

Interaction and learning in PhD supervision – a qualitative study of supervision with multiple supervisors

Sofie Kobayashi, PhD Student, Department of Science Education, University of Copenhagen.

Brian Grout, Professor, Department of Plant and Environmental Sciences, University of Copenhagen.

Camilla Rump, Associate professor, Department of Science Education, University of Copenhagen.

Reviewed article

This paper presents a case of a single PhD supervision session with multiple supervisors from a life science faculty. The aim is to identify how learning opportunities are created. The supervisors and PhD student were interviewed about their experiences of the supervisory process. The session was analysed using positioning theory. Learning opportunities were created through the diverging voices of the supervisors. This is apparent from the interaction and confirmed in the interviews.

'I think it was really good that I had three quite different supervisors, because, imagine that I only had one? Then I would just be like a clone of that supervisor.'

This is a quote from a PhD graduate that illustrates one of the advantages of PhD supervision involving multiple supervisors. Supervision is usually conceptualized as a one-to-one relationship, but supervisory arrangements are increasingly becoming more varied (Lee & Green, 2009; Pearson & Brew, 2002). Universities increasingly encourage doctoral students to have more than one supervisor to ensure breadth of supervision and to make sure that the student has access to supervision if one supervisor is absent (Kiley, 2011; Manathunga, 2012). PhD projects are increasingly diverse and interdisciplinary (Adkins, 2009; Hammond, Ryland, Tennant, & Boud, 2010; Manathunga, Lant, & Mellick, 2006), and this calls for supplementary supervisors to cover different, specialized aspects of the research. Inevitably, supplementary supervisors add to complexity, and a central question here is whether diverging or conflicting supervision is an impediment to the PhD student's learning and development, or whether it can add value in terms of higher learning potential. With this paper we present an analysis of a single supervision session and interviews with the

PhD student and supervisors involved, with the aim of identifying how learning opportunities may be created for a PhD student with multiple supervisors.

Multiple supervisors

Joint supervision with two or more supervisors is more common in the natural and technical sciences than the social sciences and humanities. In the natural and technical sciences PhD students often work as team members in a research group, with their PhD project being part of a larger project with a predefined research question (Adkins, 2009; Neumann, 2007; Pole, 1998). Pole questions whether joint supervision really is a safety net for doctoral students, as it can create problems for students and supervisors in cases where it is less than successful. It can be problematic for PhD students to manage their supervisors, especially if the supervisors do not collaborate well with each other (Guerin, Green, & Bastalich, 2011; Manathunga, 2012; Watts, 2010).

However, the tension between multiple supervisors' diverging or conflicting perspectives can also be a learning opportunity for PhD students, under the right circumstances. As studies by Dysthe, Samara, and Westrheim (2006) show, diverging voices create potential for new understandings. Similarly, Guerin et al. (2011) found that PhD students benefited from the academic debate among supervisors and actively responded to the variety of perspectives, 'provided there is team commitment in arriving at agreement about how to proceed' (p.147).

The local context

During workshops for PhD students on 'Collaborating with your supervisor(s)' PhD students often raise the issue of struggling with the different viewpoints of their supervisors and poor communication between supervisors. The course approach is to offer tools and guidance to put the PhD students in a position where they can take charge of both their PhD studies and collaboration with their supervisors, much in line with the advice given by Kearns and Gardiner (2011). A response by a participant in our course shows how this may work: *I finally got my supervisors to agree between themselves and I am on track! As we were taught, I took hold of the situation and focused on the fact that it is MY PHD!*

Typical of the institution involved in this study is a growing number of PhD students conducting research that sits at the interface between two or more distinct groups, and PhD students have a supervisor from each group. This situation, where the PhD student often has a central role, is illustrated in Figure 1. This is a departure from the more traditional situation, commonly described in the literature, where PhD students conduct their research in a single group with a common focus (Neumann, 2007).

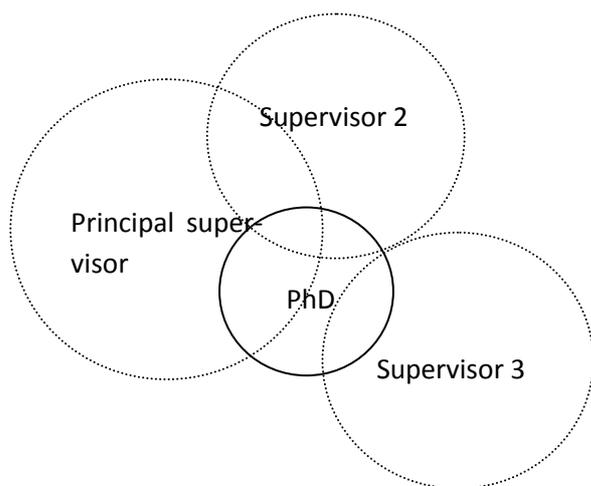


Figure 1: A representation of a supervisory arrangement for PhD students, who struggle with the conflicting viewpoints of multiple supervisors. The supervisors have their expertise in different fields, covering different parts of the PhD student's interdisciplinary research project. Overlaps vary from project to project.

Theoretical framework

This study is based on a socio-cultural understanding of learning as a human social activity conducted within institutional and cultural contexts (Lemke, 2001). We are looking at supervision as a space for learning, with the discipline and institution as the wider social and cultural context. We are not only concerned with the individuals and their relations and interaction, but how the interaction between supervisors and PhD student can lead to learning opportunities in this particular social and cultural context. We are interested in the practice of supervision with multiple supervisors, and we use the concept of learning opportunities for the PhD student, or the learning potential of the interaction, as we do not aim to produce evidence of actual learning, in line with studies by Dysthe (2002a). As argued by Lillejord and Dysthe (2008) learning often results from disturbance, conflicting perspectives, problems and tensions that the students have to relate to and choose between in order to make sense of the world. Dysthe uses the concept of diverging voices (multivoicedness) based on Bakhtin and dialogism, and this frames our discussions in the present study (Dysthe, 2002a, 2002b; Dysthe et al., 2006; Lillejord & Dysthe, 2008).

As recommended by Pearson and Brew (2002), we intend to take discussions beyond the static roles, and we therefore use *positioning theory* for the analysis of the present case. In their introduction to positioning theory van Langenhove and Harré (1999) present the concept of *positions* as 'a dynamic alternative to the more static concept of role' (p. 14). In positioning theory, conversations are viewed as a tri-polar structure of *speech-act* (e.g. utterances and gestures), *positions* and *storylines* that are mutually determining (van Langenhove & Harré, 1999), see Figure 2. Positioning is the act of

assigning rights and duties to oneself and to others from moment to moment, and relative to one another or towards a task or an object. Storylines are the personal use of the cultural context in the situation.

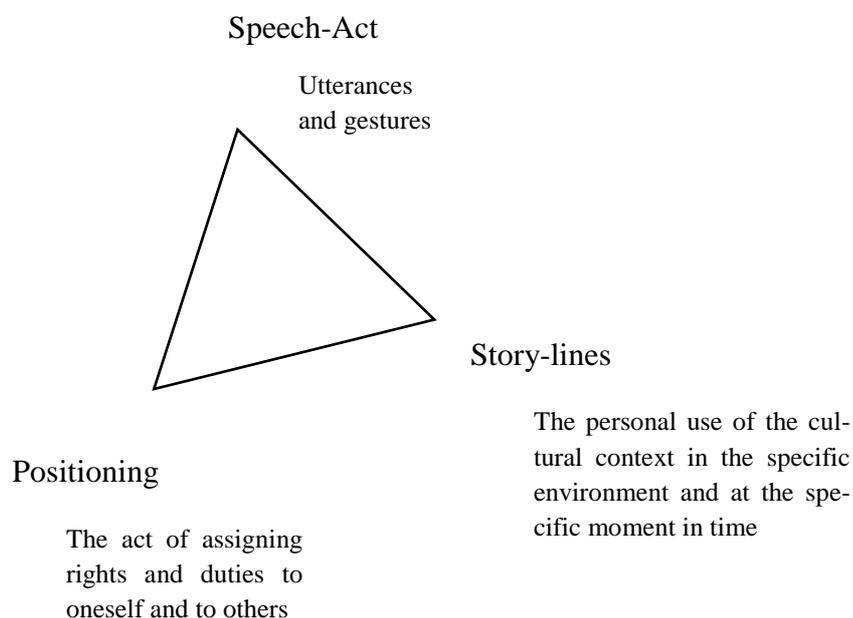


Figure 2. The tri-polar structure of positioning theory based on van Langenhove and Harré (1999).

Brinkmann (2010) provides an illustrative example of storylines: ‘Sometimes participants in some social episodes disagree on which storyline is unfolding. If a man is opening a door for a woman, the man may interpret the event according to a storyline of gentlemanship and civility, whereas the woman may interpret the event as one involving male chauvinism that positions the woman as weak and in need of male protection.’ In the present investigation the general cultural context was the local research environment that the supervisors and PhD student belong to, but with their different scientific backgrounds there are still discrepancies between the storylines, as they each take for given that their individual scientific background is common ground. The strength of using positions as a concept is that it allows a focus on the relations between the individual and the cultural context at an appropriate level of detail. Positions can be assigned and negotiated from moment to moment, challenged and changed, as the conversation unfolds in a storyline.

Methods

The supervision session took place half a year into the PhD study, while interviews took place four months after the PhD student had graduated. The supervision session concerned methodologies to be employed in a study at the interface between landscape architecture design and storm water management, and included the PhD student, her principal supervisor (Sup A) and two co-supervisors (Sup B and C). Only two of the three supervisors were subsequently interviewed (Sup A and B),

since the third (Sup C) had taken up a new position in a different country.

The first author was present as an observer at the supervision session and conducted the interviews, and both the session and interviews were audio-recorded to provide *verbatim* transcripts. The supervision session was analysed using positioning theory, through descriptive coding, positional coding and creation of storylines (van Langenhove & Harré, 1999). The three concepts of speech-act, positions and storylines are mutually determining, and storylines were identified from combining the descriptive coding with the positional coding.

The interviews followed an interview guide as described by Kvale and Brinkmann (2009). The interviews were conducted after the transcript of the supervision session had been analysed, and the interviewees got the opportunity to read the analysis before the interviews. Hereby we included the respondents in the interpretation, and thus we established a discourse in the interview as a means to prepare respondents and to reduce the power distance in the interview situation, as described by Kvale (2006). The time lapse between the supervision session and the interviews means that respondents see the supervisory process in retrospect and they put the specific session into the context of the overall supervisory process. Interviews were analysed thematically (Braun & Clarke, 2006) with a focus on supervision with multiple supervisors. Quotes from interviews were translated from Danish to English by the first author, while the observed supervision was carried out in English. English was the second language of all involved.

This study design provides the opportunity to analyse the dynamics of an interaction, and then put this interaction into the context of the overall PhD study as experienced by the PhD student and her supervisors.

Findings and Discussion

Interaction in the supervision session. The most prevalent theme emerging from the descriptive coding was discussion of the research approach suggested for the PhD study and subsequent analysis was focused on this. Through initial discussions the supervisors and the PhD student defined the objective of the research as 'the process of developing a physical element for storm water management'. The discussion then revolved around the approach to be taken in the research. A lot of the discussion took place between the supervisors who had different opinions about what they perceived as sound scientific methods, what would be publishable in refereed journals, and whether the PhD student should be a distant observer or involve herself directly in the process of developing the element. The PhD student most frequently appears as the listener uttering acknowledgements like 'yes'. However, she also positioned herself as someone who can make decisions and give suggestions to her supervisors.

In the beginning she replied hesitantly to her supervisor's questions, although still positioning herself as someone with an opinion:

Sup C: *It's interesting, and it is also the question, because is it really the focus of your PhD? Someone who wants to study planning processes, so I think it is very good, but is it really what you want to do?*

PhD: *yeah, no, I don't want to get into all this planning process... I don't know...*

Later she takes a more firm stand, and gets support from the co-supervisor, who had otherwise been critical to the participatory approach:

PhD: *If I really be part of it, and be part of the design process, then I will gain knowledge from it, very much, I guess. Because then I really involve myself. So, if I only see other people working, then I am not really able to see why did they decide to change the [element] this way, so I think I have to be involved, so*

Sup B: *I think so too, yeah, ...you will definitely learn a lot, and you need to go into the process.*

By the end of discussions she positions herself as someone who can even make suggestions to her supervisors:

Sup A: *That's what I meant for you, [name], ... you should also point out: where is your starting point, ... What is the theory about participation or not participation in a process*

PhD: *yeah, yeah, but at the moment I already started to trying to find out... I am always talking about this research by design. This approach of doing research while you are working on something. And that, that's the way I think I have to look at it. And then, there is this book I am reading at the moment about it, and there is this group at [other institution] talking about this. They are more designers, but then, in a way, I think I am more a designer myself, so*

Sup A: *Good*

Sup B: *yeah,*

PhD: *that's what I am trying to do then, ... but then I think, then I would need your support, and discussing about this matter, because I cannot decide on my own this one, and then you may also have to read an article...*
[quotes from supervision session]

She takes more charge as the session unfolds, and ends up suggesting that they read an article. The supervisors, for their part, position themselves with the authority to challenge the PhD student, to question her focus and project ideas, and also with the right to support her ideas. They appear to exercise their power in the relation by accepting her suggestions explicitly, 'allowing' her to proceed.

Supervisor B, with a natural science background, was especially concerned about getting publishable results and that good research was objective and so argued that the researcher should distance herself from the object of research. The principal supervisor from landscape architecture saw research as an iterative process where the researcher is inevitably involved in the design process. They talked from these two different understandings, and two different storylines stood out from the transcript:

1. When following the formal 'scientific method' the researcher must distance herself from the object of research
2. Research in landscape architecture is an iterative process, where the researcher is involved in the design process

The two storylines are evident throughout the interaction as parallel references, such as supervisor B stating 'You don't want to get involved anyway' [laughing], taking as given that direct researcher involvement is not scientifically sound. The principal supervisor (A) thinks along the lines of a participatory project and has suggestions like: 'I think that it is very important that there is a group [...] where [name] can meet'. At one point the two understandings are confronted in discussion as conflicting perspectives. Supervisor B in particular refers to the first storyline, while the principal supervisor (A) refers to the second storyline:

Sup B: Then you are becoming part of the decision making process. And you would not be observing what is going on, in fact

Sup A: OK, but I am not sure about that, because we are the ones who are following the process, and we should be observing, but then we should also have a role in terms of solving the problems in the project group, that might be lack of knowledge, it could be that they disagree, or it could be facilitative...

Sup B: But we might have a problem, scientifically, if we want to make a paper stating 'how is a planning process being performed in a municipality' if we are actually very strongly interfering with that process. Then the general value of the paper is very limited

Sup C: Yes, but I think this type of research can also ... Where you reflect on your own input and see how it is used in the process ...

[quoted from supervision session]

The two different understandings of 'good research' stand out in this dialogue as diverging voices in Dysthe's terms, while in the preceding interaction they were underlying references, taken for given by each of the supervisors who thus seemed to be playing by different rules of the game, as different storylines. According to Dysthe et al. (2006) the tensions between the diverging perspectives create a potential for new understanding. The PhD student is confronted with the accommodation of the different methodological approaches in building her own understanding of 'good research'. As the PhD student constructs her own understanding from the multi-voicedness of the supervision, the supervisors' diverging voices are processed by the PhD student as an inner dialogue. If this works according to Dysthe's perceptions, the involvement of multiple supervisors would enrich the learning environment with a higher learning potential. This will be further explored through the analysis of interviews below.

Interviews. As described above, the interviews were conducted 4 years after the supervision session was observed and recorded, and the interviewees had the opportunity of reading the preliminary analysis of the session before the interviews. This means that they had time to reflect on issues of dialogical supervision, power relations and multiple perspectives in supervision before the interviews took place. They recognized the themes and found the analysis relevant.

The interviews revealed how supervisors and PhD student (now PhD graduate) experienced the session and the process differently. The principal supervisor recognized the description of dialogical supervision, whilst the PhD graduate remembered the session as very confusing:

There was a holiday where I was very worried... They talked like, the four of us sat around the table, and they talked a lot, and I was just listening, and in the end I came out and didn't really know what I was going to do and not do, because there wasn't agreement about what I should and could do... [PhD graduate].

It was confirmed in the interview that it was this specific session she recalled. However, when talking about the overall process, the PhD graduate appreciated the diversity among her supervisors.

I think it has given me a good understanding of what science is. That there is not one right way to do research, but therefore different opinions on the same subject are needed, and all you need to do is to take conscious decisions about it, and then you are a good researcher. That's what I learned from the process. To really see the diversity [PhD graduate].

She explains that her three supervisors had very different perceptions of what good research is, and that it took some time for her to figure out that there was not one research plan.

And it took some time for me to notice that, because when you enter, then you think that this is a close relationship, they have employed me, and they agree on what they want to do and what that PhD should look like, and then it takes half a year or so until you notice, oh, I can actually choose between three different directions to do this [PhD graduate].

This specific session stood out in her memory four years after it took place. Whilst the session itself had put her into a period of confusion and worry, her later reflections on the overall process of PhD studies and supervision support the findings by Dysthe et al. (2006) that diverging perspectives created learning potential. It might well be that the diverging voices of the supervisors would have been confusing had they remained implicit storylines, but as they are confronted in the dialogue as conflicting understandings of 'good research', they are made visible and become alternative approaches to consider. In the interaction the utterances of a supervisor would be authoritative given the power relations between a supervisor and a PhD student. For the PhD student to be able to accommodate the supervisors' diverging and authoritative voices they need to leave room for the PhD student to use them constructively in her own inner dialogue, as inner persuasive voices in Bakhtin's terms (Dysthe et al., 2006). For this to work the supervisors need to signal that they are ready to adjust their views. The co-supervisor B does this very explicitly in stating '*I am not an expert in this. I can just see that there is a dilemma that we have to be aware about*'.

To the principal supervisor (A) the supervision session was not really different from a typical group research meeting among colleagues, where an agreement will be reached through discussion. The co-supervisor (B) perceives the PhD student as very independent:

[Name] is a very independent student. So, she can maintain her position, and say 'Now I decide that I will do like this', and then she takes what she needs from each of us [...] presenting herself as a real colleague, an equal partner [Co-supervisor B]

This perception of the power relations is in contrast to the way the PhD graduate experienced the interaction with her supervisors. To her, it was important to have them all present at the supervision sessions, so that they would balance out each other. As she puts it:

...sometimes, because they were all very busy, I met with just one of them, but that was not a very good idea. [...] if I only used one, then I might go in the wrong direction, because that supervisor was not kept back by the other supervisor [PhD graduate]

She found it difficult as a PhD student, to argue against an experienced researcher in a higher position and with a strong opinion. When they were all present they would counterbalance each other and she would not be pulled in any one direction. Here, internal power relations between supervisors come into play, similar to what Manathinga (2012) found in her study of team supervision.

The principal supervisor connects the dialogical supervision with the type of research they engage in:

...another less independent PhD student would maybe suffer in such discussive work environment, right? Then they just want to be told what to do. But that is a trait we do not possess, it doesn't work well as a creative landscape architect [Principal supervisor]

He believes that individuals who do not thrive in this work environment choose a different path, like more natural or technical sciences. The co-supervisor, being involved in a number of interdisciplinary research projects, prefers PhD students who 'take fewer notes' and throw themselves into the discussions, preferably from the outset, but she also realises that it is a matter of maturing as a researcher. To the PhD graduate, this is a learning process and it takes time to build confidence to engage in discussions with supervisors.

...that demands perhaps also that the PhD student also is capable of saying yes and no to different.. different methods and different ideas. When you build up your own position and you are strong enough to maintain your stance when the supervisor isn't of the same opinion as you are. That is something you need to learn. It is clearly not something you do when you have just started your PhD study. [PhD graduate]

The analysis of the supervision session and the interviews shows how the PhD student needed to relate to her three supervisors with different viewpoints and different understandings of 'good research', and defend her views within the game of power relations she perceived. The interview with the PhD student revealed that she was actually confused after the meeting, so confused that it stands out in her memory three years later. But also that it was around this time that she started noticing that she had alternative research approaches to choose between. The analysis tells us

something about the quality of the diverging or conflicting voices as learning potential: They need to be explicit diverging perspectives rather than implicit conflicting storylines, where each supervisor simply takes their own understanding for granted as common ground. As stated by Davies and Harré (1990) 'In making choices between contradictory demands there is a complex weaving together of the positions [...] that are available within any number of discourses, the emotional meaning attached to each of those positions [...] and the moral system that legitimates the choices that are being made' (p. 59). Here, the moral system includes the expectation that a PhD student will consider the advice given by her supervisors. Her ability to benefit from the learning potential of the diverging voices was influenced by the power relations in play, also the power relations between supervisors and their commitment to reach agreement. When the storylines turn into conflicting views and the supervisors realize their disagreement they adjust their opinions in order to make it possible to reach an agreement. The interview indicates that the PhD student found the disagreement more problematic than the supervisors, who believed that she was fully capable of taking her own decisions. The contrasting perceptions of power relations could be an obstacle, as supervisors might be less attentive to her subordinate position. To her, the power relations changed over time as she became familiar with research in the field, and at some point she became the expert.

Concluding

Joint supervision with multiple supervisors and diverging voices created learning opportunities for the PhD student in this case. Findings from a single qualitative study cannot be conclusive, but our analysis of the supervision session and subsequent interviews point in the same direction as other studies by e.g. Lillejord and Dysthe (2008), Dysthe et al. (2006) and Guerin et al. (2011), that supervision with multiple supervisors and diverging voices and perspectives enables the student to create their own understanding. This study shows how this may happen as a result of conflicting storylines.

The use of positioning theory enabled us to go beyond the static roles such as the critical and the supportive supervisor, and show how competing storylines developed into conflicting voices. The interviews revealed how the supervisors and their PhD student perceived the power relations differently, and how this influences their interaction.

Joint supervision is a pressing theme in supervisor development and the issue of balance needs to be discussed during development activities: Clearly supervisors have to adapt their style to the individual PhD student, but the involvement of multiple supervisors adds another level of complexity. The power relations between the supervisors and the PhD student, as well as between supervisors, have to be consid-

ered for the use of multiple voices to be constructive and develop into inner persuasive voices rather than conflicting authoritative voices.

Sofie Kobayashi, M.Sc., is PhD student at the Department of Science Education at the University of Copenhagen. Sofie Kobayashi teaches supervision to PhD students and supervisors and her PhD project concerns PhD supervision in the science-based faculties.

Brian Grout, Ph.D., is Professor in Horticultural Science at the University of Copenhagen. An active researcher and PhD supervisor, he also teaches Introductory courses for PhD students, with a strong emphasis on Personal Development, and is involved in PhD supervisor education.

Camilla Østerberg Rump, M. Sc. Eng., Ph. D., is Associate Professor of University Science Education at the Department of Science Education, University of Copenhagen. She teaches in the teaching development program (Adjunktprædagogikum) and participates in development of teaching and learning at the Faculty of Science. Her research work focuses on attrition and retention, outcomes of university teaching development programmes, artefact mediated learning, and PhD supervision.

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