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The Practically Wise Medical Teacher: Medical Education at the University of Tromsø – A Norwegian Case

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Abstract

This article addresses the issue of teaching quality in medical education and investigates what characterizes a professionally competent or practically wise medical teacher through the use of longitudinal data from interviews with 40 medical students. In discussing the findings, Aristotle's concepts of episteme, techne and phronesis, and theoretical perspectives on professionalism and quality in teaching are applied. The findings highlight that one is either a practically wise medical teacher or a technical medical teacher. The practically wise medical teacher typically focuses on reflection, experience, participation, formative assessment and discussion in an atmosphere of good relations, which stimulate teaching and learning. The technical medical teacher, on the contrary, knows very little about the students and treats them as onlookers in clinical settings. The analysis results indicate that being a practically wise medical teacher requires a perception of what characterizes professionalism in medical education, the ability to use formative assessment and role model consciousness. These findings underline the importance of a good supervisor–learner relationship, which promotes medical teachers' teaching competence and knowledge of professionalism. The findings also indicate the importance of faculty development in order to improve teaching quality at both the individual and system levels.

Keywords: Forms of knowledge; Medical professional competence; Reflective practice; Medical students' experiences; Teaching quality

Introduction

In recent years, there has been a focus on teaching quality in medical education [1,2] as well as on students' professional competence development and especially on how they become practically wise [3,4]. However, few studies have investigated theoretically and empirically what characterizes the teaching style of a practically wise medical teacher and how students' development of professional competence, especially practical wisdom, is linked to the characteristics of medical teachers' teaching.

This study was aimed at investigating what it means to be a practically wise medical teacher in clinical contexts and how to teach accordingly. The project was a longitudinal qualitative study in medical education from 2012 until 2018 at the University of Tromsø – the Arctic University of Norway. In this article our focus is on the fifth year where the placement period lasts for 26 continuous weeks. The data contribute to the literature by providing knowledge on what characterizes a practically wise medical teacher.

The theoretical framework is based on the concept of medical professional competence and forms of knowledge related to professional medical education with reference to international literature [3,5-11]. Three forms of knowledge–episteme, techne and phronesis–derived from Aristotle [5] are given attention, especially the concept of phronesis, as this concept has been focused, renewed and recontextualised in the discussion of what it means to be a professional educator. The discussion of the medical teacher as practically wise is supported by Biesta's [12] and Sullivan's [13,14] perspectives on this topic.

We start by describing the study, its aims and methods. We then outline the theoretical framework and present the

empirical findings relating to practical wisdom in a teaching context. Finally, we present our discussion and conclusion.

The Research Project: Aims, Methods and Research Questions

The Medical School in Tromsø is based on two principles: integration of theory and practice, and student orientation related to the students' perspectives on good medical education. Clinical practice is an essential part of medical education, and during the six-year programme, a gradual escalation of placement learning takes place.

The research at hand was a six-year study, and the participants were 40 students enrolled in the medical education programme. The overall objective of the research project was to explore students' perceptions of what characterizes professional medical teaching and what it means to be a professional doctor. The data was collected by means of a semi-structured interview guide. The study is based on self-selection. An invitation was sent to the students asking for volunteers to participate for six years (2012–2018). All students that volunteered took part in the study for six years.

All interviews were individual and lasted for around 60 minutes. Follow-up questions were used for clarification and further in-depth questioning. Before finishing each interview, the researcher gave a short summary of the session and her understanding of the main points. According to Maxwell [15], these strategies strengthen the validity of research work. The same researcher conducted all interviews to ensure consistency in the interviews and to make it easier to build on and follow up on previous statements in subsequent interviews.

The interviews were recorded and transcribed verbatim. The transcribed text was read and reread to get an impression of the data. Themes relating to the actual topics concerning the practically wise medical teacher and how to teach accordingly were identified and coded through thematic coding, which included inductive and deductive coding. Thagaard [16] and Alvesson et al. [17] claim that abduction is a position in between induction and deduction which highlights the dialectic connection between a theoretical and an empirical perspective. The abductive position contributes to the interpretation of the data's meaning. In our case, inductive coding emerged from the collected empirical data, whereas deductive coding was derived from the applied theoretical framework – in this case, Aristotle's forms of knowledge. According to Fereday et al. [18], thematic coding is a balance between inductive and deductive coding. Accordingly, the analysis became a synthesis of the empirical data and the theoretical framework, which, according to Cohen et al. [19], is preferable because it is more faithful to the data.

The findings prompted the authors to come together to discuss medical education and address the research question: What characterizes a practically wise medical teacher?

Theoretical Framework

Professional competence development in medical education

Professional practice requires interaction between different types of knowledge, skills, attitudes and judgments [14]. Jensen et al. [20] underline the following:

The tasks of the practitioners go beyond the application of predefined knowledge to handle a particular case or client's need. Also included are responsibilities for selecting, validating and in other ways safeguarding knowledge in the context of everyday work, for keeping issues open to investigation, and for taking active steps to explore opportunities for improvement.

Hence, professional competence is a complex phenomenon, and developing professional medical competence requires acquiring various forms of knowledge, skills and the appropriate attitude as well as the ability to make judgments and act responsibly. In recent literature on professional competence [7,11,13,21-27], we witness a renewal of Aristotle's three forms of knowledge – episteme, techne and phronesis – which this article focuses on, with special attention to the concept of phronesis. Inspired by Aristotle's distinction between these three concepts, Sullivan [13] divides professional education into three apprenticeships. The first apprenticeship is mainly about acquiring episteme, and it involves acquiring scientific knowledge, analytical reflection and argumentation. Episteme is context independent, it represents the form of knowledge found in educational curricula and institutions, and it is normally delivered via lectures in an auditorium on campus. As far as medical education is concerned, episteme represents the theoretical framework that physicians in the making must learn.

The second apprenticeship concerns developing techne, and it is about learning practical skills by participating in simulated or authentic practice situations. Techne relates to practice in the sense that you have an aim, and it asks how to reach it. In medical education, techne is about learning different skills and methods for examining patients or handling some apparatus. Techne is context-dependent, and it is related to the practical form, poiesis, which means that the actor searches for simple solutions where certain guidelines should be followed.

The third apprenticeship, which mainly takes place in the field of practice, introduces students to the values and attitudes shared by the professional community, and it is aimed at developing phronesis. Phronesis can be translated as practical wisdom or prudence. Sullivan [13] emphasises the following:

Professional moral discernment is thought to be learned and practiced together with the skills of a particular professional practice. The highest ethical achievement is understood as practical wisdom, the phronesis Aristotle wrote about, meaning the ability to act well in context. Practical wisdom… demands the ability to balance the complexity of situations while maintaining consistent moral aims.

Phronesis deals with ethical issues in the search for the best possible solution. The basic question to be asked and answered is "What is the right thing to do?" In the process of determining the right thing to do, the actor – the doctor in this case – applies epistemic general knowledge to a particular situation relating to how to best treat the patient. Phronesis represents a kind of contextualized knowledge that does not ask for simple solutions. Instead, the doctor seeks a holistic view where different aspects are discussed before any decision is made. This practical and complex form of knowledge is often named praxis, and it should be distinguished from poiesis, which is related to techne. Whereas praxis seeks a holistic view where different aspects are discussed, poiesis points at guidelines to be followed. Phronesis does not work on its own. It is related to episteme and techne and can only be realised in a contextual interplay between them. Here, the three forms are integrated or, as Higgs [27] puts it, the three forms dance together. Reflection and experience are basic aspects that are essential to developing phronesis. In this process, the expert – that is, the experienced doctor – shares his or her knowledge, reflections and experiences with the novice – the medical student – in a dialogue.

Phronesis is closely related to the development of professional identity and professionalism. Solbrekke et al. [28] argue that the development of phronesis among professionals is a prerequisite for developing professional responsibility and a necessity for justifying professional autonomy and space for discretion. The perspectives discussed in these article present set standards for the practically wise medical teacher, which we will focus on in the next sub-section.

Medical teaching competence

Being a highly competent medical teacher requires more than just being a professionally competent doctor. It also requires didactical competence. Didactical competence includes knowing what to teach, how to teach and to reflect upon why-related questions linked to educational goals, content, methods of teaching and learning and the professional medical teacher as a role model. Mann et al. [29] discuss what characterizes the medical teacher as a role model and emphasise the concept of "role model consciousness," which we will return to in the discussion.

Biesta [12] discusses the relation between teaching and learning in education and in this context he asks the fundamental question, "What do we want education to work for?". He distinguishes between "learning from" and "being taught by", which seems to be a fruitful way of thinking when it comes to medical education. "Being taught by" refers to the fact that the practically wise medical teacher has something to teach the students. Biesta's argument is that if we abandon the idea that teachers have something to teach and instead make them into facilitators of learning, we are on the verge of abandoning the very idea and intention of education, where the students are invited into contexts as dialogical participants. By contrast, "learning from" emphasises the teacher as a facilitator of learning, where the students are thought of mainly as onlookers receiving recipes to follow. These two contexts give associations to praxis and phronesis on one hand and to poiesis and techne on the other. Biesta argues that what is essential in education is the presence of a teacher, *"not just as a fellow learner or a facilitator of learning, but as someone who, in the most general terms, has to bring something to the educational situation that was not there already".*

Problematizing the educational process and the role of the teacher, Biesta [12] applies the Aristotelian concepts in his analysis:

"The educational question is therefore never just about how to do things, but always involves judgments about what is to be done – the question of educational desirability – and this locates education firmly within the domain of praxis. The distinction between poiesis and praxis helps us to see that teachers do not just need knowledge about how to do things (techne) but also, and most of all, need practical wisdom (phronesis) in order to judge what needs to be done."

In this respect, an essential question is, "How can the medical teacher become a practically wise person and teach accordingly?" Boudreau [30] argues that the ideal doctor is a practically wise medical teacher, which means that the Aristotelian forms of knowledge are integrated in the clinical practice, paying special attention to phronesis. Boudreau also argues that practical wisdom is an aspirational goal in medical education. According to Biesta [12], teachers must acknowledge that education cannot be reduced to the logic of poiesis and techne; it also needs the logic of praxis and phronesis [31-36].

Findings

The impact of placement learning

The fifth year is the second-last year of the medical programme. This year is said to be the flagship of the Medical School in Tromsø due to the long-lasting placement period. The students were out working in hospitals and with practicing doctors in different communities across Northern Norway. The placement period lasted for 26 continuous weeks, where 14 weeks were spent in hospitals, 8 weeks with municipal doctors and 4 weeks in psychiatric clinics.

The students highly appreciated this long-lasting practice, which enabled them to do clinical work and meet different patients for a rather long time. They reported that this long-lasting placement practice was crucial to their professional development. During this year, they reported gaining valuable experience; they reported undergoing a kind of "transformative process." During this year all students reported on a steep learning curve. This experience was an extremely important motivating factor for starting on and working out the last year of the study programme. They felt they had entered the fifth year as hard-working medical students and had come out of it as physicians in the making:

"I am more able to relate theory to practice now. I feel more like a physician in the making compared to what I felt when I

started this practice. After six months in clinical practice, I feel safer now".

A central finding was the fact that two different categories of medical teachers emerged in relation to placement teaching during the fifth year. On one hand we identified the medical teacher as practically wise which included the integration of the three Aristotelian forms of knowledge where phronesis played an important role and was associated to praxis. On the other hand we found the medical teacher as a "technician" which included the integration of episteme and techne and was associated to poiesis. Some of the students even shared the medical doctors in two other categories: "the professional" and "the kind" teacher. Whereas the first one reflected the practically wise medical teacher, the second category reflected the technical doctor who just told the students what to do without stimulating or challenging their medical competence. As our scope is the medical teacher as practically wise, we will further focus mainly on this aspect.

Professionalism and the practically wise medical teacher

The practically wise medical teacher is characterized by applying and integrating the three Aristotelian forms of knowledge. This teacher stressed the importance of interplay between episteme, techne and phronesis contextualized in practical settings with patients. In situations like these the medical doctor acted as a teacher that had something to teach the students who really appreciated these settings. The following is a representative quotation from the students' perspectives:

"I have learned a lot this year, and I have gained more insight into clinical practice compared to earlier. I have had many new experiences relating to issues that I have not been able to understand when they were lectured about or when I have just been reading. But then you meet a patient, with whom you can talk and ask questions, and you may discuss with other doctors, and you get a more practical approach, and to me, this has been valuable and important learning. There are many cases that I could not understand theoretically, but which I now understand, as I can experience them in practical settings, discuss and reflect. This has indeed been the most important year."

The students point to the fact that the practically wise medical teacher asked questions, explained, shared experiences, reflected on and discussed the different patient cases with the students. In this way the medical doctor practiced professionalism in medical education. The practically wise medical teacher invited the students to participate, discuss and reflect on different ways of treatment related to each patient. Thus episteme, techne and phronesis were playing together contextualized to each patient.

Formative assessment

Another aspect characterized by the practically wise medical teacher was the fact that this person often gave feedback to the students, challenged them and thus helped them to transform theoretical knowledge into practical settings. All students underlined the importance of immediate feedback (formative assessment) to improve the learning process.

When you meet a patient you have to reflect and activate what you have learned. It is important to have feedback from the teacher both positive as well as critical comments. This is a god way of learning.

It is of great importance to have immediate feedback from an experienced doctor. Then you get to know that you are on the right track, and that you actually have some relevant medical competence.

The examples above point at the enormous impact of formative assessment in clinical practice. The medical teacher who was able to give immediate feedback supported and facilitated the students' learning processes in a positive way. The students claimed that formative assessment represented an important motivation factor to them.

Role model consciousness

The third aspect to be focused on had to do with the medical doctor as a role model. In these clinical settings different aspects were observed and commented on by the students. Very often they commented on the way the doctors communicated with their patients and the way in which the doctors treated their patients. The students compared different cases and drew their conclusions about good role models, and thus became aware of what kind of doctor they wanted to become. *"I was really inspired by some doctors when I saw the way in which they treated their patients. This is the kind of doctor I want to be."* Some of the students even claimed that previous meetings and experiences as patients had inspired them to study medicine.

The medical teacher as a technical doctor

Before proceeding to the discussion, we should pay some attention to the doctors who were not characterized as practically wise. We found that the students who were not taught by a practically wise teacher reported that they had to find out on their own what to do during the day because there was no plan for them. They had to grab a doctor's white coat to ask if they could participate, or sometimes they just had contact with an intern. The result of experiences like these was frustration. Students reported that they often went home to consult the literature and discuss with fellow students in order to learn something. Some representative quotations from these students are as follows:

"I could have been there every second day without anyone paying attention to it, or I could have taken a day off in the middle of the week and nobody would have noticed it. It is like… you have to be responsible yourself in order to learn something. You have to grab someone…"

Most of the doctors allow you to come with them when you ask, but they do not know why you are there or what you are supposed to do or anything at all. You see – so you have to

explain and repeat every time, and it is a bit cumbersome in this way…

The students pointed to the fact that they were not invited into cases where they were asked to reflect and discuss together with experienced doctors who cared for the students' medical professional development. Instead they were treated as onlookers, watching and observing what was going on without participating in discussions.

So far we have no clear answer why such big differences existed among medical teachers in clinical settings. However, we have some suggestions which we will return to in our discussion.

Discussion

The findings show significant variations in the quality of the learning opportunities offered. We identified three key features that characterize a practically wise medical teacher and how to teach accordingly.

First, we argue that it is of great importance for the medical teacher to have a perception of what characterizes professionalism in medical education. In this sense, integrating the Aristotelian forms of knowledge contributes to concretization in authentic contexts. In these settings, practice is related to praxis. Phronesis was in focus when the medical doctor acting as a practically wise teacher invited the student into a patient case to examine the patient and further discussed, explained, asked questions and challenged the student in different ways and in a good atmosphere of teaching and learning. In these situations, the teacher reflected together with the student, decontextualized his/her former experiences into this new situation and sought a holistic view before any decision was made.

Smith et al. [37] discuss some aspects related to reflective practice in medical education. They claim that the literature over-emphasizes technical and instrumental aspects, techne, at the expense of the critical potential of reflection, phronesis. The authors underline the fact that reflective praxis is contextual, particular and social, and thus dependent on a dialogue between supervisors, students, peers and colleagues.

Another aspect relating to authentic patient cases was that the practically wise medical teacher was able to make the student aware that sometimes one must make decisions under pressure related to time and lack of certainty. In addition, the practically wise medical teacher should problematize the use of guidelines adapted to the specific patient case. We claim that the aspects mentioned are summarized in the following quotation from Sellman [11] *"the competent practitioner aspires toward the Aristotelian ideal of doing the right thing to the right person at the right time in the right way and for the right reason."* These aspects seem to be strongly supported by other researchers discussing the concept of phronesis [4,9,23,24,26].

Second, we focus on formative assessment and time for reflection, as this issue was strongly stressed among the students. Mann et al. [31] provide a literature review on reflection and reflective practice in health professional education. They state that the process of reflection seems to be multi-factorial and include different aspects. They also find that reflection is stimulated in response to complex problems. Reflective thinking is also associated with deeper approaches to learning and meaning-making. Formative assessment, also called assessment for learning, is closely connected to reflection. Those two aspects should be integrated in a good learning strategy. The importance of formative assessment as an extremely important factor in stimulating a good learning process is well-documented [32-35]. Mann et al. [31] claim that the literature on reflective thinking suggests that guidance as feedback and supervision are key factors of reflection and that students perceive them to be beneficial to their learning. What the authors actually refer to is the medical teacher acting as practically wise.

Moreover, Trede et al. [36] discuss reflective practice in clinical education. They argue that clinical educators need to learn more about what characterizes good teaching. They point to the fact that medical teachers are firstly clinicians with a responsibility to their clients and secondly clinical educators with a responsibility to medical education. Consequently the clinicians need to learn about the importance of reflection and formative assessment in professional education.

Third, we stress the importance of role model be deliberate about modeling in order to be explicit about what it means to be a professional clinician. Their statement supports what we experienced: the students in this project referred to the importance of the teacher as a practically wise role model regarding their learning and professional development.

Being a role model is not a simple task, as being a physician involves taking complex and complicated aspects into consideration. Thus, some degree of consciousness of what it means to be a medical teacher is of crucial importance. Yet the fact is that the medical teacher's primary focus is patient care. The role of the medical teacher means caring for and healing patients in the best way possible while also teaching the student in a way that learning is developed and improved. The practically wise medical teacher is expected to manage this integration.

Cooke et al. [1] claim that students enter medical school with only a superficial understanding of what it means to be a physician. In this sense, a strong, clear and dedicated role model is important to teach and introduce students to professionalism and professional development. In this project, we experienced that the clinicians who taught to a great extent set the standards for the quality of the medical education, as placement learning seemed to be of paramount importance for the development of physicians in the making. Cooke et al. [1] assert that clinical education involves far more than outfitting medical students with scientific knowledge and technical skills. We experienced that the teacher acting as a good role model invited the students to participate in patient cases and discussions about the treatment of each patient. In this way, the students may experience that medicine is dynamic and may carry far more unknowns and uncertainties than imagined. Medical students also need role models who

can help them distinguish between different situations in clinical settings.

In this study we can outline two different role models from our data. One is the doctor acting as a practically wise medical teacher, which includes the integration of the three Aristotelian forms of knowledge. The other role model is what we have referred to as a technical doctor who only focuses on episteme and techne. This is the teacher who regards the student only as an onlooker in clinical settings.

Due to the fact that two different role models have been outlined in this study, we will point at the importance of faculty development in order to prepare clinicians to become medical teachers.

In Bearman et al. [38] study, clinicians who taught required faculty development to improve as teachers. Educating faculty members for professional teaching has gained increasingly interest during the last decade. Steinert [39] states that teaching and learning of professionalism have grown within faculty development which she considers to be critical. Placement teaching and learning is extremely important, and educating doctors on that arena to be practically wise medical teachers will be a basic task related to faculty development.

In our case the first step will be to ask what it means to be a professional educator in medicine. The answer will be related to the interplay between the three Aristotelian forms of knowledge. It is important that medical teachers are able to teach professionalism explicitly. Steinert [39] claims that clinicians need help to become professional educators, which is the responsibility of faculty management. Moreover she also pays attention to the importance of role modeling within faculty development, and a discussion about how clinical teachers behave as role models. In short faculty management should provide conceptual framework for the medical teachers to reflect upon and thus contribute to professional development. Steinert points to the fact that medical teachers seem to think they are professional, and that teaching professionalism is intuitive, an idea which is absolutely not correct. Medical teachers should have opportunities to discuss in groups and share experiences from clinical practice together with colleagues, as these aspects may contribute to developing a consciousness related to being a practically wise medical teacher and a good role model. Managing this role, however, is not an individualistic project but the responsibility of a medical faculty, which is supposed to stimulate and develop professional medical education. Steinert [39] concludes that faculty development should be addressed at two levels: the individual and the organizational level. In our case, this seems to be of great importance. We will argue that individual engagement within a supporting organization, in this case a supporting faculty management is a future challenge to be prioritized in order to fully utilize the potential that placement teaching and learning offers.

Tiplic et al. [40] have studied the process of curricular change which was the first step before carrying through the study programme that we have been analyzing in this paper. In their analysis Tiplic and Hovdenak concluded that the new curriculum was accepted because the faculty as an organization had strategic actors that worked as sense-makers for the rest of the organization. Thus sense-making became a basic precondition in order to develop a new curriculum at faculty level. However, it seemed that during the next step, i.e. the implementation of the curriculum and medical teaching the faculty management had to cope with a lack of strategic actors behaving as sense-makers. Thus a plausible explanation may be that this lack of sense-makers among the medical teachers may be one of the reasons for our observation of a number of teachers acting as technical medical teachers. In fact there was no person in the faculty management to discuss explicitly with the clinical doctors as teachers what it meant to be a practically wise medical teacher and how to teach accordingly. Moreover there was no discussion about the concept of professionalism.

Thus we may argue that the interplay between the faculty as an organization and the medical teachers as individuals did not work in a strategic way. From our point of view we will claim that sense-makers who had invited medical teachers to discuss professional medical education probably could have improved and facilitated the curricular implementation and the medical teaching at an individual level. In this way the medical teachers could have been offered teaching competence to support medical education in a professional way.

Conclusion

What can we learn from this study? First and foremost that practice in clinical settings represents a great potential regarding teaching and learning in medical education. This conclusion is not revolutionary, as our study corroborates what other studies have concluded concerning placement teaching and learning as a crucially important arena. However, we claim that the present study additionally focus on what it means to teach as a practically wise medical teacher and in this respect, we think that it adds new and valuable knowledge to the discussion about professionalism, medical education and students' perspectives. The findings indeed show that placement sites have unique possibilities for practically wise medical teaching, and correspondingly for the students' professional development. We have outlined three key factors to be taken into consideration if the medical teacher is to act as practically wise.

First, we discussed the concept of professionalism and claimed that the professional medical teacher should know this concept and its three forms of knowledge episteme, techne and phronesis. In this context, we paid special attention to phronesis. Second, we shed light on the importance of formative assessment and time for reflection among the study participants. Third, we paid attention to the impact of the medical teacher as a role model.

Further, we suggest that educating practically wise medical teachers should be a responsibility within the faculty. In this respect, we underlined the importance of faculty development.

This qualitative study, will hopefully give directions for further professional development in medical education. We also hope that our study will inform, inspire and motivate the development of medical education where the concept of phronesis will become a basic aspect of professional medical education in the future. In this respect, we insist on the need for more research in this field, both qualitative and quantitative, which focuses on the practically wise medical teacher and how to teach accordingly.

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