

Balancing closure and discovery: Adaptive expertise in the workplace

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Abstract

Background

Residents must develop the knowledge and skills to handle an everchanging and demanding clinical workplace which requires a high degree of adaptability. To address this need, adaptive expertise has been suggested as an important framework for health professions education. However, research on the development of adaptive expertise has yet to explore how workplace supervision impacts residents' development. This study sought to investigate how clinical supervision might support the development of adaptive expertise.

Methods

The present study used a focused ethnography in two emergency departments. We observed 75 supervising situations with the 27 residents resulting in 116 pages of field notes. The majority of supervision was provided by senior physicians, but also included other healthcare professionals.

Results

We found that supervision could serve two purposes: closure or discovery. Supervision aimed at discovery included practices that reflected instructional approaches said to promote adaptive expertise, such as productive struggle. Supervision aimed at closure included practices which reflected instructional approaches said to be important for efficient and safe patient care, such as verifying information. Our results suggest that supervision is a shared practice and responsibility.

Conclusion

We argue that setting and aligning expectations before engaging in supervision is important. Furthermore, results demonstrated that supervision aimed towards discovery was not significantly more time consuming, and a feasible mode of supervision in appropriate situations.

Introduction

It is imperative to prepare future health professionals to meet the evolving needs of patients. In addition to handling routine problems, clinicians must be able to handle novel problems, often characterised by complexity and ambiguity (Croskerry, 2012). The rapid development of technological innovations and shifting societal expectations of hospital care and treatment place an increasing pressure on residents' clinical performance. It is therefore not surprising that in health professions, the construct of adaptive expertise has been forcefully elaborated in recent years (Mylopoulos et al., 2018; Mylopoulos et al., 2012; Mylopoulos and Woods, 2009; Mylopoulos and Woods, 2017; Woods and Mylopoulos, 2015).

Research on adaptive expertise has identified two complementary dimensions of expertise; the efficiency dimension (effective application of known solutions) and the innovation dimension (capability to learn in

order to construct new solutions when needed) (Schwartz et al., 2005). The performance of both dimensions of expertise is critical for high-quality workplace performance and thus the preferred outcome of training. Preparation for Future Learning (PFL) has been suggested as a core capability that supports both dimensions of adaptive expertise (Bransford and Schwartz, 1999). PFL is understood to be a capability that emphasizes the importance of acquiring new knowledge during problem solving in order to enable flexibility, adaptation, and lifelong learning (Bransford and Schwartz, 1999). Thus research seeking to provide an evidence base for preparing future experts within health professions has focused on identifying pedagogical strategies to inform the design of training programs that support the development of PFL and adaptive expertise (Mylopoulos et al., 2018; Cutrer et al., 2017).

Research has shown that medical education can play an important role in facilitating the development of adaptive expertise through pedagogical approaches including metacognitive instruction, integration of procedural (knowing 'what' to do) and conceptual (knowing 'why' you're doing it) knowledge (Kua et al., 2021), and promoting productive struggle through guided discovery. However, to date, exploration of these pedagogical approaches has occurred primarily in classroom settings, making it difficult for educators to imagine how this translates to workplace-based learning.

Supervision has an important indirect impact on workplace-based learning as it is embedded in many routine practices such as delegation of tasks and upholding accountability (Hughes, 2004). Studies indicate that effective clinical supervision can enhance educational outcomes (Farnan et al., 2012; Rothwell et al., 2019), however very little is known about what constitutes effective clinical supervision aiming to develop adaptive expertise (Hauer et al., 2014; ten Cate et al., 2021; Hughes, 2004). Informal supervision is defined as supervision between a resident and a senior physician who is not the resident's formal supervisor or a situation that is not formally organized (Coren and Farber, 2019). As such, much workplace-based supervision is informal as residents often review patients with other healthcare professionals or a senior physician during the diagnostic process.

In an effort to better understand how learning experiences that occur during clinical supervision might support development of adaptive expertise this study explored patient review interactions between informal or formal supervisors and learners.

Methodology

The Danish Context: Clinical supervision in Emergency Medicine

Newly graduated physicians in Denmark start their residency in a general hospital, for a 6-month period. We observed how residents at two Emergency Departments (EDs) engaged in formal and informal supervision. In the EDs observed in the present study, approximately 6 PGY-1 physicians start residency every 3 months. Their role is to be the primary physician for all patients admitted to the department, collecting the patient history and performing relevant physical examinations. They are allowed to order

relevant scans and tests, but are encouraged to review larger tests, such as CT scans, with a senior physician. Before settling on a diagnosis and acting on a treatment plan, it is mandatory for all residents to review patients with a senior physician in the department. In these departments PGY-2-5 physicians in specialist training also acted as supervisors, similar to specialist physicians or consultants. Their specialty training was in emergency medicine, but it was also assisted by specialists in other departments, such as orthopaedic, pulmonary, geriatric, and anaesthesia. In summary, supervision could be provided by a senior physician from the same or another, closely related, field.

Design

The present study used a focused ethnographic method (Rashid et al., 2019; Andreassen et al., 2019; Reeves et al., 2013) where the first author (MLG) took the role as a passive observer participant (Spradley, 1980). Data consisted of field notes from observations of residents' interactions with other healthcare professionals, ad-hoc interviews during observations, and meetings with key stakeholders. Focused ethnography was chosen due to the feasibility of observing a fast-paced clinical context. This modification of traditional ethnography allow for observing specific phenomena, such as supervisions, in time-sensitive settings and has been argued as a valuable method in clinical contexts (Rashid et al., 2019; Andreassen et al., 2019; Reeves et al., 2013).

Reflexivity

The research team was comprised of four researchers in medical education, three of which had a background in psychology (MLG, PM and MM). Two of these were senior researchers (MM and PM) with extensive experience with various qualitative research methods. The first author, MLG, is a junior researcher with prior experience in qualitative research methods and was supervised throughout data collection by MM and PM. All members of the research team had experience with the ethnographic design and MM had experience with the method of analysis. All observations were done by MLG who has a background in geriatric psychiatry.

Participants

In all, 27 PGY-1 residents from two different departments were observed. In department 1, the local chief physician secured access to the department and disseminated information regarding the project to all staff, prior to data collection. During data collection, the chief physician would recruit all newly started PGY-1 residents to the project. The main author (MLG) attended the residents' introduction-meeting where she presented the project, collected written informed consent, and made agreements with residents about dates for data collection. In department 2, the local chief physician handed over daily recruitment to the educational manager, who was a nurse. In this department, senior physicians were informed about the project and recruited residents on the day of observations. In all, 19 residents were observed in department 1, and 8 residents were observed in department 2.

Data collection and analysis

Data was collected in the from August 2019 to December 2020 between 7AM and 10PM.

Administrative and research ethic board approval at both EDs was obtain prior to data collection.

Data was drawn from field notes from 80 hours of observations of residents' diagnostic reasoning activities with geriatric patients in the ED. The analysis was done in two rounds of coding. The first round was done by the main author (MLG) and consisted of identifying when reviewing took place in the diagnostic process, who was present, and where it was performed. The second round of coding focused on the identified reviewing interactions between the resident and their supervisor and was done inductively as well as deductively based on the theoretical framework of adaptive expertise. The research group met several times to discuss the deductive analysis based on sensitizing concepts from the adaptive expertise framework (Kua et al., 2021; Mylopoulos et al., 2016; Sockalingam et al., 2021).

Results

Of the 27 residents, 19 were female. The residents had an average of 2 months (range of 1 day to 6 months) of experience at the point of data collection. We observed 75 patient reviews with senior physicians from the ED (n = 54), nurses (n = 11), and other healthcare staff (e.g., physiotherapists) or specialist physicians from other departments (n = 10). Supervision primarily took place in offices on the ward (n = 56), but would also occur over the phone (n = 10), in the hallway (n = 3), or in the patient room (n = 6). Supervision was mainly between the resident and a supervisor, but sometimes a relevant health professional (n = 1) or a fellow resident would listen in (n = 5). In two cases, the resident was being shadowed by a medical student.

We grouped the data into two overarching types of interactions: 1) interaction oriented towards closure and 2) interaction oriented towards discovery. While we grouped the interactions into these overarching types, supervision was dynamic and could shift during the supervision from an interaction oriented towards closure, to orientation towards discovery. This speaks to the fact that supervision is a dialectic process where the mode of supervision often is dynamic, created in the conversation between the supervisor and the resident. Examples of the two types of interactions can be seen in Table 1.

Table 1
Interactions between resident and supervisor

Interaction	Mode	Examples from the data
Interaction is oriented towards closure/conclusion	Verifying information	When Resident 1 cannot find a senior physician to discuss her suspicion that there is a fracture on the pelvis, she finds a physiotherapist to consult the X-ray pictures with. They agree that it looks like a fracture on the pelvis, but that final diagnosis requires a more thorough physical exam, which she move on to perform. Later, she finds her senior physician and discuss both the physical examination and the x-ray. They discuss her suggestions for treatment and the resident continually checks her rationales with the senior physician, who responds by nodding or short utterances.
	Verifying decision	Resident 21 is treating an elderly patient with respiratory problems and is reviewing the patient with a senior physician. After Resident 21 has presented the patient and the supervisor has asked clarifying questions, Resident 19 says that she wants to discharge the patient. The senior physician agrees, stating that it is appropriate as the patient does not have a fever and that the respiratory symptoms, may be related to her habitual cough and overall general health.
	Direct instruction	Resident 15 is investigating a patient with an infection. When concluding the supervision, the senior physician asks Resident 15 to order tests for urinary tract infection and hydration levels, arguing that "then you are covering all bases."
	Takeover	Resident 7 asks a senior physician for supervision. They find the patient journal on a computer and go through her medication. The senior physician lists different treatment options. By the end of the supervision, the senior physician adjust the medication. She suggests a specific pain medication and tells the resident that the patient needs a normal dosage. Resident 7 asks "what a normal dosage is?", and the senior physician gives her the exact dosage.
Interaction is oriented towards discovery	Metacognitive instruction	When reviewing the patient with a senior physician Resident 5 explains that there is nothing wrong with the treatment of the patients broken arm, other than the sling being misplaced, and that a correction would fix the patient's discomfort. Despite being certain his approach is very investigative and respectful to the senior physicians opinion. The senior physician responds by being supportive of Resident 5s certainty trying to build his confidence in making the diagnosis. He praises him (nods and gives affirmative utterances), but also leaves the decision up to Resident 5: "if you have the least bit of a knot in your stomach, then order an X-ray, so that you are sure it is in place" (the arm, not restricting blood flow). Resident 5 responds with confidence in his own treatment decision and goes with his plan of having the nurse redo the sling.

Interaction	Mode	Examples from the data
	Helping to integrate conceptual knowledge with procedural knowledge	Resident 23 is discharging a patient with chest pain, but is unsure how to interpret the ECG. She asks a senior physician for help and after some discussion of the patient's history, he explains that "with this kind of patient, we primarily use [ECG] as a marker for the effectiveness of the treatment.", referencing the patient's history and how this should be considered when interpreting tests in the ED.
	Creating productive struggle for the learner	Resident 19 is reviewing a patient with suspected ileus with a senior physician. After presenting the patient and all the findings, the senior physician asks "what are you thinking?". Resident 19 explains her concern regarding the patient's flashing pain and several possible diagnoses (gall bladder, ileus, and pancreatitis). The senior physician then asks "are there any other diagnosis which could explain this?". Resident 19 mentions a kidney stone and they discuss how this would fit with the patient's symptoms. When agreeing that the symptoms are best aligned with a kidney stone, the senior physician asks "what is the treatment for this?". Resident 19 reply that it would be pain medication.
	Orienting to new aspects of the case	Resident 10 has just finished her medical round and is reviewing a patient with a senior physician. They discuss an admitted patient's physical appearance. Resident 10 comments on the patient's general dishevelled appearance, giving specific examples: pants drawn low, her trying to drag them up in the bed, generally leaning back extensively, pondering that the patient answers questions with clarity and is oriented in her own data, time, and place. The senior physician replies that the patient's state has improved significantly since Saturday, and that the patient might be leaning back due to pain in the stomach area.
	Shared discovery	Resident 3 is treating a severely ill patient who has been referred to the ED with water in his lungs. Resident 3 and her senior physician are unsure if they should refer him for diagnostics due to his state, and together they ask a coordinating nurse if he's being treated at any departments in the hospital (yes) and Resident 3 and the senior physician discuss if they can refer him to a better option. They discuss his history and costs and benefits of referring him to diagnostics in regards to the lung infection.

Interaction oriented towards closure

One of the two major categories of interactions between the resident and supervisor aimed to provide closure or reach a conclusion on the patient case. In many cases, this would take the form of the resident reviewing the patient to *verify information or a decision* that they made. For example, Resident 5, Casper, was treating a patient with aphasia and had a hard time confirming if the patient's state is habitual:

Casper concludes the physical exam and seeks out the responsible nurse, as he wants to know how the patient's habitual condition is [in regards to the patient's extreme aphasia] and how the patient was

brought to the ED, in order to assess if the patient is also having some degree of delirium. When he can't get into contact with nurse, he confers with a more experienced resident until the nurse responds. As the nurse doesn't have any information about the patient's arrival, he calls up the nursing home for clarification. They explain that this is the patient's habitual state.

In another example, Resident 8, Maria, was performing a physical examination of a patient she had just conferred with a senior physician and they decided that the senior physician should go with her to see the patient:

Maria and the senior physician introduce themselves and moves closer to the patient. The senior physician tries to introduce herself to the patient, but the patient's son clarifies that she cannot hear, nor understand what senior physician is saying. The senior physician starts by taking the lead, but Maria shortly after naturally takes over. The son presents his mother's medical history and answers questions from Maria. The patient is attentive, but does not interfere. The senior physician cuts in to prepare Maria of what to pay attention to and how to approach the patient. Maria introduces herself to the patient. The patient does not respond, but Maria starts questioning the patient, clearly following an algorithm. Maria continues to address the patient, who still doesn't respond, and soon the son moves closer to the patient and starts translating Marias questions directly into the patient's ear, in order to ease the conversation. While this is going on, the senior physician keeps in the background to observe. Maria continually addresses the senior physician in order to check that her strategy correspond to their agreed approach, by asking her specific questions to what she is doing. The senior physician gently corrects and then encourages her to go on.

Such an interaction could also become *direct instruction* by the senior physician as when Resident 9, Daniel, discussed treatment of dehydration with the senior physician:

The senior physician describes her hypotheses and asks Daniel to order specific tests and describes to Daniel, what these tests can tell him. They talk briefly about dehydration, because the patient has elevated natrium values, which could put stress on the patients kidneys. Daniel asks: "would you just give glycoses, then?", to which the senior physician responds: "yes, but does he have diabetes?" (Daniel confirms), "then take an arterial blood sample so we can rule out...[muffled]"

In some instances, the supervisor would *take over* the decision process during supervision as was the case for Resident 4, Louise. The encounter with the patient appeared to be highly stressful to all participants, as the nurses struggled to place a catheter on the patient, the resident was continually interrupted during history uptake and physical examination. As a result, Louise had a hard time structuring the supervision:

The level of chaos in the patient encounter carries over to the conversation with the senior physician, and the reporting became sporadic. Louise had a hard time sorting out the relevant information and instead she presented all her information to the senior physician, whom then told Louise what to do next.

Interaction oriented towards discovery

The other major category of interaction was oriented towards discovery. These interactions often aimed to provide *metacognitive instruction* or help *integrating conceptual knowledge with procedural knowledge*. These interactions were characterized by the senior physician providing perspective to the situation or the resident seeking to understand symptoms better, and being provided with conceptual understandings of the symptoms and how this should be interpreted. These interactions provided further insight into why certain steps should be taken, and in some cases, this reflected factors other than medical values (i.e., age, upbringing). They could also be characterized by the supervisor providing conceptual knowledge along with their rationales, and explaining their reasonings while providing an answer.

Supervision aiming for discovery could also take the form of the supervisor *creating productive struggle for the learner* as was sometimes observed in the interaction between Resident 9, Daniel, and a senior physician:

They are reviewing the patient's values and the senior physician bring up the patient's value on the screen for them to go through them together. The senior physician goes through the bloodwork and interprets out loud on all values and they talk about possible diagnosis. Here, it is primarily the senior physician proposing diagnosis and Daniel agree by nodding and uttering confirmative sounds. The senior physician asks "what can we do with these?" or "what does they tell us?" with the tests that they talk about future steps.

When MLG questioned residents on their experience with this kind of supervision, some would respond that it could feel like being examined or interrogated, as they were being quizzed on their knowledge. Discovery could also emerge by the supervisor *orienting the resident toward new aspects of the case*, as was seen with Resident 7, Julie, who was treating a patient who had fallen. She conferred with a senior physician in order to determine why the patient had fallen and if there were any injuries she should treat:

Julie presents who she is to the patient and continue with information about where she is in the ward, the patient's symptoms and current values, and what the physical examination showed. Julie concludes by stating that "she is sore". The senior physician asks "bone or muscle?", which Julie hasn't examined. The senior physician responds "that's fine, does she have dyspnoea?", which Julie rejects. The senior physician asks to the patient's functional level and Julie explains that she is living on her own, to which the senior physician utters "huh!" in surprise. Julie explains that "the patient is very tired" and the patient's recent cognitive deficits and her hypotheses for these. Julie presents her treatment choices (IV, tests, etc.) and explain a wound on the patient's leg. The senior physician recommends Julie to make the nurse responsible for the following treatment. Julie agrees. They discuss a CT scan of the chest region, where to the senior physician notes "be aware that this can also be a fine liquid" referring to a differential interpretation of the image.

In some cases, *shared discovery* was observed, which placed a less hierarchical structure in the supervision and reflected a shared lack of knowledge and regulatory behaviour. This was observed in

interactions between Resident 9, Daniel, and the senior physician. Daniel was treating a diabetic patient for dehydration and the senior physician was unsure of the appropriate treatment of dehydration:

Daniel and the supervisor check the online medical handbook together, and discuss the appropriateness of their treatment plan for dehydration, and together they discuss possible ways of meeting the patient's need for glycoses, without 'irritating' his diabetes (as described by the senior physician.

Discussion

Overall, we saw two primary types of interactions during clinical supervision, one served to reach a conclusion on diagnosis and treatment, while the other prompted discovery. While the former category supported development of procedural knowledge, the latter category primarily consisted of interactions related to fostering conceptual understanding and the development of preparation for future learning. Both of these learning activities are understood to be core to adaptive expertise. Supervision to reach a conclusion is an integral and inherent part of every resident's diagnostic process, and is important for patient satisfaction and safety (Jansen et al., 2020). Supervision to discover was more oriented toward learning, when there was time and opportunity to do so. Results indicated that this category of supervision echoed interactions previously described in the adaptive expert literature (Kua et al., 2021; Sockalingam et al., 2021; Mylopoulos et al., 2016), while adding new categories, such as shared discovery and orienting to new aspects of the case.

Is developing Adaptive Expertise a shared practice?

Results showed that learning opportunities were actively sought out by residents, but also by supervisors who had to facilitate the right time, content, and place for the supervision. Jansen et al. (2020) investigated residents' help-seeking behaviours and argued that the act of requesting help was a delicately balanced act between not wanting to lose credibility and autonomy, but also providing high-quality care. They argued that a safe learning environment and an approachable supervisor was important for help-seeking. The present study demonstrated several co-regulated supervisions, and reported several instances where reviewing the patient was encouraged by the supervisor. This finding speaks to a shared responsibility for performing supervision. Teunissen et al. (2007) found that interpretation and construction of meaning by the resident, was fundamental for the expansion and refinement of residents' personal knowledge. Therefore, Teunissen et al. (2007) advise faculty to be aware of when and why they influence a specific phase of a resident's learning process. Similarly, Lockspeiser et al. (2016) found that residents benefit from interacting with senior staff setting and pursuing goals (Lockspeiser et al., 2016). Results from the present study indicate that the resident and the supervisor had a shared responsibility in creating and regulating learning situations during the clinical supervision. This finding echoes a recent study on informal workplace learning, arguing that providing and creating effectful learning situations in the workplace is a collaborative effort (Sehlbach et al., 2020).

Regulating learning is an important part of being an adaptive expert as these experts are able to monitor their level of knowledge and remedy the situation (Moulton et al., 2007; Mylopoulos and Woods, 2009; Mylopoulos and Woods, 2017). Within adaptive expertise, self-regulation refers to the cognitive ability to redirect one's attention towards opportunities for closing knowledge gaps (Hatano, 1982; Hatano and Inagaki, 1986; Bereiter and Scardamalia, 1993). Self-regulation is referring to the action which epistemic distance elicits (Mylopoulos and Regehr, 2007), and has been framed as 'looking up' (Eva and Regehr, 2007) and 'slowing down' (Moulton et al., 2007) when needed. Results in the present study build on these framings by indicating a shared social responsibility in both the opportunity and ability to regulate learning. In this way, supervisors can engage residents in fostering conceptual understandings, by using the clinical supervision to prompt discovery and help residents to be aware of when they should direct their attention to their knowledge gaps.

Productive struggle through inquisitive supervision may feel like an examination

During clinical supervision, we observed residents experiencing struggle or failure in diagnosing the patient. Such failure and struggle has been highlighted in the medical education literature as a powerful educational tool that supports the development of conceptual knowledge (Mylopoulos et al., 2016; Mylopoulos and Farhat, 2015; Steenhof et al., 2019). In a recent review, Klasen and Lingard, (2019) emphasize the social phenomena of allowing failure in health care and conclude that research should investigate why, when, and how supervisors can apply this technique (Klasen and Lingard, 2019). The reported findings in the present study demonstrate that productive struggle occurred through some degree of inquisition, which has been shown to support learning by encouraging learners to actively generate multiple possible, usually incorrect, solutions (Steenhof 2020). When asked, residents would respond that such inquisitions could feel like an examination and it is therefore important to discuss how supervisors balance power structures in more inquisitive approaches. Supervisors may know that the resident is working at the limit of their competence and may therefore see productive struggle or failure as a useful educational tool (Klasen et al., 2022). While Klasen et al. (2022) found that supervisors emphasize trainee confidence and personality as indicative of when to use productive failure as an educational tool, our study adds that a trusted relationship between the resident and the supervisor is an important factor. Otherwise, productive struggle often felt like an examination to the residents. Similarly, this stresses the emotional aspect of learning from failure by highlighting that the emotional aspects may have a negative consequence on the learner (Klasen and Lingard, 2019; Fischer et al., 2006). Hence, findings in the present study emphasize an awareness about emotional aspects of productive struggle (Mylopoulos and Farhat, 2015; Steenhof et al., 2019).

While learning in the clinic is essential, the results in the present study also demonstrated that productive struggle could take place without harm to the patient. This was seen when residents reviewed patients to reach a conclusion, which was imperative for their ability to move on with their clinical work. Thus, in time sensitive situations (i.e., acute), striving to make supervision a learning opportunity with productive struggle might be inappropriate. The ethnographic data also demonstrated, that when residents sought

supervision to discover, it was not necessarily noticeably more time consuming than more instructive approaches. Therefore, in non-time sensitive situations, supervision may be a good opportunity to engage in learning experiences that support the development of adaptive expertise. Here, the marginal additional time spend, may be a good investment in residents' learning.

Implications for education

Results demonstrated that residents sought out supervision for two reasons; to confirm or to learn. However, as supervision is a shared practice, the decision to engage in learning activities may be a shared responsibility. This suggests that it might be relevant for supervisors to ask the resident of their intention for reviewing the patient, and being responsible for motivating supervision to discover when appropriate. Additionally, such a practice may mitigate the incongruity of the felt experience reported by some residents when they needed a clear answer to their questions, rather than being forced to engage in productive struggle. Being open to such learning activities is an important aspect of adaptive expertise (Crawford et al., 2005; Wineburg, 1998; Mylopoulos and Woods, 2009; Hatano, 1982; Hatano and Inagaki, 1986) and being coerced into learning practices can impede learning as the resident might refrain from engaging in future help-seeking behaviours (Jansen et al., 2020). As such, a match of expectations between the resident and the supervisor seems pivotal in order to engage in productive struggle.

Limitations

While this focused ethnography was set in two different ED, they practice similar formal educational approaches. In both, it was mandatory for all residents to review the diagnosis and treatment plan of the patient with a senior physician before acting on their diagnosis. As a result, much of the supervision in this study was due to such formal structures and this could have impacted the uneven distribution of supervision provided by senior physicians, compared to other healthcare personnel. This is important to keep in mind, as such a requirement could lessen their need for seeking supervision from other healthcare personnel.

Conclusion

This study sought to better understand the learning experiences that resident's form during clinical supervision and how they might impact development of adaptive expertise. We found that residents actively sought out supervision both to confirm and to learn. A shared responsibility exists between the resident and supervisor to engage in learning experiences that support the development of adaptive expertise. When supervisors initiate supervision oriented towards discovery, we found that a match of expectation is pivotal, as inquisitive supervision may feel like an examination and can cause uncertainty for the resident.

Declarations

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Other disclosures

None

Ethical approval

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Disclaimers

None

Previous presentations

None

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