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How best can faculty development support teachers in clinical settings?

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Abstract

Faculty development is key to ensuring quality clinical teaching, but standardising teaching practices in multiple settings is a challenge. This article presents an example of a 3-year faculty development programme for teaching clinical reasoning skills, implemented by the Faculty of Medicine and Health Sciences, University of Sherbrooke, Quebec, Canada for its faculty members at multiple teaching sites. A follow-up study 1–5 months after the final workshop, using a self-assessment questionnaire, indicates that almost half of the participants transferred some of their newly acquired knowledge into their teaching practices. This article discusses factors to consider when developing a faculty development culture, at both a programme and faculty level, to support quality teaching and learning.

Key words: Clinical supervision; Clinical teaching skills; Faculty development culture; Faculty development in medical education; Spaced education in faculty development programme

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Introduction

Teaching in a clinical setting is not an easy task. As highlighted by Algahtani et al (2020) in a need assessment on faculty development, medical faculty members identify teaching strategies, skills and methodologies as the most important aspects to include in faculty development, demonstrating the concerns that surround these elements.

Clinical teachers in the undergraduate medical education programme of the Faculty of Medicine and Health Sciences of the University of Sherbrooke (Quebec, Canada) are no different. Over the years, they have identified the need for support to enhance their teaching practices on many subjects, such as teaching clinical reasoning skills, giving effective feedback and assessment of learning. At the programme level, the challenge is amplified by the number and the widespread locations of clinical settings in which learners do their clerkship.

The Committee on Accreditation of Canadian Medical Schools is responsible for the accreditation of medical education programmes leading to a Doctor of Medicine degree in Canada. The Committee requires that teaching and assessments be equivalent in every clinical setting, creating a pressure to standardise teaching practices.

With this in mind, the Office for Faculty Development of the Faculty of Medicine and Health Sciences and the Centre de Pédagogie des Sciences de la Santé, in collaboration with the clerkship programme, designed a 3-year pedagogical continuing professional development programme to help clinical teachers identify difficulties in clinical reasoning and give them tools to better support their learners' development of these skills (Gagnon et al, 2020). Following the end of the programme, a survey was conducted to identify the extent to which participants felt they had transferred their newly acquired knowledge into their teaching practices.

This article describes this longitudinal 3-year faculty development programme and the results of a follow-up questionnaire. It also provides insights into the importance of developing a culture of faculty development, throughout the undergraduate medical education programme and at faculty level.

A measure of context

The undergraduate medical education programme of the Faculty of Medicine and Health Sciences is a 4-year programme. Clerkship takes place during the last 18 months of the

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programme and includes four elective and twelve mandatory rotations. Learners can choose an alternative longitudinal integrated clerkship programme, which is structured in two blocks of 20 weeks, with family medicine as an integrative ground for learning. The clerkship programme is spread throughout the provinces of Quebec and New Brunswick, with 128 different teaching sites. It hosts around 200 learners each year and has a workforce of almost 1000 clinical teachers, with some as far as 800 km away from the Faculty of Medicine and Health Sciences. All accredited medical education programmes in Canada must meet the standards of the Committee on Accreditation of Canadian Medical Schools, including the requirement that teaching and assessment be equivalent at all clinical settings attended by learners. Considering this and the fact that clinical teachers working in hospitals and ambulatory practices are hired foremost for their medical expertise, it becomes clear that faculty development is necessary to ensure uniformity in teaching and assessment practices to meet the expectations of the Committee.

Faculty development for quality clinical teaching

Being an expert in a medical field does not mean that one has the knowledge and skills to be an effective clinical teacher. Like any other teachers, medical teachers are prone to rely on their experience as learners, with little reflection on different approaches to teaching. This can lead to a lack of skills in dealing with common situations (Barrett et al, 2016). Faculty development is a key component of ensuring quality clinical teaching (Sorinola et al, 2017; Lee et al, 2018). As shown by Steinert (2020), the interest in faculty development has grown steadily in the last 30 years, with an emphasis placed on enhancing the role of faculty members as teachers and educators. Paten and Christensen (2019) found that it was important that teaching practices be grounded in appropriate learning theories to enhance learning. Connor et al (2019) went a step further, suggesting that teachers should possess the same vocabulary and frameworks imparted to learners and that faculty development plays a predominant role in achieving this. Indeed, sharing the same vocabulary should render communication more fluid, and improve learning.

Additional benefits of faculty development have been identified, including increased motivation for teaching, acquiring new knowledge and the skills to do so efficiently (Lee et al, 2018), increased confidence in teaching, better credibility as a teacher, improved recognition as an educator (Sorinola et al, 2017), easier and more adequate spontaneous reactions while teaching (Newman et al, 2018), changes in attitudes and perceptions (Lee et al, 2018; Newman et al, 2018), socialisation (Ng et al, 2017), quality assurance and standardisation of teaching (Sorinola et al, 2017; Lee et al, 2018), and learner assessment (Sirianni et al, 2020).

For many years, faculty development has been a priority at the Faculty of Medicine and Health Sciences. For clinical teachers, this means attending a compulsory 3-hour workshop on the basics of clinical teaching when first supervising learners, as well as being strongly encouraged to attend a yearly advanced workshop (**Figure 1**). The themes of these workshops change every year and are determined by a small committee, including the clerkship director, clinical teachers and pedagogical advisers. The choice of themes is based on the needs outlined by clinical teachers, observed difficulties (from learners' evaluation of clinical teachers and quality of teaching) or programme requirements and new developments. Several themes have been addressed over the years, including strategies to foster learning in clinical settings, milestones for the development of clinical competencies, using institutional tools to better provide and control clinical exposure, observing and assessing clinical competencies, written and oral feedback, and other advanced topics such as managing learners with worrisome performances or behavioural difficulties (for example, a lack of professionalism).

Moving towards long-term faculty development

While it is not easy to know what form of faculty development is the most effective or has the most impact on teaching practices for which groups of practitioners, a literature review by Newman et al (2018) noted that 'workshops and longitudinal programs report the largest number of outcomes of all types'. It has been noted multiple times in the broader

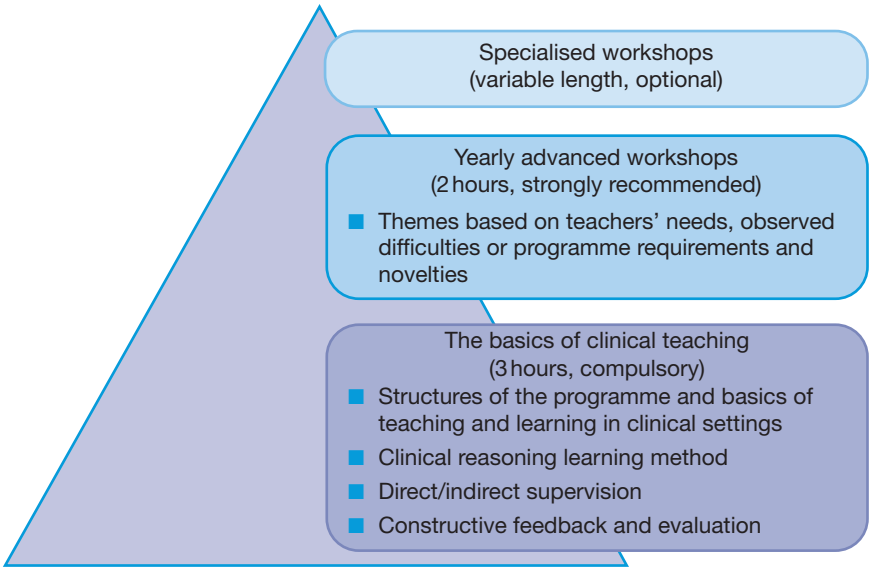

Figure 1. Faculty development for clinical teachers at the Faculty of Medicine and Health Sciences of the University of Sherbrooke.

field of education that, when learning, it is more effective to revisit concepts several times over a (relatively) long period, than to learn everything in a bolus form (Wiseheart et al, 2019). This principle, referred to as spacing, is more effective for long-term retention and retrieval of knowledge (Kim et al, 2019; Wiseheart et al, 2019; Carpenter, 2020). In a literature review of studies using spacing in continuing professional development, Phillips et al (2019) found that sessions using spaced activities resulted in better knowledge recall and retention, increased specific knowledge, better transfer of medical information and clinical behaviour changes. When considering the development of teaching skills in medical education, Kalynych et al (2021) showed that participants in a faculty development programme using spaced education were highly satisfied with the programme and had moderate to high confidence in implementing changes in their teaching practices.

Toward long-term faculty development: the example of teaching clinical reasoning skills

Throughout the years, clinical teachers from the Faculty of Medicine and Health Sciences at the University of Sherbrooke identified some recurring themes for faculty development, among which was the development of clinical reasoning skills for learners in clerkship. Gruppen (2017) defined clinical reasoning as the process of a physician integrating their biomedical and clinical knowledge with initial patient information to form a case representation of the problem. This process is repeated in cycles, until a threshold of confidence to support a diagnosis and management actions is reached. The need to increase one's ability to support the development of clinical reasoning skills comes as no surprise, since it is one of the main skills needed for medical competency (Ten Cate and Durning, 2018). Even if this had been addressed in advanced workshops throughout the years, it did not seem to be enough to meet the teachers' needs or reduce the challenges they were facing while teaching clinical reasoning skills. Every year, they asked for more pedagogical knowledge and tools to address this challenge, emphasising the importance of these tools being readily operational and efficient in practice, where time is limited. This highlighted the idea that a different approach might be necessary, since one-time faculty development workshops on clinical reasoning did not seem sufficient to answer the expressed needs.

Combining the use of workshops and spaced education, the Centre de Pédagogie des Sciences de la Santé designed a 3-year faculty development programme. Each year, a 2-hour workshop was given, 2–3 months before the start of mandatory clinical rotations, for a total of three workshops (one workshop per year). The workshops were structured according to the following framework: introduction and objectives, alternating presentations of concepts

and strategies (including a recapitulation of some concepts from previous workshops), hands-on activities (such as video analysis, group discussion and role playing), ending with key points and a reflective exercise on the participant's own practice and possible changes the participant could make following their attendance at the workshop. This satisfied the recommendation from Sorinola et al (2017) that faculty development activities should be participatory, use multimodal approaches and reflective, experiential practice. Sirianni et al (2020) also emphasised the importance of 'using multiple instructional methods to accommodate different learning styles and preferences'.

The workshops were developed based on the self-reported needs of clinical teachers. These were collected through the Centre's standard satisfaction survey that was sent to participants after all workshops. Participants were asked to complete the following statement: 'In an upcoming workshop, I would like the following topics to be addressed'. The topic of teaching clinical reasoning skills was identified as a priority, based on how often it was listed. Once the topic was selected, the workshops were designed and developed with progression in mind, starting with the basics of learning clinical reasoning and ending with ways to assess and foster its development with appropriate feedback (Table 1). The workshops were implemented by a team of clinical teachers specifically trained to deliver them in all clinical settings associated with the Faculty of Medicine and Health Sciences.

Was the 3-year faculty development programme useful? A follow-up questionnaire

Between 1 and 5 months after the last workshop was held, a follow-up questionnaire was sent to ask whether teachers had transferred their new knowledge into practice (Gagnon et al, 2016). From 293 participants, 117 (39.9%) answered the questionnaire, which consisted of ten 4-point Likert scale questions and three open-ended questions. The questions were aimed at understanding the factors that supported or hindered their use of the integrated Summarise, Narrow, Analyse, Probe, Plan and Select-One Minute Preceptor (iSNAPPS-OMP) tool, used in a hands-on activity in the second-year workshop. It should be noted that the iSNAPPS-OMP tool was developed by faculty members (Clavet and Langlois, unpublished workshop material, 2014), by combining Wolpaw et al's SNAPPS (2003), and

Table 1. The 3-year faculty development programme on clinical reasoning

Year of workshop	Theme
Year 1	The progressive learning of clinical reasoning ■ How does it work? ■ What does the data say? ■ What are the main clinical reasoning difficulties for clinical learners? ■ How can we better foster the development of clinical reasoning in clinical learners? ■ Strategies and tools
Year 2	Diagnosing and managing clinical reasoning difficulties ■ A framework for diagnosing clinical reasoning difficulties ■ Which interventions for which difficulties? ■ Supporting the overachievers by using the integrated Summarise, Narrow, Analyse, Probe, Plan and Select-One Minute Preceptor tool (iSNAPPS-OMP) (Gagnon et al, 2020)
Year 3	Assessing learners' clinical reasoning ■ The basics of constructive feedback ■ Constructive feedback in a clinical setting: when and how ■ Summative evaluation of clinical reasoning: using the clerkship evaluation grid ■ When feedback/evaluation goes wrong: managing the situation

Neher and Stevens' OMP technique (2003). The survey participants were also asked to give their opinion of the benefits and obstacles encountered while using the iSNAPPS-OMP tool.

Of the 117 survey participants, 49% used the tool after attending the workshops. The main reasons indicated by those who did not use the tool were the lack of time caused by a heavy clinical workload, not thinking of integrating the tool into their supervision practices or not having clinical learners since the workshops. Whether using the tool or not, most participants thought it could be helpful to better support the progression of clinical learners (Table 2).

The answers to the open-ended questions (Table 3) highlighted several other benefits of the tool, for both teachers and learners. The most important of these were the efficiency of the tool, the fact that it helped learners formulate the health problem in appropriate clinical terms and to cope with uncertainty, the easier access to the learner's clinical reasoning, and better support of clinical reasoning development. In short, it progressively structures the learner's clinical reasoning. The factors limiting the use of the tool mostly relate to the context of use and the level of expertise of the learners.

Because the benefits appeared to greatly outweigh the obstacles of using the iSNAPPS-OMP tool, measures have been taken to further promote the use of the tool in clinical settings. Among these measures, the undergraduate medical programme committee decided that the iSNAPPS-OMP tool should be integrated into the learners' preparatory course to clerkship, as well as into the compulsory faculty development workshop on the basics of clinical supervision, ensuring a better alignment between the learners' and teachers' knowledge. The hope was that the tool would be more readily available since both teachers and learners would know how to use it. This would in turn facilitate its transfer into practice, thus benefitting a larger number of learners and teachers.

As noted by Lee et al (2018) and Newman et al (2018), self-reported data can be influenced by a desirability bias. Therefore, directly linking a change of teaching practices to the faculty development workshops would have required a much more rigorous study. Nonetheless, since the questions asked pointed directly to one of the teaching tools used by participants in two of the workshops, it can be assumed that the adoption of that method was 'somewhat induced' by attending the workshops. As such, the faculty development team was pleased with the percentage of teachers who integrated the tool into their teaching practices. It would be interesting to repeat the survey over a longer period to see if the use of the tool was maintained, or if the obstacles identified resulted in its abandonment with time.

When reflecting on the effectiveness of the faculty development programme presented above, it generally had the expected results (transfer from theory to practice). However, when considering faculty development for clinical settings, strategies to encourage the participation of clinical teachers must be developed since their enrolment remains, at best, difficult. While there is always a core of clinical teachers (around 30% at the Faculty of Medicine and Health Sciences) who regularly participate in the yearly workshops, others are more difficult to reach. One reason for this may be the distance between clinical settings and the university itself. In an attempt to increase these numbers, the measures described below have been developed over the years.

Table 2. Usefulness of the integrated Summarise, Narrow, Analyse, Probe, Plan and Select-One Minute Preceptor (iSNAPPS-OMP) tool

Question: To what extent do you agree with the following statement?	
The iSNAPPS-OMP tool…	Agree or totally agree *n* (%)
... Is a tool that can be easily used when treating patients, after observing a student or when discussing a case	112 (96)
... Helps to make my interventions more efficient when supervising clinical learners	106 (91)
... Gives me easy access to the clinical reasoning of the student	109 (93)
... Helps me quickly diagnose learners' clinical reasoning difficulties and to situate them within the different steps of the clinical reasoning process	103 (88)
... Helps me establish a more specific pedagogical diagnosis regarding clinical learners' performance	104 (89)

Table 3. Benefits and obstacles to using the integrated Summarise, Narrow, Analyse, Probe, Plan and Select-One Minute Preceptor tool

Question: What are the benefits of using the integrated Summarise, Narrow, Analyse, Probe, Plan and Select-One Minute Preceptor tool? (verbatim summary)	
For teachers	■ Quick and efficient tool ■ Structures interventions ■ Makes supervision a lot more methodical ■ Increases efficiency of interventions by facilitating the diagnosis of clinical reasoning difficulties of the learner
For learners	■ Helps clinical learner base their clinical reasoning on diagnostic hypotheses, which they do not necessarily do naturally ■ Forces them to summarise their thoughts and bring out the main ideas/ to better organise their thoughts ■ Prompt self-assessment, since it allows learners to: ■ Better highlight their competencies and therefore display their capabilities ■ Define areas they need to work on
Question: What difficulties or limits did you encounter while using the integrated Summarise, Narrow, Analyse, Probe, Plan and Select-One Minute Preceptor tool? (verbatim summary)	
	■ Clinical learners say they do not know the iSNAPPS-OMP tool ■ Hard to use in certain settings or with certain clinical cases (for example, patient follow-up vs new patient) ■ Harder to use with beginners or clinical learners that display difficulties

An office of pedagogical faculty development

As a means of growing a faculty development culture, the Faculty of Medicine and Health Sciences has established an office of pedagogical faculty development: the Centre de Pédagogie des Sciences de la Santé. This means devoting yearly resources for the sole purpose of supporting faculty members in their teaching tasks. Throughout the years, the Centre de Pédagogie des Sciences de la Santé has grown and flourished from a small team of faculty members and one pedagogical consultant in charge of approximately 50 activities, to nearly 100 faculty members and a team of six pedagogical consultants, deploying close to 200 activities a year. It also includes a research centre on health science pedagogy. These investments and the visibility given to the Centre de Pédagogie des Sciences de la Santé and its research centre highlight the importance of focusing on faculty development at the Faculty of Medicine and Health Sciences.

Supporting faculty engagement in faculty development

Faculty members get academic and financial recognition for the time spent in pedagogical training. For each hour of faculty development, faculty members receive a financial compensation that covers part of their clinical practice earnings lost by attending the training. Additionally, regular attendance at faculty development workshops or enrolment in a credited pedagogical training programme is considered an indicator of teaching excellence, used for the promotion of faculty members. Finally, capitalising on the obligation issued by different health profession associations, each workshop or activity is officially reviewed for continuing professional development credits. Since health practitioners have an obligation to update their clinical knowledge, the same should be done for their pedagogical knowledge. This is supported by an increasing number of professional associations which acknowledge pedagogical faculty development as part of their continuing professional development.

Adopting a strong policy on the quality of teaching

To emphasise the importance of faculty development, the Faculty of Medicine and Health Sciences has its own policy on quality teaching (Faculté de Médecine et de sciences de la santé, 2019), which states teachers have a responsibility towards pedagogical professional

development. As stated in the policy, each teacher 'has the responsibility to: undertake a periodic review of the competency profile needed to accomplish their teaching tasks, annually update their personal faculty development plan based on self-evaluation and learners' evaluations of their teaching, and to choose which faculty development activities they wish to enrol'. As a community, the Faculty of Medicine and Health Sciences acknowledges that 'the knowledge of the [pedagogical] foundations on which the health sciences programmes are built, as well the development and updating of competencies associated with quality teaching of the individuals teaching in those programmes, are essential instruments to maintain the quality of teaching'.

Conclusions

Quality clinical teaching contributes substantially to improving health services and patient care. As such, faculty development for clinical teachers can support them in their teaching tasks and help to ensure they provide quality teaching. Giving access to new knowledge helps to enhance the confidence and efficiency of clinical teachers. However, the scope of faculty development should be broadened from traditional methods, such as one-time workshops or activities, to workplace-based faculty development. Moving towards longitudinal (spaced) faculty development programmes can be a first step in using in-practice experimentation to facilitate the transfer of pedagogical knowledge and create learning communities to discuss challenges encountered in teaching.

Nonetheless, convincing faculty members to enrol in pedagogical faculty development remains a challenge. Each clinical setting can count on its 'champions' to promote faculty development in its organisation. Strong support from the Dean's office can also go a long way. From quality teaching policies to the recognition of faculty development in the process for promotion within the faculty, this support plays a major role in creating a faculty culture based on the development of teaching competencies and a constant search for improvement.

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Conflicts of interest

The authors declare that there are no conflicts of interest.

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Key points

- Standardising teaching practices across multiple settings is a challenge.
- A faculty development programme, spaced over a 3-year period, using a sequence of standardised annual workshops on teaching clinical reasoning skills was developed for multiple teaching sites.
- A self-assessment questionnaire for participants following the final workshop suggests the programme contributed to a change in their day-to-day teaching practice of clinical reasoning.
- Spaced education (or distributed practice) can improve the efficiency of faculty development.
- A faculty development culture is essential to support quality teaching and learning.

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