Analysis of the dynamics of the sharing knowledge between cooperating teacher and teacher-in-training: The partners' respective roles

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Abstract: Collaboration is becoming increasingly important in the realm of education (Novoa, 2004). For instance, as soon as training is undertaken, the future teacher must develop an ability to cooperate in a pedagogical context. However, in order to learn to make a relevant contribution to a teaching team's undertakings and to provide innovative suggestions in pedagogical matters (Gouvernement du Québec, 2001), the student teacher needs solid backing from the cooperating teacher. A student teacher's willingness to reflect on and to question his own teaching practices will create a much more promising learning context (Portelance & Durand, 2006). Reciprocally, the cooperating teacher will make a positive contribution to the student teacher by accepting that his positions be questioned and even altered (Johnston, Wetherill & Greenebaum, 2002). It is the dynamics of sharing of knowledge and know-how in this partnership that retains our interest. From 2004 to 2007, the researchers carried out a study of the subject by examining four practicum sessions at high school level in a number of Quebec schools. To gather data, the researchers used written questionnaires, individual interviews, as well as recordings of conversations between student teachers and their cooperating teachers. These conversations pertain to the conception and to the execution, by the student teacher, of teaching-learning situations. These dialogues were integrally transcribed and processed by N'vivo, software designed to analyze qualitative data. the researchers present a typology of the respective roles taken on by the two partners in their discussions. The cooperating teacher reveals himself to be an advisor, a transmitter of information and a teacher. The student teacher also takes on the role of transmitter of information, as well as that of reflective practitioner, among others. the researchers observed that the conversations are usually carried out in an egalitarian spirit and, in some cases, give rise to co-construction of practical knowledge.

Key words: teacher-in-training; cooperative teacher; shared knowledge; partner's roles

1. Introduction

Collaboration and cooperation, growing necessities at the workplace in general, are becoming increasingly important in the realm of education (Novoa, 2004). All involved in education, including teachers and teacher trainers, are confronted with this reality. In Quebec, initial teacher training, entrusted to universities, attaches particular importance to the development of collaborative abilities. Ministerial standards governing the professionalisation of teaching include, among other requirements, a set of twelve competencies to be developed

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by teachers; two of these deal with collaboration. Hence, as soon as training is undertaken, the future teacher must develop an ability to cooperate in a pedagogical context. Notably when practice teaching, the student teacher is progressively conditioned for compliance with ministerial expectations. However, in order to learn how to make a relevant contribution to a teaching team's undertakings, to supply constructive criticism as to the outcome of team projects, and to provide innovative suggestions in pedagogical matters (Government of Quebec, 2001), the student teacher needs solid backing from a cooperating teacher.

2. Problem statement

A student teacher's willingness to reflect on and question his teaching practices will create a much more promising learning context (Portelance & Durand, 2006), as will the possibility of conferring with his cooperating teacher and of expressing his ideas (Tatum & McWhorter, 1999), basing them on sound assertions. Reciprocally, the cooperating teacher will make a positive contribution to the student teacher's progress not only by expressing his own outlook and beliefs with transparency, but also by accepting that his positions be confronted and even altered (Johnston, Wetheril & Greenebaum, 2002). In such a case, the student teacher and his cooperating teacher can together generate new expertise (Gervais & Correa, 2005) in regards to learning and teaching. Of course, conversations between teacher and trainer are not necessarily devoted solely to the exchange of ideas, to the confrontation of viewpoints, or to the sharing of thoughts relative to teaching and learning (Portelance & Durand, 2006). It is the dynamics of the sharing of knowledge and know-how in this dyad, made up of the student teacher and the cooperating teacher, that retains our interest. After analyzing diverse knowledge shared between trainer and trainee (Portelance & Gervais, in press), we examine the professional interaction that these dialogues reveal.

3. The sharing of knowledge through discussion

The sources that we consulted point to the importance of discussion as a means of sharing knowledge in the dyad composed of the student teacher and the cooperating teacher. This discussion generally takes place when a cooperating teacher is giving feedback following his observation of a novice's classroom teaching (Smith, 2002), and also when the student teacher is presenting lesson planning to the cooperating teacher. According to Butcher (2002), the cooperating teacher, much more than the student teacher, shares knowledge in his assertions. He does this in his functions of model, guide, trainer, as well as counsel or. His attitude may influence not only the climate of discussion but also its essential nature. If both the cooperating teacher and the student teacher assume the role of practitioner-researcher, they may gain from these discussions in their joint analysis of each others' teaching (Kajs, 2002), but if and only if the cooperating teacher accepts to participate in the exercise.

Discussion, to be sure, calls for thought (Boutet, 2003) and inversely, the sharing of knowledge is a product of thought. Socio-cognitive conflict potentially arises from the discussions when cooperating teacher and student teacher alike are prepared to question their representations, beliefs, personal theories, conceptions, and teaching practices. In such a case, the exchange offers the opportunity not only for deconstruction, but also for the co-construction of knowledge.

Kajs (2002) noticed that in exchanges following a series of mutual observations in class, the cooperating teacher himself may, in the same manner as the student teacher, identify strengths and weaknesses in his own teaching and use this portrait to improve his methods and more actively promote his students' learning. This mutual input requires an appreciable amount of open-mindedness. Indeed, the cooperating teacher will be a more

natural participant in this culture of knowledge sharing if he considers his student teacher as a professional, encourages discussions and swap sessions, and adopts an egalitarian approach (Tatum & McWhorter, 1999). Braund (2001) identifies a number of other requirements of sharing knowledge: having similar outlooks on learning and teaching, using a common vocabulary, and possessing comparable knowledge of pedagogical approaches. According to Gervais and Correa (2005), co-construction of knowledge may emerge from the co-analysis of practices and from the articulation of their basis, but only if the student teacher is actively engaged in his training and is in frequent interaction with a cooperating teacher who is himself profoundly absorbed in his role.

4. Methodology

From 2003 to 2006, we carried out our study of three practicum sessions at high school level in a number of Quebec (Canada) schools. In each case, the session was the fourth and final practicum of teachers' training. Data were collected from 14 dyads, each composed of a cooperating teacher and a student teacher. The subjects taught by the student teachers were French, History, Geography, Mathematics, Science, Physics and Chemistry; students' learning levels varied from first to fifth year of the high school curriculum. To gather data, we used written questionnaires, individual interviews, as well as recordings of conversations between student teachers and their cooperating teachers. These conversations pertain to the conception and to the execution, by the student teacher, of teaching-learning situations, two competencies to be developed during training. We will disclose our analysis of verbal exchanges between the cooperating teacher and the student teacher. These dialogues were integrally transcribed and processed by N'vivo, software designed to analyze qualitative data. Inter-coding and inter-analysis were carried out by the researchers and by two assistant researchers.

5. Results

Before presenting our findings in regards to the dynamics of knowledge sharing and more precisely to the type of discussion and to the roles taken on, respectively, by the cooperating teacher and the student teacher in each dyad, we will disclose what individual, post-practicum interviews reveal about preferred means of sharing knowledge. The assertions analyzed represent perceptions, both of student teachers and of cooperating teachers.

5.1 The favoured means of sharing knowledge: Discussion

We can confirm, as did Smith (2002), and as mentioned by all participants in our study, that it is principally through discussion between the cooperating teacher and the student teacher that knowledge is shared. According to student teachers, discussion gives rise to an exchange of ideas concerning class experimentation. Among other things, the student teachers appreciate oral presentations given by the cooperating teacher, stipulating that these presentations fuel discussion. The cooperating teachers indicate that they view discussion periods as opportunities for the hatching of new ideas. If we emit the hypothesis that in the process, the partners may question their own beliefs and viewpoints and even come to adopt new ones, it appears probable that conditions are present for the partners to together discover other conceptions and representations, and that they together produce "theories" adapted to the context of their teaching. Drawing from Lenoir's (1996) definition, we can here speak of the co-construction of knowledge. Other means of knowledge sharing are mentioned during interviews, including mutual observation in class, presentation of teaching material, justification of the pertinence of this material, and the student teacher's presentation of innovative teaching strategies with which he has experimented.

5.2 The type of discussion

While discussion is the major component of the conversations analyzed, it is not characteristic of all conversations. Moreover, preliminary analysis of discourse reveals that the content of conversations may be linked to the roles played by each of the partners.

We noticed that most conversations take place in an egalitarian, collegial, and cooperative atmosphere. The student teacher and the cooperating teacher expose their respective ideas, identify their viewpoints, complete with additional information when necessary, and show interest in the other's viewpoint. When Hélène and Joséphine discuss a pre-exam review activity, Hélène declares: "Students should be able to accept several possible explanations of the meaning of a poem, take time to really understand the explanations and also check their notes or the poem itself. They have worked hard, which has really helped them. They have applied themselves". Joséphine likewise expresses her observations: "What I have really noticed is the students' active participation" (Hélène & Joséphine, 2003-2004, pp. 108-112).

In a few cases, in-depth discussion gives rise to the co-construction of knowledge. This implies that the two members of the dyad together question themselves and each other and come to a mutual comprehension of the same reality and to the formulation of a theoretical answer that they may later test and adapt to the teaching situation under discussion. For instance, Anne has prepared a lesson on asymptotes and is wondering how to make the lesson interesting for the students. After observing her student teacher, the cooperating teacher says that the lesson was a pleasant surprise: "Insisting on what asymptotes are and on the fact that they exist for a reason was excellent …. You told me at the beginning that you wanted to try something different. The students also felt that it was different. Frankly, it was well done". The student teacher explains: "Everyone does not have the same interest in these things. Some will simply say: Tell me the formula and that's all, I don't need to know any more about it". The cooperating teachers retorts: "It's a two-sided coin. Maybe, if we explained their usefulness, they would be more interested in knowing the rest" (Anne & Maya, 2004-2005, pp. 179-200).

In some conversations, there is no discussion between partners; one may even take on a dominating position over the other. In some cases, the cooperating teacher gives his opinion and the student teacher acquiesces; in other cases, the student teacher articulates his pedagogical reasoning with little more than cursory approval from the cooperating teacher. The conversations between Lisanne and Danielle (2004-2005, pp. 5-82) illustrate the self-effacing role of this cooperating teacher. Lisanne alone expresses herself. She describes her teaching, explains the reasoning behind her actions, shares her observations of her students, indicates new awareness and questions herself. Danielle barely utters a word, save to say that she agrees.

5.3 The partners' roles in the dyad

Whether it gives rise to discussion or not, the dynamics of conversation are influenced by a number of factors, be they personal, interpersonal, contextual or other. Our interest lies in the relational aspects and, more particularlly, in the roles of the partners, one being in a position of trainer and the other of trainee. We will disclose a number of excerpts from their conversations in order to illustrate the significance of each role. We remind the reader that these conversations pertain to the conception and to the execution, by the student teacher, of learning-teaching situations.

5.3.1 Roles of the cooperating teacher

We set up six categories that illustrate the roles taken on by the cooperating teacher during conversations with the student teacher. The cooperating teacher, in putting his knowledge into words, becomes an adviser, a reassuring judge, a transmitter of information, a teacher, a thought provoker or a reflective practitioner. The

conversations were carried out in a climate of dialogue among equals.

(1) The adviser

The cooperating teacher often acts as an adviser. He gives his opinions, proposes, and makes suggestions to the student teacher: "You could also have the student write the word on the blackboard instead of always just asking them to spell it. This constitutes a variation and everyone can see the word on the board. You could alternate" (Jean-Guy, 2003-2004, p. 52). Maya suggests to Anne: "It would be preferable to write it in lower-case letters so as not to confuse it with an x squared plus b" (Maya, 2004-2005, p. 83). This role of advisor is evident in almost all the conversations, confirming the conclusion of Ganser and Koskela (1995), to the effect that cooperating teachers see themselves as guides who exhort the student teacher.

Only one of the cooperating teachers articulates his counsel in a more commanding way. Gilles makes precise requirements of his student teacher: "It is not something to fear. It is something that you will have to do when you explain the assignment …, circulate among the teams and divide up the task". He then adds: "You must make sure to tell the students: I absolutely need the six texts. … It is compulsory, and is precisely what I'm evaluating" (Jean-Philippe & Gilles, 2004-2005, pp. 89-97).

(2) The reassuring judge

The cooperating teacher approves of the student teacher's ideas and accomplishments, gives positive feedback on his teaching, reassures him and gives positive reinforcement. As Pelpel (2002) reminds us, the most important spontaneous attitudes of the cooperating teacher with regard to his student teacher are that of evaluator and of decision maker, as he is strongly influenced by his daily attitudes towards his students. Examples of this are numerous. Suzie recognizes the contribution of elements of disciplinary content that are not specifically part of the program: "You obtained new information, despite the fact that we never specifically examined this. That shows interest. I see that you were able to engage some of the students with this information". (Susie, 2005-2006, p. 101). Étienne appreciates that Jules has taken the time to make certain links between notions in Chemistry and daily life: "That's good. You cannot just throw out facts that fly over their heads" (Étienne, 2005-2006, p. 31). Some cooperating teachers manifest their satisfaction with activities that their student teacher has come up with, to the point of using their ideas as inspiration for their own teaching later on. "I am looking at your project because I want to reinvest in it and repeat it next year. It's really enjoyable", declares Marc-André to Justin (Justin & Marc-André, 2003-2004, p. 206).

(3) The transmitter of information

The cooperating teacher knows his school and students, and is thus in a position to pass valuable information on to his student teacher. Any information pertaining to the context of teaching helps the student teacher constitute a reference frame in which to create and implement teaching-learning situations. One cooperating teacher is informing her student teacher about certain obstacles that got in the way of successfully attaining the goals of an activity proposed to students. "Don't forget that this is a gifted group. These students do not like to be confronted with failure; a situation of the sort destabilizes them and makes them uncomfortable" (Marielle, 2003-2004, p. 275). In another case, a student teacher has noticed the particular work methods and learning style of students in the PEI program (French acronym for International Education Program); his cooperating teacher, Marc-André says: "This is in direct line with our Quebec curriculum reform.… We focus on competency instead of solely on interaction. In the PEI program, prime classroom time is devoted to interaction and is the point of departure of each lesson. We branch out from these interactions to attain the ultimate goal of having the student pass the course" (Marc-André, 2003-2004, p. 56).

(4) The teacher

The first and foremost position of the cooperating teacher is that of teacher. As the cooperating teacher is usually experienced, he can be counted on to play his usual role when he converses with his student teacher; he generally supplies explanation as he does to his own students. A geography teacher explains his vision of teaching in these words: "The student is at the centre of the process. We teach him to learn how to learn. We help him acquire work methods, which include note taking, performing at exams, study methods, budgeting of his time, stress management, and so on. Once he has acquired learn skills, he will use this knowledge to serve the community" (Marc-André, 2003-2004, p. 50). Another cooperating teacher explains the aim of debates in French class: "A debate is not a fight… People do not raise their voice or scream at each other; rather, they communicate, exchange viewpoints, and give arguments in support of their position. It is not a dispute in which they come to blows or insult each other" (Léon, 2005-2006, p. 17).

(5) The thought provoker

We have pointed out that student teachers express a significant amount of theoretical knowledge in regards to teaching and learning. It is our belief that because of their university training, they are in possession of substantial didactical and psycho-pedagogical knowledge. Ideally, teacher training integrates theory and practice. It is to assure this integration that the cooperating teacher helps the student teacher to validate his procedural knowledge and to link it with knowledge gained through research (Altet, Paquay & Perrenoud, 2002), and also that he encourages him to critically scrutinize his teaching and base his analysis on solid arguments. A certain number of teachers in the study played this role. It is of interest to mention the following passage from a conversation pertaining to a lesson that France has prepared and that she is presenting to Marielle. This excerpt shows how Marielle plays her role as the thought provoker.

> Teacher: What do you do if a student says, "I refuse to work with her"?
>
> Student teacher: I tell him that it counts, that they do not have any choice in the matter, that the activity is compulsory, and that it has specific objectives. I explain the purpose of the activity from the start and say, "If you don't participate, your mark will be zero".
>
> Teacher: What if the student could not care less about getting zero?
>
> Student teacher: I meet with him and discuss it… I admit, though, that I would be in a little bit of a fix.
>
> Teacher: A situation of this kind can happen, but it would be surprising with that group.
>
> (Marielle & France, 2003-2004, pp. 430-439)

We notice here that Marielle challenges the student teacher to question herself and to think about something fundamental, but she also makes a point, subsequentlly, of reassuring her.

(6) The reflective practitioner

A teacher trainer demonstrates that he is a reflective practitioner when he consents to the confrontation and the questioning of his beliefs, theories, conceptions and practices, and when he demonstrates acceptance of his own limits and imperfections (Lamy, 2002). This type of attitude is markedlly different from that of a self-acclaimed model. It also differs from an attitude of leader or of expert (Pelpel, 2002). The reflective practitioner does not fear questions that require him to go beyond his initial understanding and from which may stem conceptual changes (Perrenoud, 1998). France's attitude concerning a problem encountered by her student teacher during an activity involving teamwork on the part of the students demonstrates her role as reflective practitioner. She thinks aloud about the best way to divide the group up in teams and her questioning is authentic:

> Do you think there would be a difference in the discussions carried out in teams made up of friends versus teams that

> are forced upon them? Up to some point, a student in a team that is imposed upon her will be more hesitant to give her opinion. Among friends, she will be inclined to answer more freely. On the other hand, in a group composed of friends, the students know who has al the right answers. Once they have heard out the student who knows it all, the task is over. It is debatable which is better (Marielle & France, 2003-2004, pp. 103-110).

5.3.2 Roles of the student teacher

Because of his position as teacher in training, the student teacher is himself in a learning situation. Whereas he may recognize with difficulty the value of theoretical knowledge transmitted by university professors (Portelance & Legendre, 2001), he generally attaches considerable credibility to what his cooperating teacher tells him and sees the practicum session as a special occasion in which to learn how to teach. During conversations dominated by a climate of sharing, student teachers learn by confronting their ideas with those of their cooperating teachers. As we have shown (Portelance & Gervais, in the press), they do not simply act as bit players or as supporting actors when conversing with their cooperating teacher, as is testified to by the quantity and wealth of knowledge that they express. We have identified four categories of roles played by the student teacher, roles through which he reveals his knowledge: transmitter of information, transmitter of innovative ideas, advocate of his choices, and reflective practitioner.

(1) The transmitter of information

As part of his practicum teaching, the student teacher is asked to present lesson plans to his cooperating teacher. Seeking approval and suggestions, before class, he indicates what teaching situations he has devised. A considerable part of the student teacher's pre-class discourse is of an informative nature. For instance, Lisanne shows her lesson plan to Daniele.

> To help students work on understanding a written text, I chose The Drowning of Joson, an excerpt from Félix-Antoine Savard's novel Menaud. Before explaining the text, I will summarize what was happening at the time of the writing, and that the theme of the homeland was then very present in Quebec literature. I will point out that the homeland novel emphasizes the importance of agriculture, close family ties, and the Catholic faith. I will sum it al up rapidly, just to give some background information. Then, I will talk about the author, Félix-Antoine Savard, who came from the Abitibi region of Québec. I will ask them if they know that region, and if so, to describe it. Yes, it is a forested area, and aptly, it is in the forest that the action takes place. This discussion is to give them a context for their reading of the excerpt, The Drowning of Joson (Lisanne & Danielle, 2003-2004, p. 61).

(2) The transmitter of innovative ideas

The cooperating teacher who accepts to oversee a student teacher reaps a certain amount of emotional and motivational benefit (Lepage, 1997). He appreciates being brought up to date on pedagogical innovations and gaining a better understanding of curriculum reform (Portelance, 2005). The student teacher satisfies this need when he makes use of teaching methods that the cooperating teacher does not master. For example, many future teachers seem to be more at ease than their cooperating teacher with the use of cooperative teaching and learning, or of peer teaching. A student teacher, Jeanne, outlines her ideas to Benoît:

> I thought of doing a project on the theme of the Middles Ages. It would consist of making a mock-up of, perhaps, a castle, a gothic cathedral, or a facet of knighthood. They would have to represent by scale model an aspect of the Middle Ages. At the end, the students would have to present their project to the group. It would be like giving a short lesson on castles, using what they have learned to the benefit of the class. So, it would be similar to the principle of peer teaching.
>
> (Jeanne & Benoît, 2005-2006, pp. 8-11)

To put into practice the concept of interdisciplinarity, Jean-Philippe has thought up an original way to link the learning of History to the fine arts. His cooperating teacher has confessed his enthusiasm for the idea. The

student teacher explains:

> The core of the task is a critical analysis of a painting. I ask them to express their opinion with the help of elements that they will have researched. That is really the essence of the task. When they see a painting, they will wonder about it, and ask themselves: is this painting part of history? Does it depict a historical scene? Or is it simply a product of the artist's imagination? And if it is both fantasy and history, then why? And how? In teaching of the arts, we lack the time to do this, to get students to ponder over things and to stimulate their thinking. We always ask for something concrete, tangible, but yet works of art are all around us and are what we see in museums. Why does art exist?
>
> (Jean-Philippe & Gilles, 2004-2005, p. 28)

(3) The advocate of his choices

We have noticed that with or without discussion among equals with the cooperating teacher, student teachers develop pedagogical reasoning. They articulate their pedagogical intentions, the reasons motivating their choice of approach, choice of this or that method, choice of strategy or of teaching material. When speaking of their didactic and psycho-pedagogical techniques, they elaborate on the objectives pursued and on the potential for positive impact on their students' learning. In relation to her lesson on the consequences of economic development, Catherine states: "Using two comparative charts that I examine with them …, I bring attention to the figures, chiefly to prompt them to notice how they have changed. That is what is important. What is the relation between the two? Have the figures doubled? Tripled?" (Catherine, 2005-2006, p. 13). In their university courses, student teachers have heard considerable talk of the construction of knowledge, and have received training that generally enables them to place students in situations in which they construct their own knowledge. To her cooperating teacher, Marielle explains the purpose of an activity that she wants to propose to her students:

> The activity is about warm and cold air masses and lasts about 30 minutes. It aims at helping students construct their own knowledge. Through a process of questioning, the students will learn the subject matter themselves. They will study maps and predict the movement of the air masses …. They themselves will research the theory, and will reflect on the processes or the concepts. Since it is a team task, the students will learn to cooperate, which is a cross-curricular competency (Marielle & France, 2003-2004, pp. 3-7).

In his teaching of electromagnetism, Étienne chooses an original example to illustrate the practical use of magnets. He states the reasons of his choice to Jules: "We give magnets to cows to extract nails from their stomach without perforating it. I will create a cognitive conflict in relation to the utility of magnets as used in such a way with cows" (Étienne & Jules, 2005-2006, p. 187).

(4) The reflective practitioner

The practicum gives the student teacher the opportunity to analyze his teaching methods, to discover himself as a teacher, and to evaluate himself. Through self-questioning, the future teacher explores the meaning of his pedagogical acts. The student teacher who behaves as a reflective practitioner shares his doubts and voices dissatisfaction with particular aspects of his teaching. He questions his own beliefs, theories, and the pertinence of his choices. After a lesson, during a feedback session, Jean-Philippe makes the following assessment: "It is in this way that we realize the relevance of the cross-curricular competency using information. It is precisely the manner in which the students select and process information that will help them make it their own. In broaching an artistic or literary work, I would probably accentuate the interpretative angle …. Another thing I would probably give, in addition to websites, is an example" (Jean-Philippe & Gilles, 2004-2005, pp. 137-148).

6. Conclusion

Our research, in penetrating to the very heart of the professional acts of teachers and student teachers alike, has shed light on the roles played by each of the partners in their exchanges; we have accordingly come to a clearer understanding of the collaborative dynamics that play out when the student teacher's teaching is under discussion. These exchanges promote innovative thinking on the part of the student teacher. They seem conducive to the co-construction of theories adapted to a particular context of teaching and consequently, useful to each of the partners. Among the conditions judged essential to the sharing of knowledge, student teachers mention the complementarity of the partners' knowledge and the mutual recognition of the other's contribution. Cooperating teachers insist on the student teacher's ability to take knowledge-based risks. These conditions of knowledge sharing intersect with factors of constructive collaboration in the school team, as identified by Lessard and Portelance (2005).

If the cooperating teacher exhibits openness to the student teacher's ideas and encourages reflection on and analysis of his practices, he will indirectly encourage the novice to develop confidence in his ability to give his opinion and to debate. By maturing in this type of climate, the student teacher acquires learning that enables him to become actively involved in a larger teaching team. This sharing of knowledge during the practicum helps the future teacher not only to converse more readily with colleagues, but also to respect the knowledge his colleagues have gained through experience. For the cooperating teacher, it is the opportunity to pursue his own professional growth, and more particularly, to improve his competency in the area of collective construction of interventional strategies to be used with students. It would be appropriate to examine the roles that best enable cooperating teacher and student teacher to share knowledge during a practicum session.

The climate that predominates in interpersonal and inter-professional relations has an incidence on the dynamics of the sharing of knowledge. Contextual elements, attitudes, and values can promote or inversely, hinder the sharing of knowledge. Another study could be devoted to the analysis of the variables liable to have an impact on communication within the dyad.

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(Edited by Max and Jean)