



The operating room as a learning arena: Nurse anaesthetist and student nurse anaesthetist perceptions

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Abstract

Aim: To examine which competencies mentors and student nurse anaesthetists perceive as important in a clinical anaesthesia education practice.

Background: Mentoring during clinical placement in the operating room can be challenging from the viewpoint of both a nurse anaesthetist and their students. The operating room is a work environment with many restrictions, and the nurse anaesthetist's work requires prompt decisions and actions. Simultaneously, the mentor is tasked with guiding and supporting the student.

Method: A qualitative approach including two focus group interviews was used. The analysis was conducted using systematic text condensation. The COREQ checklist for qualitative studies was applied.

Result: The analysis yielded two main categories, including two sub-categories for each. The first, "Mentoring in the operating room," contained sub-categories "Application of knowledge and expectations" and "Mentoring experiences," and the second, "Creating a good climate for learning," contained sub-categories "Impact on mentoring: human factors" and "Impact on mentoring: obstacle factors." The mentor's knowledge of human relationships and learning strategies emerged as an important factor with the potential to influence the students' learning and self-confidence. Another valuable consideration was the ability to give constructive feedback, from the perspective of both. However, production pressure was a negative factor for effective knowledge transition.

Conclusions: The ability to give constructive feedback and having an awareness of one's own attitude—which should ideally be positive and inclusive—are crucial mentoring skills. Mutual expectations must be clearly communicated before the clinical placement period, including learning assumptions, a progression plan and learning outcomes. This will facilitate the planning and help to direct the optimal course of learning.

Implications for clinical practice: This study highlights that an awareness of the student's vulnerability and the mentor's pedagogical competence and learning strategy are crucial factors to take into account.

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KEYWORDS

anaesthesia nursing, clinical placement, clinical practice, Mentor competence, mentor role, nurse anaesthetist and student nurse anaesthetist

1 | INTRODUCTION

The quality of clinical placement learning is a key factor in achieving successful student learning outcomes (Eller, Lev, & Feurer, 2014; Foster, Ooms, & Marks-Maran, 2015; Gray & Smith, 2000; Løfmark, Lindaas, Berland, Vae, & Bentse, 2016). For this reason, the Norwegian Association of Higher Education Institutions (UHR) chose in 2016 to focus on clinical practice, recommending that resources ought to be used on learning strategies to raise the quality of student supervision. A 10-credit formal competence course was proposed as a requirement for professionals who supervise students in the health sector. Jølstad, Røsnæs, Severinsson, and Lyberg (2019) recently suggested raising this to a 15-credit competence course for specialised nurses such as nurse anaesthetists (NA).

The UHR (2016) report also emphasised that lecturers must strengthen their supervision skills in both educational and clinical settings, to improve student learning. International research (Foster et al., 2015; McCarthy & Murphy, 2010), as well as a national study (Caspersen & Kårstein, 2013), revealed that mentors in different clinical health domains were unsure about what formal mentoring competence entailed, which skills were required and what the role would contain. Cassidy et al. (2012) showed that high workload and production pressure could result in limited time for briefing and feedback. Moreover, support and cooperation from management were often inadequate (McCarthy & Murphy, 2010). At the same time, nursing students have expressed that their learning outcomes and progression depend almost solely on their relationship and interaction with their mentor (Aigeltinger, Haugan, & Sørli, 2012).

Norwegian NAs have a bachelor level degree in nursing followed by a minimum of 2 years of clinical practice, and a postgraduate education in nurse anaesthesia based on the national curriculum (Education & Research Department, 2005). In 2014, an optional 6 months was added, to create a master level degree (120 ECTS European Credit Transfer System) in line with the Bologna Process (Collins & Hewer, 2013). Petterson Skogaas (2016) noted that this extension into a master's degree programme was a natural development and a part of the whole society in change, but also a prerequisite for future recruitment.

The NA provides care for patients in a wide spectrum of clinical settings, from elective surgery to prehospital emergencies (Gran Bruun, 2011). This advanced clinical field requires a high level of medical and technical skills combined with nursing care to maintain patient safety and trust (Sundquist & Anderzen Carlson, 2014). The NA works in cooperation with the anaesthesiologist, with areas of independent responsibility and as an assistant. Their role as an important part of the surgical team implies responsibility for securing patient safety and effectiveness (Norwegian Association of Nurse Anaesthetists (ALNSF), 2014). The level of competence and

What does this paper contribute to the wider global clinical community?

- A suggestion to close the gap between requirements as a nurse anaesthetist mentor and demands on production pressure and efficiency in the surgical units.
- Develops more insight into mentoring of nurse anaesthetists students.
- The finding that self-confidence and progression increase when the student nurse anaesthetist is included by their future peers.

responsibility required in Norway is similar to that of other Nordic countries, but differs from the US Certified Registered Nurse Anesthetist (CRNA) who works either independently or in conjunction with an anaesthesiologist (Tenedios, O'Leary, Capocci, & Desai, 2018). Therefore, there are differences as well as similarities in tasks, competence and responsibility between countries.

Student nurse anaesthetists' (hereafter named NA student) clinical practice constitutes half of the nurse anaesthesia education and is periodically allocated over three semesters. The fourth semester is reserved for the master's thesis (Master's Programme in Nurse Anaesthesia, 2017). NA students are novices, beginning their clinical education in the anaesthetic context. They confront a restricted workplace since most of the tasks are performed inside the operating room (OR) (Averlid & Bihari Axelsson, 2012). The work situation requires continuous observation and bedside presence. High workload, both dependent and independent tasks, and unpredictable scenarios characterise the NA profession (Gran Bruun, 2011), leading to a variety of challenges, for students as well as mentors.

In accordance with the national curriculum (Education & Research Department, 2005), NA students should be supervised (based on criteria and predetermined learning outcomes) through a progression plan characterised by escalating difficulty and responsibility. Moreover, the NA student's learning outcomes should be characterised by comprehensive professional competence in anaesthesia nursing. This activity is the responsibility of both the educator from the university and the mentor from the clinical practice field. Despite this responsibility, mentors in the field of anaesthesia nursing rarely have formal clinical supervision competence (Jølstad et al., 2019).

To our knowledge, there are few existing European studies concerning NA students' and mentors' perceptions of what competencies are required to mentor NA students. In the United States however, the "Characteristics of clinical teachers in nurse anaesthesia" were

already being investigated in 1984 by Katz and later by other researchers. Their research reveals that the highest ranked mentoring skill among NA students was “stimulates student learning involvement,” while instructors ranked “clinical competence/judgment” as the most important (Smith, Swain, & Penprase, 2011).

While there is existing knowledge of mentors' role and qualifications in general nursing, we see a gap between these requirements (i.e. competence and resources) and the NA's actual work situation. This gap poses many challenges compelling our attention to study the matter of which mentoring competences should be required in the clinical context of anaesthesia.

2 | BACKGROUND

Learning in a clinical practice context is often linked to sociocultural learning, or what is known as “situated learning” (Lave & Wenger, 1991, p. 34), which means that learning happens in an interaction between the professionals' competence in the field and the students' personal experiences. Development from peripheral participation leads to membership in a community of practice. Informal knowledge and culture transference is highly represented in this community of practice (Gotvassli, 2012). In the nursing practice context, Patricia Benner (1995) presented learning as a process, where nursing experience develops in steps: novice, advanced beginner, competent and proficient. Since the period of reflection from the 1980s (Schön, 1987) onward, “critical and self-reflective approaches” are terms used in adult learning, emphasising the learner's development of skills and insight that are important to their practice (Mezirov, 2000). The NA students start their transition from proficient (general) nurse to novice NA, changing both their clinical environment and their community, and necessitating a change in mindset and attitude.

Quality in mentoring is characterised by reflexive dialogue, collaboration, caring and professional and personal development (Eller et al., 2014). Mentoring is a process that uses formative assessment, which involves giving constructive stepwise feedback. Hattie and Timperley describe the feedback model as “Where am I going (feed up), what are the goals? What progress is being made toward the goal? (feedback), and what activities need to be undertaken to make better progress? (Feed forward)” (2007 s. 86). Helminen, Johnson, Isoaho, Turunen, and Tossavainen (2017) emphasise that feedback in summative assessment situations should also be based on collaboration with other staff members to obtain a broader basis for student assessment.

Supervision, mentoring and clinical preceptorship are terms used in different practical training contexts in different countries. The term supervision (rather than mentoring) is often used in combination with summative assessments (McCarthy & Murphy, 2010). By contrast, mentoring is often associated with increased independence, and the learning approach is more collegial (Lauvås & Handal, 2014). In this article, mentor will be used to describe the role and mentoring as the tool used.

The mentor's role and principle goal are to act as a guide and role model for the student (Moseley & Davies, 2008), presenting and embodying the ideal behavioural traits for the role. Hence, the NA mentor should be calm and confident and act as a distinct member of the surgical team (Elisha & Ruthledge, 2011). They should guide the students as a good role model, as described by nursing students in the study carried out by Gray and Smiths (2000). The goal is to achieve this through clear communication and realistic expectations from both the student and the clinical setting. This facilitates the NA student's transition from observer to participant in the operating room community (Gotvassli, 2012; Lave & Wenger, 1991) and supports their learning process (Vae, Engström, Mårtensson, & Løfmark, 2018). Several studies on student nurses have pointed out that mentoring is time-consuming, and recommend that mentors should have an appropriately lessened workload relative to their responsibility for teaching (Holmsen, 2010; Hilli, Melender, Salmu, & Jonsén, 2014; Foster et al., 2015). In relation to this, Foster et al. (2015) point out that the educational institution should provide mentor support through regular updates, study days and assessment. This development and support of mentoring skills correspond with the findings of Jokelainen, Jamookeeah, Tossavainen, and Turunen (2013) showing their importance in the assessment and support of the student's learning process.

Pettersen Skogsaas (2016) implied that there might be a need for a change in mentoring approach. In this study, the NA mentors interviewed emphasised the importance of a close bond between the thesis and the clinical field, to make the thesis of actual value to the clinicians.

This implies that we need to sharpen our insight in acknowledging the contribution of theses in optimal mentoring. Moreover, NA student supervision necessitates the recruitment of motivated, qualified and suitable mentors. With this in mind, we wanted to secure data directly from both the mentors and students. Grounded on perceptions and experiences of NAs and NA students, this study aimed to identify the core competencies that mentors need to have when mentoring NA students. In addition, a second aim (depending on the result) was to plan a preparation course.

The following research question was formulated: What competencies do mentors and student nurse anaesthetists perceive as important in clinical mentoring?

3 | METHOD

3.1 | Design

A qualitative design was used, represented by a systematic text condensation (STC) inspired by Giorgi phenomenological methodology (Malterud, 2012b). STC is a descriptive and explorative approach that presents the participants' experiences and perceptions as they describe them, in line with the focus of this study. The procedure consists of the following four steps: (a)

total impression—from chaos to themes; (b) identifying and sorting meaning units—from themes to codes; (c) condensation—from code to meaning; and (d) synthesising—from condensation to descriptions and concepts.

3.2 | Sampling procedure

Focus group interviews were chosen as this was considered the most relevant sampling approach. Focus group interviews are particularly suitable for exploratory work, in this case people's experiences and perceptions (Malterud, 2012a). We wanted to investigate both sides of mentoring, and both NA students and NAs were invited to participate for this reason. The students were recruited from the three-semester-long anaesthesia nursing programme at a selected university, and the NAs came from three different anaesthesia departments in the Oslo region of Norway.

The sample includes one focus group with eight student participants (7 female and 1 male), with between three and 17 years of nursing practice, and one focus group with seven nurse anaesthetists (3 female and 4 male) with mentoring experience ranging from four to 24 years. None of the mentors had undergone a formal mentoring preparation course (10 or 15 credits), although some had taken a 2-day orientation course regarding the curriculum and a brief introduction to the mentor role (held at the university).

Requests for participation were made orally and in writing, and the latter were sent to the head of the anaesthesia nursing department, who was responsible for forwarding the request by mail to the NAs, of which seven were recruited. The co-author (JSH) was responsible for organising the mentor focus group, which was held in a room close to the participants' workplace. The NA students were recruited via email by the principal author (GA). Eight students responded to the request, and the focus group interview was held at the university.

3.3 | Data collection

Data were collected in December 2016 and March 2017. To answer the research question, an interview guide was used, which included mentoring-related questions. The questions were initially formulated by the authors and, further on in the process, were revised by a professor employed by the anaesthesia nursing education programme. A group of NA students and colleagues at the university read the interview guide and gave feedback on whether the questions were understandable. Some of the questions are reproduced in Figure 1 below. The focus group interviews were conducted in person by the principle author and the co-author as an assistant moderator. The interviews lasted approximately 60–90 min. During the interviews, the participants were given the opportunity to raise questions of relevance to their personal situation. The researchers tried as best they could to avoid biases—spending time listening and letting the participants talk

freely—with nuances and personal comments inspired by a good collaborative flow (Malterud, 2012a).

The interviews were audio-recorded and then transcribed verbatim by the co-author soon after the event. The data were then analysed in accordance with Malterud's (2012b) four-step STC.

3.4 | Analysis

In step one, an overview of the material was achieved by reading the transcribed text. The authors then met, discussed their overall impressions and identified the preliminary themes.

The second step entailed identifying and organising data elements that elucidated the research question. The complete transcripts were read line-by-line and labelled as "meaning units," which provided information related to the research question (Malterud, 2013). The information was then subjected to a coding procedure, which included sorting and classifying meaning units and labelling them for code group placement (similar content or meaning). The authors then discussed and summarised the similarities and/or differences within the code groups.

In the third step, the information was further abstracted by content condensation for each code group and sorted into primary subgroups. In the fourth step, content was synthesised from the condensation stage, and a story was developed based on the empirical data from each subgroup and substantiated with quotes. This text represents the most relevant and meaningful content connected to the research question. The synthesised result was validated by confirming that it still reflected the whole dataset. Throughout the process, the researchers tried to be as open and honest as possible, and every step was carefully considered and assessed in accordance with guidelines for focus group interviews. In addition, the participants were contacted by email asking for feedback on the analysis. We received positive responses confirming that our analysis was in accordance with the participants' statements (Krueger & Casey, 2009; Malterud, 2012a).

3.5 | Ethical considerations

The National Data Inspectorate approved the data collection procedure, which entails the condition that the audiotaped files and any sensitive information were deleted 2 years after the approval, in accordance with the regulations. Project approval was granted by the head of the anaesthesia department as well as the chosen university. Informed and written consent from the participants was obtained on the basis of voluntary participation. Oral information was given before the initiation of each focus group interview. Confidentiality was assured, as was safeguarding the participants from individual consequences of participation by ensuring that no personally identifying information would be tied to quotations or information used (Polit & Beck, 2012). In addition, the Consolidated Criteria for Reporting Qualitative (COREQ) research checklist is attached as a Data S1.

FIGURE 1 Excerpt from the interview guide

Introduction question
From your point of view, describe what mentoring means for you?

Transfer question
Describe a mentoring situation you perceived as good, or bad

Key questions
What do you see as important when mentoring NA students?
What competence do you consider useful in mentoring NA students?

Ending question
What competence would you like to develop if you had the opportunity to participate in a preparation course for mentors? (Only NAs)

4 | RESULTS

The STC analysis yielded two main categories. The first is “Mentoring in the operating room,” containing two sub-categories: “Application of knowledge and expectations” and “Mentoring experiences.” The second is “Creating a good climate for learning,” containing two sub-categories: “Impact on mentoring: human factors” and “Impact on mentoring: obstacle factors.”

4.1 | Mentoring in the operating room

The first main category consists of the students and mentors’ perceptions of the relation between mentoring and learning in the OR work environment. In general, mentoring here takes place simultaneously while attending to patients’ care needs. Hence, the mentor is fulfilling two different roles at the same time. The OR was perceived as the most valuable and relevant learning arena for the NA student, where they could develop all necessary skills and competencies to function as an NA later on. This is not limited to technical procedures and observations, but also the role as a nursing care provider. The OR has a strong influence on the students’ master’s thesis in terms of its relevance to the clinical context. As a learning arena, the OR could function as a catalyst in this process. Further aspects of the main category are described under two sub-categories: *Application of knowledge and expectations* and *mentoring experiences*.

4.1.1 | Application of knowledge and expectations

Mentors talked about patients’ vulnerability and their need for an atmosphere of safety and trust. They saw themselves as communicators who convey this crucial knowledge and attitude to their students.

Nevertheless, the first ten minutes are vital. You need to create an atmosphere of safety in ten minutes! That is important! Even though other procedures like intubation and all those things are very important as well.

Mentor 6

According to the students, the NAs conducted their anaesthetic work in different ways in terms of how they administered,

handled and maintained anaesthesia. For the students, there were no uniform procedures, and the possibility of varying approaches and methods represented a cause of insecurity. At the same time, variation was seen as positive, especially during the third semester, when the students had already developed critical observation skills—moving from novice to becoming competent and more independent.

The mentors wanted the students to take a holistic view and see the whole scope of patient treatment, and to be a caring person and not only a technician. The mentors all agreed that their supervision was guided by personal experience and inspired by “step learning.” They also explained that learning outcomes were dependent on student motivation and interest, and they paid attention to personal suitability.

Briefing and debriefing in close proximity to the case were seen as well-invested time and improved the students’ sense of mastery. Conducting debriefings between patients, assessing performance quality and asking students to reflect upon personal performance were perceived as highly valuable for learning progression. When asked to describe a good mentoring situation, one student recalls:

And we did a whole day, with three patients. [...] ... we did a debriefing between each case - what happened, what could we do differently? It was a very good day, and I learned a lot.

Student 4

Both students and mentors agreed that the master’s programme helps to further develop the profession, as it leads to a broader understanding of the various topics. The participants believed that the programme was important for advancing both patient benefits and the nurse anaesthesia profession. The students explained that it was more engaging if the professionals asked them to investigate, improve or construct a practical and needed topic or procedure. In summary, the students found that mentors and other professionals in the clinical settings were both interested in and positive towards their master’s degree subjects. One mentor said that it was essential that the NAs kept working in the clinical setting and that they did not leave the profession after acquiring their master’s degree. Nevertheless, the mentors felt that educators needed to maintain the responsibility for providing

theoretical guidance, stating that they noted inadequacies in their own academic competence.

4.1.2 | Mentoring experiences

Students described themselves as vulnerable, in that their self-confidence was dependent on their mentors' feedback. Students also wanted to be recognised as novices and, upon failure (for instance during an intubation attempt), needed to be encouraged to try again. This was perceived as positive for self-confidence, especially if they succeeded in their attempts.

... [Students are] allowed to try more than once - and they are not "taken over" [by the mentor] immediately if not necessary. Of course I understand you can't try for an eternity, but you should be allowed a few attempts because then you improve your self-esteem.

Student 4

During the final semester, students are expected to work more independently. In this phase, mentors look for initiative and a deeper understanding. This is the time where the student acts on their own in the operating room. Students, on the other hand, expressed worries about having "black-outs" when being alone, and not knowing how to act in a given situation. Mentors expressed a need to teach them how to be independent—always being prepared, expecting the worst case and seeing what is missing. Furthermore, students should learn self-help and to not seek assistance in tasks that they will have to do on their own at a later stage. One mentor participant described this in the following quote:

I start pretty early in preparing them to be independent, even while they should know that there is help to be had. But they should be independent to foresee and do things ...

Mentor 7

Mentors described themselves as having calming personalities, with an ability to withstand and handle stress, as well as a sense of humility towards their own role as a mentor. An important mentoring skill was assisting the student in relaxing and acquiring a feeling of confidence and mastery. In addition, mentors help students to develop self-confidence, to see their strengths and to cope with difficulties. Mentors expressed frustration in cases where they were unable to assist students who were stressed.

I think failing is when I don't manage to give the student that self-esteem we talk about. If I see anxiety and stress in a situation, and I can't manage to get them to relax with a feeling of mastery, then I think I am a bit unsuccessful.

Mentor 1

Students describe "suitability to supervise students" as the most important mentoring skill. The amount of experience was less important than having a suitable approach to students. Another important skill was not being too proactive and detail-oriented, and allowing the students to think and try by themselves within the limitations of the situation. When asked about which criteria the mentor role should be subject to, students commented that a theoretical education in mentoring might be a good addition, but they were unsure whether this was sufficient in itself for the mentor role. Students also said they missed a mutual understanding with mentors in clinical settings, which could serve as a common platform for how to best mentor students.

Personal suitability is most important, because having a preparation course in mentoring does not necessarily mean that you are a good mentor.

Student 1

Mentors on their part expressed their desire to know more about educational demands placed on educators. They mentioned their uncertainty about what students should know and learn. Some mentors felt that their own knowledge appeared a bit outdated, while others saw student mentoring as an opportunity to update their own knowledge—an opportunity to learn from each other. One seasoned mentor explained that it could be useful to learn elementary pedagogics, in particular how to handle difficulties and how to be a better mentor. Another suggested that receiving both written and/or oral feedback from the clinical placement period would be valuable. To increase their own mentoring competence, they suggested group discussions with colleagues so that they could benefit from sharing each other's experiences, for example how to use different mentoring approaches to different students and how to increase student growth and learning outcomes.

Yes, I agree with what you say about feedback from students - I wish we had more of it, a sort of systematic feedback.

Mentor 1

4.2 | Creating a good climate for learning

The second main category "Creating a good climate for learning" can be described as both structural and cultural factors with an impact on learning. Structural could be the operating schedules that demand effectiveness and the limited time for feedback and reflection, as well as poor continuity. Culture could be the desire and/or need for belongingness to the future workplace. Students expressed that a feeling of belonging and inclusion in the group of future colleagues was crucial for self-confidence and well-being. Moreover, various elements of guiding the students' work were said to be important to their learning outcomes. Further aspects of the second main category are described in two sub-categories:

Impact on mentoring: human factors and Impact on mentoring: obstacle factors.

4.2.1 | Impact on mentoring: human factors

Students had the desire and need to be (and perhaps expectation of being) included in the professional NA group during their training period. One student described this as a desire to receive a thorough introduction to their future peers, with their mentor introducing them to the others. Essentially, the students wanted to be seen as individuals. Another student described the same desire, but with the aim of making the nurse anaesthetists aware of their presence as students. In addition, they proposed that both doctors and other specialist nurses should receive some information about them, thereby making it easier for students to get hands-on experience in the OR and follow a predetermined progression plan.

... if they introduced me and said: 'this is NN. She's a student and will be here this and that long'. And then presented [you] to the other [future colleagues and personnel].

Student 5

Both students and mentors explained that good guidance depended on planning and communication, based on dialogue. They also emphasised the importance of a good student-mentor relationship, which was seen as the foundation of a safe and stable learning environment. Students saw this as an especially important factor early on in their placement learning, enabling them to improve their skills faster and securing a steeper progression curve. It also reduced the feeling of insecurity and uncertainty.

All students emphasised a desire to know what was expected of them in each clinical placement context, and all participants saw the importance of recognising and communicating expectations from the start of the clinical placement period. Positive feedback was necessary, provided in a dialogue that included both elaborative and challenging questions. As one mentor put it:

I prefer to see it as two-way communication. They actually know a lot when they start, and they are already nurses. So it's just to get them to believe in themselves.

Mentor 7

4.2.2 | Impact on mentoring; obstacles factors

The constant production and efficiency pressures are described as a limitation to student learning, meaning that the time for guidance on anaesthesia and bedside training ends up being compromised in favour of efficiency. Mentors underscored the importance of giving the students enough time to perform tasks and think on their own. The students, on the other hand, expressed this somewhat

differently and felt that they lost sight of the big picture and their part in it, resulting in a feeling of chaos. The students also observed problems with mentoring in such an environment and suggested that placement learning in ORs could begin with a less intense tempo and with less complicated cases.

... That's the greatest challenge today - time. Create room for them today, so that ... [we] could mentor in a good and constructive way, in relation to production and other factors.

Mentor 3

Continuity in the mentor-student relationship emerges in the interviews as something that is highly valued by both students and mentors. The mentors are able to provide more tailored and targeted mentoring when they are allowed to follow the same students over time. In extended mentoring situations, the students point out the importance of having dedicated and capable mentors, since nondedicated or short-term mentors leave the student feeling a sense of setback with each change in mentor. Keeping the number of mentors per student to a minimum was perceived as a huge benefit.

You can work with four or five different [mentors] in a week. And you'll have to start over every single day because ... it restricts how much hands-on you get when they don't know you. It's understandable, but it slows your progression.

Student 1

Students also mentioned continuity in the context of surgical procedures, as the majority expressed a faster skills progression when being able to anaesthetise similar patients consecutively while being mentored along the way.

5 | DISCUSSION

The aim of this study was to explore and describe which competencies mentors and student nurse anaesthetists perceive as important in a clinical anaesthesia education practice.

The results reveal the importance of creating a good climate for learning that includes mutual feedback, dialogue and the transfer of important knowledge specific to the context of anaesthesia. This includes taking a holistic patient view and being able to create an atmosphere of safety and confidence in a preinduction setting. The result also shows that the learning environment and climate affect student well-being and self-confidence. This is in line with earlier studies (Holmsen, 2010; Jack et al., 2018; Vae et al., 2018).

Clinical placement in the OR is the single most important learning arena for NA students, as described by both mentors and students in this study. Yet, it is demanding and has major restrictions. Mentoring solely during the administration of anaesthesia is proficient for

learning the basic hands-on skills, but restricts the focus on development and critical reflection (Schön, 1987). This study reveals a traditional learning focus on hands-on, apprenticeship-style training, rather than on critical reflection (Gotvassli, 2012; Mezirov, 2000; Schön, 1987). Instead of cementing knowledge, it is suggested that the mentor gives constructive feedback to encourage the student to be critical and reflective, enabling them to acquire a broader understanding and gain new knowledge, as also suggested by Mezirov (2000). Giving students enough time to perform tasks and reflect on their own performance enhances the NA students' development of skills and important self-critical insight on their practice (Mezirov, 2000).

Briefing and debriefing were seen as valuable by the students interviewed. This finding needs to be taken seriously. The consequence of not doing so in direct relation to the cases is that crucial elements are ignored or forgotten. Giving immediate feedback, in accordance with Hattie and Timperley's (2007) principle, helps the student to come further in the learning process. Hence, the mentor needs to use all situations to the student's advantage—for example giving task-related feedback, which is described as being vital to improving learning outcomes (Hattie & Timperly, 2007; Holmsen, 2010; Caspersen & Kårstein, 2013; Haddeland & Söderhamn, 2013; Foster et al., 2015). In addition, having time for briefing before a task increases performance, predictability and safety (Haddeland & Söderhamn, 2013). Participants recommended that managers allow more time and consider the mentoring role when allocating tasks. Some suggested the value of working in operating theatres with shorter schedules.

Mentors see their role as one of caring and as transferring professional knowledge and competence within the anaesthesia context. These aspects were pointed out as important to transmit to the student and are in line with descriptions of the mentor role model as a caring, organised and professional NA (Moseley & Davies, 2008; Perry, 2009; Hilli et al., 2014). This is in partial contrast to how the mentor drops the student in at the "deep end" so that they become independent and confident. This requires a safe relationship based on mutual trust. The student is afraid to act alone, but also needs room for trial and error to progress and grow. The mentor, as the NA responsible, must weigh patient safety against student learning and may decide not to permit the student to try and to fail more than once. This is understandable if the reason is declared (for instance an unstable patient). Yet, it becomes even more important to allow the student to perform tasks when conditions are safe, and to let them fail and try again when the situation permits. This requires the mentor's professional knowledge, as well as their knowledge and skills in pedagogics, which, as Hilli et al. (2014) revealed, are not always present.

The NA students stated that having many mentors was negative early on in clinical placement, but positive later on because "they could adopt the best from all" as they became more experienced. This can be seen as a part of their transition into the role as NA (Tracy, 2017), in that they have gained enough experience to take different elements of practice from different mentors and build their own role.

NA students in the present study stated that mentors should be suited to working with students and expected a relationship built on a mutual platform in terms of expectations, demands and progression. They wanted the mentoring environment to be kind and inclusive. Earlier research underlines the importance of mutual good chemistry, meeting the student where they are, using humour, having an optimistic attitude and creating a safe learning environment, in improving student learning (Perry, 2009; Holmsen, 2010; Eller et al., 2014).

The NA students in this study expressed their preference for mentors who fulfilled predetermined criteria before taking on such a role. For their part, the mentors wanted students to provide organised and structured feedback, and educators to provide updates about curriculum and elementary theoretical pedagogics. Previous research (Cassidy et al., 2012; Foster et al., 2015; McCarthy & Murphy, 2010) shows that mentors need regular updates, study days and assessments of their own performance. A preparation course with a minimum of 10 credits, as the Norwegian Association of Higher Education Institutions UHR (2016) suggests, and updated lectures from the educational institution that provide support to the clinical personnel, could be positive and necessary complements to the mentoring of NA students today and going forward.

The students' master's theses seem to be of interest to clinical professionals, but they were not comfortable in giving guidance and suggestions on the thesis topics. Nevertheless, they pointed out that the topics ought to be connected to the clinical context. It has been suggested that the master's programmes should entail greater collaboration between the educator and the clinical field (Pettersen Skogsaas, 2016). Our interpretation is that the educator would still be responsible for guiding the master's thesis, as mentors saw themselves to some degree as inadequate in their own academic practice. A desire to supervise theses and provide academic guidance might improve when the NAs working in the clinical context have a master's degree themselves. However, it will also require that clinical mentors show more engagement and have more knowledge, in line with the research of Jølstad et al. (2019).

The NA student participants in this study point out the importance of belonging to a group of future colleagues. When starting clinical practice, the students described feeling vulnerable and sometimes even frightened, which possibly impacts their self-confidence. It is important that the mentor can recognise and meet such feelings (Jack et al., 2018). Mentors ought to be assigned the role of introducing the students to the working environment and to future colleagues, so that they become somewhat familiar with the new professional field already when they are on placement learning, and of being a member of a community of practice (Lave & Wenger, 1991). This is consistent with the work of Perry (2009) and Jokelainen et al. (2013), who find that having a good first impression and "being someone" were perceived as supportive of self-confidence and well-being. Indeed, being part of a team and being seen and cared for are factors that improve self-esteem and perceptions of safety. Taken together, this will improve learning outcomes (Eller et al., 2014; Holmsen, 2010) and later facilitate the transition from student to colleague (Tracy, 2017).

The mentors expressed uncertainty regarding the educator's demands and expectations to clinical placement. This might be interpreted as inadequate mentor training and competence, and lack of communication between the university and the clinical field. Whether or not this is the case would be speculation, but the mentors did express a wish for more support and training in mentoring from the educator. Joint programmes between the university and clinical field could enhance communication and cooperation to the benefit of the students. In Jokelainen et al. (2013), both Finnish and British mentors expressed the importance of communicating and clarifying previous knowledge and competence so that appropriate levels of support were given and personal needs addressed. This view was under-communicated among participants in our study. However, it would be advantageous if the student's previous knowledge and competence were communicated to those involved in their placement learning. Such information could possibly reduce their "setback" each time they rotate between departments, and perhaps reduce negative experiences from poor training value and lack of mastery.

Continuity, especially in the mentor's task performance and supervision approach, as well as in the student's competence and prior knowledge, has an impact on student learning and is a highly valued factor by both students and mentors. As previously expressed, the NA mentor has clear expectations about preparedness and independent task performance when the students enter the third semester. This expectation is especially vital when mentoring NA students due to the NAs' high degree of independent responsibility (Gran Bruun, 2011).

As mentioned in the introduction, there are few European studies on the topic of mentoring NA students. Our findings coincide in part with those of Katz (1984) and Smith et al. (2011), although these studies are from the United States. Differences in both education and work practices warrant further research on mentoring in the nurse anaesthetist's clinical education in a European context.

5.1 | Methodological considerations

This study has several limitations. The principal author was employed at the university, while the co-author worked as a coordinating nurse anaesthetist mentor at one of the selected anaesthesia departments. This may have had a positive effect in the form of researcher insiders and knowing the field of inquiry, as well as a negative influence in the form of less free-speaking by participants. However, the students recruited had all finished their practice placements. Voluntary participation was used, and the participants were contacted either directly by the researchers or indirectly by their managers. We cannot, however, exclude the possibility that the sampling procedure has influenced the results. Moreover, since there were only two focus groups, the scope of the data was limited by a small sample size. We believe nevertheless that the data have given us sufficient exploratory material.

The strength of the study is that we include participants with experiences and perceptions as both students and mentors. The

student participants have experience from three semesters, and most of the mentor participants are seasoned mentors. In addition, the results are consistent with earlier research, which supports the reliability of the study.

6 | CONCLUSIONS

Future NA students will likely be more academically trained, and several students were already pursuing a master's degree. This will likely influence the future mentoring role and the mentor's competence and approach. Collaborative advantages can be gained if lecturers are skilled in both academic knowledge and clinical practice, thus supporting both mentors and students and creating a closer connection between the theoretical and practical fields.

During the first semester, it is vital that students obtain an overview and begin to feel included in their new profession. In addition, those who mentor NA students must be aware of their role as an introducer and bridge builder to the new profession. Furthermore, the need for independence and professional mentoring will increase as the students' education progresses. Thus, briefing and debriefing communication is crucial for illuminating previous knowledge and current progression. All of the above factors point to the importance of having a robust mentor-student relationship. This study recommends that managers facilitate mentoring in a way that avoids the negative influence of production pressure and poor continuity.

Finally, a formal preparation course on the curriculum and pedagogy, as well as collegial exchanges and student feedback, emerge as important mentor requirements.

7 | RELEVANCE FOR CLINICAL PRACTICE

This study highlights the student's vulnerability, as well as the mentor's competence in pedagogy and learning strategy, as crucial factors in practice placements that affect learning outcomes and students' self-confidence. Future NA students' requirements will likely influence the mentor's role, although there will continue to be a need for improved competence in mentoring and academic understanding. This will in turn influence the educator's role and demand more collaboration between the theoretical and practical fields.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTION

Both authors Gertrud Averlid (GA) and Jakob Støren Høglund (JSH) fulfil the journal's authorship policy, and both authors have approved the final article text. Study design: Gertrud Averlid (GA), data collection and analysis: GA and JSH; and manuscript preparation: GA and JSH.

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REFERENCES

- Aigeltinger, E., Haugan, G., & Sørli, V. (2012). The importance of the instructor-student nurse relationship to student nurses in clinical hospital praxis [In Norwegian]. *Sykepleien Forskning*, 7, 152–158. 104220/sykepleienf.2012.0083
- Averlid, G., & Bihari Axelsson, S. (2012). Health promoting collaboration: A qualitative study of nurse anesthetists in Norway. *AANA Journal*, 80 (Suppl 4), S74–S80.
- Benner, P. (1995). *From Novice to Expert: Excellence and Strength in Clinical Nursing Practice* [In Norwegian]. Oslo, Norway: Tano in Cooperation with Munksgaard. (Originally published in English by Prentice, 1984).
- Caspersen, J., & Kårstein, A. (2013). Quality in practice. Quality perceptions among mentors [In Norwegian]. NIFU-report 14, 2013. Oslo: NIFU. <http://www.nifu.no/files/2013/04/NIFUrapport2013-14.pdf>.
- Cassidy, I., Butler, M. P., Quillinan, G. E., McNamara, M. C., Tuohy, D., ... Tierney, C. (2012). Preceptors' view of assessing nursing students using a competency based approach. *Nurse Education in Practice*, 12, 346–351. <https://doi.org/10.1016/j.nepr.2012.04.006>
- Collins, S., & Hewer, I. (2013). The impact of the Bologna process on nursing higher education in Europe: A review. *International Journal of Nursing Studies*, 51, 150–156.
- Education and Research Department (2005). National curriculum in anaesthesia nursing [In Norwegian] https://www.regjeringen.no/globalassets/upload/kilde/kd/pla/2006/0002/ddd/pdfv/269383-rammeplan_for_anestesisykepleie_05.pdf.
- Elisha, S., & Ruthledge, D. N. (2011). Clinical education experiences. Perceptions of student registered nurse anesthetists. *AANA Journal*, 79, 35–42.
- Eller, L. S., Lev, E. L., & Feurer, A. (2014). Key components of an effective mentoring relationship: A qualitative study. *Nurse Education Today*, 34, 815–820. <https://doi.org/10.1016/j.nedt.2013.07.020>
- Foster, H., Ooms, A., & Marks-Maran, D. (2015). Nursing students expectations and experiences of mentorship. *Nurse Education Today*, 35, 18–24.
- Gotvassli, K. Å. (2012). Supervision and the learning organization [In Norwegian]. I A. Kärki Ulvestad and F. Ulvestad Kärki (red.), *Multi-voiced supervision* [In Norwegian] (pp. 301–318). Oslo: Gyldendal Akademisk.
- Gran Bruun, A. M. (2011). The nurse anaesthetist's competence [In Norwegian]. In. Hovind (red). *Anaesthesia nursing*, 2nd ed. Oslo: Akribe AS.
- Gray, M. A., & Smith, L. M. (2000). The qualities of an effective mentor from the student nurse's perspective: Findings from a longitudinal qualitative study. *Journal of Advanced Nursing*, 32, 1542–1549.
- Haddeland, K., & Söderhamn, U. (2013). Nursing students' experiences of mentoring situations in clinical practice - A phenomenological study [In Norwegian]. *Nordisk Sykeplejeforskning*, 01, 18–32.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81–112. <https://doi.org/10.3102/003465430298487>.
- Helminen, K., Johnson, M., Isoaho, H., Turunen, H., & Tossavainen, K. (2017). Final assessment of nursing students in clinical practice: Perspectives of nursing teachers, students and mentors. *Journal of Clinical Nursing*, 26, 23–24. <https://doi.org/10.1111/jocn.13835>.
- Hilli, Y., Melender, H.-L., Salmu, M., & Jonsén, E. (2014). Being a preceptor. A Nordic qualitative study. *Journal of Nurse Education Today*, 34, 1420–1424.
- Holmsen, T. L. (2010). Influence on nursing students confidence and learning in clinical practice [In Norwegian]. *Vård I Norden*, 95(30), 24–28.
- Jack, K., Hamshire, C., Harris, E., Langan, M., Barrett, N., & Wibberley, C. (2018). "My mentor didn't speak to me for the first four weeks": Perceived Unfairness experienced by nursing students in clinical practice settings. *Journal of Clinical Nursing*, 27, 929–938. <https://doi.org/10.1111/jocn.14015>
- Jokelainen, M., Jamookeeah, D., Tossavainen, K., & Turunen, H. (2013). Finnish and British mentors conceptions of facilitating nursing students placement learning and professional development. *Nurse Education in Practice*, 13, 61–67.
- Jølstad, A. L., Røsnæs, E. R., Severinsson, E., & Lyberg, A. (2019). A paradigm shift in nurse specialist clinical supervision – Implementation of a competence program. *SAGE Open Nursing*, 5, 1–10.
- Katz, I. E. (1984). Characteristics of clinical teachers in nurse anesthesia. *AANA Journal*, 52, 192–197.
- Krueger, R. A., & Casey, M. A. (2009). *Focus groups a practical guide for applied research*, 4th ed. Los Angeles: Sage.
- Lauvås, P., & Handal, G. (2014). *Mentoring and constructed theory* [In Norwegian]. Oslo: Cappelen Damm Akademisk.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Løfmark, A., Lindaas, I., Berland, A., Vae, K. J., & Bentsen, S. B. (2016). The Norwegian version of the assessment of clinical education tool (AssCE). *Nordisk Sykeplejeforskning*, 6(4), 342–351.
- Malterud, K. (2012a). *Focus groups as research method in medicine and health sciences*. [In Norwegian]. Oslo: Universitetsforlaget.
- Malterud, K. (2012b). Systematic text condensation: A strategy for qualitative analysis. *Scandinavian Journal of Public Health*, 40, 795–805.
- Malterud, K. (2013). *Qualitative methods in medical research* [In Norwegian]. 3rd ed. Oslo: Universitetsforlaget.
- Master's Programme in Nurse Anaesthesia (2017). Oslo Metropolitan University. Retrieved from <http://www.hioa.no/Studier-og-kurs/HF/Master/Anestesisykepleie/Programplan-for-Masterstudium-i-anestesisykepleie-2017>.
- McCarthy, B., & Murphy, S. (2010). Preceptors' experiences of clinically educating and assessing undergraduate nursing students: An Irish context. *Journal of Nursing Management*, 18, 234–244.
- Mezirov, J. (2000). *Learning and transformation: Critical perspectives on a theory in progress*. San Francisco: Jossey-Bass.
- Moseley, L. G., & Davies, M. (2008). What do mentors find difficult? *Journal of Clinical Nursing*, 17, 1627–1634.
- Norwegian Association of Higher Education Institutions UHR (2016). Quality in health- and social professions higher educations: Practice Project [In Norwegian]. Retrieved from http://www.uhr.no/documents/versjon_oktober_2016_Grete_Samstad_Praksisprosjektet_anbefalinger_i_sluttrapport_til_KD.pdf.
- Norwegian Association of Nurse Anaesthetists (ALNSF) (2014). Function description for nurse anaesthetists: the nurse anaesthetists group of Norwegian Nurses Organisation (NSF) [In Norwegian].
- Perry, B. (2009). Being an exemplary role model. *Journal for Nurses in Staff Development*, 25, 242–248.
- Pettersen Skogsaas, B. M. (2016). Specialist nurse mentors' reflections on the academisation of nurse specialist education programmes [In Norwegian]. *Sykepleien Forskning*, 11, 54–64.

- Polit, D. F., & Beck, C. T. (2012). *Nursing research. Generating an assessing evidence for nursing practice*, 9th ed. Philadelphia, PA: Lippincott Williams & Wilkins.
- Schön, D. A. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass.
- Smith, C., Swain, A., & Penprase, B. (2011). Congruence of perceived effective clinical teaching characteristics between student and preceptors of nurse anesthesia programs. *AANA Journal*, 79, S62–68, special research edition.
- Sundquist, A. S., & Anderzen Carlson, A. (2014). Holding the patients life in my hands. *Scandinavian Journal of Caring Sciences*, 28, 281–288.
- Tenedios, C., O'Leary, S., Capocci, M., & Desai, S. P. (2018). History of anaesthesia: Nurse anaesthesia practice in the G7 countries (Canada, France, Germany, Italy, Japan, the United Kingdom and the United States of America). *European Journal of Anaesthesiology*, 35, 158–164. <https://doi.org/10.1097/EJA.0000000000000774>
- Tracy, A. (2017). Perceptions of certified registered nurse anesthetists on factors affecting their transition from student. *AANA Journal*, 85(6), 438–444.
- Vae, K. J. U., Engstrøm, M., Mårtensson, G., & Løfmark, A. (2018). Nursing students' and preceptors experience of assessment during clinical practice: A multilevel repeated-interview study of student-preceptor dyads. *Nurse Education in Practice*, 30, 13–19.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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