to leave little unclear or out in the open during the communication process.

In general Receiving Feedback is an important predictor of Accepting Feedback, and this counts especially for MBO students who value Receiving Feedback higher than the HBO students. This outcome plausibly reflects on the way in which the feedback is given, and respectively is received by the students. The way and setting, individually or group wise, in which feedback is given and received, obviously has a serious impact on the acceptance of it.

For the MBO students the mentoring style Imperator is a significant influencer of the actual usage of feedback, while the styles Initiator and Encourager, both strongly non-directive, contribute non-significantly in a negative way to using feedback.

For the HBO students none of the mentoring styles are significant predictors of using feedback. The HBO students recognized the mentoring style Initiator as the one present during the group mentoring sessions, which is low in directiveness, and high in activeness. Obviously the mentoring sessions in a group setting don't provide enough support for the students to mark the mentoring sessions as providing an active contribution to them as far as making usage of feedback.

Both the MBO as the HBO students indicate that the mentoring style Advisor has a positive effect on Trust, and the style Encourager has a negative effect on Trust, with the HBO students expressing both effects in a stronger way than the MBO students. For the MBO students the style Encourager has a negative effect on Clarity, and the same applies to the HBO students, however, in a non-significant way. The HBO students experience Advisor to

have a positive effect on Feasibility, while Encourager is regarded as having a negative effect on Feasibility.

The third domain of sub research questions examined *if there is a difference in the mean scores on Feedback and the mentoring styles between the two student populations and the fit with the education, and if there is an interaction effect between these predictors*, and also this question has been explained by the found main and interaction effects.

4.1.4 Influences On The Perception Of Mentoring Style

Concerning the mentoring style both the factor ‘student population’ as the factor ‘the fit with the education’ have a main effect on the mentoring styles Imperator and Encourager. The HBO students who don’t have a fit with the education express a very low perception of the mentoring style Imperator and they express a very high degree of the mentoring style Encourager. On the contrary, the MBO students with and without a fit with the education show no major difference in the perception of the style Imperator, and also the low amount of perception of the mentoring style Encourager is shared by both the MBO students with and without a fit with the education. Consequently can be derived that the experienced fit with the education influences the HBO population in a strong way, even to the extent that it influences the way in which the mentoring style is perceived. No fit with the education apparently implies for the HBO population that they experience the feedback process as low in directiveness and low in activeness from the mentor’s part. Brinko (1993) discusses this crucial element one’s self, whereby the recipient’s characteristics plays an active, central role in the success of the feedback process. The bidirectional feedback cycle includes the underlying student’s characteristics to a great extent, since the reciprocal dyadic mentor-mentee relationship needs two persons to make it succeed, with all important students factors, such as the perceived fit with the education, taken into account.

4.1.5 Influences On The Perception Of Feedback

Regarding the HBO students, when a negative fit with the education is experienced, it in turn shows a very low score on receiving feedback, whereas a positive fit with the education gives a high score on receiving feedback. Also regarding the HBO students a negative fit with the education shows a very low score on following recommendations, whereas a positive fit with the education gives a high score on following recommendations. Apparently with regard to the HBO students the fit with the education has a great impact on the perception of the various

feedback domains. This underlying psychological dimension of one's self (Brinko, 1993) evidently can't be ignored, and has to be considered carefully and with thought in order for the feedback process to be successful. Again the tailored comments with the right way of 'What, When, and How' proves to be evident in the feedback process.

4.2 Reflection On Some Of The Open Questions

Unanimously all 68 students find the attainment of their diplomas important.

In addition further examination shows a second remarkable similarity in ratings from highest to lowest, namely both populations give the highest score to the variable Using Feedback, and the lowest score to Encourager.

Even though the MBO students have nearly finished their 3-year education, 78% of the students is motivated to attain their diplomas, while of the HBO students, with still one year education to go, 97% is motivated to attain their diplomas.

Examining the mean ratings given by the MBO and HBO students to the variables, it is evident that the MBO students overall rate in a more positive way than the HBO students (highest MBO score $M=3.71$ and HBO score $M=3.52$, and lowest MBO score $M=3.53$ and lowest HBO score $M=3.27$).

Quantitative analyses of the answers to the open questions have given some more insight in the various domains of this study, as well as on the somewhat lurking variables. It appears that when a student was not content about the education and felt no fit with it, it reflected on the way the various data were filled in. Obviously it showed to have an influence on the various aspects of feedback and mentoring styles worth further investigation during the data analyses. The same effect applied to a negative experiencing of the mentoring situation, due to outside organizational circumstances, like the mentor not having enough time to spend on the mentor group. In addition when the relationship with the mentor was not satisfactory, it also reflected on the answers given. These results have confirmed the choice to use the negative or positive answers to the open question "This education really suits me well?" in combination with the type of education for the performance of the analyses of variance.

4.3 Validity And Reliability Of The Questionnaire

The factor analyses (Appendixes 1, 2 and 3) gave a statistical back-up to the theoretical design, and the Alpha correlations (Table 1) of the items per variable were fine.

The Pearson's correlation coefficient shows a significant positive correlation between all variables, but for the variable Encourager. This variable significantly correlated with all

other variables in a negative manner. This is a logical outcome, backed up by the theoretical construction of this variable, since all variables are about actively contributing to the student's development by practicing feedback, while the mentoring style Encourager is passive both in providing feedback through giving guidelines and advice, as in bringing up topics for the mentoring sessions. Consequently this variable was supposed to theoretically correlate negatively, and so it did in practice.

During this study also the robustness of the questionnaire was examined, with the question if the questionnaire is a valid instrument to be utilized in MBO and HBO settings, and it can be stated that the validity and reliability of the questionnaire have been proven solid for usage in MBO and HBO populations.

4.4 Discussion

The outcomes of this study are discussed in some more detail and questions are raised, in need of answers, possibly provided by future research in this domain.

4.4.1 Mentoring style

Is the fact that the two MBO and the two HBO groups both perceive the same mentoring style in their mentors simply a coincidence, or does this mean that per educational setting, focused on the specific student population, the mentors deliver feedback in the same particular manner, due to its effectiveness proven to be successful regarding the student population?

The MBO students perceive their mentors as containing high amounts of directiveness and activeness in their mentoring style, while the HBO students perceive the mentoring style of their mentors as low in directiveness and high in activeness. This outcome could imply two things: (1) either deliberately the HBO students are given feedback in a somewhat non-directive way, because they're expected to develop themselves without too much steering, or (2) it's mainly caused by the feedback setting, namely that of a group setting. To deliver feedback in a group setting automatically provides a far lesser amount of directiveness, such as the provision of specific and concrete advises, focused on the particular and individual development of the student, whereas in an individual on one setting, there is much more room for detail and specificity.

The perceptions of the mentors and their mentor groups regarding the mentoring style gave a high amount of discrepancy, by the mentors recognizing in themselves another type of mentoring style than their students did. This could reflect to some sort of blind spot, better known as 'the window of Johari'. The way people see themselves isn't necessarily the way

other people see you, and by means of asking feedback regarding one's performance the blind spot can be reduced, and the gap between the perceptions of oneself and the other person can be narrowed. The feedback element of the mentee towards the mentor could be an important element to include in the practice of an effective feedback process.

The HBO students who don't have a fit with the education express a very low perception of the mentoring style Imperator and they express a very high degree of the mentoring style Encourager. No fit with the education apparently implies for the HBO population that they experience the feedback process as low in directiveness and low in activeness from the mentor's part. The question is raised in which direction this influence works, because does the laissez-faire style during the mentoring process result in experiencing no fit with the education, or does the fit with the education influence the perception of the mentoring style and its corresponding amount of directiveness and activeness in a negative way?

The mentoring style Imperator is a significant influencer of the actual usage of feedback for the MBO students, while the styles Initiator and Encourager, both strongly non-directive, contribute non-significantly in a negative way to using feedback. This means that the MBO students profit during their personal process of feedback reception transferred to the actual usage of feedback from the active input during the mentoring sessions, combined with clear and concrete advices and instructions. The mentoring style Imperator is the style they perceive in their mentors, during the individual mentoring sessions, and this proves to work well for their development, to successfully make the transfer from the reception of feedback to the actual usage of the received feedback.

4.4.2 Feedback

The MBO students expressed a higher mean degree of accepting feedback, compared to the HBO students. The way and setting, individually or group wise, in which feedback is given and received evidently, has a serious impact on the acceptance of it. Can be concluded from this result that feedback given in an individual setting in any case leads to a higher degree of acceptance?

The perceptions of the mentors and their mentor groups regarding the feedback given and received showed a high level of discrepancy, with three out of the four mentors overrating their feedback. Also the factor trust is overrated by the mentors, compared to the students. Apparently the amount of trust which the mentors think is present isn't present in the eyes of the students to this degree. To narrow this gap in perception and to get a better grip on how

the feedback is perceived by the recipient, feedback from the mentee to the mentor could definitely be added as a crucial element to be included in the effective feedback process.

For the HBO students the factor 'student population' and the factor 'the way the students experience a fit with the education' both have a significant main effect on receiving feedback, since a negative fit with the education shows a very low score on receiving feedback, whereas a positive fit with the education gives a high score on receiving feedback. Also regarding the HBO students a negative fit with the education shows a very low score on following recommendations, whereas a positive fit with the education gives a high score on following recommendations. Apparently with regard to the HBO students the fit with the education has a great impact on the perception of the various feedback domains.

4.5 Some Practical Outcomes Of This Study

- Feedback needs to be communicated with clarity in order to be successful.
- The mentoring style Emperor has a positive effect on clarity.
- The mentoring style Emperor leads to a higher amount of usage of feedback. Students profit in their process of the reception of feedback transferred to the actual usage of feedback from active input for the mentoring sessions, combined with clear and concrete advices and instructions.
- The way and setting, individually or group wise, in which feedback is given and received, evidently has a serious impact on the acceptance and usage of it. Individual feedback settings appear to be more successful than group wise settings.
- Common ground between the mentor and the mentee is required, concerning conceptualizations and definitions, and regular discussions and fine-tuning in this area should be an essential element of feedback during mentoring sessions, in order to reduce any miscommunication, ambiguity and misinterpretation.
- The feedback assessment given by the mentee about the mentor, for instance by usage of assessment dialogues, has proven to be an important and essential element to be included in the practice of an effective feedback process to diminish any miscommunication.
- The mentoring style Emperor works well for the HBO students' development, to successfully make the transfer from the reception of feedback to the actual usage of the received feedback.
- The element one's self is an essential element to be considered during the feedback process.

4.6 A Core Question With Reference To Feedback

“Isn’t giving feedback, in particular feed forward, in reality another form of the formerly practiced transmission-teaching? Isn’t feed forward in fact a wolf in sheep’s clothes?”

This core question persistently kept on coming back to my mind during this study, and not having attained the full answer yet to this point, to my opinion the main characteristics that determine if feedback is transmission-teaching in disguise or not, is the degree of practiced reflection during the mentoring sessions, as well as the level of steering as in telling the student what to do. If the character of the given feedback during the mentoring sessions aims at the development of the students’ self regulated learning, then scaffolding in its true and pure meaning is being practiced.

4.7 Closing

This study has to some extent lifted the veil some more on the hidden and subconscious domain of feedback. Differences and similarities have been made visible, as well as which factors contribute to the usage of feedback. One of the found conclusions, that the amount of clarity really makes the difference, was in a way a true confirmation of the theoretical design of this study. Other domains of feedback have been briefly touched on, especially certain aspects of feedback that unexpectedly came to the surface during this study, and could therefore possibly be deepened out some more in future research.

Future research could focus on the quality of the dyadic mentoring relationship in relation to its effect on the perception and outcome of feedback, and also the student’s contentness with the education and its effect on feedback could be studied more in detail. Also truly fascinating remains the differing perceptions of the mentoring styles as perceived by the students and their mentors, and it’s hidden background causes could definitely be studied more in coming research, since not all the ground has been plowed enough to the extent that clear and sound guidelines regarding effective mentoring have come forward.

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Appendix A

Items and subscales of the student version SAFL-Q

Receiving Feedback / Assessment as a monitor

1. Mijn mentor stimuleert mij om na te denken over hoe ik mijn functioneren in het onderwijs kan verbeteren.
2. Nadat mijn mentor mijn schoolwerk heeft nagekeken, bespreken we samen mijn antwoorden.
3. Tijdens het verloop van het schooljaar vraagt mijn mentor regelmatig hoe ik vind dat het tot nu toe gaat.
4. Mijn mentor laat mij meedenken over de manier waarop ik wil leren op school.
5. Ik krijg van mijn mentor de mogelijkheid om te bepalen wat mijn leerpunten zijn.
6. Mijn mentor vraagt mij wat ik goed en minder goed heb gedaan in mijn schoolwerk.
7. Mijn mentor stimuleert mij om terug te kijken op mijn leerproces en om te bedenken wat ik een volgende keer anders kan doen.
8. Mijn mentor geeft mijn sterke punten aan op het gebied van leren.
9. Mijn mentor geeft mijn zwakke punten aan op het gebied van leren.
10. Ik word aangemoedigd door mijn mentor om mijn leerproces te verbeteren.
11. Ik krijg aanwijzingen van mijn mentor die mij helpen bij het leren.
12. Mijn mentor bespreekt mijn gemaakte werk met mij zodat ik de opdrachten beter begrijp.
13. Mijn mentor bespreekt met mij mijn vorderingen.
14. Na een beoordelingsmoment laat mijn mentor mij weten hoe ik het de volgende keer beter kan doen.
15. Mijn mentor bespreekt met mij hoe ik mijn sterke kanten kan gebruiken om mijn werk te verbeteren.
16. Samen met mijn mentor bedenk ik een manier om mijn zwakke punten te verbeteren.

Using Feedback / Assessment as a scaffold

17. Als ik de uitleg niet begrijp dan probeert mijn mentor het op een andere manier aan mij uit te leggen.
18. Mijn mentor geeft mij aanwijzingen die mij helpen om de lesstof inhoudelijk te begrijpen.
19. Ik kan met het uitvoeren van de opdrachten laten zien wat ik heb geleerd.
20. Mijn mentor stelt de vraag op een begrijpelijke manier.
21. De vragen van mijn mentor helpen mij de lesstof inhoudelijk te begrijpen.
22. Mijn mentor staat open voor mijn inbreng tijdens de mentorgesprekken.
23. Ik heb de mogelijkheid om vragen te stellen aan medeleerlingen over het schoolwerk.
24. Ik weet aan welke punten ik moet werken om mijn resultaten te verbeteren.
25. Er bestaat de mogelijkheid om vragen te stellen.
26. Ik weet aan welke eisen mijn werk moet voldoen.
27. Als ik een opdracht krijg is het duidelijk wat ik hiervan kan leren.
28. Met mijn werk laat ik zien wat ik kan.

Appendix B

Items and subscales of the student version UFI

Feedback Acceptance clarity

- 1. De informatie over de doelstellingen voor de stageperiode, die mijn mentor met mij bespreekt tijdens het feedbackgesprek, is voor mij duidelijk.
- 7. Het feedbackgesprek wordt qua invulling afgestemd op mijn leer- en ontwikkelingsbehoeften.
- 13. De feedback die ik ontvang van mijn mentor begrijp ik altijd goed.
- ufi.19_FA_cl Tijdens het feedbackgesprek legt mijn mentor de bespreekpunten duidelijk aan me uit.

Feedback Following Recommendations clarity

- 4. De feedback die ik ontvang van mijn mentor is duidelijk.
- 10. De beoordelingen en de erbij geplaatste opmerkingen ten aanzien van mijn werk zijn gebaseerd op duidelijke criteria / richtlijnen.
- 16. De feedback, die ik krijg van mijn mentor tijdens de beoordelingsmomenten, geeft mij goede richtlijnen voor verder handelen.
- 22. Ik weet na het feedbackgesprek met mijn mentor precies aan welke punten ik ga werken.
- 27. Ik weet na het feedbackgesprek met mijn mentor precies hoe ik mijn prestaties kan verbeteren.

Feedback Acceptance trust

- 2. Mijn mentor is zich tijdens de feedbackgesprekken bewust van mijn doelen, zoals ik die heb weergegeven in mijn portfolio.
- 8. Ik mag met mijn mentor meebeslissen over wat ik laat zien tijdens een beoordelingsmoment.
- 14. Tijdens het feedbackgesprek met mijn mentor krijg ik de mogelijkheid om mijn eigen standpunten kenbaar te maken.
- 20. Ik accepteer de beoordelingsreacties op mijn functioneren, zoals ik die ontvang van mijn mentor tijdens de feedbackgesprekken.
- 25. Ik vertrouw op het inzicht van mijn mentor, ten aanzien van de sturing en begeleiding die hij/zij aan mij geeft.

Feedback Following Recommendations trust

- 5. Mijn kwaliteiten worden door mijn mentor beoordeeld en becommentarieerd op een eerlijke manier.
- 11. Na feedback te hebben ontvangen van mijn mentor, voel ik mij goed genoeg in mijn vel zitten om de volgende, geadviseerde stappen te zetten in mijn schoolwerk.
- 17. Ik ga af op de aanwijzingen en adviezen van mijn mentor, omdat die voor mij de juiste koers aangeven.
- 23. Als mijn mentor verbeterpunten aangeeft, weet ik dat wanneer ik deze opvolg, ik betere prestaties neerzet.
- 28. Ik ga ervan uit dat mijn mentor mij op correcte wijze beoordeelt en aanstuurt.

Feedback Acceptance feasibility

- 3. Tijdens het feedbackgesprek met mijn mentor voel ik ik mijn motivatie toenemen.
- 9. Tijdens het feedbackgesprek met mijn mentor bespreken we het leerproces dat heeft geleid tot mijn huidige functioneringsniveau.
- 15. Als ik tijdens het feedbackgesprek met mijn mentor mijn sterke punten aangeef, denk ik dat het me gaat lukken de benodigde doelen te bereiken voor de opleiding.
- 21. De ontwikkelpunten, die mijn mentor met mij bespreekt tijdens het feedbackgesprek, zijn voor mij haalbaar en ik weet dat ik ze kan bereiken.
- 26. De doelen, zoals worden genoemd door mijn mentor ontmoedigen mij niet, want ik weet dat ik ze kan bereiken.

Feedback Following Recommendations feasibility

- 6. Met de algehele beoordeling van mijn prestaties wordt rekening gehouden met mijn mening en antwoorden.
- 12. De feedback die ik ontvang van mijn mentor is specifiek, gedetailleerd genoeg voor mij om naar te kunnen handelen.
- 18. Wanneer mijn mentor verbeter- en ontwikkelingspunten met mij bespreekt tijdens het mentorgesprek, voel ik mij ontmoedigd.
- 24. Na feedback te hebben ontvangen van mijn mentor, zie ik duidelijk aan mijn leerproces hoe goed ik mij aan het ontwikkelen ben in mijn beroep.
- 29. Als ik tijdens het feedbackgesprek met mijn mentor mijn zwakke punten aangeef, denk ik dat ik ook voor deze zwakkere gebieden de benodigde doelen ga bereiken.

Appendix C

Items and subscales of the student version MSQ

Initiator

1. Mijn mentor geeft geen aanwijzingen of richtlijnen voor mijn ontwikkeling.
4. Tijdens het feedbackgesprek vraagt mijn mentor mij te reflecteren op mijn handelen, zodat ik zelf tot inzichten kom.
7. Mijn mentor komt wel actief met gesprekspunten, maar er is tijdens het gesprek nooit sprake van het geven van uitleg of concrete aanwijzingen.
10. Alle beslissingen worden samen met mijn mentor in overleg genomen.
14. Mijn mentor heeft het niet vaak over doelen en waar ik momenteel sta ten opzichte van deze doelen in mijn ontwikkeling.
24. Mijn mentor geeft geen sturende richtlijnen en adviezen ten aanzien van mijn ontwikkeling, maar komt wel actief met de gesprekspunten.

Encourager

3. Door middel van tweerichtingsgesprekken met mijn mentor, kom ik tot inzicht ten aanzien van mijn ontwikkeling.
5. Er is veel ruimte voor mij als student in het gesprek (er is begrip voor mijn gevoelens en er wordt actief geluisterd).
12. Ik krijg van mijn mentor alle vrijheid om de opdrachten geheel naar eigen inzicht uit te voeren.
16. Mijn mentor geeft mij in geen enkel opzicht sturing middels aanwijzingen of adviezen.
20. Mijn mentor reageert op wat ik inbreng tijdens het gesprek en geeft hierbij geen directe adviezen of aanwijzingen.
23. Mijn mentor komt niet met gespreksonderwerpen en hij/zij is totaal niet sturend ten aanzien van mijn ontwikkeling.

Imperator

2. Mijn mentor is een echte coach die mij stimuleert!
8. Mijn mentor zorgt dat ik de feedback helemaal begrijp.
11. Mijn mentor vraagt mij ten aanzien van de uitgelegde opdracht hoe ik denk de taak uit te gaan voeren.
15. Mijn mentor geeft duidelijke antwoorden op vragen.
18. Mijn mentor laat mij mijn ontwikkeling zien van de afgelopen periode en legt mij duidelijk uit hoe en waar ik naartoe moet ontwikkelen om de doelen te bereiken.
21. Mijn mentor komt altijd actief met de gesprekspunten en ook is hij/zij in sterke mate sturend ten aanzien van mijn ontwikkeling.

Advisor

6. Er worden na elk feedbackgesprek concrete afspraken gemaakt.
9. Mijn mentor stelt nauwkeurig de huidige positie van mij vast ten opzichte van het doel en verwoordt duidelijk wat hij/zij wil zien aan verbeteringen.

13. De mentor geeft middels duidelijke richtlijnen en adviezen aan wat ik moet doen om de doelen te bereiken.
17. Mijn mentor geeft duidelijke richtlijnen ten aanzien van de doelen, maar ik ben degene die de onderwerpen inbrengt.
19. Mijn mentor controleert in welke mate mijn doelen zijn bereikt.
22. Ik kom zelf meestal met de gesprekspunten tijdens het feedbackgesprek en hierop reageert mijn mentor in sterke mate met sturende richtlijnen en adviezen ten aanzien van mijn ontwikkeling.

Appendix 1

Questionnaire AfL-student Principal Component Analysis

	recFB	useFB	recFB	recFB	useFB	useFB	use/rec FB
recFB7.	.77						
recFB5.	.71						
recFB 10.	.64						
recFB 3.	.63						
useFB 25.	.62						
useFB 22.	.61						
recFB 13.	.61						
recFB 1.	.61						
recFB 11.	.47						
recFB 4.	.46						
useFB17.		.81					
useFB18.		.75					
useFB21.		.74					
useFB20.		.65					
recFB16.	.33	.35					
recFB12.			.75				
recFB14.			.68				
recFB15.			.65				
recFB6.			.49				
recFB9.				.75			
recFB8.				.68			
useFB19.				.64			
useFB27.					.76		
useFB28.					.69		
useFB24.					.49	.48	
useFB23.						.81	
recFB2.							.63
useFB26.					.49		.49

Rotation Method: Varimax with Kaiser Normalization
 Rotation converged in 14 iterations

Appendix 2
 Questionnaire UFI-student Principal Component Analysis

	<i>Clarity/ FollRec</i>	<i>Trust + Feasib/ FBAcc</i>	<i>Trust/ FollRec</i>	<i>Feasi Bility/ FollRec</i>	<i>Trust/ FollRec</i>	<i>Trust + Feasib/ FBAcc+ FollRec</i>	<i>Trust+ Clarity/ FBAcc</i>
19.clarity	.76						
4.clarity	.71						
12.feasibility	.61						
20.trust	.60						
13.clarity	.57						
16.clarity	.52						
10.clarity		.76					
9.feasibility		.67					
15.feasibility		.58					
14.trust		.55					
8.trust		.49					
17.trust			.75				
27.clarity			.56				
23.clarity			.55				
25.trust			.54				
7.clarity			.52				
24.feasibility			.48				
18.feasibility				.75			
26.feasibility				.60			
21.feasibility				.58			
29.feasibility				.54			
22.clarity				.46			
6.feasibility					.75		
5.trust					.64		
28.trust					.50		
3.feasibility						.81	
11.trust						.63	
2.trust							.80
1.clarity							.60

Rotation Method: Varimax with Kaiser Normalization
 Rotation converged in 26 iterations

Appendix 3
Questionnaire MS-student Principal Component Analysis

	IMP	ENC	ADV	INI	INI	ADV
6.ADV	.77					
19.ADV	.77					
18.IMP	.73					
9.ADV	.72					
2.IMP	.72					
10.INI	.64					
11.IMP	.62					
21.IMP	.59	.53				
14.INI	.57					
15.IMP	.57			.51		
24.INI		.82				
23.ENC		.71				
16.ENC		.52				
17.ADV			.84			
12.ENC			.76			
5.ENC			.62			
13.ADV	.47		.57			
8.IMP	.47			.60		
3.ENC	.52			.57		
4.INI		.41		.52		
7.INI					.68	
20.ENC					.65	
1.INI				.46	.56	
22.ADV						.87

Rotation Method: Varimax with Kaiser Normalization
 Rotation converged in 10 iterations