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8. THE LEARNING POTENTIAL OF MENTORING CONVERSATIONS

INTRODUCTION

> Mentor: "Yet I think that when you move on with this class you'll have to try to tackle a few things, because otherwise you'll get … You'll bring a lot of work on to yourself. That is one. May be that is not the most important thing to you right now, but it means that you have to have to concentrate on how you conduct a conversation with everyone in the class. Then again, you do not have that on your mind …."
>
> Student: oh …
>
> Mentor: "When it becomes noisy in the classroom. What would you do to solve this in future?"
>
> Student: "For example by…[EXPLANATION GIVEN]."
>
> Mentor: "Can you do that, deal with all that happens around you?; what can you do?"
>
> Student: "A number of things…"

This is an excerpt from a mentoring conversation. But do we understand what is occurring here and can we interpret the mentor's intentions from a learning perspective? This is the aim of the current chapter: to find ways to describe what we could call the "footprint" of a conversation.

Our main quest in this chapter is: Do students learn from mentoring conversations? Within the context of teacher education, the study we present explores different types of patterns in conversations from the perspective of student learning, asking: To what extent do patterned speech acts in mentoring conversations promote (professional) learning in students?

In an explorative, mixed method research design 12 mentoring conversations were analysed in depth with regard to the speech acts deployed in interactions in which the mentors tried to foster learning in their mentees. Our findings indicate a high variety of distinct patterns in mentoring conversations. A predominant preference was found for a reflection oriented pattern of mentoring which however was not positively related to student satisfaction or student learning outcomes. It is

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concluded that mentoring conversations can (and should) be critically analysed with regard to their potential for learning.

MENTORING AS IT RELATES TO (PROFESSIONAL) LEARNING

Mentoring is an important vehicle to make 'practical knowledge' explicit (Tillema & Van der Westhuizen, 2013) and is deployed widely as a major resource in professional learning (as is the case, for instance, in student teacher learning). Mentoring has been defined as the support an apprentice or less experienced practitioner (mentee) receives from a more experienced professional (mentor) (Hobson, Ashby, Malderez, & Tomlinson, 2009). Its aim is to raise the level of the mentee's expertise and to facilitate induction into the profession (Kwan & Lopez-Real (2005). Positive claims have been made about its impact on the capabilities of a beginning professional, such as improved skills and ability to manage workload (D'abate & Eddy, 2008). Tillema and Van der Westhuizen (2013) add that mentoring is important to educate apprentices professionally and promote further professional learning.

Within the apprentice relationship the mentor is expected to 'look after' a mentee (for instance in a practicum or internship). Depending on a mentor's goal, s(h)e will enact different roles; like: 'critical friend' to provide reflection on practice (Day, 1999), 'equal partner' to work together with the student, or 'observer' to give counsel and advise (Crasborn & Hennissen 2010). In their study on actual mentor roles Feiman and Carver (2009) identified mentors as local guides, educational companions, and as agents of change.

There are many studies to be found on mentoring (Edwards & Protheroe, 2003; Darling Hammond, 2003), but few of them are of an empirical nature. Despite the wide advocacy for mentoring, the critical issue still is the warranty of claims made; that is, in what way does mentoring lead to an apprentice's learning? Reviewing what has been said on the relation between mentor activity and learning points to the importance of a number of characteristics, for instance: addressing the willingness of a mentee to get the most out of a mentoring relationship (Hobson et al., 2009); being responsive to the needs of the mentee/learner (Alebregtse, 2008); identifying critically their conceptions of teaching (Lopez-Real & Kwan, 2005), using explicit reflection (Mena Marcos & Tillema, 2007); and seeking agreement on goals in the mentoring relationship, as well as periodically revisiting objectives (Shore, Toyokawa, & Anderson, 2008). Furthermore, several mentor skills have been stated to contribute to the student's learning such as: (1) the ability to develop a clear and consistent notion of good teaching, (2) the mentor's ability to model, analyse, and reflect on behaviour, and (3) the ability to help the apprentice with developing own ideas and approaches, as well as (4) the mentor's ability to define and redefine zones of the apprentice's proximal development (Wang & Odell, 2002; Edwards, 2010). Certain tactics in mentoring seem particularly effective for learning: i.e., supporting mentees emotionally; showing openness for discussion; allowing autonomy for

making decisions (Kwan & Lopez-Real, 2005). Effective mentors ensure sufficient challenge and scaffold deeper levels of reflection.

Based on these studies recommendations have been made about mentoring practice, such as: (1) mentors need to know how questions should be posed and how apprentices have to be helped so that they pose relevant questions, (Núñez, Rosário, Vallejo & González-Pienda, 2013); (2) mentoring should engage apprentices in an ongoing dialogue about their teaching and learning (Baker, Jensen & Kolb, 2005); (3) mentors should provide opportunities for deep levels of understanding; and (4) approach learning from the perspective of students, (Hobson et al., 2009); as well as (5) mentors should help apprentices to construct their own conceptions of teaching and learning (Shore, Toyokawa, & Anderson, 2008).

In general: mentors have been advised to promote professional learning by: (a) engaging apprentices in reflective interactions, (b) challenging apprentices to re-examine crucial events to reconstruct meaning, (c) offering alternative interpretations for events, and (d) engage apprentices in analysing where they are in learning and where they need to go (Wang & Odell, 2002).

The platform on which these recommendations and advice become tangible and concrete is the mentoring conversation, i.e., the talk and exchange occurring between a student and a mentor. In order to promote and sustain the student's learning process a mentor can make use of a variety of approaches in conversation, such as determining the format, topics, start and finish of the conversation, choose certain roles, and adopt either directing or non-directing approaches in communication (Tillema & Van der Westhuizen, 2013). Conversational approaches contain ingredients, such as: questioning, support and challenge, reflective queries, and require relational and interpersonal skills, as well as meaning making and maintaining relevancy of conversation. From a study by Tillema and Van der Westhuizen (2013), it appeared, firstly, that there are different strategies related to the attainment of learning goals. Secondly, that the student teacher's perceived knowledge productivity, i.e., learning for professional action, was influenced by conversational moves of the mentor. Thirdly, that there was an overall positive effect of conversational moves on the learning outcomes of the student teachers. This pointed to the importance of 'explicating practical knowledge' in mentoring.

STUDYING MENTORING CONVERSATIONS

Of key concern then is whether mentoring conversations have a positive and direct influence on the learning of students as they prepare for practice (Tillema & Van der Westhuizen, 2013). Mentoring conversations are meant to be supportive in 'pushing' mentees forward in keeping (goal) direction while at the same time promote learners towards reflection on past performance as well scaffold the steps to explore or gain insights from their recent learning accomplishments (Núñez, Rosário, Vallejo & González-Pienda, 2013) (See also Sadler, 2010).

From previous studies (Ciga Tellechea, 2012; D'abate & Eddy, 2008) it can be argued that mentoring conversations that facilitate student's goal orientation during learning will result in enhanced levels of motivation and self-efficacy (Núñez et al., 2013). Other studies point to enhanced self-reflection as a result of participating in a mentoring conversation (Mena, Gonzalez & Tillema, 2012). Moreover, studies that focus on mentoring approaches (Crasborn & Hennissen, 2010) highlight the positive influence of mentor talk on professional growth, problem-solving capacities, and the development of professional capabilities (Hobson et al., 2009). It is therefore of interest to investigate in more detail in what way mentoring conversations result in changes in student's competence; that is: to explore types of patterns in conversations from the perspective of student learning, with the overall concern being: Do mentoring conversations have a positive influence on learning ?

Looking in greater depth at mentoring conversations may reveal how mentors scaffold learning in a concrete way; i.e., by using specific speech acts or moves that support student's understanding of past performance and promote further learning (Tillema & Van der Westhuizen, 2013) Typical examples of such conversational moves are: orienting probes, reflective questions, directing suggestions, regulative remarks, prescriptive advice giving, and constructive ideas. However, although many studies deal with the conversational analysis of mentoring few relate the analysis of talk to learning (or 'walk") of students as a result of conversation. Analysis of patterns in talk might reveal how mentors structure the conversation and 'organize' how to gain insight from past performance. Analysis of speech acts might help to ensure that students will learn from conversations, and may inform mentors about routes to take in a conversation. Mentors can use such information as feedback in order to improve learning in their students.

In literature from linguistics, several ways are described to analyse conversations. According to Clouston (2007), discourse analysis and conversation analysis are methods suited for analysing talk in a variety of settings. A conversation analysis is characterized by a levelled approach to talk: i.e., (1) identifying sequences of related talk, such as turns, overlaps, pauses and noting any 'remarkable phenomena', (2) examining how speakers take on certain roles or identities through their talk, and (3) the study of 'outcomes in the talk' (Clouston, 2007). Discourse analysis typically makes use of principles and methodology of linguistics to analyse discourse in structural-functional terms (in IRF/IRE cycles – Seedhouse, 2004). In analysing conversations in mentoring (Tillema & Van der Westhuizen, (2013), typically speech acts or moves are described in terms of styles and role-taking (Crasborn & Hennisen, 2010); often measured with self-developed coding instruments, which often involve a propositional analysis of transcribed video records of a conversation (Mena Marcos & Tillema, 2011). Conversational studies in mentoring portray mentoring most often as process. In this way Crasborn and Hennissen (2010) refer to the importance of effective guidance as an essential condition for learning of students. Key aspects of mentoring dialogues as process being studied are: content of dialogue, mentor teachers' style and supervisory skills, mentor teachers' input, time aspects of the

dialogue, and phases in a dialogue. Findings from these process studies (Orland Barak, 2002) point to the relevancy of instructional and organisational aspects in the exchange. A repeated outcome of these studies is the predominant directing style and supervisory skill of the mentor (as the mentor usually decides about topics, gives active input, and does most of the talking). Furthermore, from these process studies it appears that there are three key aspects prominent in the analysis of dialogues: mentor style/supervisory skills, input provided by the mentor, and time, organisational aspects. Many of these process studies have identified a variety of roles taken on by the mentor, for instance: initiator, imperator, advisor and encourager (Crasborn & Hennissen, 2010) or Tillema and Smith (2007) who identify a relational, instructional and situational style in mentoring.

But, and this is a major drawback of these process studies, we do not learn how these mentor roles or manifestations of mentoring approaches relate to outcomes on learning, or gain in proficiency and understanding of the student/mentee. That is: how, by means of mentoring dialogues, mentors influence how and what student will learn.

MENTORING AS AID IN EXPERTISE BUILDING

In order to position mentoring in relation to learning a notion needs to be developed on how mentoring comes to aid in 'helping' the mentee to gain a higher understanding and improved proficiency in a domain. This notion we call "climbing the mountain" by which we mean that mentoring derives its purpose from the support it gives to the learner in achieving goals being set (either by the mentee, or by given standards; such as is the case in education). Mentoring, therefore, is concerned with developing expertise.

According to Ericsson's theory of expertise (Ericsson, 2002; Ericsson et al., 2007), developing expertise involves selecting a goal, drawing on an available or provided knowledge base, and checking or monitoring required behaviours to reach that goal. Schematically this theory can be represented as is shown in Figure 1.

From this perspective mentoring can be looked upon as reaching goals based on activating relevant knowledge and monitoring past performance or, in short what we call: "climbing the mountain". In this way we can interpret conversations as aiming for improved understanding and building of proficiency realised in interactions between a mentor and a mentee.

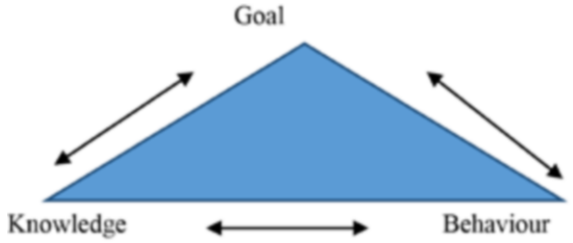

Figure 1. Schematic representation of Ericsson's theory on expertise

From the literature on meta-cognition (Zimmerman & Schunk, 2001), certain cognitive regulatory skills or abilities are identified that function to advance this process of attainment and would support a climbing of the mountain; and thus constitute a learning conversation. These are: a) (self)reviewing in terms of establishing a reflective looking back on past performance; b) goal orientation as looking forward to evaluate attainments or progress made, and c) planning steps for concrete action to attain the goals set. These three abilities can be rephrased in relation to Ericsson's model as: a) Knowing what has been done; b) Knowing where to go and c) Knowing how to get there (See also Sadler, 2010 who brought forward this distinction as typical for instruction and learning).

Figure 2 depicts these skills in mentoring conversation in a dynamical way:

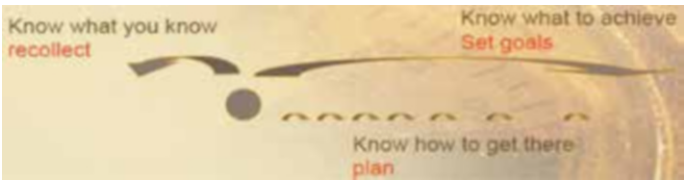

Figure 2. Taken from Ciga Tellechea, 2012

a. Reviewing or (self)monitoring of performance relative to standards or goals is important in a mentoring for learning conversation to reflect on and adjust performance. Detecting discrepancies between standards and actual performance may inform the learner to make efforts for improvements (i.e. recycling through the loop) so that these discrepancies are resolved.
b. Evaluating goal attainment is important in a mentoring conversation to determine the direction and relevance of efforts and link actions taken to the requirements of the task ("double loop learning"). In a conversation it is important for a mentor to highlight concrete, tangible goals, i.e., that are task-specific, proximal to possible attainment, and challenging to the learner to invest in improvements (i.e., slightly above his or her current performance level).
c. Action planning involves the determination or choice of concrete steps to achieve the goals relative to the past performance. It entails the (mentor supported) selection of effective strategies to cope with discrepancies and difficulties to improve performance.

ANALYSING MENTORING CONVERSATIONS

In this way mentoring conversations can be analysed in more detail, using the three key abilities to screen mentoring conversation on how the learner is supported "to climb the mountain".

Conversations as transcribed talk need therefore to be divided into meaningful units or episodes, that contain several mentor's speech acts or 'moves' which can

be coded as: (1) know what you know – review or recollect, (2) know what to achieve - set goals, and (3) know how to get there – plan action. In the analysis of a conversation these smaller units or coded moves can be combined or merged into certain patterns that represent a typical arrangement of a mentor's intention to support the learner. By identifying beforehand possible combinations of moves (or patterns), mentor conversations can analysed in a meaningful way. The following patterns may represent the mentor's guiding intentions in a talk to climb the mountain:

- Review + goal + plan = reviewing
- Goal + plan + review = directing
- Plan + goal + review = stimulating
- Review + plan + goal = indicating
- Goal + plan + review = orienting
- goal = >review => plan = constructive pattern

Looking at the conversation globally the analysis of moves and patterns could indicate a footprint of the conversation, i.e., give a total impression of the type of talk. (I.e., a footprint of a typical conversation could be: review – 50%; goal – 20%, and action – 30% of moves). Knowing a conversation's footprint can be informative to the mentor in assessing the talk afterwards.

The analysis of conversation into moves and patterns of a mentor's speech acts is meant to detect how student are supported to learn from conversations. In our study, a detailed analysis of individual speech acts is combined with a more global level of analysis on patterns to provide an overall account of about what happened in a mentoring conversation. In this way, it is scrutinized how advice is given on what was done, what was achieved, and which recommendations were given on how to get there.

THE STUDY

Participants

Twelve dyads of mentors (in teacher education) and their mentees (student teachers) participated in this study. Eight student teachers were enrolled in a teacher education program for secondary education (from one institute) and four student teachers were enrolled in a teacher education program for primary education (from another institute). Age range of these students was between 18 and 28 years. Four of these twelve student teachers were male. The students took courses in their third and fourth year of the four-year program. The participating mentors were practice teachers of schools affiliated to the program and had training as a mentor given by the teacher education institute. Their teaching experience ranged from 14–31 years. The length of mentorships in dyads varied, from a half year to close to a year. Data were collected in the 2nd half of the practice teaching period of one year.

Design of the Study

The design of study consisted of data collection on presage variables with regard to student beliefs on mentoring using questionnaires, as well as quality measures of the student's reflection on performance; and an in-depth analysis of the conversation between mentor and student. These measures were related to outcome variables regarding student's appreciation of mentoring conversation and learning results. Learning result consisted of an evaluation with regard to: student's problem understanding, student's willingness to change his or her perspective, and commitment to apply the recommendations given by the mentor. It was studied to what extent presage variables as well as conversational moves and patterns influence the outcome variables.

Procedure

As a first step, the dyads of student teachers and their mentors received an invitation by mail to participate in the study. The researcher randomly selected those who indicated their willingness to participate. After their consent, the presage questionnaires were distributed. For students it consisted of: the Student Beliefs questionnaire on professional learning and the evaluation questionnaire on Preferred Mentoring Behaviour. The belief questionnaire on Professional Learning was also administered to mentors. Furthermore student teachers were asked to write a Reflection Report on their past teaching performance; the researcher rated the reflection report using an instrument for quality of reflection (see *Instruments*). After the questionnaires were administered and analysed, an appointment was made for videotaping the mentors' and mentees' upcoming mentoring conversation. Before videotaping the conversation, the researcher first introduced the nature and the procedure of the study. Subsequently, the mentoring conversations were videotaped. With the camera installed, the researcher left the room in order not to disturb the process. The length of the conversation was on average 45 minutes (range 23–84 min). After the mentoring conversation, the researcher administered the learning outcomes questionnaire and the questionnaire on appreciation of conversation to the students Also a student interview was held, asking a written response to questions on memorable events happened during the conversation. The instrument was to gauge the students' perception on important learning outcomes that were taken from the conversation. The whole procedure, including conversation, was on average 2h;10 min.

The transcripts of the mentoring conversations were then coded and analysed by using the instrument for conversation analysis. The administered data from questionnaires and the reflection report were analysed and linked to the codes of the conversation analysis using SPSS and Excel.

Instruments

Conversation analysis. An instrument was developed to code and analyse transcripts of conversational propositions into episodes. An episode is defined as a smallest meaningful unit in a conversation (Tillema & Van der Westhuizen, 2013) and consists of topically connected (mostly 2–3) propositions. An episode has a clear beginning, middle and end. Each episode was coded into the following categories or "moves": know what you know (Review), know what to achieve (Goals), and know how to get there (Plan/Act). (In addition, there was a miscellaneous code). For correct coding each transcript was analysed by two raters. Inter-rater reliability (after a training session) was high – k = .90.

An example of an episode coded as Review is:

> Mentor: "Let's pay attention to the lesson start: you start the instruction by giving homework. I think that is very good, because then you have all the attention. Not at the end of the lesson, great!".

Another example of an episode coded as Goals, is the following:

> Mentor: "let's have a look at your lesson plan form"
>
> Student: "Like this one?"
>
> Mentor: "Yes, I would like you to include as a purpose in your lesson plan form: making compliments to pupils. Because what would that mean for next time?"

An example of code 3 – Plan is as follows:

> Mentor 1: "There is a moment it becomes disrupted and loud in the classroom. What could you do to solve this in future?"
>
> Student: "For example by…."
>
> Mentor 1: "You can do that, but what else can you do?"

Subsequently, the coding of episodes was used for a topical analysis of patterns in the conversations. A topic consists of a combination of episodes subsumed under a common theme or subject, entailing mostly three to four episodes with a clear beginning and closure, (for instance with signal words like: OK, let's). A pattern analysis searches for combinations of episode codes that signify a mentor's intention or objective in the conversation. Several patterns were defined beforehand (See above)

For instance: an analysis of a transcript with a common theme/subject having high frequency codes for Goals (code 2) and low for 1 (Review) and 3 (Plan), would be coded as the pattern 0-1-0, and would receive as a label: stimulating. Alternatively, when a transcript was coded with high frequency on code 1 (Review) and but not on codes 2 and 3 it would be labelled as a reviewing pattern – for example the pattern

1-0-0. In the same way a pattern labelled as directing has a 1-1-0 code. A pattern was labelled as orienting would have 1-0-1. And one labelled as indicating having 0-0-1; and one labelled as constructive has as code 1-1-1.

Other Instruments

The Student Belief questionnaire on professional learning (Tillema, 2011, 2013) measures attitudes towards learning and professional development and is comprised of eighteen Likert type questions, having two subscales: the Rethinking one's Abilities scale (e.g. 'I regularly need to reflect on my way of teaching') and the Restructuring one's Performance scale (e.g. 'Mastery shows itself in my planning and organizing of teaching'). Reliability of the scale is. 85.

Student Mentoring Preference questionnaire measures attitudes of students regarding favoured mentoring behaviour and is based on the Ideal Mentoring Scale (IMS) by Rose (2000). The IMS entails the following subscales:

- Integrity, which consists of fourteen items (e.g., 'What I see in my mentor is that he values me as a person').
- Guidance, which consists of ten items (e.g. 'What I see in my mentor is that he helps me plan a timetable for my research').
- Relationship, which consists of ten items (e.g. 'What I see in my mentor is that he helps me realize my life vision') (Tillema & Van der Westhuizen, 2013).

The IMS consists of 34 closed questions, on a five point Likert scale (ranging from not true to very true). Internal consistency for the subscale integrity is. 87, for the subscale guidance is. 75 and the subscale relationship is. 78.

Afterwards the student's appreciation of the conversation was measured with a questionnaire using IMS items reformulated into 18 evaluative questions. It was determined: a) how the student valued the conversation (6 items), b) how well the mentor reacted to the student (7 items) and c) how positive a relationship was established during the conversation. This instrument is completed by the students and comprised of closed questions on a 4 point scale. An example of a reformulated item is: 'What I noticed during conversation is that my mentor treats me in a pleasant way.'

The Knowledge Productivity questionnaire on student learning (Tillema, 2007; Orland Barak & Tillema, 2006) measures evaluation of learning accomplishments by the student ('i.e., did the mentoring support your professional practice?') (Tillema & Van der Westhuizen, 2013). This questionnaire is comprised of twenty closed evaluation questions with respect to three categories on a five point Likert scale:

- Problem understanding: seven items on understanding of what was discussed during the mentoring conversation (e.g. 'I found the problems being discussed authentic and realistic')
- Perspective change: seven items on how the mentors, contributed to learning, (e.g. 'my thinking changed during the discussion')

- Commitment to apply: six items on the intention to actively follow up on recommendations after the mentoring conversation (e.g. 'I will take up ideas to practice further')

Internal consistency for the items of problem understanding was r = .71; perspective taking was r = .64, and the category commitment had r = .97.

The Interview questionnaire on Memorable Events is also completed afterwards by the student teachers and contains nine evaluative questions dealing with the knowledge gained from the conversation as a learning event (Tillema & Van der Westhuizen, 2013). In detail:

- Problem Understanding: three questions on whether the student teachers accepted and learned from the messages that were expressed in the discussions (e.g. 'what have you learned and gained from the examples your mentor expressed?').
- Perspective Change: two questions on whether the conversation led to insightful new knowledge (e.g. 'what the talk you had changed your way of approaching matters in teaching?').
- Commitment to Apply: four items on whether the student teachers participated actively in the process (e.g. 'what kind of consequences would you draw as a result of the mentoring conversation?') (Tillema & Van der Westhuizen, 2013).

The coding of each question was either positive, negative or neutral. The inter-rater reliability of this instrument was evaluated as 88% agreement

Furthermore the student teachers' reflection report was rated. It is an account of past performance, having a free format (i.e., open learner report). The quality of reflection (Mena Marcos, 2011; Winitzky, 2004)) was measured using a category coding instrument to assess the level of quality of the student's reflections by means of rating each kernel (full) sentence on a quality level ranging from 0 till 5. (Afterwards weighted by the amount of sentences, that is the number of lines of the reflection report). The assigned codes were used for further analyses.

Data Inspection

Questionnaire data were checked regarding their statistical properties. For these variables means and interquartile ranges were computed (Moore & McCabe, 2003). Furthermore histograms and Q plots were made in order to determine normality distribution of the data (De Vocht, 2009). No deviations were found. In order to determine linear relations between numeric variables, homogeneity of variances and outliers, scatterplots were made, as well computation of correlations between these variables (Moore & McCabe, 2003). Correlations are given in the Findings section.

Data Analysis

Firstly, a descriptive analysis was conducted on the data that resulted from the conversational analysis to determine frequencies of occurrence of moves (detailed

level of conversations) and patterns (global level of conversations). Next, the (differential) impacts of the presage variables on the learning outcome variables were determined by t-tests and simple regression analyses. These findings provide a condition for findings related to the impact of patterns and moves of a conversation on the learning and appreciation outcome variables.

FINDINGS

Moves and Patterns in Conversation

The descriptive analysis of episodes showed a high variation in amount and type of mentor speech acts or 'moves' across conversations. The frequencies of episode occurrence in conversations are given in Table 1, together with the overall 'footprint'.

Table 1. Total frequencies of episodes in mentoring conversations

Mentoring conversation	*Episode move*	*Total amount of episodes (n)*	*Footprint (percentage combination of three episode moves)*
A	0[1]	3	
	1[2]	123	75-5-18
	2[3]	8	
	3[4]	30	
B	0[1]	21	
	1[2]	49	50-14-14
	2[3]	14	
	3[4]	14	
C	0[1]	6	
	1[2]	36	60-20-10
	2[3]	12	
	3[4]	6	
D	0[1]	9	
	1[2]	65	63-10-19
	2[3]	10	
	3[4]	20	
E	0[1]	34	
	1[2]	38	36-7-25
	2[3]	7	
	3[4]	26	

(*Continued*)

Table 1. (*Continued*)

Mentoring conversation	*Episode move*	*Total amount of episodes (n)*	*Footprint (percentage combination of three episode moves)*
F	0[1]	13	
	1[2]	12	35-15-15
	2[3]	5	
	3[4]	4	
G	0[1]	43	
	1[2]	64	44-5-21
	2[3]	7	
	3[4]	30	
H	0[1]	22	
	1[2]	42	43-20-14
	2[3]	10	
	3[4]	14	
I	0[1]	11	
	1[2]	32	64-2-12
	2[3]	1	
	3[4]	6	
J	0[1]	3	
	1[2]	31	54-16-25
	2[3]	9	
	3[4]	14	
K	0[1]	15	
	1[2]	47	44-4-39
	2[3]	4	
	3[4]	42	
L	0[1]	16	
	1[2]	27	46-2-25
	2[3]	1	
	3[4]	15	
Total averaged footprint			53[2]-9[3]-21[4]

[1]*0 = miscellaneous*
[2]*1 = Know what you know – review*
[3]*2 = Know what to achieve – goal*
[4]*3 = Know how to get there – plan*

Each of the episode moves was present at some point in the conversation; episode move 1 (know what you know – review) being the dominant one. But there were marked differences between conversations (see Table 1), both in the occurrence of specific speech moves (the total averaged conversation's footprint being: 53% – for move 1; 9% for move 2 and 21% for move 3; miscellaneous having 18%); as well as within the course of a conversation with regard to the patterns of moves used (deployment of combinations of episode moves across the conversation). The patterned configurations of conversation (see Method) are shown for each mentoring conversation in Table 2.

Table 2. Frequencies of patterns in mentoring conversations

Mentoring conversation	*Orienting*	*Reviewing*	*Directing*	*Stimulating*	*Indicating*	*Constructive*	*Not content oriented*
A	0	18	2	1	8	5	0
B	3	17	4	4	4	5	2
C	2	7	0	1	2	1	0
D	1	3	0	0	0	4	2
E	1	8	4	2	7	6	11
F	1	7	1	0	0	2	3
G	0	17	5	1	5	3	6
H	0	4	0	2	3	3	4
I	0	8	0	1	3	0	0
J	0	1	0	0	1	6	0
K	0	1	0	0	2	3	1
L	1	2	0	0	5	0	12
Total percentage	.04	.43	.07	.06	.19	.11	

Table 2 shows marked differences in patterns between conversations as evidenced by the columns of the Table as well as differences in the overall use of patterns across each conversation as evidenced by the rows of the table. In most conversations we find a dominance of Reviewing pattern (notably in A, B and G) as well as for the Indicating pattern; both are reflective in nature. The Constructive pattern: E and J was next in frequency of use. In some conversations all patterns are present (B, E or G), but others have a specific and restricted use of patterns: e.g., L. Looking at the overall patterns in conversations, we find that most mentoring conversations could be typified as reflective; accounting for 62% of the speech acts.

In a more fine grain examination, the episode analysis of moves and patterns can be used to identify specific shifts in the flow of a conversation to identify at what point in a conversation specific patterns are being initiated. Such an analysis (however not fully described in this chapter) could reveal intentional redirections and 'meaning making' in the conversation (Clutterbuck, 2004). In this manner, a fine grain analysis of conversation A (with 164 episodes) would reveal, for instance, a flow of conversation that is characterized by: firstly, a lengthy period (67 episodes) of reviewing talk (footprint: 34-0-2), a short period (12 episode) of exploring action options (footprint: 3-0-9), followed by a short reflective period again (31-2-4) to finally wrapping up the talk (54 episodes) with: 7-3-3. This conversation would resemble more or less the GROW model of mentoring (Whitmore, 2001). In this way, a detailed account can be provided of the mentoring conversation as a whole as well as indicate at what points in a conversation actual shifts occur.

Mentoring Conversations and Learning

It was studied next to what extent student learning from mentoring and appreciation of conversation is influenced by student beliefs on professional learning, as well as to what extent conversational moves and patterns influence learning outcome variables.

In Table 3 t-tests results are shown with regard to the influence of student's Professional Learning Beliefs on appreciation of mentoring conversation, as well as on learning from mentoring (divided into: problem understanding, perspective taking, and commitment). The belief test consisted of two scales: importance of rethinking one's abilities and ability to restructure one's actions. High and low student beliefs on both tests were contrasted (split around the median) to test for differences on learning variables and appreciation of conversation.

From Table 3, it can be concluded that there are no significant differences between student with high or low scores on professional beliefs on learning or their appreciation of the conversation. Correlations between student beliefs and the dependent variables were small and slightly negative (Table 4).

It was further analyzed whether student Mentoring Preferences influenced outcome variables. Mentoring preferences were analyzed on two subscales: Integrity and Relationship. These scores were related to student learning (subdivided into: Problem Understanding, Perspective Taking and Commitment to Apply) and their Appreciation of conversation.

Table 5 shows a significant difference for Relationship on appreciation of conversations ($t(10) = -2.24$, $P \leq .05$); i.e., to value a conversation a personal mentoring relationship needs to be established. As far as student learning is concerned, a significant difference for integrity was found on perspective taking (t=-2.66, $p \leq .05$); i.e., in order to change one's ideas one has to trust one's mentor. Correlations between student beliefs regarding preferred mentoring and their learning, and appreciation of conversation are moderate and non-significant (Table 6).

Table 3. Results with regard to the influence of student beliefs of professional learning

	Low on rethinking		*High on rethinking*				*Low on restructuring*		*High on restructuring*			
	M	*sd*	*M*	*sd*	*t df=10*	*p*	*M*	*sd*	*M*	*sd*	*t df=10*	*p*
Appreciation	4.15	0.25	4.13	0.28	0.13	0.90	4.10	0.20	4.17	0.29	–0.44	0.67
Problem underst.	4.32	0.45	4.39	0.43	-0.26	0.80	4.50	0.44	4.23	0.41	1.07	0.31
Persp. taking	3.91	0.42	4.07	0.64	-0.53	0.61	4.14	0.59	3.84	0.38	1.10	0.30
Commitment	4.29	0.42	4.13	0.39	0.63	0.55	4.23	0.43	4.22	0.40	0.04	0.97

Table 4. Correlations between student beliefs and their learning and appreciation

	Rethinking	*Restructuring*
	Φ	*Φ*
Appreciation	–.12	–.03
Problem understanding	–.13	–.12
Perspective taking	–.21	–.24
Commitment	–.31	.10

Table 5. Results with regard to the influence of student mentoring preference on their learning

	Low scores on integrity		*High scores on integrity*				*Low scores on relationship*		*High scores on relationship*			
	M	*SD*	*M*	*SD*	*t*	*p*	*M*	*SD*	*M*	*SD*	*t*	*p*
Appreciation	4.06	0.27	4.24	0.19	–1.13	0.23	4.08	0.22	4.44	0.08	–2.24	0.05*
Problem understanding	4.20	0.38	4.54	0.44	–1.42	0.19	4.31	0.40	4.50	0.71	–0.55	0.60
Perspective taking	3.71	0.43	4.31	0.31	–2.66	0.02*	3.90	0.50	4.29	0.20	–1.04	0.32
Commitment	4.28	0.40	4.17	0.42	0.44	0.67	4.24	0.36	4.17	0.71	0.23	0.83

** P <. 05 df=10*

Table 6. Correlations between the student mentoring beliefs on appreciation and learning

	integrity	*relationship*
Appreciation	0.38	0.43
Problem understanding	0.32	0.49
Perspective taking	0.46	n.c.
Commitment	0.43	0.15

After having established these associations between student beliefs and dependent variables, it was studied in a subsequent analysis whether there was a relation between specific conversational moves (i.e., Review, Goal, and Plan) and student appreciation, and student learning. No significant differences were found for type of conversational moves on dependent variables, with the exception for Review moves on commitment; i.e., reflective mentor speech acts increases student commitment. ($t(9) = -2.43$, $P \leq .05$). Table 7 shows the results for conversation moves on dependent variables.

Correlations between conversational moves and appreciation, and learning (problem understanding, perspective taking and commitment) (see Table 8) are moderate but not significant.

This analysis on moves was also conducted for typical conversational patterns in relation to dependent variables: appreciation and student learning. In Table 9 results of the t-tests are shown for the different patterns.

As Table 9 shows, a significant difference was found for reflective patterns on appreciation of conversation ($t(10)= -3.11$, $P \leq .05$). Also directing patterns show a significant difference on problem understanding ($t(10) = -2.32$, $P \leq .05$). Furthermore, the table shows significant differences for the orienting pattern on student appreciation ($t(10 = -2.24$, $P \leq .05$), problem understanding ($t(10) = -2.93$, $P \leq .05$), and commitment ($t(9)= -2.58$, $P \leq .05$). There is also a significant difference found for the constructive pattern on problem understanding ($t(10) = -2.32$, $P \leq .05$).

Furthermore, student's reflection reports were rated with regard to the quality of their reflection, having following levels: low (scores 7 to 29), middle (scores 30 to 52) and high (scores 53 to 75). This rating was related to their scores on Appreciation, Memorable Events based on the interview, and their learning scores: Problem Understanding, Perspective Taking and Commitment (see Table 10).

One-way analysis of variance revealed no differences between students levels of reflection and dependent variables except for memorable events (an inverse relation was found) and perspective taking ($F(2;9)=4,23$; $p = .05$). These results probably suggest that students high in quality of reflection learned more from the mentoring conversations.

Subsequently, it was examined whether the overall footprint of a conversation was related to quality of reflection (I,e whether a mentor's approach to conversation took into account the level of a student's reflection report). It appeared that footprints did not differ with regard to quality of reflection, except for memorable events and perspective taking (Table 11).

With regard to the overall conversation's footprint, it appeared that reflective talks had the highest score on appreciation, memorable events but not on the learning outcomes. A constructive footprint was more associated with positive learning outcomes. These results probably suggest that reflective footprints had a positive influence on the students' well-being but not on their learning.

Table 7. Results for t-tests with regard to the influence of type of moves on student appreciation, problem understanding, perspective taking, and commitment (df=10)

	Low in review		*High in review*				*Low in goal*		*High in goal*				*Low in plan*		*High in plan*			
	M	*sd*	*M*	*sd*	*t*	*p*	*M*	*sd*	*M*	*sd*	*t*	*p*	*M*	*sd*	*M*	*sd*	*t*	*p*
Appreciation	4.08	0.25	4.26	0.21	–1.28	0.23	4.06	0.23	4.22	0.25	–1.19	0.26	4.09	0.27	4.24	0.18	–0.96	0.36
Problem understanding	4.21	0.37	4.63	0.43	–1.76	0.11	4.26	0.43	4.43	0.44	–0.66	0.52	4.32	0.45	4.39	0.43	–0.26	0.80
Perspective taking	3.95	0.46	4.00	0.58	–0.17	0.87	3.86	0.62	4.07	0.31	–0.76	0.47	3.86	0.45	4.18	0.54	–1.10	0.30
Commitment	4.08	0.39	4.54	0.08	–2.43	0.04*	4.23	0.28	4.22	0.50	0.05	0.96	4.24	0.43	4.21	0.39	0.11	0.91

** P < .05*

Table 8. Correlations between conversations moves and appreciation and student teachers' learning

	review	*goal*	*plan*
Appreciation	.26	.14	.11
Problem understanding	.41	.35	.41
Perspective taking	.25		
Commitment	.29		

Table 9. Results of conversation patterns on learning and appreciation of conversation (df=10)

	*Low in reflective pattern***		*High in reflective pattern*				*Low in directing*		*High in directing*				*Low in stimulating*		*High in stimulating*			
	M	*sd*	*M*	*sd*	*t*	*p*	*M*	*sd*	*M*	*sd*	*t*	*p*	*M*	*sd*	*M*	*sd*	*t*	*p*
Appreciation	4.04	0.20	4.43	0.06	–3.11	0.01*	4.07	0.23	4.33	0.20	–1.71	0.12	4.11	0.26	4.22	0.24	–0.66	0.53
Problem understanding	4.32	0.42	4.43	0.52	–0.38	0.71	4.21	0.35	4.76	0.41	–2.32	0.04*	4.21	0.35	4.74	0.45	–2.12	0.05*
Perspective taking	3.95	0.50	4.00	0.52	–0.14	0.89	3.90	0.45	4.14	0.62	–0.73	0.48	3.89	0.47	4.19	0.54	–0.94	0.37
Commitment	4.21	0.38	4.28	0.54	–0.25	0.81	4.10	0.40	4.56	0.10	–1.89	0.09	4.10	0.40	4.56	0.10	–2.09	0.05*

** P < .05 **reviewing and indicating pattern combined*

Table 9 (*Continued*)

	Low in orienting		*High in orienting*				*Low in constructive*		*High in constructive*			
	M	*sd*	*M*	*sd*	*t*	*p*	*M*	*sd*	*M*	*sd*	*t*	*p*
Appreciation	4.08	0.22	4.44	0.08	–2.24	0.05*	4.07	0.23	4.33	0.20	–1.71	0.10
Problem understanding	4.22	0.34	4.96	0.05	–2.93	0.02*	4.21	0.35	4.76	0.41	–2.32	0.04*
Perspective taking	3.89	0.49	4.36	0.10	–1.31	0.22	3.90	0.45	4.14	0.62	–0.73	0.48
Commitment	4.11	0.33	4.75	0.12	–2.58	0.03*	4.10	0.40	4.56	0.10	–1.89	0.09

** P < .05*

Table 10. Mean scores on dependent variables given rating of student's quality of reflection

	quality categories in reflection reports		
	Low N=4	*Middle N=3*	*High N=5*
Appreciation	4.09	4.15	4.25
Memorable events	3.17	3.75	2.01
Problem understanding	4.35	4.34	4.36
Perspective taking	3.90	3.93	4.22
Commitment	4.22	4.13	–

Table 11. Means of dependent variables for Quality of Reflection under typical patterns

	reflective	*constructive*	*directing pattern*
Appreciation	4.39	4.11	4.06
Memorable events	6	3	1
Problem understanding	4.00	5.00	4.29
Perspective taking	4.14	4.57	4.57
Commitment	3.67	4.50	4.17

DISCUSSION

Overall some interesting findings were noted in our study on conversational moves and student learning. From our analyses the following picture emerges:

Firstly, it appeared that the student teachers' (preference) beliefs on mentoring have a significant influence on their appreciation of conversation as well their learning. It showed that relationship influences appreciation and that mentor integrity influences perspective taking. These results suggest that student's evaluation of their mentor has a positive influence on their learning in that as they value their mentor more it will enhance their learning from mentoring conversations.

Secondly, it appeared that certain patterns in conversation have a significant relation with students' appreciation of conversation. A relation between appreciation and the reflective pattern was found as well as for the constructive pattern and student appreciation. These results probably suggest that the reflective and constructive moves are associated with the students' well-being.

Thirdly, it appeared that certain conversational patterns in mentoring have a relation with student learning. First, a relation was found between appreciation and the reflective pattern. Second, a positive relation was found for problem understanding and commitment with the directing pattern. Third, it appeared that this is the case

for the stimulating pattern as well. Fourth, the orienting pattern is associated with almost all outcome variables in a positive way, which is more or less the case also for the constructive pattern. These results suggest that typical conversational patterns may influence students' learning to different degree and suggest that conversational moves have a differential effect in the exchange between a mentor and a mentee. This is typically the case for the orienting, reflective and directing patterns (i.e, Table 2).

This study highlights the following outcomes on mentoring conversations: With regard to the influence of students' beliefs on professional learning, we found that student high on integrity prefer a constructive pattern, and that a positive valuing of a mentor is associated with students learning from conversations. Looking at the impact of conversational moves on learning we found, firstly, that frequency of conversational moves per se is not so much relevant, but instead the overall pattern used: all patterns have a positive impact on appreciation of the talk; mainly the reflective and directing patterns were most appreciated by students. Secondly, the orienting and constructive pattern have a (however, small) influence on learning of students. Student probably will learn more from conversations when their mentors use "climbing the mountain" moves during the conversation. Thirdly, the conversational move: review is dominant in a conversation's footprint; goal oriented speech acts are small in number, however (which actually speaks against a 'climbing the mountain" orientation).

This leads us to conclude that in the conversations we studied mentoring can be characterized as: oriented towards appreciated talk by mainly reviewing and reflecting upon past performance. Patterns in conversation that are related to learning were not often used. But there are marked differences between the conversations we studied, meaning that mentors can take different approaches to the talk they have with their mentees.

IMPLICATIONS

Analyzing mentoring conversations, such as in the approach we took, i.e., by gauging speech acts of the mentor and displaying them as moves and patterns of a conversation, has a number of benefits. A benefit related to learning of mentees is the awareness that a conversation can be analyzed and reconstructed with regard to the steps and directions taken during discourse, based on the assurance that a mentor may have selected question strategies with a deliberate choice in mind on the specific moves and patterns to be used. In this manner the level of quality of a conversation can be raised. This may work both ways: in evaluating as well as designing a talk. In as far as the mentee is concerned, raising the level of conversation may increase confidence and add to improved self-reflection (Hobson et al., 2009) in order to "climb the mountain' that is, to build further on current proficiency levels and change them for the better.

A main benefit of analyzing conversation lies directly on part of the mentor in that it may add to the mentor's professional development. Mentoring conversations can be carefully reviewed and planned as to its flow and process. As a review the tool provides feedback on successful or unproductive, (non-challenging) parts of the conversation; as a plan, it may help to select the relevant patterns of speech for the mentee (for instance based on reviewing a reflection report in advance). In our study we did examine the course of individual conversations at a specific level (i.e, the flow of moves) and revealed a detailed account of the mentor's actions – as such it is of importance to feedback to the mentor to see if intentions have been met.

A point of interest is the possibility of using a conversational analysis of mentoring talk for joint (peer based) assessment of a conversation to see how well it met expectations and, possibly, have another look at the talk from another person('s) perspective.

Based on the exit interviews we held, mentors' involvement in analysing mentoring talk (Hobson et al., 2009) may have enhanced their development of 'new ideas' and led to 'new perspectives' on their mentoring. More specifically, mentors indicated they became aware of improved mentoring styles and strategies as a result of analysing their talk, so as to improve their communication skills, and become more self-reflective in supporting mentees. Secondly, it appeared that our mentors felt reassured in having 'validated' ideas communicated to their learners (Franson, 2004). Furthermore, they felt less isolated in the approach they took during conversation because of knowing the footprint of their talk that could be communicated to and shared with other colleagues.

The attention given to mentoring conversation during the period of study and the mentors' collaboration with research was experienced as enjoyable, and increased confidence in their own mentoring. Mentors returned back afterwards that students judged their mentoring to be 'more demanding' and 'more tolerant'. The focus on conversation made the mentors take more pride in their mentoring, especially while noticing that their mentees succeeded and progressed in learning, which was made possible through the evidence mentors drew from the analyses. According to some mentors mentoring has achieved that 'their enthusiasm for teaching has been revitalised' they have become 're-energised' or 're-engaged' with the profession and are more committed to teaching. Finally, from our study it appears that involvement in mentoring has aided mentors in identifying their strengths and priorities.

REFERENCES

Alebregtse, M. (2008). *De invloed van persoonlijkheid en de aard van de mentorrelatie op effectiviteit van mentoring* (Master's thesis). Universiteit Utrecht, The Netherlands. Retrieved from http://dspace.library.uu.nl/handle/1874/30671

Baker, A. C., Jensen, P. J., & Kolb, D. A. (2005). *Conversational learning: An experiential approach to knowledge creation*. Los Angeles, CA: Sage Publishing

Ciga Tellechea, E. (2012, June). *Aprendizaje auto regulado y desarollo professional* {self regulated learning and professional development} (Doctoral dissertation). University of Salamanca, Spain.

Clouston, T. J. (2007). Exploring methods of analysing talk in problem-based learning tutorials. *Journal of Further and Higher Education*, *31*(2), 183–193.

Clutterbuck, D., & Megginson, D. (2004). *Techniques for coaching and mentoring*. Amsterdam: Elsevier.

Crasborn, F. J. A. J., & Hennissen, P. P. M. (2010). *The skilled mentor. Mentor teachers' use and acquisition of supervisory skills* (Unpublished doctoral dissertation). Eindhoven, University of Technology Library, The Netherlands.

D'Abate, C. P., & Eddy, E. R. (2008). Mentoring as a learning tool: Enhancing the effectiveness of an undergraduate business mentoring program. *Mentoring & Tutoring: Partnership in Learning*, *16*(4), 363–378.

Darling-Hammond, L. (2003). Keeping good teachers: Why it matters, what leaders can do. *Educational Leadership*, *60*(8), 6–13

Day, C. (1999). *Developing teachers; the challenges if life long learning*. London: Falmer press.

Edwards, A. (2010). *Being an expert professional practitioner the relational turn in expertise professional and practice-based learning* (Vol. 3). New York, NY: Springer Publishers.

Edwards, A., & Protheroe, L (2003). Teaching by proxy: Understanding how mentors are positioned in partnerships. *Oxford Review of Education*, *30*(2), 183–197

Ericsson, K. A. (2002). The path to expert golf performance: Insights from the masters on how to improve performance by deliberate practice. In P. R. Thomas (Ed.), *Optimising performance in golf* (pp. 1–57). Brisbane, Australia: Australian Academic Press.

Ericsson, K. A., Prietula, M. J., & Cokely, M. T. (2007). The making of an expert. *Harvard Business Review*, *85*(7/8), 114–121.

Feiman Nemser, S., & Carver, C. (2009). *Creasting conditions for serious mentoring; implications for policy making*. Washington, DC: NSSE yearbook.

Franson, K. (2010). Mentors assessing mentees? An overview and analyses of the mentorship role concerning newly qualified teachers. *European Journal of Teacher Education*, *33*(4), 375–390

Grossman, P. (2006). Research on pedagogical approaches in teacher Education. In M. Cochran Smith & K. Zeichner (Eds.), *Studying teacher education: Report of the AERA panel on research and teacher education* (pp. 425–477). Mahwah, NJ: Lawrence Erlbaum

Hobson, A. J., Ashby, P., Malderez, A., & Tomlinson, P. D. (2009). Mentoring beginning teachers: What we know and what we don't. *Teaching and Teacher Education*, *25*, 207–216.

Instrumentenboek Mentorgesprekken, een onderzoek naar de rol van kennis in leraar-leerling interacties (n.d.). Onderwijskunde. Universiteit Leiden.

Johnson, S. M., Berg, J. H., & Donaldson, M. L. (2005). *Who stays in teaching and why: A review of the literature on teacher retention*. Cambridge, MA: Harvard Graduate School of Education. Retrieved June 4, 2013 from http://assets.aarp.org/www.aarp.org_/articles/NRTA/Harvard_report.pdf

Kwan, T., & Lopez-Real, F. (2005). Mentors' perceptions of their roles in mentoring student teachers. *Asia-Pacific Journal of Teacher Education*, *33*(3), 275–287.

Lopez-Real, F., & Kwan, T. (2005). Mentors' perceptions of their own professional development during mentoring. *Journal of Education for Teaching: International Research and Pedagogy*, *31*(1), 15–24.

Magano, M. D., Mostert P., & van der Westhuizen, G. (2010). *Learning conversations the value of interactive learning*. Johannesburg, South Africa: Heinemann Publishers.

Malderez, A., Hobson, A. J., Tracey, L., & Kerr, K. (2007). Becoming a student teacher: Core features of the experience. *European Journal of Teacher Education*, *30*(3), 225–248.

Mena Marcos, G. I., & Tillema, H. (2012). Student teacher reflective writing, what does it reveal? *European Journal of Teacher Education*, *4*, 1–17.

Mena Marcos, J., & Tillema, H. H. (2006). Studying studies on teacher reflection and action: An appraisal of research contributions. *Educational Research Review*, *1*(2), 112–132.

Moore D. S., & McCabe, P. (2003). *Practice of business statistics: Using data for decisions*. Los Angeles, CA: Sage.

Moore, D. S., & McCabe, G. P. (2003). *Introduction to the practice of statistics* (4th ed.). New York, NY: WH Freeman & Co.

Núñez, J. C., Rosário, P., Vallejo, G., & González-Pienda, J. A. (2013). A longitudinal assessment of the effectiveness of a school-based mentoring program in middle school. *Contemporary Educational Psychology*, *38*, 11–21.

Orland-Barak, L. (2002). What's in a case?: What mentors' cases reveal about the practice of mentoring. *Journal of Curriculum Studies*, *34*(4), 451–468.

Orland-Barak, L., & Tillema H. H. (2006). Collaborative knowledge construction; the dark side of the moon. *Teachers & Teaching, 12*(1), 1–12.

Rose, G. L. (2003). Enhancement of mentor selection using the ideal mentor scale. *Research in Higher Education*, *44*(4), 45–56.

Sadler, R. D. (2010). Indeterminacy in the use of preset criteria for assessment in grading in higher education. *Assessment and Evaluation in Higher Education*, *34*, 159–79.

Seedhouse, P. (2004). Different perspectives on language classroom interaction. *A Journal of Research in Language Studies*, *54*, 55–100.

Shore, W. J., Toyokawa, T., & Anderson, D. D. (2008). Context-specific effects on reciprocity in mentoring relationships: Ethical implications. *Mentoring*, (1), 17–29.

Shulman, L. S. (1999, July/August). Taking learning seriously. *Change*, *31*(4), 10–17.

Tillema, H. H. (2007). Authenticity in knowledge productive learning of teams. In E. Munthe & M. Zellermayer (Eds.), *Teachers learning in communities, international perspectives* (pp. 27–45). Rotterdam: Sense Publishers. ISBN 978-90-8790-176-9

Tillema, H. H. (2011). Looking into mirrors: Teacher educators' dilemmas in constructing pedagogical understanding about their teaching. In J. Brownlee, G. Schraw, & D. Berthelsen (Eds.), *Personal epistemology and teacher education* (pp. 40–54). London: Routledge.

Tillema, H. (2013). Student involvement in assessment of their learning. In C. Wyatt Smith, V. Klenowski, & P. Collins (Eds.), *Designing assessment for quality learning* (pp. 37–52). London: Springer.

Tillema, H. H., & Smith, K. (2007). Portfolio assessment, in search of criteria. *Teaching & Teacher Education*, *23*(4), 442–456

Tillema, H., & Van der Westhuizen, G. (2013). Mentoring conversations and student teacher learning. *South African Journal of Higher Education*, *27*(5), 1305–1323.

Vocht, A. de (2009). *Basishandboek SPSS 17*. Utrecht: Bijleveld Press.

Wang, W., & Odell, S. J. (2002). Mentored learning to teach according to standards-based reform: A critical review. *Review of Educational Research*, *72*(3), 481–546.

Whitmore, J. (2002). *Coaching for performance*. London: Brealy.

Zimmerman, B. J., & Schunk, D. H. (2001). *Self-regulated learning and academic achievement theoretical perspectives* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

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