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Exploring a two-dimensional model of mentor teacher roles in mentoring dialogues

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ABSTRACT

In this study, a two-dimensional model of mentor teacher roles in mentoring dialogues, entitled MERID, is explored empirically. Data regarding five aspects of mentoring dialogues were collected, using a sample of 20 transcriptions of mentoring dialogues, in which 112 topics were discussed and 440 mentor teacher utterances emerged. Correlations between the five aspects were determined and a cluster analysis was conducted. There is empirical support for the model and it is a useful framework to promote reflection on mentor teachers' supervisory behaviour.

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1. Introduction

A vital and widespread part of teacher education programmes are field experiences, in which a pivotal role is played by experienced teachers who mentor student teachers in their classrooms. The availability of effective guidance by a mentor teacher is an essential condition for student teachers' learning in the workplace (e.g. McIntyre, Hagger, & Wilkin, 2005). Mentor teachers are influential because of their close interaction with their mentees. They are usually the first to be consulted since they are physically near to the mentees, who see them as a valuable source of information because of their experience as a teacher (Zanting, 2001). The available international research literature provides a growing body of empirical evidence for the benefits of mentoring as a feature of the workplace (e.g. Hobson, Ashby, Malderez, & Tomlinson, 2009). With regard to the benefits for student and beginning teachers, mentoring positively impacts their developing teaching competencies (Lindgren, 2005), plays a key role in their socialisation process (Bullough & Draper, 2004) and provides emotional and psychological support (Marable & Raimondi, 2007).

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At the same time, the literature suggests that mentor teachers' supervisory behaviour should fulfil certain requirements, if these benefits are to be achieved. Student teachers' learning may improve, if mentor teachers become better at adapting to mentoring situations, in which workplace features interact differently with individual student teachers' characteristics. From an extensive research review, Hobson et al. (2009) conclude that the extent to which mentor teachers are able to address mentees' learning needs is an important factor in the success of mentoring. A disparity between individual student teachers' learning needs and the mentoring approach they experience may lead to withdrawal from teacher education. It may also limit chances for student teachers to reach their best possible levels of competence (Copeland, 1982; Williams et al., 1998). In their review of a large number of studies of supervision, Glickman and Bey (1990) conclude that "no one supervisory approach is effective for all students" (p. 560). Consequently, mentor teachers need to assure that the supervisory roles they take and the strategies they use to support mentees' learning are receptive to their mentees' concerns and suitable for their current stages of development.

Mentoring dialogues about teaching experiences are an important educational context for helping student teachers develop professional knowledge and/or transform existing teaching practices (Hiebert, Gallimore, & Stigler, 2002). The reason is that teachers' knowledge and skills are event-structured, context-based,

and practice-oriented in nature (e.g. Elbaz, 1983; Kessels & Korthagen, 1996). Roles that mentor teachers take during the mentoring process differ accordingly and may therefore have different effects on student teachers' learning and professional development (Kremer-Hayon & Wubbels, 1993). These roles are visible in the intentions, content and approach of mentors' dialogues with student teachers (e.g. Edwards & Protheroe, 2004). This means that through mentoring dialogues, mentor teachers may have a considerable influence on how and what student teachers learn (e.g. Helman, 2006). How mentor teachers take their roles in mentoring dialogues, then, is a quite relevant topic for research.

Hence, the focus of the present study is to explore empirically a two-dimensional conceptual model of mentor teacher roles in mentoring dialogues, developed by Hennissen, Crasborn, Brouwer, Korthagen, and Bergen (2008) and entitled MEntor (teacher) Roles In Dialogues (MERID). The model can be helpful in providing a language which enables educators and researchers to observe, describe and analyse mentor teacher supervisory behaviour in mentoring dialogues. The model may also offer a basis for the development of tools for reflection on mentor teachers' supervisory behaviour in mentoring dialogues.

For the purpose of this study, we define *mentoring* as the one-to-one support of a student teacher by a more experienced teacher. We use the word *mentor teacher* for a teacher of pupils with an additional responsibility as a mentor of student teachers. We use the word *mentor teacher* for a teacher of pupils who has an additional responsibility within the school based part of a teacher education programme to support student teachers. The expression *mentoring dialogue* refers to a formal two-way conversation between mentor teacher and student teacher.

1.1. Overt aspects of mentoring dialogues

In the context of training and supervising teachers, quite some research has been done on how mentor teachers function (Hawkey, 1998a). In particular, to describe and analyse mentor teachers' supervisory behaviour, separate overt aspects of mentoring dialogues have been studied in a variety of circumstances and from various perspectives. In empirical research on mentor teachers' supervisory behaviour in mentoring dialogues, five distinct research objects can be identified: degree of input, degree of directiveness, time aspects, nature of the content, phasing of the dialogue.

With respect to mentor teachers' *degree of input*, research results indicate that mentor teachers are the ones who generally take the most initiative in mentoring dialogues and usually decide upon the topics to be discussed (Feiman-Nemser, Parker, & Zeichner, 1992; Geldens, 2007; Haggarty, 1995; Hughes, 1998). Regarding mentor teachers' *degree of directiveness*, Blumberg (1970, 1980) made a main distinction between a direct and an indirect supervisory style, indicated by supervisory skills *telling and criticising* and *asking and listening*, respectively. Generally, it can be concluded from the literature that mentor teachers who use their conversational turns mainly to *bring in* information (i.e. ideas, perspectives, suggestions, feedback, views, instructions) have a more directive supervisory style than mentor teachers who use their conversational turns to *bring out* information, i.e. by asking questions, summarising aspects of the discussion, and active listening (Ben-Peretz & Rumney, 1991; Evertson & Smithey, 2001; Franke & Dahlgren, 1996; Harrison, Lawson, & Wortley, 2005; Williams et al., 1998). In general, mentor teachers' supervisory style and/or use of supervisory skills can be described as for the most part directive (Strong & Baron, 2004), and they tend to use their own knowledge and experience as a teacher as the source for the dialogue (Edwards & Protheroe, 2004; Haggarty, 1995).

As regards *time aspects*, the duration of mentoring dialogues differs a lot (Edwards & Collison, 1996; Strong & Baron, 2004).

According to Dunne and Bennett (1997) and Hughes (1998), mentor teachers use more speaking time during the dialogue than student teachers. Hawkey (1998b) concludes from research that mentor teachers who are directive in style may use more speaking time than a more non-directive mentor teacher. Consequently, there may be a correlation between mentor teachers' speaking time and the degree of directiveness of the mentor teachers.

Concerning the *nature of the content*, four main categories can be derived from the literature: instruction and organisation, the pupils and the class, subject matter and a category various (Borko & Mayfield, 1995; Coulon, 1994; Edwards & Collison, 1996; Hawkey, 1998a; Orland-Barak & Klein, 2005; Strong & Baron, 2004). Topics discussed during mentoring dialogues are mainly about instructional and organizational situations and to a lesser degree about individual pupils, the class or the subject matter (Coulon, 1994; Edwards & Protheroe, 2004).

With regard to the *phasing of dialogues*, research results seem point at a twofold division: looking back on what happened in (a) previous lesson(s) and/or looking ahead how to conduct (the) future lesson(s) (Ben-Peretz & Rumney, 1991; Evertson & Smithey, 2001; Korthagen, 2001; Wang, Strong, & Odell, 2004). Harrison et al. (2005) term these categories deconstructing and/or constructing practice, respectively.

1.2. The MERID model

A difficulty with previous empirical research efforts is that they resulted in descriptions of separate aspects of mentoring dialogues and/or mentor teachers' supervisory behaviour. To our knowledge, the above mentioned five overt aspects of mentoring dialogues only have been investigated as more or less separate entities. However, mentor teachers' supervisory behaviour in mentoring dialogues is not one-dimensional. It is a combination of several aspects, which taken together, produces a predominant mentor teacher role. Hence, a more integrated conceptualisation and a research-based description of mentor teachers' roles in mentoring dialogues, would produce a sharper picture and a more differentiated analysis and description of mentor teachers' supervisory behaviour in mentoring dialogues.

For this reason, based on a review study, Hennissen et al. (2008) proposed a conceptual model connecting two overt aspects of mentoring dialogues. The model is entitled MEntor (teacher) Roles In Dialogues (MERID). The empirical data from the investigations included in the review study indicated that overt differences between mentor teachers were only reported with regard to the aspects 'input' and 'directiveness'. This is why the authors of the review study selected these aspects as relevant to constitute the model and, subsequently, to conceptualise mentor teacher roles in mentoring dialogues. Combining both aspects in the MERID model may be helpful in discriminating empirically mentor teachers roles in mentoring dialogues in an explicit and specific way.

The vertical axis of the MERID model (Fig. 1) represents the dimension input, indicated by the degree to which topics are introduced into the dialogue by the mentor teacher. This dimension is a continuum with two poles: active and reactive. The horizontal axis represents the dimension directiveness, which indicates the degree to which the mentor teacher steers the course of the dialogue. This dimension is a continuum with two poles: directive and non-directive. Hawkey (1998b) established that a mentor teacher who has a directive style talks the most in the dialogue. Hennissen et al. (2008) hypothesised that there is a positive correlation between the MERID model's dimension *directiveness* and *speaking time*. A mentor teacher who is directive in style may use more speaking time than a non-directive mentor teacher and vice versa.

The dimensions 'input' and 'directiveness' are assumed to be independent of each other. The combination of both dimensions

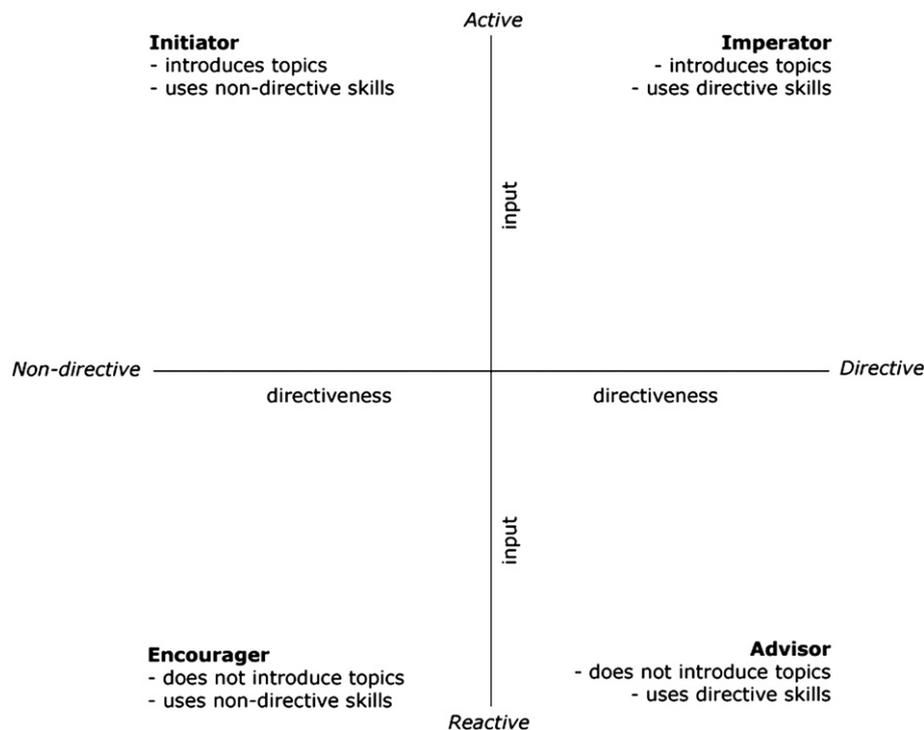


Fig. 1. The MERID model.

results in the conception of four different mentor teacher roles in mentoring dialogues: initiator, imperator, advisor and encourager. The four quadrants in the MERID model will now be illustrated with transcribed excerpts from four distinct mentoring dialogues.

1.2.1. Initiator

The role in the upper left quadrant is referred to as initiator. The mentor teacher (MT) introduces the topic *first impressions of the school* and subsequently uses non-directive supervisory skills (for example, summarising content, summarising feeling, and asking open questions) to encourage the student teacher (ST) to further reflect on the topic:

MT: Okay Ella, you've been here now for several days. What are your first impressions of the school?

ST: Well, I immediately felt welcome in the team. As soon as I introduced myself, I felt at home. Also, considering it's an old building, it's very nice and convenient.

MT: So, you feel at home as a member of the team, and you like the school building.

ST: Yes...

MT: What made you feel welcome in the team?

ST: Well, the colleagues invited me to sit with them during lunch and offered me their help when I should need it. They also asked me if I would like to come to the school party next weekend.

1.2.2. Imperator

The role in the upper right quadrant is referred to as imperator, a term derived from the ancient Roman Republic.¹ In the example,

the mentor teacher introduces the topic *use of notebook* and subsequently uses directive supervisory skills (for example, giving opinion and giving advice) to guide the dialogue:

MT: Ella, in the reading comprehension lesson you carried out, I saw you had a correct diagram on the blackboard. Very good!

ST: Yes, thank you!

MT: But, I saw that Paula wrote on a small piece of paper. You know, the agreement is that she must use her notebook. You should have told her to do so.

ST: Yes, I wanted her to write it in her notebook, but I forgot to give special attention to her, because a few other pupils were asking questions.

1.2.3. Advisor

The role in the lower right quadrant is referred to as advisor. The mentor teacher reacts to the topic introduced by the student teacher of *involving pupils in the lessons*, and subsequently uses a directive supervisory skill by giving direct advice on what to do:

ST: Hello Albert, I have a question. When I am sitting in a circle with these young pupils, how can I ensure that they are involved in the story I am telling? There always seem to be some children who just look around and don't respond to me.

MT: Yes Ella, I understand your problem. Everyone of course has different interests and some pupils are more interested than others. Personally, I think that it very much depends on you to make the topic interesting and attractive by how expressive you are and by your own body language. Constantly warning pupils doesn't help. Just saying "pay attention" will get you nowhere. You can involve pupils by maintaining eye contact, by making a gesture such as a wink, by asking questions, and by walking up to them to correct them.

¹ After an especially great victory, an army's troops in the field would proclaim their commander imperator (Berger, 1953). Associated with the meaning of the word in old times, in terms of the MERID model an 'imperator' is a mentor teacher who is taking the lead in a mentoring dialogue by introducing most of the topics and by using predominantly directive supervisory skills.

1.2.4. Encourager

The role in the lower left quadrant is referred to as encourager. The mentor teacher reacts to the topic introduced by the student teacher of *dealing with pupil* and subsequently uses non-directive supervisory skills to induce the student teacher to explore her concern:

MT: Hello Ella. How are things going?

ST: Well, the new pupil Yvonne is talking about leaving school. She is always saying things like "I want to leave school and I am going to talk to my mother about it." And then I am unsure of how to react. She is constantly asking for attention, but there are more children who need that too. I can't give her all the attention she seems to need. If I ignore her, she just carries on talking. I really don't know anymore how to react. May be I should arrange a talk with her and her mother.

MT: You are confused because you don't know how to deal with Yvonne, who is constantly asking for your attention.

ST: That's right. I don't like it when she says these things, but it is a sign. I want to know why she's acting like that.

MT: Yes. Can you think of a specific situation in which this kind of behaviour occurs?

Although the dimensions and the roles of the MERID model may provide greater specificity in describing mentor teachers' roles in mentoring dialogues, the model has resulted from a theoretical analysis of the literature and has not yet been explored empirically and subsequently utilised in research. In the present study the MERID model will be explored empirically in a three-fold way. Firstly, by exploring the degree to which each dimension of the model contributes to the model separately. Such an exploration is important to establish initially if both dimensions of the MERID model can be helpful in producing a sharper picture and a more differentiated description of mentor teachers' supervisory behaviour in mentoring dialogues. Secondly, by exploring if the three other overt aspects of mentoring dialogues, namely speaking time, content and phasing, which also emerged from the research review, are linked to the dimensions of the MERID model. Finally, by investigating if the four conceptual mentor teacher roles, as distinguished by the MERID model, can also be established empirically and, consequently, may enhance the relevance of the model.

1.3. Research questions

The research questions guiding our study were:

1. Are the dimensions input and directiveness of the MERID model independent of each other?
2. To what extent do the aspects speaking time, content and phasing correlate with any of the dimensions of the MERID model?
3. How can the extracted key aspects be connected to build a conceptual framework for studying mentor teachers' supervisory behaviour in mentoring dialogues?

2. Method

2.1. Context

The importance of field experience as a proportion of the overall time invested in initial teacher education has increased in the past several years in both North America and Europe (Wilson, Floden, & Ferrini-Mundy, 2002). This development can be attributed to increasing evidence and recognition of the value of learning in the workplace (e.g. Eraut, Alderton, Cole, & Senker, 1998), the criticism of the practical relevance of theory in teacher education

programmes (e.g. Darling-Hammond, 2000), the teacher shortages many countries are faced with (e.g. Villani, 2002), and the idea that teacher education is less expensive if it is done in the workplace (e.g. Caldwell & Carter, 1993).

The move towards school-based teacher education has made the role of the mentor teacher more important than ever. However, proficiency as a teacher within one's own classroom does not guarantee the ability to support others in their professional growth as a teacher (e.g. Yusko & Feiman-Nemser, 2008; Zeichner, 2005). The development of effective mentor teachers involves learning new, sometimes complex skills and understandings that are seldom self-evident (Achinstein & Athanases, 2005; Fantilli & McDougall, 2009). To this end, many schools, often in cooperation with teacher education institutions, implement training programmes to broaden mentor teachers' supervisory skills repertoires (Strong & Baron, 2004). This study was carried out previously to the implementation of a training programme for mentor teachers, entitled Supervision Skills for Mentor teachers to Activate Reflection in Teachers, abbreviated as SMART.

2.2. Participants

The participants in the present study were 20 mentor teachers from primary education in the Netherlands who applied to participate in the SMART programme. Eight mentor teachers participated in 2000 and twelve mentor teachers took part in 2001. On characteristics including sex, age, education and experience as a (mentor) teacher both groups are comparable. In the total group of participants, there were ten women and ten men, all of whom had a student teacher under their guidance. The participants' ages ranged from 26 to 55 and averaged 48. As a group, on average the participants had 16 years of teaching experience and an average of eight years of experience in mentoring student teachers. Not one of them had been trained in mentoring skills before.

2.3. Data collection

One month before the SMART training, each mentor teacher was asked to carry out a mentoring dialogue with a student teacher after the student teacher had given a lesson. The dialogue had to be conducted within 24 h after the lesson and the student teacher needed to give his or her permission for the dialogue to be audio-taped. The form of assessment used was a work sample test (Straetmans, 1993). In such an assessment, participants have to perform tasks in real settings, which are considered to be a sample of similar tasks in the work situation. The mentor teachers carried out a mentoring dialogue with a student teacher, in the last year of a pre-service teacher education programme, whom they were already mentoring at the time of recording. All mentor teachers had one student teacher under their guidance. Hence, the audio recording of the mentoring dialogue had to be made with this specific student teacher. The mentor teachers had explicit instructions to conduct the dialogue as they were used to do in their normal mentoring practice.

2.4. Transcription and coding

As an empirical basis for the exploration of the MERID model, data regarding the five aspects of mentoring dialogues were collected. To realise this, all 20 recorded mentoring dialogues were transcribed literally from audiotapes. Table 1 shows an example of a transcription. The time in minutes is noted in column 1. Utterances were marked as separate using the principle of turn taking (Table 1, column 3). The moment when a mentor teacher commences speaking, marks the beginning of a mentor teacher's

Table 1
Example of coded transcription.

Time Min.	Inter-Locator	Utterances of the mentor teacher (MT) and the student teacher (ST)	Codes			
			(4)	(5)	(6)	(7)
(1)	(2)	(3)	Input Topic	MT Turn	Content Topic	Phasing Dialogue
Topic 4: "stop or continue"			Active			
4.03	MT	I thought that the lesson on the whole went very well. It was well structured. You looked at me a couple of time as if you wanted to say: "What should I do now?". Did you want me to tell you whether to continue or not?		BOT		
4.08	ST	Yes, I wasn't sure. Normally your math lesson goes till half past nine, but it was already a quarter to ten and we weren't finished with the exercise. The children were working well on the sums with the measurements of volume. But if we had gone on too long with the exercise I may not have had time to begin the project "Bullying at school".			I	B
4.20	MT	Well I think you made the right decision to go on with the math exercise. If you had stopped, you might have had to explain more the next lesson and that would have taken up more time.		BIT		

conversational turn. A mentor teacher's turn ends the moment the student teacher commences speaking. In total, 440 utterances of the mentor teachers were registered. Three raters were prepared and trained for the task of labelling four aspects of the recorded mentoring dialogues, namely *introduction of the topic* (Table 1, column 4), *directiveness of mentor teachers' utterance* (Table 1, column 5), *content of the discussed topic* (Table 1, column 6) and *type of dialogue phasing* (Table 1, column 7). For these coding tasks

a written scoring procedure was developed. The aspect *mentor teachers' speaking time* was established by using the time codes (Table 2, column 1).

2.4.1. Input

In this study, we define 'input' as the degree to which a mentor teacher determines upon the topics to be discussed in a mentoring dialogue. The degree to which the mentor teachers' input is *active*

Table 2
Five observed aspects of mentoring dialogues.

1	Input				Directiveness				Speaking time		Content				Phasing			
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	No. Dialogue	No. initiated topics	Active	Reactive	Active minus Reactive	No. Turns MT	BITs	BOTs	BITs minus BOTs	Total	MT	I	P	S	V	B	A	BA
	Abs.	%	%	%	Abs.	%	%	%	Min.	%	%	%	%	%	%	%	%	%
01	06	83	17	67	16	56	44	13	03.50	57	83	17	0	0	67	33	0	
02	09	78	22	56	34	59	41	18	15.41	75	78	11	0	11	67	0	33	
03	10	90	10	80	19	58	42	16	17.00	40	60	20	0	20	60	20	20	
04	07	86	14	71	44	50	50	0	13.58	71	43	14	43	0	71	0	29	
05	09	78	22	56	27	56	44	11	24.33	58	56	22	0	22	56	33	11	
06	06	58	42	17	42	71	29	43	25.20	42	67	33	0	0	67	0	33	
07	01	50	50	0	12	67	33	33	05.35	20	0	100	0	0	100	0	0	
08	07	79	21	57	26	46	54	-8	07.15	43	57	14	0	29	86	0	14	
09	07	100	00	100	16	25	75	-50	07.30	40	57	0	0	43	86	14	0	
10	04	25	75	-50	12	50	50	0	06.12	31	0	50	50	0	100	0	0	
11	03	67	33	33	12	08	92	-83	03.00	51	100	0	0	0	100	0	0	
12	08	69	31	38	25	20	80	-60	10.55	43	38	0	0	63	38	12	50	
13	06	92	08	83	24	17	83	-67	09.17	46	0	67	17	17	83	17	0	
14	01	100	00	100	20	25	75	-50	04.32	67	0	100	0	0	0	0	100	
15	03	33	67	-33	18	72	28	44	09.39	57	33	67	0	0	0	33	67	
16	13	92	08	85	48	73	27	46	14.40	75	92	8	0	0	54	15	31	
17	03	33	67	-33	10	30	70	-40	04.17	11	33	67	0	0	100	0	0	
18	03	100	00	100	11	73	27	45	03.24	60	33	33	33	0	67	0	33	
19	05	90	10	80	15	53	47	7	07.29	45	60	20	0	20	50	50	0	
20	01	50	50	0	9	78	22	56	01.45	57	100	0	0	0	100	0	0	
Total	112				440				195.34									
Mean	5,6	73	27		22	49	51		9,46	52	50	32	07	11	68	11	21	
STD	3,27				11,79				6,49									
Kappa		0,80				0,84					0,79			0,89				

*Column 3: To calculate the percentage of topics the MT introduces into the mentoring dialogue, each instance an interlocutor (MT or ST) introduces a topic (s)he acquires (half) a point. For example, when of a total of seven topics discussed during a dialogue, the MT introduces four topics, the ST two topics and together they initiate two topics, the proportion "input" for the MT is calculated as 4.5:7 = 65%. Automatically, it becomes clear that 35% of the input of the MT is reactive, in the sense that (s)he is reacting on a topic that has been introduced by the ST (column 4).

*Column 5: MT is active introducing topics minus MT is reacting on input topics by ST: rounded results of detraction of one-decimal %.

*Column 9: BITs – BOTs = "Bringing In Turns" minus "Bringing Out Turns" (rounded results of detraction of one-decimal %).

*Column 12 ("Instruction & organisation"); Column 13 ("Pupils & Class"); Column 14 ("Subject Matter"); Column 15 ("Various").

*Column 16 (B = "Looking Back"); Column 17(A = " Looking Ahead"); Column 18 (BA = "Looking Back & Ahead").

*% in columns 12, 13, 14, 15, 16, 17 and 18 are calculated as a proportion of the total number of initiated topics (column 2) in the dialogue.

or *reactive* (vertical dimension of the MERID model) was examined by looking at the dialogue and deciding who of the interlocutors introduced a topic. Firstly, the number of discussed topics was determined by two researchers who both read all the transcripts several times and independently recognised the number of topics covered. Then after consultation, the final number of topics was established on the basis of consensus. In total, 112 separate topics were recognised in the 20 dialogues in the sample. Within one thematic context, various topics can be discussed. For example, in the situation of an arithmetic lesson, the topics could be *helping an individual pupil* and also *group instruction on working independently*. Also, if the mentor teacher gives feedback or makes suggestions, this can cover various topics. For example a mentor teacher may say, “Your voice is loud and clear, but your intonation could do with some improvement” (Topic 1), following with “Pupils started working immediately without further questions because your instructions were clear” (Topic 2).

Secondly, three raters read the transcripts and decided independently how each topic was introduced into the dialogue. To label the introduction of a topic into a dialogue, three coding categories were used: *active*, *reactive* and *active–reactive* (see Table 1, column 4). When a mentor teacher introduced the topic, this was labeled as active. A mentor teacher introducing a topic may say: “Can you explain to me the diagram you drew on the blackboard?” When a mentor teacher reacted on a topic which was introduced into the dialogue by the student teacher, the label reactive was assigned. A student teacher introducing a topic may say: “What do you think about the difficulty of the assignment the pupils had to complete in my lesson?” When a mentor teacher and a student teacher introduced a topic in collaboration, this was coded with the label active–reactive. For example, the mentor teacher may say: “I would like to discuss the arithmetic lesson”. The student teacher subsequently could utter: “Yes, the pupils were very unruly during that lesson. I would like to discuss how to deal with that”. In this last example, the mentor teacher first delineates a context (arithmetic lesson), and subsequently, the student teacher focuses on how to deal with unruly pupils in that lesson. On average, for each of the three combinations of two raters, Cohen's kappa (Cohen, 1988) of the aspect input was 0.80, the lowest kappa being 0.75.

2.4.2. Directiveness

The degree of directiveness of a mentor teacher (the horizontal dimension of the MERID model) was examined by categorising all mentor teachers' utterances from the transcripts. In the present study, a viable twofold category system was used which is based on the distinction between direct and indirect supervisory behaviour (Blumberg, 1970, 1980). As explained in Section 1.1, mentor teachers who use their conversational turns mainly to *bring in* information (i.e. ideas, perspectives, suggestions, feedback, views, instructions) are likely to have a more directive supervisory style than mentor teachers who during their conversational turns *bring out* information of the student (i.e. asking questions, summarising discussed content or feeling, and active listening). In this study, we referred to these types of supervisory skills using the terms ‘bring in turn’ (BIT) and ‘bring out turn’ (BOT), respectively.

In order to assess mentor teachers' supervisory style, each conversational turn was labeled as BIT or BOT. Three raters independently read the transcripts of all 440 conversational turns of the group participants and assigned one of the two codes to each turn (Table 1, column 5). When, in some cases, both types of supervisory skills were performed during one turn, only the last type was coded, because in almost all cases this was the trigger for the student teacher's reaction. On average, for each of the three combinations of two raters, Cohen's kappa of the aspect directiveness was 0.84, the lowest kappa being 0.78.

2.4.3. Speaking time, content and phasing

The duration of each of the recorded and transcribed mentoring dialogues, as well as how long the mentor teacher contributed to the dialogue, was determined with the help of the time codes (Table 1, column 1). To investigate the content of the dialogues, all 112 topics established in the dialogues were coded, using four main categories of contents: *instruction and organisation* (I), *the pupils and the class* (P), *subject matter* (S) and a category *various* (V). Three raters independently read the transcripts of all 112 topics from the dialogues, and then placed the topics in one of the four categories (Table 1, column 6). On average, for each of the three combinations of two raters, Cohen's kappa of the aspect content was 0.79, the lowest kappa being 0.76.

To label the phasing of recorded mentoring dialogues, three main categories were utilised: *looking Ahead to a future teaching activity* (A), *looking Back on a previous teaching activity* (B) and *looking Back and looking Ahead to a teaching activity* (BA). The coding task consisted of determining which type of phasing occurred during each separate topic that was discussed in the dialogues. Three raters independently read the transcripts of all 112 topics and assigned a code to each separate topic discussed in the dialogues (Table 1, column 7). On average, for each of the three combinations of two raters, the Cohen's kappa of the aspect phasing was 0.89, the lowest kappa being 0.85.

2.4.4. Data analysis

For each of the five investigated aspects descriptive statistics were used. These are presented in Table 2. To answer the first research question about the independence of the MERID model's dimensions, two codes were assigned to each of the 440 mentor teacher turns. Firstly, the label bring in turn (BIT) or bring out turn (BOT) was given to each turn, representing the MERID model's dimension directiveness. Secondly, also the label active, reactive or active–reactive, representing the dimension input, was assigned to mentor teachers' conversational turns. Throughout the discussion of one distinct topic, all mentor teachers' conversational turns were classified with one identical label. For example, when a mentor teacher initiated the topic and made use of six turns in discussing this with the student teacher, all these six mentor teacher turns were labeled as active. Subsequently, a chi-square test, using Cramér's V (Cramer, 1998) and a log linear analysis (Agresti, 2007), were carried out on the scores, in order to assess the existence and extent of a possible association between the two dimensions of the MERID model.

To answer the second research question, to what extent other variables link to the dimensions of the MERID model, Pearson correlations (two-tailed) were used to determine whether, and to what extent, the aspects speaking time, content and phasing are related to the dimensions of the MERID model, respectively input and directiveness.

Research question 3, aiming at empirical identification of homogeneous groups of mentor teachers, was answered by conducting a cluster analysis (Everitt, 1980) in an attempt to identify relatively homogeneous groups of cases in the sample, based on a combination of the aspects input and directiveness. The percentages in column 5 and column 9 (Table 2) were used to conduct the cluster analysis, in which the number of cluster divisions was varied from 2 to 6 groups. This was done through a procedure of composing groups being diametrically opposed on the two dimensions of the MERID model (input and directiveness), while at same time being maximally homogeneous as a group, by means of the algorithm of squared Euclidean distances.

In addition, by means of the Ward estimation procedure, the criterion was applied that the group composition had to be such as to provide an optimal explanation for the variance on the two

dimensions. Subsequently, an analysis of variance was carried out to determine for each of the cluster divisions (2, 3, 4, 5 and 6 groups) the means and standard deviations for each of the types within the clustering and to determine how much variance the clustering explained in total. To determine the optimal number of clusters it is essential to meet a balance between two criteria. The group size should be sufficiently large so as to prevent individuals from having too much effect on the group division. At the same time, the percentage of variance explained should be as high as possible, i.e. when the percentage no longer goes up, the limit for the number of clusters is reached.

3. Findings

3.1. Observations of five aspects

The data with regard to the vertical dimension *input* of the MERID model show that the group of mentor teachers is for the most part active: on average they introduced 73% of the total of 112 discussed topics (Table 2, column 3). The standard deviations point to individual differences between mentor teachers. In some of the recorded dialogues (number 10, 15 and 17) mentor teachers for the most part are reactive, 67% and 75% respectively. They react on topics introduced by student teachers. As regards the horizontal dimension *directiveness* of the MERID model, the data show that on average 49% of the conversational turns of the group of mentor teachers fall in the directive category BIT (Table 2, column 7) and 51% of the mentor teacher turns are fall in the non-directive category BOT (Table 2, column 8). For this variable too, there are individual differences. For example mentor teachers 6 and 7 used more BITs than BOTs as opposed to mentor teachers 11 and 12 who used more BOTs than BITs.

Regarding the time aspect *speaking time of the mentor teacher*, the data show that the recorded dialogues lasted 10 min on average (Table 2, column 10). The total time of the dialogues, however, varied considerably, from nearly 2 min (mentor teacher 20) to more than 25 min (mentor teacher 6). The mentor teachers on average used almost one half (49%) of the speaking time (Table 2, column 11), but there are huge individual differences between mentor teachers with regard to this aspect. Mentor teacher 17, for example, led the dialogues for 11% of the time, while mentor teacher 2 led 75% of the time.

As regards the aspect *content*, the data show that on average 50% of the total of 112 discussed topics fall in the category instruction and organisation (column 12), 32% in the category the pupils and the class (Table 2, column 13), 7% in the category subject matter (Table 2, column 14) and 11% in the category various (Table 2, column 15). With regard to the aspect *phasing*, the data demonstrate that in the group of mentor teachers the discussion of a topic in 68% of the cases only consisted of looking Back on previous teaching activities. Looking Ahead to a future teaching activity occurred significantly less frequently, i.e. in only 11% of the topics. In 21% of the topics discussed during the dialogues, looking Back and looking Ahead occurred.

3.2. The status of the MERID model's dimensions

Concerning research question 1, a chi-square test carried out on the data of Table 3, using Cramér's V, shows that on the basis of this sample, the null hypothesis, assuming independence of both variables, could not be rejected (chi-square = 3.65; df = 2; $p = 0.16$; $V = 0.09$). In addition, to investigate whether the relation between the dimensions directiveness and input differs over the 20 dialogues, we carried out a hierarchical log linear analysis on the table of 20 (dialogues) × 2 (labels directiveness) × 3 (labels input). The

Table 3
Crosstabulation "directiveness" and "input".

		Input			Total
		Active	Active–Reactive	Reactive	
Directiveness	BOT	131	53	22	206
	BIT	168	44	22	234
Total		299	97	44	440

model without three-factor interaction fits the data well (Pearson chi-square = 15.8, df = 38, $p = 0.999$), showing that there is no evidence for a different relation between directiveness and input over the dialogues. Based on these statistical analyses, we cannot conclude that the dimensions of the MERID model are dependent.

3.3. Other relationships

Concerning research question 2, we found that the model's dimension input correlates significantly with mentor teacher's speaking time (Pearson $r = 0.52$, $p = 0.02$, see Table 4). This result suggests that an increase in the number of topics introduced by the mentor teacher goes hand in hand with an increase of the mentor teachers' speaking time and/or vice versa. The suggestion of other researchers that there might be a positive correlation between the variable 'directiveness' and the variable 'mentor teacher's speaking time' could not be confirmed in the sample of the present study.

3.4. Four empirical clusters

The answer to research question 3 is given by the cluster analysis, which showed a subdivision in four empirical groups. The subdivision in four groups resulted in the most optimal balance between on the one hand explained (additional) variance and on the other hand groups which can be interpreted reasonably. With this subdivision the explained variance of both dimensions (variables) of the MERID model is high: input (Eta squared = 0.82) and directiveness (Eta squared = 0.87). A subdivision into more than four groups does not explain constructive additional variance and a subdivision into less than four leads to groups being hard to interpret. In Fig. 2 the four clusters are visualised in the MERID model. In Table 5 the means and standard deviations of the four empirical clusters in Fig. 2 are given.

Results indicate that the four mentor teacher roles distinguished by the MERID model are to a large extent supported by empirical data in the sample. For each mentor teacher, the percentage in column 5 (Table 2) is the position on the vertical axis of the MERID model and the percentage in column 9 (Table 2) is the position on the horizontal axis.

In cluster 1, nine mentor teachers (number 1, 2, 3, 4, 5, 8, 16, 18 and 19) come together in the part of the MERID model that largely concurs with the imperator role (45%). This group of mentor teachers introduced the majority of the topics into the dialogues and used directive supervisory skills more frequently than

Table 4
Pearson correlation between five observed aspects of mentoring dialogues ($p < 0.05$).

	Content				Phasing			MT Speaking time
	I	P	S	V	B	A	BA	
<i>Dimensions MERID</i>								
Input	0.16	-0.28	-0.09	0.29	-0.26	0.21	0.17	0.52*
Directiveness	0.23	-0.03	0.04	-0.43	-0.09	0.11	0.03	0.24

I = Instruction & organisation; P = Pupils & class; S = Subject matter; V = Various; B = Looking Back; A = Looking Ahead; BA = Looking Back & Ahead.

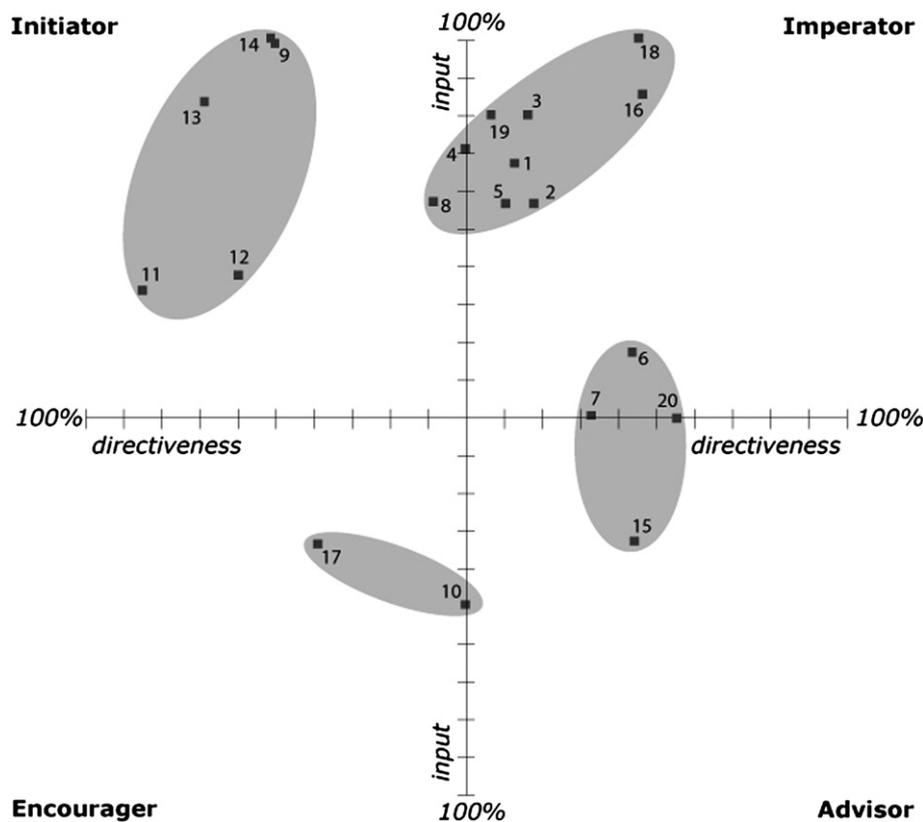


Fig. 2. Four empirical clusters of mentor teacher roles visualised in the MERID model.

non-directive skills. In cluster 2, four mentor teachers (number 6, 7, 15 and 20) are grouped in and near the quadrant which coincides with the advisor role (20%). These mentor teachers, for the most part, reacted on topics introduced by student teachers. Also, they largely used supervisory skills of a directive nature. In cluster 3, two mentor teachers (number 10 and 17) come together in the part of the model which partially overlaps with the encourager role (10%). In this group, mentor teachers for the most part reacted on topics introduced by the student teacher, using mainly non-directive supervisory skills. In cluster 4, five mentor teachers (no. 9, 11, 12, 13 and 14) group in an area of the model which primarily overlaps with the initiator role (25%). This group of mentor teachers introduced most of the discussed topics and their conversational turns for the most part had a non-directive character.

3.5. Dominance of the imperator role

In the present study, the exploration of the MERID model was based on empirical data with regard to five overt aspects of mentoring dialogues. The data concerning the five investigated aspects show that mentor teachers are the ones who initiate the majority of topics discussed. In terms of the MERID model, this implies that

mentor teachers' degree of input (vertical axis of the model) is relatively high. Also, most of mentor teachers' utterances are of a directive nature. In terms of the MERID model, this means that mentor teachers' degree of directiveness (horizontal axis of the model) is relatively high. Furthermore, as regards the three other overt aspects data indicate that the amount of speaking time during dialogues differs a lot between individual mentor teachers, the content of the dialogues in most cases refers to instructional and/or organizational situations or problems with pupils in the classroom and during the dialogues, the greater part of the topics is discussed in a retrospective way.

Taken together, in terms of the MERID model, these results indicate that many mentor teachers conduct their mentoring dialogues mainly as an imperator. They focus on teaching performance by pointing out as right or wrong elements in what student teachers do during their lessons and that they provide them with tips and suggestions to make improvements.

4. Conclusion and discussion

4.1. Conclusions

The focus of this study was to explore empirically the two-dimensional MERID model, which distinguishes four mentor teacher roles in mentoring dialogues. The study is based on the assumption that the extent to which mentor teachers are able to address mentees' individual needs is an important factor in the success of mentoring. We do not give a judgment on the best mentor teachers' role(s) and agree with Williams et al. (1998) who state that a mentor teacher whose supervisory approach matches with the prospective teachers' needs is more effective. We assume that student teachers' learning improves if mentor teachers become

Table 5 Means and standard deviations of the four empirical clusters in Fig. 2.

	Input		Directiveness	
	Mean	Stdev	Mean	Stdev
Upper right cluster	72.4	15.2	16.4	18.3
Lower right cluster	4.0	20.9	44.0	5.4
Lower left cluster	41.5	12.0	20.0	28.3
Upper left cluster	70.8	33.0	62.0	13.8

better at adapting to individual differences between prospective teachers and to different workplace situations in which several workplace features interact differently with specific characteristics of individual prospective teachers. As a consequence, mentor teachers will usually face a diversity of supervisory contexts and situations, on which they have to anticipate by developing versatile repertoires of supervisory roles.

The findings indicate a beginning of empirical support for the model and its distinction of four mentor teacher roles. As an answer to the first two research questions, the different analyses performed on the data allow for the possibility that the dimensions input and directiveness are independent of each other, although further, more extensive research is needed. In addition, the model's dimension input correlates positively with the aspect speaking time. As an answer to the third research question, empirical support was found for the viability of the four mentor teacher roles as distinguished in the MERID model for studying and discussing mentor teacher roles in mentoring dialogues.

Most mentor teachers in the sample were clustered in the emperor group. This finding is consistent with the outcomes of previous research (Crasborn, Hennissen, Brouwer, Korthagen, & Bergen, 2008; Elliot & Calderhead, 1994; Franke & Dahlgren, 1996; Martin, 1996; Timperley, 2001; Williams et al., 1998). One explanation for the prevalence of the emperor role is that mentor teachers are inclined to resort to their expertise as a teacher of children, because they are first of all concerned with effective instruction and pupils' progress, more so than with the learning process of student teachers (Orland-Barak, 2005). Consequently, during mentoring dialogues, mentor teachers' focus is less on student teachers as learners than on the pace at which student teachers cover the prescribed curriculum and on how effectively they manage the children in the classroom while doing so (Edwards & Protheroe, 2004).

4.2. Limitations and further research

In this study, the dimensions input and directiveness could be used to constitute the MERID model. However, this result is based on analyses of a relatively small sample of mentoring dialogues. Further research should ascertain whether independence between these dimensions of the model may be assumed more generally. It should also be borne in mind that, because conversational turns during mentoring dialogues were used to distinguish utterances, the measurements were not entirely independent of each other.

The clusters of mentor teacher roles that were empirically established in this study show a strong overlap with the roles previously derived from a conceptual analysis as visualised in the MERID model, although this overlap was not 100%. Even though the subdivision in four clusters applies to our sample, the stability of these clusters needs to be confirmed for a larger group of mentor teachers. Follow-up research is needed to further elaborate and validate the MERID model.

Also, in naming the four mentor roles, the two dimensions of the MERID model have provided the leading considerations. This is apparent in the examples used in Section 1.2. It is conceivable that following further research aimed at elaborating and validating the model, the naming of the roles should be changed. It would be possible that results of further research will indicate that the four basic roles of the MERID model should be further subdivided and differentiated into distinct sub roles.

Finally, the four mentor teacher roles of the MERID model are based on frequencies of overt supervisory skills related to two behavioural dimensions, namely input and directiveness. However, mentor teachers' supervisory behaviour is not merely an undifferentiated use of skill but also includes contextual understanding.

From a socio-cultural point of view, the objective, content, and process of interaction that occur in a mentoring dialogue are shaped by the discourses embedded in the particular cultural and political context within which mentor teachers function (Luke, 1996). Mentor teachers constantly have to make decisions about which supervisory skills must be invoked with each student teacher in each context at different times and for different purposes throughout the mentoring process. Hence, roles of mentor teachers' in mentoring dialogues must also be understood as being embedded in mentor teachers' work context (Gee, 1996), and as being shaped by contextual, curricular, population, and school culture factors (Wang, 2001). In addition, Helman (2006) mentions five other factors that were not taken into account in our study: relationship with the mentee, emotional state of the mentee, level of knowledge base of the mentee, goal of the dialogues and external expectations.

4.3. Practical implications

There is widespread agreement in the literature that mentoring is a multifaceted phenomenon and that no straightforward description or guidelines for success can be given (Harrison et al., 2005). Diversity in mentoring situations is the result of several workplace features (Erat et al., 1998; Holton & Baldwin, 2000) which interact differently with specific characteristics of individual student teachers (Bullough & Draper, 2004; Furlong & Maynard, 1995; Kagan, 1992; Oosterheert & Vermunt, 2001). This calls for variety and flexibility in mentor teachers' supervisory behaviour. However, the reality is that most mentor teachers hardly vary their supervisory roles in response to student teachers' changing needs and, either consciously or subconsciously, stick to one typical approach (Williams et al., 1998).

In terms of the MERID model, this means that effective mentor teachers are those who are flexible in using the four roles in mentoring dialogues. As a first step in broadening their supervisory repertoires it is important that mentor teachers reflect on their prevalent supervisory roles (Kremer-Hayon & Wubbels, 1993). This reflection can be promoted when feedback about their roles in mentoring dialogues is presented in various ways. Apart from written or oral information, images or profiles are alternative ways of presenting such feedback. For every mentor teacher, an individual role profile can be drawn, based on empirical data found in this study with regard to the model's dimensions input and directiveness (see Figs. 3 and 4).

On the upper half of the vertical axis (input), the number of topics initiated by the mentor teacher is given (Table 2, column 3). On the bottom half of this axis, the number of topics introduced by the student teacher (reacted on by the mentor teacher) is presented (Table 2, column 4), both as a percentage of the total of the discussed topics. On the horizontal axis (directiveness), the number of bringing in turns (BITs) of the mentor teacher is given on the right and the number of bringing out turns (BOTs) of the mentor teacher is given on the left, both as a percentage of the total number of mentor teachers' conversational turns. By drawing lines which connect four points on the axes of the MERID model, a role profile of a mentor teacher during specific mentoring dialogues becomes visible in a shaded graph. The greater the shaded part in each quadrant of the MERID model, the more the pattern of mentor teacher's supervisory roles can be characterised by this sector of the model.

For example, Fig. 3 visualises the role profile of mentor teacher number 16, who can be considered an *imperator*, clearly taking the lead in initiating topics (92%) and practicing more directive (73%) than non-directive (27%) supervisory skills. Fig. 4 exemplifies a role profile of a mentor teacher who can be characterised as an *encourager* because topics were for the most part introduced by the

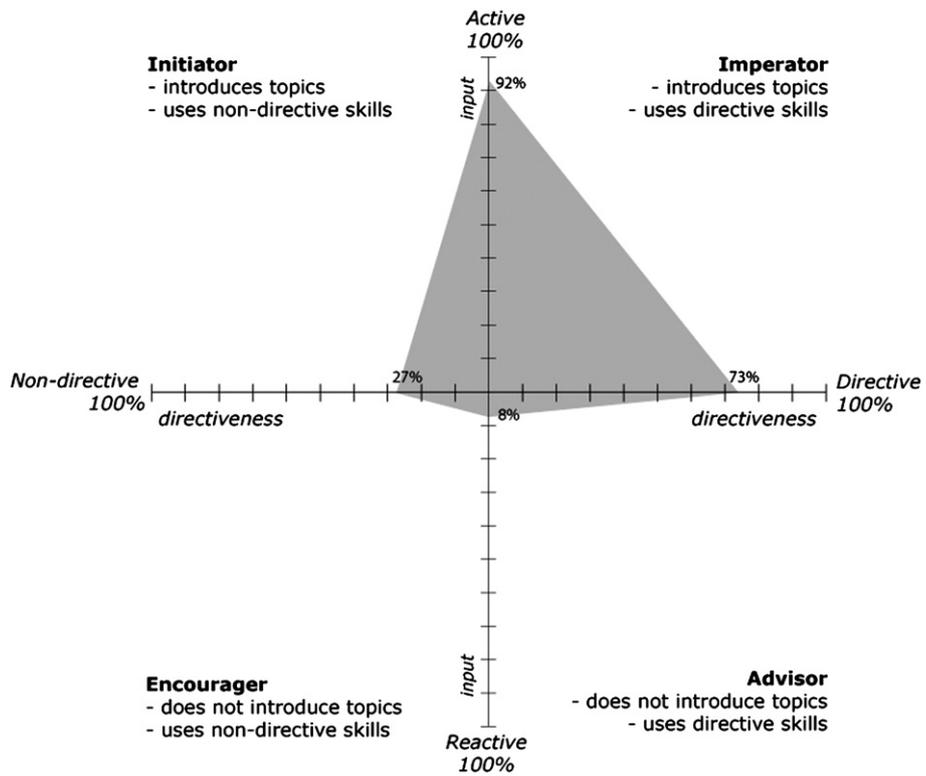


Fig. 3. Profile of mentor teacher 16, conducting the mentoring dialogue primarily as an 'imperator'.

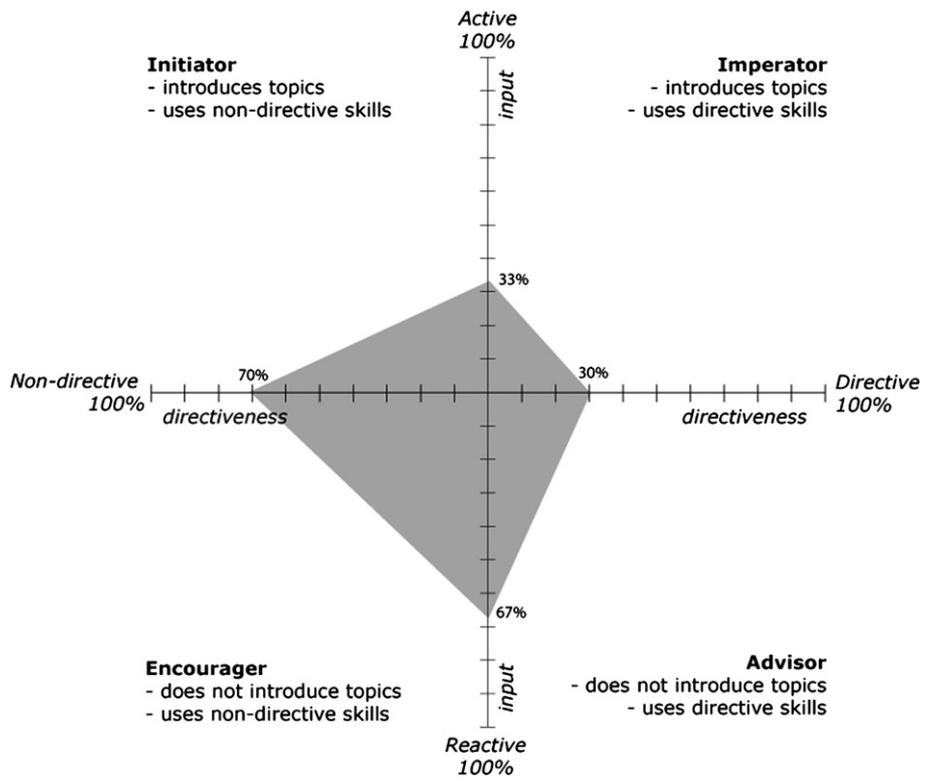


Fig. 4. Profile of mentor teacher 17, conducting the mentoring dialogue primarily as an 'encourager'.

student teacher (67%) and the conversational turns of the mentor teacher were mostly non-directive (70%).

Such profiles can be effective tools for reflection because they can be used to conceptualise and summarise complex and inter-related information in a way that can be easily comprehended and, subsequently, can stimulate links within a person's own knowledge (Copeland, Birmingham, de la Cruz, & Lewin, 1993; Korthagen, 1993; Weber & Mitchell, 1996; Wubbels, 1992). Hence, drawing out (combinations of) individual mentor teachers' roles in a profile based on the MERID model, may provide clues for reflection and, subsequently, for changes in and enlargement of mentor teachers' role repertoires.

In order, to provide mentor teachers with feedback about their own supervisory behaviour, not only the observer's perception can be taken into account, but also the student teacher's perception. According to Martin (1996), the effectiveness of mentor teachers' supervisory behaviour is largely determined by the perceptions of student teachers. Blumberg (1980) in his research on mentor teachers' styles in mentoring dialogues stated that "How a person perceives the behaviour of another is much more important than the behaviour itself" (p. 63). This viewpoint implies that it is important to strive for a successful match between a mentor teacher's supervisory approach and a student teacher's learning needs during the mentoring process. To help mentor teachers and their mentees to understand how their stances and interactions may contribute to the mentoring process, mentee–mentor pairs might periodically talk explicitly about their perceptions and expectations regarding their respective roles and contributions in mentoring dialogues. Drawings of role profiles based on the MERID model may be helpful to set the stage for such reflective conversations.

A sequence of three steps could be used to structure this joined reflection. Firstly, the student teacher and the mentor teacher may together look back on a series of mentoring dialogues by independently making a drawing of the mentor teacher's role profile based on the MERID model, indicating their current individual perception of the mentor teacher's prevalent supervisory role(s) in the mentoring process until that moment. Guiding questions to facilitate the drawing of the profile could be: To what extent did the student teacher or the mentor teacher introduce the discussed topics in the previous mentoring dialogues? To what extent is the mentor teacher *telling and criticising*? To what extent is the mentor teacher *asking and listening*?

Next, to become aware of latent discrepancies and/or mismatches regarding their mutual expectations of roles and behaviour in the mentoring process, the student teacher and the mentor teacher can discuss similarities and differences between their perceived role profiles. During this exchange, it would be important that both the student teacher and the mentor teacher express their perceived and any desired role profiles concretely in terms of both dimensions of the MERID model: the degree of input and the degree of directiveness. For example, a student teacher perceives the role of mentor teacher to be mainly that of *encourager*, because in most mentoring dialogues, the mentor teacher invites her to bring classroom experiences into the dialogue. After that, the mentor teacher listens and asks questions about what happened, what is essential, and what would be more effective to do a next time in similar circumstances. Nevertheless, the student teacher would prefer the mentor teacher to give more feedback and direct advice, because (s)he feels insecure about her/his classroom behaviour.

Finally, the mentor teacher and the student teacher may discuss any mismatches occurring and how to deal with potential mismatches in future mentoring dialogues. For example, the mentor teacher may recognise that, apart from activating this student teacher to reflect on specific classroom situations by asking

questions, for this particular student it is important to balance his supervisory strategy by giving more feedback and advice.

This type of learning conversation, based on drawings of perceived mentor teacher role profiles, could also take place during seminars with fellow mentor teachers related to the practice of mentoring. In the company of fellow mentor teachers, a mentor teacher can be encouraged to reflect on the degree to which his/her prevalent supervisory role(s) match(es) the learning need(s) of a specific student teacher. In general, such a community of practice could be helpful in facilitating and enhancing mentor teachers' skill development through conversations about mentoring practice and pedagogy (Carroll, 2005; Orland, 2001).

In summary, the present study is based on the assumption that the extent to which mentor teachers are able to address mentees' individual needs is an important factor in the success of mentoring. We believe that there is no single approach to mentoring that will work in the same way for every student teacher in every context. Hence, developing versatility in conducting mentoring dialogues is an important challenge. The mentor teacher's ability to vary approaches regularly and to continually and actively choose suitable behaviour will offer optimal learning opportunities to each individual student teacher. As a prerequisite, mentor teachers will need to reflect on their supervisory approach in order to develop awareness about how their mentoring behaviour affects individual student teachers, and to make conscious decisions about their supervisory behaviour in relation to the student, the context, and the purposes of the mentoring process. We believe that the MERID model provides a viable tool for mentor teachers' reflections and, subsequently, for the further development of mentor teachers' role repertoires.

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