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Collaborative learning and competence development in school health nursing

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Abstract

Purpose – The purpose of this paper is to investigate the process and learning outcomes of peer collaboration in a Danish health developmental project in school health nursing. The paper explores how peer collaboration influences the school nurses' collaborative learning and competence development.

Design/methodology/approach – The article is based on data from a three-year health educational development project at primary schools in Denmark. These data are observations from 12 reflective workshops with school nurses, two questionnaire surveys, and five focus group interviews with five of the six sub-projects after the project was over. In the workshops, the questionnaire surveys and the focus group interviews the school nurses were asked to reflect on the developmental process, their collaboration, own and mutual pedagogical competence development.

Findings – Systematic peer collaboration between school nurses qualifies their learning and ability to reflect on practice, their communication with colleagues and children, and the development of new and innovative approaches to school health nursing. The introduction of peer collaboration, however, takes time and energy and it can be a challenge to introduce peer collaboration into a working culture in which school nurses traditionally work alone under prominent work and time pressures.

Research limitations/implications – The study is explorative. Further research could explore the connection between collaborative learning among school nurses and the development of their competences in school health nursing.

Practical implications – The paper outlines how and why collaboration among school nurses should be introduced in a more systematic way into school health nursing.

Originality/value – The paper investigates the connection between informal educational activities for SNs and possible learning outcomes for practice. Specifically, the paper looks into different ways in which SNs collaborate and the findings contribute to new understandings of how SNs' practice can be organised in order to stimulate school nurses' participation and collaborative learning and increase the quality of school health nursing.

Keywords Collaborative learning, Participation, Peer collaboration, School health nursing, Competence development, Competences, Denmark

Paper type Research paper

Introduction

Peer collaboration in educational contexts is widely praised as a practice capable of developing and improving the quality of teaching and learning processes (Hammersley-Fletcher and Orsmond, 2005; McLeod and Steinert, 2009). Still the potential of collaborative learning among nurses in school health nursing has yet to be explored and unfolded, in spite of several obvious similarities between the two contexts in which these two groups of educational professionals operate. Just like teachers school nurses (SN) predominantly work alone and they often experience an imbalance

between the demands of the work environment and their ability to meet these demands. They may seek children's active participation in health promotion activities but at the same time they are faced with standard expectations around such basic activities as screening height, weight and sight and a demand for resolving acute problems. SNs, moreover, report challenges in distributing resources equally in school health nursing and experience a gap between their ambitions and possibilities (Nordentoft and Wistoft, 2010). This diverse and ambivalent situation has been called a "moral imbalance" by Severinsson and Kamaker (1999). The nurses wish to make the "right" decision, however they do not always recognise moral dilemmas as ethical conflicts but treat them in an individualistic and intuitive manner (Solum and Schaffer, 2003).

Previous research shows that health professional pedagogical competences such as competences to guide and to communicate with colleagues, clients and patients, have an impact on professionals' competences and ability to deal with moral, ethical and diverging demands in the field of health education and promotion (Wistoft, 2009).

In Denmark SN have a bachelor in nursing science together with a one year diploma as a health visitor. For many years it has been a plan to develop education at master's level, however, it has not been realized yet for economical as well as administrative reasons. The SNs are, therefore, eager to continue their competence development in other ways.

The purpose of this paper is to investigate the potential of peer collaboration for SNs competence development in school health nursing. The question is if and how SNs collaboration leads to collaborative learning and how peer collaboration may enforce the quality of school health nursing. In the literature on health promotion the peer-concept mainly refers to collaboration among adolescents in, for instance, sexual health promotion projects (Mitchell *et al.*, 2007; Wright, 2008) and not collaboration among health care professionals as is the case in this paper.

In the paper we draw on findings from health development study in which SNs have worked together with researchers to create new methods in order to qualify their practice. We begin the paper by clarifying our theoretical perspective on collaborative learning and why it is important to include research on peer collaboration among professionals in health improvement.

A theoretical approach to collaborative learning

Our theoretical approach to collaborative learning springs from a social constructivist base. It is a situated approach to learning which perceives learning as a construction of knowledge within a social context which encourages an acculturation of individuals into specific contexts (Lave and Wenger, 1991). Moreover, we see learning and participation as two phenomena which are closely linked together (Dreier, 1999). In other words this situated perspective on learning and knowledge creation implies that we learn when we are actively involved in the learning process and what we learn – the knowledge creation – is closely linked to the specific situation in which we participate. In collaborative learning the learning is constituted in interaction between the parties who participate in the interaction. The learning is dependent on the parties' mutual participation and orientation to social practices in specific contexts (Marsh-Piirainen and Tainio, 2009). The structure of social activities structures the participation and, therefore, the collaborative learning. So when two SN's collaborate their learning depends on their ability to communicate and understand each other and

the nature of the professional task which is required in a specific situation with, for instance, a troubled child. In this respect knowledge is understood to be "a social construct" and learning a "social process" (Brufee, 1993).

Dewey, Vygotsky and Bruner, all well known theorists within the socio-cultural tradition, have contributed to this "situated" line of thinking (Vygotsky, 1978; Bruner, 1960; Dewey, 1991). More specifically, the theoretical framework for collaborative learning in this paper is inspired by guidance, workplace learning and communication theories mainly developed in the Nordic countries such as Sweden, Norway and Denmark (Lauvås and Handal, 2006; Kvale and Nielsen, 2006; Ellström, 2006). Guidance in the professions has been increasingly prioritised in the Nordic countries and despite the many different terms – i.e. mentoring, coaching, supervision – different formats of guidance is looked upon "as a fundamental modus of workplace learning" – both at pre- and post- qualifying, formal and informal levels (Illeris, 2004; Lystbæk, 2007). In particular guidance has become an important part of moving beyond formal education and securing educational strategies of life-long learning in work place settings like, for instance, school health nursing. the scholastic paradigm inspired by Donald Schön (1983) educational researchers have been critical of a scholastic learning paradigm in which learning takes place in formalized contexts such as schools and other learning contexts where there is a fixed curriculum for what students have to learn as is the case in most health professionals' education. Educational researchers have questioned if this current scholastic conception of what professional education means can match or even enrich the complex, unstable and conflictual every-day practice professionals meet in, for instance, a school setting (Lauvås and Handal, 2006). In this respect a situated perspective on knowledge and learning opposes a scholastic paradigm in which there seems to be de-contextualised and hierarchical conception of knowledge (and what professionals should learn) where espoused theories and research based knowledge have higher status than "rigorous practical knowledge" (Schön, 1983, p. 34).

Lauvås and Handal specifically emphasise the prominence of professionals' tacit knowing-in-action as "the practice theory" they draw on in their practice in their moment-by-moment decisions and actions. According to Schön (1983), professionals reflect not only on-action but also in-action. Reflection-in-action like knowing-in-action is a process they can deliver without being able to verbalize what they do. In this respect skilled professionals can integrate reflection-in-action into the smooth performance of an ongoing task and learn from their reflection on reflection-in-action.

Different formats of guidance and collaboration such as peer observation/coaching and supervisions group may assist practitioners in giving professional feedback to each other and reflecting on their practice-theory including the values in which their practice is embedded (Smith *et al.*, 2001; Gosling, 2002; Donati and Watts, 2005; Cosh, 1999; McLeod and Steinert, 2009; O'Keefe *et al.*, 2009). McLeod and Steinert (2009) and O'Keefe *et al.* (2009) argue that expert-led interventions are often ineffective because of the asymmetrical relationship between learners and teachers. They describe an innovative development program at the University of Adelaide in Australia which differs from the teacher-learning model in that it introduces peer observation partnerships. McLeod and Steinert conclude that these partnerships allow health care professionals to learn from each other as they work together because the partnerships operate "in the teacher's own practice setting, enables individualized learning, and fosters collaboration" (McLeod and Steinert, 2009, p. 1044).

The individualized learning, moreover, may stimulate the personal development of the professional – a core requirement of professional health care training (Donati and Watts, 2005). These learning qualities can also be found in clinical supervision, but peer observation is more directly linked to practice because it takes point of departure in peer observations of practice situations. Kvale and Nielsen (2006) assert the importance of not only focusing on individual learning processes but also looking at social dimensions of learning. Together with other work place and educational researchers (e.g. Eraut, 1994, 2000) they argue that most learning is invisible because it is incorporated into daily shared work activities. This informal learning, then, is defined by taking place outside a formal learning context and springs from the activities, interests of individuals and groups but may not be recognised as learning. In the health educational development project we have introduced and created spaces in which the SN's could reflect collaboratively on their practice in both more formalized and informal ways. Our ambition with these learning spaces has been to stimulate SN's participation and collaborative learning and subsequently professional outcome.

Previous research into school health nursing

School health nursing is a new research area in which approved practice, together with public health studies, including the registration of childrens' physical health status, appear to dominate the content of the research (Clausson, 2008). Recently, there has been a focus on the increasing mental health among school children (Clausson, ibid). In this respect Borup and Holstein (2004) have studied health promoting dialogues from school childrens' perspective and emphasised the significance of the dialogue for childrens' health related choices. Johansson and Ehnfors (2006) have investigated prerequisites for a good dialogue from adolescents' perspectives and found that factors like trustfulness and continuity were important dimensions in the relationship between the SN and the adolescent. Because caring for school children is a complex, professional challenge in that it involves not only caring for physical and mental health of the child but also includes caring for the social environment of the child, in other words the whole family research into school health nursing emphasises the importance of the active collaboration of professionals involved in school health promotion (Clausson, 2008). This complexity of care means that SNs often face ethical dilemmas in the caring process they need to discuss with colleagues. Examples of ethical dilemmas are: balancing withholding information and truth telling, unequal access, or inequalities in care, and breaking rules and reporting broken rules. In this regard, Oberle and Tenove (2000) recommend that public health nurses should have mentor support and opportunities to engage in value clarification to recognise and handle ethical challenges in practice. Solum and Schaffer (2003) moreover, assert that SNs need to hear one another's voices concerning ethical problems. The importance of investigating the role and priority of SNs education in more depth is emphasised because SN play such a key role in the health promoting activities for children and young people (Vought-O'Sullivan *et al.*, 2006). However, we have not been able to find papers linking informal educational activities for SNs and learning outcomes for practice, including demonstrating how SNs collaborate and how their collaboration influences the quality of school health nursing. This paper, therefore, intends to fills a gap in the literature on research in school health nursing.

The school health developmental project
School health care has unique opportunities to instigate inclusive social activities which facilitate children's sharing of mutual experiences, problems and health challenges. The ambition of the SNs participating in the project was to inspire children and young people to develop a more active approach in getting a healthy life. The overall objective of the project was to facilitate and qualify health pedagogical method development within school health nursing. In the project we worked with a participatory approach inspired by participatory and action oriented research and development (Aagard Nielsen and Svensson, 2004). The school children and young people participated actively in the preventive and health promoting interventions together with the SNs (Hart, 1997). They have, for instance, set targets for the interventions, participated in decision making and shared responsibility of actions. Moreover, they have evaluated and described the benefits and results of this approach to health education. This approach to health care in which standard controls, miscellaneous debugging and troubleshooting methods are discarded makes testing of innovative participatory and collaborative methods possible and thereby a change of the otherwise typical "autonomous" working practices. In accordance with previous research using participatory methods in researching health promotion in school settings we see participation and "the importance of taking action as part of learning about health" (Simovska, 2008, p. 61).

The overall project was divided into six sub-projects. These sub-projects were:

(1) *"The sanctuary" – groups for children of divorced parents*. SNs often experience that children of divorced parents are "caught in the middle'. This sub-project has developed a group method to promote well-being, openness and mental health among divorced children around the age of 10.

(2) *"Self esteem is a weighty matter"*. This project took a point of departure in believed connection between low self esteem and obesity in children. This connection was examined and verified. Based on this knowledge, the nurses developed a group-intervention for children who suffer from both low self-esteem and obesity.

(3) *"It's about you" – a health educational health profile in the eighth grade*. The project was carried out by the municipality's child and adolescent physician. She developed a net-based questionnaire to uncover a children's health profile. This questionnaire has until now been tested among eighth graders.

(4) *"The pupil's agenda" – a health educational perspective on the individual conversation with adolescents in the eighth grade*. This project focuses on the ways in which the pupil's agenda and needs can be illuminated in the individual health conversation in eighth grade.

(5) *"Boy and girl, what does that mean?"* The project has developed a teaching plan for health education about the body for pupils in the second and third grade. The intention is to strengthen and support the pupils' positive physical and mental self-awareness.

(6) *"Health circus"*. A well-tested and well-founded creative offer to first graders, consisting of a number of different health activities related to four specific themes during four days. The offer spans over several activities and involves at least two SNss and the class teacher.

All of the sub-projects drew on experimental methods and the SNs succeeded to develop new health educational activities in the schools. These activities included creative method development and testing (Nordentoft and Wistoft, 2010) in which the SN, for instance investigated how school children perceive mental health and wellbeing, physical and social health. The sub-projects were organized in three phases: analysis of existing evidence (best practise) and problem identification; implementation of concrete development projects; and dissemination, implementation, and anchoring (Nordentoft and Wistoft, 2010). All experiments and activities were situated at the schools. All the SNs met with researchers/consultants to reflect and give each other feedback in 12 workshops during the project.

Methodology
Data collection
This article draws on our notes and observations from 12 reflective workshops with SN and researchers as participants. These workshops provided the participants with a conversational space in which reflection and interpersonal understanding formed learning relationships among the SN throughout the project. Secondly, we made a questionnaire survey twice in the process: half way and as part of the evaluation of the projects. Lastly we had five focus group interviews with five of the six subprojects after the project was over. In total 13 out of 16 SN were interviewed. In the workshops, the questionnaire surveys and the focus group interviews the SN were asked to reflect on the developmental process, their collaboration, own and mutual pedagogical competence development.

The interview guide
The focus group interviews were based on open-ended questions (Kvale, 1996) and the interview guide consisted of themes which had been raised in the workshops and questionnaire surveys. Before the interviews we mailed a letter to the SN in which we summarised the main points of their written comments in the two surveys and asked them to reflect in more detail on these comments as a preparation for the interviews.

The interview guide was structured around the following themes:

- Structure of peer collaboration – who, how and when? Before, during and after the project?
- Learning outcomes and challenges – individually, collaboratively, professionally, organisationally.

In the interviews we started with the broader questions and moved on to more focused and sensitive questions as the interview progressed, such as specific emotional challenges in peer collaboration.

Analysis
The interviews were transcribed verbatim. The SN statements were coded and we made a content analysis in which we grouped the transcripts into categories to identify common and emerging themes related to possible connections between peer collaboration and collaborative learning (Kvale, 1996). Rigour was ensured during the analysis via triangulation of the different perspectives (i.e. from the different sub-projects), time points (before, during and after the activities) and multiple data sources (observations from the reflective workshops, questionnaires and focus group interview).

Findings

Peer-collaboration in the projects

The findings we present in the following paragraphs are similar to the findings existing research has produced into different peer collaborative formats in educational contexts in that peer collaboration changes the professionals' traditional working practice. Still our findings contribute to new understandings of school health nursing and how SNs practice can be organised in order to stimulate participation and collaborative learning. Normally the nurses work on their own and only meet with their colleagues at meetings and at the end of the working-day. A significant part of the project has been nurses' mutual reflections more or less systematically on pedagogical methods they used in practice. The researchers introduced four key elements for creating this atmosphere at one of the first workshops. These elements were:

(1) be willing to share experiences;

(2) avoid criticism;

(3) focus on the needs of colleagues; and finally

(4) be positive and future-oriented in feedback to and guidance of colleagues.

In accordance with previous literature on informal learning our findings emphasise the importance of constructing a secure learning context, in other words, space for learning (Eraut, 1994; Ellström, 2006; Sense, 2005; Aubert and Bakke, 2008). In this respect a secure atmosphere is not indefinable, indescribable or even mysterious. The SNs express that they felt secure because their collaboration process was founded on an explicit and clear structure and feedback culture. In fact the SNs see this secure atmosphere and as the crucial factor in their innovative and fruitful collaborative learning throughout the project. The structure was integrated in the projects from the start when the nurses planned the interventions together. Moreover, the nurses had physical spaces at work or at the schools where they could exchange reflections without being disturbed. In sum the secure atmosphere together with the undisturbed physical context in which the peer conversations took place appeared to facilitate the SNs collaborative learning.

The nurses' collaborative work has taken mainly two different forms:

(1) Informal collaboration and learning in pairs.

(2) A structured and more formal collaboration in pairs inspired by a peer observation-scheme developed by Lauvås and Handal (2006).

The peer-collaboration pairs in both (1) and (2) were matched from the six sub-project groups. In most cases the nurses were matched with colleagues they knew fairly well and felt confident about.

Below we expand more on the ways in which the SNs collaborative work was structured in (1) and (2).

(1) Informal collaboration in pairs. During the intervention nurses in five of the sub-projects collaborated in pairs. The process of collaboration is outlined in Table I.

In the two subprojects with groups for children, i.e. "the sancturary" and "self esteem is a weighty matter" the nurses co-chaired and supported each other. If, for instance, one of the nurses did not get a response to a question her colleague might take over and rephrase the question. This peer support also made nurses ask questions they

would not normally have the courage to ask and, for instance, investigate the mental health of the children in more depth[1].

(2) Formal peer-collaboration in pairs. In one of the sub-project "the pupil's agenda" – a health educational perspective on the individual conversation with adolescents in the eighth grade the nurses were more structured in their collaboration. They took turns in observing and giving each other feedback on their conversations with the adolescents as described in Table II.

A colleague who gives feed-back to another colleague is also called "a critical friend" (Farrell, 2001; O'Keefe *et al.*, 2009). This construction draws attention to the challenge and diverse situation of having to be both critical and "a friend" at the same time in order to stimulate collaborative learning. Situating peer observation and feed-back within a collegial partnership and dialogue with a trusted colleague appeared to overcome participants' concerns about being the subject of evaluation and "criticism". Instead the strength of collegiality was emphasised. This finding is in accordance with a previous finding in an educational setting (Shortland, 2010) and together with the nurses' identification of their own learning objectives the peer observation process allowed for them to explore alternative ideas and actions in a secure atmosphere. Still, as we shall return to in the last section of the paper, the peer observation process was not without challenges.

Peer-collaboration and competence development

In their collaborative learning the SNs developed reflexive and relational competences (Qvortrup, 2004). According to Qvortrup (2004), a relational competence implies the ability to interact and communicate with others in spite of cultural differences. Being

Peer collaboration	
Before the intervention	Planning: the peer collaboration pair plans the intervention: who is doing what and why? Exchange of expectations and previous experiences
During the intervention	Support: the nurses in the peer collaboration pair supplement and support each other during the intervention
After the intervention	Evaluation – written and oral: the nurses talk about the intervention and write down key points of the evaluation. This evaluation was the point of departure before the next intervention

Table I.
The process of
collaboration

Peer observation	
Before the intervention	1. Formulation of the observation theme in writing: the nurse reflects: what is my challenge and what do I want my colleague to observe? 2. Pre-guidance session between the nurse and peer observer to specify the focus of the observation during the intervention
During the intervention	Observation: the peer observer observes the intervention and takes notes
After the intervention	Feedback: the peer observer gives feedback to the observed nurse orally and in writing

Table II.
Feedback on their
conversations with the
adolescents

able to understand "the other", in other words another person, and also to understand the difference between yourself and "the other" is a relational competency and precondition for achieving mutual understanding. A reflexive competence is closely connected to relational competency in that it means to be able to observe oneself while interacting with others, an essential competence in health care (Aubert and Bakke, 2008). The conception of the difference between oneself and "the other", then, implies a reflexive competence. This difference was illuminated in different ways throughout the peer collaboration process before, during and after the interventions. In the paragraphs below we exemplify these competences and the ways in which the interactional and relational focus in the SNs' peer collaboration appears to qualify the assessment of school children's mental health and the nurses' job satisfaction.

Reflexive and relational competence development during the intervention
The SNs have become role-models for and learned from each-other. Normally SNs exchange professional experiences "reflecting on" specific episodes from their practice in their offices and perhaps clinical supervision groups. In the peer collaboration processes they got a change to observe and supplement each other's "reflection-in-action" (Schön, 1983). One SN puts it this way:

> We could sort of interrupt each other if we sensed that one of us did not know what to say next. In these situations we supplemented each other. Then I, for instance, had a little time to reflect what I wanted to say next. We had a good flow – I think.

Another SN supplements her in saying:

> We know that we operate according to the same values and that it is okay to supplement each other. This freedom releases extra resources because now we are two who are thinking.

The comments above reveal that the nurses' peer observations illuminated different possible actions and approaches to school nursing. By watching a colleague interacting with the school children and also getting verbal response on own interaction with the same group of children the SNs increased their relational and reflexive competences. One nurse summarizes the impact of peer collaboration and says that it feels like: "A mirror is held up in front of you so that you become wiser on yourself and your practice" In other words, peer collaboration illuminates SNs tacit knowing-in-action and appears to increase not only professional but also personal clarity and distinctness as, for instance, Cosh (1999), Smith *et al.* (2001) point out.

In the subprojects: "the pupil's agenda" – a health educational perspective on the individual conversation with adolescents in the eighth grade the ambition of the nurses was to let go of their habitual professional control of the individual conversation, listen more to the pupils and give them more space. In their peer observations the nurses focused on questioning techniques and how they could improve the beginning of the conversation, include the individual pupil and get him or her to share perceptions about their health, both physical and mental. A specific conversation with a young girl, we can call her Liz, exemplifies the strength of this approach. In a provocative tone of voice Liz was telling the SN about a dark, locked room she hid in was she was sad. Here she would write poetry, perhaps paint her sadness and cultivate her sad frame of mind. The nurse was not provoked. Instead she showed an interest in the Liz' room, asked her several open questions and invited Liz to tell more about the room and her state of mind. Apparently, the nurse's interest in Liz' life in the dark room made Liz open up

and talk about herself and her moods. At a certain stage the nurse challenged Liz and asked: "Do you never get out this room". This question initiated a long and profound conversation about having a dark period in your life and the ways in which you can move on. The nurse's professional knowledge and attitude were extremely prominent in this talk. In the peer-observation her questions and their effect on the progression of the conversation were illuminated and both nurses learned a lot from the feed-back session in which it was specified how the nurse's questions appeared to make the troubled young girl talk about herself and her life.

The nurses' relational competences developed because they learned how a variety of health topics can be communicated and the ways in which difficult problems can be addressed in practice to children and their parents. In other words the nurses' professional vocabulary grew in the collaborative learning process. One of the nurses formulated it like this: "we borrow words from each other". The nurses exchanged ideas about and observed how troubled children could be addressed. In one of the interviews a nurse tells about a specific peer observation situation when she has had a feeling of being unfair to a troubled child. Following such a situation she says that:

> It is really good to have the opportunity to get the perspective of a colleague on what actually happened. What did I do? And why did the child respond like he did?

Another nurse comments on the same topic about troubled children and says:

> When I experience children I feel an antipathy towards or who gets to me and my colleague does not feel in the same way, then it helps to exchange what tricks me in the situation or the child? Why do I get so annoyed? This kind of conversation I really consider to be very professional.

The nurse's comment illustrates how the SNs provided each other with an outside perspective on emotionally challenging situations, negotiated and discussed these situations in their peer collaboration. In the specific incidence, they, for instance, talked about where the emotions came from and who they belonged to. In this manner the nurses were able to separate own emotions from emotions of "the other" (Nordentoft, 2008) and thereby to qualify their relational competences.

One nurse makes an explicit link between peer-collaboration, children's mental health and own work satisfaction in saying:

> The collaboration in the project made us go one spit deeper – quite simply. And then I can feel that it increases my work satisfaction immensely. That is – when we get into the core of the sublime – what I call school health nursing. Because it is not just about how the children feel "on the outside" but also how they feel "on the inside".

In the quotation the nurse addresses how their collaboration not only increased their work satisfaction but also illuminated the importance of taking care of the children's mental health, go "one spit deeper" and look into how they feel "inside". The next paragraph describes the ways in which regular interchanges between oral and written communication and the use of logbooks appeared to qualify the nurses' collaborative learning and the process of going "one spit deeper" in dialogues with the schoolchildren.

Reflexive and relational competence development before and after the intervention
Workload and time pressure often means that collective reflections are oriented to practical solutions. A Danish lecturer, for instance, asserts that practice "is infused with problem solution" (Schaarup, 2002a). This tendency was altered in the project because the traditional inclination to "act" was postponed and put aside. "A space for disturbance and reflection" (Schaarup, 2002b) was introduced in the peer collaboration process. The disturbance and reflection was qualified by the use of logbooks throughout the project. The nurses wrote their ideas and observations down before and after each intervention. The nurses wrote:

> What was said? What was difficult? What did we observe in each child? It was important for us to get around everything before we went home – i.e. when I said this what did you think? We tried to harmonize the course of events and make sure that we had not violated each other's personal boundaries.

After each intervention the SNs shared and negotiated the meaning of their notes, descriptions, log-books and evaluations. This use of the logbooks and the intersection between oral and written communication in the six sub-projects appears to have been essential in stimulating collaborative learning. It has infused joint problem assessment, problem solving and the negotiation of meaning. Without negotiation dialogues are transformed into a monologues and participants to receptors of messages (Dillenbourg *et al.*, 1996). This synergy between the nurses' writing in the logbooks and dialogues stimulated their reflective and relational competences in that the voice and understanding of "the other", be it a child or a colleague, became clearer and more visible. Writing logbooks became not only an important collective tool in the collaborative learning process – it also became a personal tool. One of the nurses put it like this:

> I write and I write, but I don't think that half of it will appear in the project. Writing is my way of remembering and working through my experiences.

In conclusion, the collaborative learning in the interchanges between logbooks and dialogues with peers has increased nurses' reflexive competences and made them more aware of their professional and personal position and possibilities as SNs (Donati and Watts, 2005). In the end, the participatory and collaborative approach of the project work has facilitated an overwhelming feeling of "togetherness" among the SNs. One of the nurses, for instance, proclaimed in the half-way evaluation: "together we are best".

Challenges in peer collaboration, study limitations and ethical considerations
The idea of peer collaboration is based on idealistic notions about equality, mutual respect and trust that may easily been challenged in practice. For instance, it may be argued that the difference in knowledge and, therefore, inequality between peers is necessary to foster collaborative learning processes. This inequality also potentially initiates conflicts. Importantly, sober negotiations of meaning are based on mutual trust and respect. However, peer collaboration takes courage when people are used to working on their own. In peer collaboration it is a challenge to balance a secure atmosphere filled with respect and trust with an atmosphere in which it is possible to question actions in practice and initiate reflection (Martin and Double, 1998; O'Keefe *et al.*, 2009). Peer observers need to be aware that they are mostly "untrained participants in a potentially highly emotive setting" (Shortland, 2010, p. 302). This

challenge raises questions like: How do you match colleagues in the collaboration process? Do you let the nurses handle the matching themselves – or should the matching process be "blind'. And what about participants who enter later in the process? How are these participants introduced to the groups? In the project the nurses chose their partner based on a common thematic interest and a trustful feeling.

In three of the sub-projects, however, this procedure was not unproblematic. In these groups some of the nurses felt rejected for various reasons. One nurse, for instance, entered a group at a later stage in the process. In the peer observation process she made some critical observations. However, it was difficult for her to perform as "a critical friend" because she had not been a part of the initial process where the nurses had tuned into one another and developed a mutual trust. Another nurse wanted to shift partner in the middle of the process "I really wanted to try to work together with another colleague in the group" she said. This situation caused the first partner to become somewhat insecure for a while. She had thoughts like: I wonder if the partner shift has something to do with me?" and "who is my new partner going to be?".

These examples all illustrate the delicacy of the matching process in peer collaboration. Promoting and improving and school children's health calls for constant ethical considerations, with regard to interactions with both colleagues and children. When we claim that the nurses have more courage to ask the children questions they did not ask before regarding their mental health, it is also clear that peers constantly have the courage to perform as "critical friends' and make sure that they always respect each other's as well as the children's integrity and personal boundaries. In accordance with the findings of research in peer observation in educational contexts we have found that if the peer observers are emphatic, trained and are prepared to debate their observations peer observation can enforce collegiality and learning opportunities (Shortland, 2010). The study is, however, explorative and further research including more data may explore in more detail the challenges in peer collaboration and also the intersection between different forms of peer collaboration, the improvement of school children's mental health and collaborative learning.

Conclusions and practical implications for school health nursing

Previous research in school health nursing emphasises the importance of investigating the significance of SNs education and pedagogical competencies because SN play such a key role in the health promoting activities for children and young people (Vought-O'Sullivan *et al.*, 2006). This paper fills gap in research into school health nursing in that it investigates how SN work together and learn from each other. Our approach to collaborative learning implies that learning is seen as a social and situated phenomenon (Lave and Wenger, 1991). This means that learning is embedded in and depends on the quality of social relations, modes of participation and interactions in specific contexts. These interactions and collaborative learning are stimulated by creating learning spaces which increase practitioners' participation and reflexivity in areas such as different modes of peer collaboration.

The significance of different forms of peer collaboration has been examined in primarily educational contexts, however, until now it has not been examined in school health nursing. In the paper we draw on data from a three-year health developmental project in Denmark. Our findings are similar to the findings from educational contexts in that they reveal that reflection and collaborative learning seem to be enforced when

professional peers observe, critically discuss and compare different opinions and experiences as is the case in peer collaboration processes (Poole *et al.*, 2009). In spite of our situated approach to learning we argue that this similarity implies that the findings we present in this paper potentially can be generalised to work place settings in which professionals predominately work alone under similar conditions in the public and social welfare system attending to and caring for people, their schooling and their needs.

In the paper we attempt to demonstrate the ways how different learning spaces in which the SNs get opportunities to participate and collaboratively reflect-in and on their actions (Schön, 1983) enhance their collaborative learning processes. Throughout the project the participating nurses have learned that it is not possible to practice innovative health education and not let go of paternalistic intentions and paralysing health control. The ability to engage in dialogue, without losing the health professional perspective is a challenge to many of the participating nurses. In working with health promotion from a participatory perspective nurses must be able to observe own as well as others' values, basic assumptions and considerations (Wistoft and Nordentoft, 2011). This competence demands the ability to observe and act on observations from different perspectives.

Our study indicates that health educators' collaborative learning appear to be stimulated if they are capable of assessing own and colleagues' values and goals and preconceptions in peer groups and reflective workshops. In the health developmental project these peer groups have fostered peer collaboration pairs who have created innovative interventions in the schools, observed each other and their reflections-in-interactions during the interventions, and evaluated them after they took place. During this process the nurses put down their ideas, expectations, purposes and impressions in logbooks before, during and after the interventions. These logbooks qualified the nurses' face-to-face meetings, reflections-on-interactions, interventions and emotional sensitivity and, therefore, their relational and reflexive competence development. The synergy between logbooks and peer dialogues has not been explored in detail previously and it is definitely a potent future research topic to look into. Moreover, the literature (Poole *et al.*, 2009) and our findings indicate that collaboration between health professionals and researchers from the academic world in knowledge building workshops in health developmental projects creates a fruitful frame for another learning space for reflections-on-actions and collaborative learning processes. According to Lee (2005, p. 118) this kind of collaborative learning potentially mobilizes "a social synergy" within a group in that it engages in a "dynamic process of shared inquiry".

The Danish SNs' in the projects have been motivated to increase their professional visibility and explicate their approaches to prevention and health promotion because they often experience a lack of acknowledgement from teachers, social workers, parents of the children and other collaboration partners. According to the SNs there, moreover, often is an imbalance between demands of the work environment and their ability to meet these demands. They may become frustrated and perhaps more inflexible at work.

In conclusion it is essential to acknowledge and handle the emotional nature of the peer collaboration process and improvement of school children's health right from the beginning (Shortland, 2010). The boundaries between personal and professional

interventions can be blurry. A clear structure of the intervention, feed-back and evaluation process is therefore essential so that participants know what to expect and do and, finally, who to consult in case problems occurs. It is also essential that participants' clarify expectations to peer collaboration at all levels in the organisation to facilitate developmental and learning processes. It can definitely be an organisational challenge to change an individually oriented culture in which nurses are used to work on their own. This change, therefore, calls for leadership and organisational visions!

The project has revealed that if the nurses are recognised for their achievements, by colleagues and other collaboration partners, their professional and personal job satisfaction is improved. They, moreover, find energy to engage into collaborative learning processes, to change and to develop their practice. A project nurse summarised her experience with peer collaboration like this:

> After this project I have begun to consider if it would be possible to organise school health work in a more collective way so we could collaborate more? Many of us want to do so. It is a great job but we have missed this social and professional peer collaboration that is so rewarding.

Note
1. In the paragraph below we exemplify how these collaborations took place.

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