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Promoting professional development in medical education: perspectives from the Norwegian medical school in Tromsoe

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ABSTRACT

In international research on medical education the concepts of professionalism and professional development have been increasingly focused. The article problematizes and discusses these concepts in relation to the Aristotelian concepts of episteme, techne and phronesis. Phronesis as a form of knowledge is of fundamental importance regarding professionalism and professional development, and can be regarded as a response to an instrumentalist understanding of medical education. The article reports from an ongoing qualitative study following the revision of the study programme in medicine at the Medical School University of Tromsoe, The Arctic University of Norway. In the renewed programme the concept of phronesis is paid attention to, and the article discusses how phronesis is focused on different learning arenas. The data presented builds on the students' perspectives on phronesis as a form of knowledge in medical education.

KEYWORDS

Medical education; professionalism and professional development; phronesis; students' perspectives

Introduction

In this article, we address the concepts of forms of knowledge, professionalism and professional development in relation to medical education by presenting a study of medical students from the Norwegian Medical School in Tromsoe at the University of Tromsoe, TheArctic University of Norway. In 2012, the medical school started to implement a revision of its study programme that had been worked on for seven years.

Our theoretical framework is based on Aristotle's (2004) theory of different forms of knowledge: episteme, techne and phronesis. In the last decade, a renewal of the Aristotelian forms of knowledge has taken place in the international literature as far as professionalism and professional development are concerned (e.g. Eikeland, 2008; Flyvbjerg, 2006; Gustavsson, 2007; Kinsella & Pitman, 2012).

We will start by presenting the research project that took place at The Medical School in Tromsoe and its aims. We will then present the research methods and methodology used and then focus on the theoretical framework by presenting episteme, techne and phronesis as forms of knowledge that are considered essential in professional education. Then we discuss the concept of professionalism and medical professional development. Finally, we will explain how this kind of development has been integrated into the revised study programme and how the revision has been received by the medical students.

The research project, aims and method

The Medical School in Tromsoe was established in 1971, and was at that time said to be at the forefront of medical education in Norway due to its principles of integration between medical theory and clinical practice, as well as its student orientation. In 2005 the dean wanted a revision of the study programme and appointed a Scandinavian committee, named the "Roald Committee" consisting of external actors to evaluate the programme. In its conclusion the Roald Committee (2006) stated there was a potential for improvement of the curriculum, and the committee focused especially on the context and the organization of teaching and suggested that the programme should still focus on its main principles about integration, likewise student orientation and involvement of hospitals and practitioners, which represented an important part of the identity of the medical school. The committee also suggested that the revised programme should from the first year focus on integration to an even stronger degree than before to make clear the relevance between medical theory and clinical practice. No complete revision had taken place during the period 1971–2006.

After an extended period of time the first class following the revised programme started in 2012. The principles mentioned above represented the backbone of the implemented study programme. In order to evaluate the revision, research following the implementation process was established. The

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main theme of the research was to explore the students' perceptions of what it meant to be a good doctor, and whether there were some changes regarding professional development between the previous and the revised programme. A main research question has therefore been: What characterises a professional medical doctor from the students' perspectives? In this context the concept of professionalism emerged as an overall theme related to Aristotle's forms of knowledge such as episteme, techne and phronesis.

We used a semi-structured interview guide for data collection. We interviewed 40 medical students, 20 students following the revised study programme and 20 following the previous programme. By using two different student groups it would be possible to find out if there were any differences between the way in which the two different study programmes were perceived by the students. The interviews were individual and lasted around 60 minutes. Follow-up questions were used for clarification and further in-depth questioning. At the end of the interview, the researcher presented a short summary of the session and her understanding of the main points to avoid misunderstandings that could influence the validity of the study. The interviews were done by the same researcher.

Each interview was recorded and then transcribed verbatim. The transcribed text was read and reread to get an impression of the data collected. The themes concerning professionalism were then identified and coded through thematic coding, which included both inductive and deductive coding. In this process, the inductive coding emerged from the collected data whereas deductive coding was derived from the applied theoretical framework, namely Aristotle's forms of knowledge. Fereday and Muir-Cochrane (2006) claim that thematic coding is a balance between inductive and deductive coding. Thus, the analysis was a synthesis of the data collected and the theoretical framework, which, according to Cohen, Manion, and Morrison (2011) is a preferable process because it is more faithful to the data.

It should also be stated that in the interview process the researcher made a difference between researcher questions and interview questions when it came to the concepts of episteme, techne and phronesis. In this context the students were asked what it meant being a good or a professional doctor which in turn was followed up by in-depth questions related to the three different forms of knowledge which they were asked to reflect on. The article is based on a longitudinal study where the empirical data was collected once a year from 2012 to 2017.

Forms of knowledge, professionalism and professional development

As mentioned the revision process focused on acquiring professionalism through emphasising teaching practises aimed at developing reflection of what it means to be a "good doctor". In this setting the three Aristotelian forms of knowledge, episteme, techne and phronesis come to the fore as a premise for understanding the complexity of developing professionalism in higher education. These three forms of knowledge are currently undergoing a revival in literature on professionalism and we will therefore firstly describe the re-contextualisation of these forms of knowledge before we discuss the implications for medical professionalism.

Forms of knowledge and the recontextualisation of Aristotle

We begin this section by briefly discussing the recontextualisation of the three Aristotelian forms of knowledge – episteme, techne and phronesis – which form the basis for our theoretical framework and analysis (Aristotle, 2004).

Phronesis, also named prudence or practical wisdom, has been emphasised within education during the last decade, as this form of knowledge is strongly related to professionalism and professional development. Kinsella and Pitman (2012) noted that numerous scholars have called for a renewed attention to and a reconceptualisation of phronesis. In this section, we discuss how the Aristotelian concept of phronesis may "be reinterpreted, understood, applied and extended in a world radically different to that of the progenitor of the term, Aristotle" (Kinsella & Pitman, 2012, p. 1).

Phronesis has attracted great interest because this form of knowledge is related to the practical field. Phronesis has become a concept that deals with the ability to reflect on and carry out good and well-considered actions, which is vital to developing professionalism. In the introduction to the *Nicomachean Ethics* (Aristotle, 2004), Barnes described Aristotle as one of the most influential moral philosophers of our time. Aristotle points to certain moral virtues that are required to be able to develop phronesis. These are expressed in "good actions" whose starting point is reflection followed by decision and action. Phronesis, or prudence, as an intellectual virtue is described as follows:

> Thus prudence must be a true state, reasoned and capable of action in the sphere of human goods. Moreover, whereas there is an excellence in art, there is no such thing in prudence; and in art the man who makes a mistake is rated higher if he makes

> it voluntarily, but in the case of prudence he is rated lower, just as in the case of the "moral" virtues. Clearly, then, prudence is a virtue, not an art. (Aristotle, 2004, p. 151)

Nussbaum (1997, 2000, 2001, 2010) built on Aristotle's forms of knowledge with a special focus on the concept of phronesis when discussing education in a broad sense. She considered phronesis a result of, and distinct from, an increasing tendency to think of education in instrumentalist terms: "It would be catastrophic to become a nation of technically competent people who have lost the ability to think critically, to examine themselves, and to respect the humanity and diversity of others" (Nussbaum, 1997, p. 300). Within the Scandinavian context, Gustavsson (2001, 2007) has also been working in this classical sphere. This paper belongs to the same classical tradition in that it is built on a renewal and reinterpretation of the Aristotelian classical concepts of episteme, techne and phronesis.

In this paper we use the concept of recontextualisation to make clear that the Aristotelian forms of knowledge are related to educational development. The problem is that we increasingly seem to think about education within a neoclassical, also called instrumental way. In this respect we meet simple means-end solutions in education whereas ethical aspects gradually seem to decrease in discussions concerning educational issues. Against this trend the concept of phronesis emerges as it allows to a greater extent other values as well as ethical aspects to be taken into consideration. Kinsella and Pitman (2012) the editors of the anthology *Phronesis as Professional Knowledge:Practical Wisdom in the Professions* point to the fact that different researchers claim that they have registered an increasing degree of instrumental thinking related to professional education and policy making in education. Thus, recontextualising the concepts of episteme, techne and especially the concept of phronesis in education may be an answer against this instrumental thinking, which seems to be dehumanizing humanity.

Episteme, techne and phronesis

Episteme is related to scientific knowledge and is the form of knowledge found in educational institutions. This knowledge is universal and also said to be objective. Episteme is context-independent knowledge. As far as medical education is concerned, episteme represents the theoretical framework that physicians in the making have to learn.

Techne deals with skills. This form of knowledge is about practice in the sense that one has an aim and asks how to reach it. In medical education, for instance, the students have to learn different skills and methods in order to examine the patient. Techne is context dependent and related to the practical form named poiesis.

Phronesis, also called practical wisdom, is concerned with how to act in the best way and why the chosen solution seems to be the best. The basic question to be asked and answered is "What is the right thing to do?" Phronesis deals with ethical issues in the search for the best possible solution. In this process, the actor – in our case, the medical student – applies the general knowledge to a particular situation related to the treatment of a given patient. Thus, phronesis represents a kind of contextualised knowledge related to practice, also called praxis. The result of phronesis is action. This form of knowledge does not work on its own. It is related to episteme and techne and can only, in a given context, be realised in the interplay between them. In phronesis, the three forms of knowledge are integrated, or, as Higgs (2012) put it, "the three forms dance together". Reflection and experience are essential for developing phronesis. In this process, the expert, the experienced doctor, shares his or her knowledge, reflection and experience through a dialogue with the novice, the medical student.

Professionalism

Norcini and Shea (2016) claimed that the focus on professionalism has increased dramatically over the past few decades. They pointed out that professionalism can be difficult to define, as many aspects need to be taken into consideration. Several authors have agreed with this conclusion (e.g. Boudreau, 2016; Cruess & Cruess, 2016; Hafferty, 2016; Hutchinson & Smilovitch, 2016). Cruess and Cruess (2016) presented a long and broad definition of a profession based on the Oxford English Dictionary. This definition includes the main aspects of professionalism, as discussed in the literature dealing with this topic:

> Profession: An occupation whose core element is work based upon the mastery of a complex body of knowledge and skills. It is a vocation in which knowledge of some department of science or learning or the practice of an art founded upon it is used in the service of others. Its members are governed by codes of ethics and profess a commitment to competence, integrity and morality, altruism, and the promotion of the public good within their domain. These commitments form the basis of a social contract between a profession and society, which in return grants the profession a monopoly over the use of its knowledge base, the right to considerable autonomy in practice and the privilege of self-regulation. Professions and their members are accountable to those served, to the profession and to society. (Cruess & Cruess, 2016, p. 10)

In this definition, the three Aristotelian forms of knowledge – episteme, techne and phronesis – can

be identified. The definition stresses the interplay between the different forms of knowledge, which is consistent with the perspectives presented in this paper. It also includes keywords such as monopoly, autonomy and individual and societal responsibility.

Professional development

As already mentioned Kinsella and Pitman (2012) pointed to the fact that an instrumental way of thinking in education has become dominant. As a result they asked what the implications of such a trend could be for professional education and practice. They also asked what, if anything, could be done: "We questioned whether some corrective might be possible, whether something of importance might be recovered, perhaps through Aristotle and his conception of *phronesis* or practical wisdom" (Kinsella & Pitman, 2012, p. 1).

Kinsella and Pitman claimed that researchers working within the field of professionalism and professional development have paid much attention to the concept of phronesis. Thus, different chapters of their anthology discussed and problematized the concept of phronesis in the professions, some of them directly related to medical education (e.g. Ellett, 2012; Frank, 2012; Hibbert, 2012; Kemmis, 2012; Kinsella, 2012; Pitman, 2012; Sellman, 2012). Other researchers have also been working with the concept of phronesis within education and professional development (e.g. Eikeland, 2008; Flyvbjerg, 2006; Gustavsson, 2007; Nussbaum, 1997, 2010). These researchers agree on the two aspects of phronesis as a form of knowledge in professional education: Firstly, this form of knowledge is a reaction against the increasing instrumental rationality in the education system. Secondly, phronesis is developed in the interplay between experience and reflection, and ethical considerations and judgement constitute a central part of this form of knowledge.

Kinsella and Pitman (2012) stressed the interaction between the three forms of knowledge:

> We wish to be explicit in suggesting that we believe all three – episteme, techne and phronesis – are required for professional practice. The crisis, as we see it, is that episteme and techne are privileged, and the diminishing of phronesis diminishes the work that professionals aspire to do. (Kinsella & Pitman, 2012, p. 10)

In the discussion about practitioners and phronetic judgements, Kinsella (2012) claimed that the reflection that takes place should be viewed as an individual and social process that can be described as dialogic intersubjectivity; this means that other actors and their versions of reality should be heard. She summed up this issue as follows: "The practitioner oriented toward phronesis is aware of and concerned with not only his or her interpretations in practice but also the dialogic possibilities implicit in the recognition of the interpretations of clients, co-workers, and others" (Kinsella, 2012, p. 49). Her perspective highlights some major issues regarding medical professional development related to critical thinking and sharing experiences, discussions and interpretations with colleagues.

Sellman (2012) discussed some characteristics of what he called the competent practitioner, who is not merely concerned with getting through the work. His description focuses on central points of professionalism and professional development in the medical field: "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" (Sellman, 2012, p. 127). This is a good description of phronesis in practice and of what the patient and community expect from a responsive doctor. However, Sellman also focused on uncertainty and the importance of acknowledging that there are things we do not know or cannot know but still acting as best we can in accordance with the Aristotelian ideal of phronesis. Other researchers have argued that the presence of phronesis makes professional development possible (e.g. Birmingham, 2004; Gustavsson, 2001, 2007; Nussbaum, 1997, 2010).

Medical professionalism

The concept of medical professionalism is multifaceted and relates to different interpretations and expectations of what it means to be a "good doctor" (Calman, 2006). Professionalism thus refers to more than just technical knowledge; it also refers to relationships with others, reflection and critical judgement. In medicine, therefore, professionalism does not only refer to a scientific knowledge base such as diagnoses and potential treatments, but also to how doctors encounter patients. Medical professionalism also relates to this encounter, and to how doctors form an understanding of the patient's symptoms, worries and needs (i.e. getting the information needed to make an informed decision about how to proceed) (Finset, 2010). As will be discussed further below, the competence to critically meet the patients' narrative, communicate with a diverse patient group, and having a holistic approach to patient care therefore become integral parts of medical professionalism.

Baalen and Boon (2015) argued that the introduction of evidence-based medicine (EBM) and its reliance upon randomised control trials and rule-based procedures limits professional practice in medicine to algorithmic rule-based reasoning – what we, in this paper, have discussed as a techne-oriented rationality.

They further argued that there is a mismatch between this EBM-based rationality and the demands of clinical practice, where creative, active and critical reasoning is needed to understand and get a full picture of the patient's illness and problems:

> Besides algorithmic, rule-based reasoning, 'creative' thinking and nuanced styles of reasoning are inherent parts of good clinical decision making concerning diagnosis and treatment of a patient: the doctor aims to solve problems and to find compromises rather than strive for an 'objective truth'. (Baalen & Boon, 2015, p. 435)

Baalen and Boon 2015 argued that this form of reasoning, which, as we have argued above, can be described as a phronetic form of reasoning, is experience based and an integral part of clinical practice. They argue that there is a need for a new epistemic tool in medicine that combines both the rule-based and "objective" reasoning from "scientific and natural science" with the more contextualised, case-based and subjective approach to knowledge found in the human sciences, to get a complete picture of what ails the patient. They argue that; "one of the key intellectual challenges of doctors is the ability to bring together heterogeneous pieces of information to construct a coherent 'picture' of a specific patient" (Baalen & Boon, 2015, p. 433). This is in line with Finset (2011) who argued that in person centred clinical care the aim of the communication is to not only elicit patients symptoms – i.e. communication where the patient feels that he/ she is "just a kneecap" (Finset, 2011) but instead care where the whole person's narrative, or situation, is taken into consideration. Finset (2010) found that a more empathically oriented approach to patient care not only enhances the doctor's ability to correctly diagnose the patient, but also lowers patient rumination and symptoms of distress.

As Baalen and Boon (2015) argue, constructing a coherent picture of a patient therefore, includes not only understanding the nature of the patient's disease, but also the context and narrative of the patient. These narratives are often constructed on the patient's account of and current understanding or perception of his or her symptoms. This perception is often based on the patient's knowledge of health, ill health and the causes of ill health – described as the patient's health literacy, and as we will discuss further below, this will vary with the social, cultural and linguistic background of the patients.

In the following, we will therefore briefly look at how social changes and increased diversity have affected health literacy and how this is manifested in the dialogues between patient and doctor. We argue that in meeting the patient's "cues and concerns" (cf. Finset, 2010), the doctor's ability to and need for phronetic reasoning come to the fore.

Medical professionalism and health literacy in a changing society

The doctors educated today enter a socially and culturally diverse and complex society, where knowledge is readily available and fast changing (cf. Brodal, 2016; Schei, 2016), old power structures are changing and the medical landscape is vastly different from just a few years ago (Brodal, 2016).

The advent of social media is changing the face of medical professionalism (cf. Fenwick, 2014) both in terms of how doctors communicate online as well as how patients find and shape their knowledge. Patient knowledge and understanding about health and the health care system is often referred to as "health literacy" (cf. Berkman, Davis, & McCormack, 2010). The concept of literacy typically refers to one's ability to read and understand texts and therefore refers to people's technical reading skills (Kuche & Silva, 2013). This is often described as a narrow understanding of literacy. A wider understanding refers to how people interact with texts, how texts are socially and culturally mediated and interpreted, and how this shapes understanding and knowledge and, in turn, identities (Janks, 2010). Identities are often linked to the individual's narrative understanding of the self (i.e. the "story of me"); in medicine, this is referred to as a patient's narrative (Baalen & Boon, 2015; Finset, 2011) and is found in the story or information that the patient gives the doctor.

Literacy, therefore, is related to how people are shaped by and interact with sources of knowledge, such as the sources of information they choose to use, where they find information and how they understand this information. Literacy is coupled with people's social and cultural background, their education, whom they interact with, where they find information and whether they can understand and relate to (or make sense of) the information they obtain (Janks, 2010; Kuche & Silva, 2013).

Health literacy is a specific form of literacy related to people's understanding of health and how they acquire, interpret and act on information about health-related issues – that is, their *ability* and *capacity* to relate to health-related information (Berkman et al., 2010). Berkman et al. (2010) defined health literacy as "the degree to which individuals can obtain, process, understand, and communicate about health-related information needed to make informed health decisions" (Berkman et al., 2010, p. 16). Health literacy relates to, for example, knowledge or the ability to relate to information about

diseases, taking the right medication at the right time and in the right way, and the patients' assumptions of how to lead a healthy life and how their lifestyle might affect their health. Patients' health literacy will affect their ability to communicate with doctors and other health care personnel as well as their ability to act on the information they are given. Furthermore, health literacy also relates to how people make sense of and navigate the health care system (Berkman et al., 2010) to find the right treatment for their concerns.

A patient's health literacy therefore comes into play in communication with doctors and other health care professionals. For doctors, meeting patients with different levels of health literacy requires what is often referred to as "communicative competence" – the ability to deal with diversity or to communicate with others across different social, cultural and knowledge barriers (cf. Schulz & Nakamoto, 2013). This form of communicative competence requires critical reflection, judgement and practical wisdom – in other words, phronesis (Schulz & Nakamoto, 2013), and can be developed in medical students only if it is stressed during their education.

Medical education: cultivating medical professionalism

Calman (2006) highlighted the importance of developing competence in the process of "cultivating a good doctor". He noted that

> Competence is measured by the ability to put into practice the knowledge, skills and attitudes which have been learned and understood. It is this integration in practice which is the crucial part, not simply the acquisition of knowledge and skills. (p. 401)

In this quotation, one can recognise the three Aristotelian forms of knowledge, although Calman did not refer to them explicitly. Calman however referred to the concept of wisdom, which he described as the ability to look at a complex and uncertain problem and judge the appropriate course of action. He stated that this takes experience and long practice "and combines the need for detailed knowledge with a broader holism about the patient and the community" (Calman, 2006, p. 471). He added that "ethical issues will remain of crucial importance as will experience, wisdom and judgment" (Calman, 2006, p. 504).

This perspective is supported by Brodal (2016) and Schei (2016), who claimed that for medical education to educate professional doctors, there needs to be a shift in mentality from a pure biomedical pathological perspective to incorporating the phronetic perspective in medical education; otherwise, medical education risks being dehumanising and reducing the patient to a series of symptoms and diagnoses instead of a sentient human being. The students need to understand that each patient has different needs and symptoms and leads a different life. For Brodal (2016) this implies that medical education will have to focus not only on a different content, but also be taught by different methods than it currently does. For medical education to also incorporate the development of a phronetic form of knowledge, it will need to focus on teaching methods that allow students to build a professional identity by focusing on the good of the patient instead of purely on the patient's illness (pathology) or symptoms.

In what follows, we will present our findings, represented by the students' perspectives on professional development as expressed through their experiences as physicians in the making.

Professional medical education and the importance of phronesis: main findings and analysis

As mentioned the aim of this study is to follow the revision process and to explore if students within the new and the old model differ both in their perception of the medical education they are given, and also how these eventual differences might influence their perceptions of medical professionalism and what it means to be a good doctor.

As will be shown in the empirical data below, the students' answers were related to the three Aristotelian forms of knowledge: episteme, techne and phronesis. Not unexpectedly, the students considered medical scientific theories extremely important when addressing patients' different challenges and problems. The students also focused on the importance of skills and methods to be able to examine the patient. They emphasised that a professional doctor should be able to communicate with his/her patients and take into account the ethical aspects of the patient's situation. In other words, the students' view of a professional doctor included an integrated code of the three Aristotelian forms of knowledge.

The two student groups differed in their views of how phronesis was integrated into the study programme. The 20 students following the revised study programme reported that during the first four years practical wisdom or phronesis had been integrated into the programme. The student group following the previous programme reported that the extent to which practical wisdom or phronesis was integrated into their education during the first four years depended on the individual teacher and his or her view on the important aspects to be taught. This difference concerning phronesis is one of the most important findings from the comparison of the two student groups. Hovdenak and Risør (2015)

explained that within the revised plan, structures had been made to pay attention to phronesis as a form of knowledge in professional medical education. In what follows, we will describe and analyse the interplay between episteme, techne and phronesis, as well as how to stimulate phronesis in different domains of learning at The Medical School in Tromsoe.

Lectures and seminars: how to stimulate phronesis

All students attended the lectures given in the auditorium. In this domain, the focus was on the epistemic theoretical knowledge in medicine. The lectures were related to different courses. According to the students, the quality of the lectures differed. However, all the students agreed that the best teachers were able to establish meaningful contexts from a medical theoretical framework and further to the treatment of the patients, even in the auditorium when the teachers were lecturing. This was made possible by giving examples from practice as the doctors shared their experiences with the students. As one student said, "A good lecturer is one who also gives practical examples, one who relates [the content] to patient stories." Another student stated, "The education is a good mixture of lectures, seminars and practical work. A good lecture can really open up. Yes, it gives us interest and motivation."

This kind of experiential learning was successfully received by the students. The students who followed the revised study programme continued their learning process by participating in seminars. The seminars consisted of fixed groups of students where cases related to the lectures were discussed. The cases were constructed to encourage the students to take different aspects into consideration in their discussions. One student claimed, "I am very happy with the cases. They let us immediately get a perspective of what we will be working with later." Another student explained,

> There is a connection between what we learn in the lectures, the case and the clinical perspective. And that is what has been so good about the cases. The cases are worth their weight in gold. And we get to discuss in groups.

The students reported that they prepared themselves very well to participate in the seminars, which were largely problem based. In these seminars, they discussed what would be the best solution for the patient, in other words how the doctor could act well. In these cases the students tried to get a more holistic understanding of the situation. The problem-based cases represented the first step in a collective learning process, which aimed to help the students develop the three forms of knowledge. The teaching in these learning domains took place at the university campus, while the rest of the teaching occurred in different forms of practice such as at the university hospital, at several doctors' offices and in the casualty ward.

Professional competence: how to stimulate phronesis

A new learning domain was established in connection with the revised study programme. This learning domain was named "Professional Competence" (Profcom) and was organised in a longitudinal structure lasting for six years, throughout the duration of the students' medical education. Profcom consisted of a fixed group of around eight students and two physicians who acted as mentors. It was obligatory to participate in Profcom. During the first two years, the focus was mainly on communication. The students played different roles related to defined problems. The conversations were recorded, videotaped and presented to the rest of the group, followed by a whole-group discussion. The evaluation of Profcom (Hovdenak, 2016) showed that two years after the starting point, all the students were very satisfied because they had learned how to communicate in different settings and to take different aspects into account, which they considered important and meaningful in developing professionalism. Related to the Aristotelian forms of knowledge the two first years mainly focused on communicative skills which means techne. However, during the third year there was a distinction between the students that still learned about communicative skills and those students that could discuss ethical challenges related to patients' stories. As one student put it:

> You got a lot out of the first two years, and that was very good. But now I think Profcom has stagnated a little. I miss discussing the ethical dilemmas in everyday life. We did that last time, and it was good.

The students whose mentors discussed difficult cases and challenging ethical problems related to their own practice were satisfied with the progression of Profcom, whereas the students whose mentors kept to a strict programme of filming and discussions reported that Profcom had stagnated. As the students gained experience during their medical education, it was necessary to consider their experiences as physicians in the making and allow them to reflect on their own experiences. In these situations the mentors stimulated phronesis as a form of knowledge among the students. The further development of Profcom as a means to support and enhance professionalism will depend

on the extent to which the students' experiences and reflections are given space.

Practice at the university hospital and in the casualty ward: how to stimulate phronesis

Practice at the university hospital is named "Practical Clinical Teaching" (PCT). During the first four years, the students spent some weeks in PCT at different departments at the university hospital. An evaluation of PCT (Hovdenak, 2016) revealed that a crucial point was whether the students met patients. If the students did not meet patients, PCT was experienced as a kind of mini-lecture. In the cases where the students met a well-prepared doctor (teacher) and a patient, all 40 students reported a successful learning context. As one student said, "PCT has mostly worked very well. We have talked to the patients and then examined them. Then we have gotten together afterwards and gone through the cases and discussed what ails them and the treatment and all that." Another student stated, "It is important that we have PCT with patients. Then I learn better and I remember better. I have a face to relate to."

In these contexts, the students reported that it was easier for them to understand the relevance of medical theories. They had the opportunity to develop their skills, and they communicated with the patient, searching for relevant information in order to suggest the best treatment. In short, this setting was regarded as meaningful, searching for a holistic understanding of the situation in order to act well as a doctor. In these cases there seemed to be a successful integration of episteme and techne in the demands of a complex situation. Another important point was the immediate discussion among the teacher and fellow students, as well as the immediate feedback that stimulated the students' learning process.

The students also expressed great satisfaction when they had their practice at the casualty ward connected to the university hospital. In this practice, the medical students who had been studying for three and four years were allowed to act on their own, with an experienced doctor as a backup who could interfere if necessary. Once the consultation had finished, the doctor and the student discussed and reflected on the consultation and its strengths and weaknesses. Thus, this became a dialogue between the expert and the novice, who shared their experiences and reflected on and gave reasons for the chosen solution. The students said this context was demanding and meaningful. One student said, "I felt that casualty was very good. Here you get the opportunity to be independent, and I think that is very important to mature in the profession. And you have someone to discuss things with." Likewise, another student shared,

> We have to brag about casualty. It was great. It is here that I maybe learnt the most. It was a steep learning curve. And I got feedback – not being yelled at exactly, but criticism. And we could have discussions [about the cases].

Another student said,

> Okay, the patient was there and you got to test yourself properly. And the doctor and your fellow student just sat there and watched. And you got some help if you needed it. You got good feedback afterwards, and we discussed [the case]. So this was very, very good.

All of them emphasised that they appreciated the immediate feedback that was given to them, and they focused on the great learning effect of this context. They stressed the impact of a formative assessment. They described how they repeated the epistemological knowledge they had learned while they examined and communicated with the patient and tried to get as much relevant information as possible in order to suggest the best treatment or solution. In this setting, the three forms of Aristotelian knowledge "danced together" (Higgs, 2012).

Medical practice in hospitals and with municipal practising doctors: how to stimulate phronesis

During the fifth year of the study programme, the students had practice in hospitals and with municipality doctors all over North Norway. This period lasted for 26 weeks: 14 weeks in hospitals, eight weeks with municipal doctors and four weeks in psychiatric clinics.[1]

Our data show that the fifth year of the study programme was crucial to the students' professional development. All the students – both those following the previous programme and those following the revised study programme – reported on the impact of long practice in hospitals as well as with municipal practising doctors. As physicians in the making, they began to understand what it meant to be a doctor. Before then, they had learned about topics such as anatomy, physiology and diseases and their characteristics through different forms of clinical practice as described above. Those students entering the revised programme had followed Profcom to learn about, for instance, how to communicate with patients, and in some cases how to handle ethical challenges. The students now claimed that having continuous practice for a long time had a significant impact on their professional development. They reported undergoing a kind of "transformation process" during this period; they entered into medical practice as uncertain medical students with mainly epistemic knowledge and came out as doctors in the making, still uncertain to some degree but now more able to reflect and discuss

on cases where they had gained experience. In these practical settings together with the patient and an experienced mentor the students experienced the interplay between the three Aristotelian forms of knowledge: episteme, techne and phronesis.

So far the analysis shows that the students' experiences differ regarding the quality of the dialogue in the teacher-student relation. However, as this is not the focus of the article this finding will not be discussed here.

Conclusion

To sum up the findings based on the theoretical framework and the data presented, we focus on five points.

First, phronesis as a form of knowledge seems to have an important position in the international literature about professionalism and professional development, especially as a reaction to the increasing instrumental rationality in professional education. However, phronesis depends on the two other Aristotelian forms of knowledge: episteme and techne and a context in clinical practice in order to be developed. Calman (2006) claimed that the teaching of physicians in the making may be characterised in two ways: as technical training, which implies episteme and techne, or as medical education, which integrates episteme, techne and phronesis.

Second, the revised study programme promoted phronesis through structures such as seminars and Profcom, where the students could discuss ethical issues and challenging cases There seemed to be reinforcement at the structural and individual levels concerning phronesis. In these cases, the doctors, acting as teachers, discussed and reflected on the cases and shared their experiences with their students.

Third, all the students who participated in the study claimed that the integration of the three Aristotelian forms of knowledge was crucial to developing medical professionalism. This is also the case for the students who followed the previous programme, where phronesis did not have the same position.

Fourth, medical practice is of special importance in developing professionalism. It is in practice, face to face with the patient in a particular situation, that the student activates the acquired medical knowledge and uses it to find the best solution in a holistic approach where phronesis is stimulated and plays an important role.

Fifth, and finally, the study highlights the challenge of stimulating an understanding of the importance of phronesis as a form of knowledge in medical professional development. This is not an overwhelming task. The first step is to make sure that the teachers in medical education know about and understand the importance of the Aristotelian theory of forms of knowledge and their integration. The next step is for medical teachers to be willing to focus on phronesis to stimulate this form of knowledge, which develops through experiential learning, reflection, discussion and a holistic contextual approach. This will require, as discussed above and as shown in the results, a shift in both the view of knowledge that is promoted and also the teaching methods that are used in medical education. This article hopes to contribute to this perspective.

Note

1. When this paper was written the data from the fifth year had just been collected for the students following the revised programme. As the analysis of these interviews had just started, we can only present a brief and to some extent superficial impression of the students' view on this year.

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