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The Role of the Teacher in Medical Education – Literature Review

Agostinho Emanuel Moreira de Sousa

Supervisor

Maria Amélia Duarte Ferreira, MD, PhD

Full Professor of the Faculty of Medicine – University of Porto

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The Role of the Teacher in Medical Education – Literature Review

O Papel do Docente na Educação Médica – Revisão Bibliográfica

Agostinho Emanuel Moreira de Sousa¹

¹6^o year student of the Integrated Master in Medicine

Address: Rua D. Manuel ,n^o 159, 4615-510 Lixa

agostinhoems@gmail.com

Affiliation: Instituto de Ciências Biomédicas Abel Salazar – Universidade do Porto (ICBAS-UP)

Address: Rua de Jorge Viterbo Ferreira n.º 228, 4050-313 Porto, Portugal

“To consider dear to me, as my parents, him who taught me this art; to live in common with him and, if necessary, to share my goods with him; To look upon his children as my own brothers, to teach them this art; and that by my teaching, I will impart a knowledge of this art to my own sons, and to my teacher's sons, and to disciples bound by an indenture and oath according to the medical laws, and no others.”

Excerpt from the Hippocratic Oath (around 400 BC)

Abstract

Introduction

The importance of teaching in medical education starts since the beginning of medical practice. However, medical practice and the way of teaching changed throughout times and there is the need to adapt those to the present challenges and realities on education and health. This literature review presents a way to reflect on the role of the teacher in medical education in order to face this new educational paradigm.

Goals

The goals of this literature review are to define the key actors and factors involved in the teaching and learning of medicine, why it is important to define the role of the teacher in the context of medical education and the different roles of the teacher in the field of medical education.

Methods

In this literature review were included 52 articles in English from 1986 to 2014. These articles were found in a search on the electronic database PubMed and an additional search from the references section of each relevant, electronically-retrieved article.

Results

The major perspective used for this review was the models described by Harden and Crosby: *“The good teacher is more than a lecturer: the twelve roles of the teacher”*. However, another perspective is also of great influence, the CanMEDS, since it gives another view about social and clinical roles of the doctor. Taking these perspectives in consideration, in this literature review it was considered as 15 major roles of the Teacher in Medical Education, organized in 3 main areas: Role Model (Professional; Communicator; Collaborator; Health Advocate; Learner), Scholar (Facilitator; Mentor; Assessor; Resource Developer; Lecturer; Clinical or Practical Teacher; Researcher) and Manager (Curriculum Evaluator; Curriculum Planner; Course Organizer).

It was also mentioned in the review the importance of implementation of medical departments, in order to ensure and support the presence of all the roles in the medical school and to support the teachers in their roles.

Conclusions

15 different roles were identified during this literature review and it is possible to confirm that teaching is a complex task. The definition of different roles of the teacher in medical education helps a better planning of the resources from the medical school, a better adaptation of education models to the necessities of the society, a clarification for the daily tasks of the teachers and a better transmission of the knowledge from the teacher to the student.

Keywords

Medical Education; Role; Mentor; Teacher; Tutor; Educator; Professor

Resumo

Introdução

A prática médica e a forma como o ensino é realizado mudaram através dos tempos e é necessário a adaptação de ambos aos presentes desafios e realidades na educação e saúde. Esta revisão bibliográfica apresenta uma forma de refletir acerca do papel do docente na educação médica, de forma a enfrentar estes desafios.

É importante compreender que o atual ensino da medicina tem diversas limitações, como a falta de reconhecimento dos docentes por diversos setores da comunidade, falta de docentes preparados para ensinar, falta de recursos financeiros, falta de incentivos e liderança no ensino, entre outros.

Também é importante sublinhar a importância de investir na educação interprofissional e no ensino virtual, como é recomendado pela diretrizes da Organização Mundial da Saúde. No entanto, como é sublinhado pela World Federation for Medical Education, o ensino presencial deve ser o alicerce do ensino médico.

Finalmente, é preciso ter em conta o papel fundamental que os estudantes podem ter como docentes, se estes estiverem motivados e preparados para tal.

Objetivos

O principal objetivo desta revisão bibliográfica é proporcionar uma melhor clarificação acerca do papel do docente no contexto da educação médica, devido às mudanças constantes na sociedade e à necessidade de adaptar os papéis às necessidades de educação dos profissionais de saúde. É também relevante referir

que o papel do docente na educação médica mudou constantemente desde a sua origem com Hipócrates há mais de 2000 anos atrás.

Este trabalho tem o objetivo de rever e eventualmente definir novos e diferentes papéis desempenhados pelos docentes no processo de ensino e aprendizagem na medicina, sendo que para isso é importante não só definir o papel do docente *per se*, mas também o papel do estudante como docente em certas situações específicas.

Também é importante definir estes papéis e perspectivas de forma a definir políticas e estratégias baseadas em evidência, que poderão criar um impacto concreto na melhoria dos sistemas de saúde e cuidado do doente.

Em resumo, este trabalho foi desenvolvido de forma a responder a 3 questões-chave:

- Quem são os principais atores e fatores envolvidos na educação e aprendizagem na medicina?
- Porquê é importante definir o papel do docente no contexto da educação médica?
- Quais são os diferentes papéis do docente na área de educação médica?

Métodos

A seguinte metodologia foi utilizada de forma a identificar todos os artigos publicados relevantes para esta revisão bibliográfica:

1) Pesquisa na base de dados eletrónica PubMed; em todas as pesquisas foram utilizados os seguintes termos: “*Medical Education*”; “*Role*”. As variáveis na pesquisa foram os seguintes termos: “*Mentor*”; “*Teacher*”, “*Tutor*”, “*Educator*”, “*Professor*”.

2) uma pesquisa adicional através da secção bibliográfica de cada artigo encontrado eletronicamente

Após todos os artigos relevantes para esta revisão bibliográfica serem identificados, estes artigos foram selecionados ou excluídos tendo em consideração o conteúdo, título e resumo do artigo, de forma a identificar os artigos mais pertinentes. Também foi considerado como critério de exclusão, estudos ou artigos que não tinham rigor científico, sem informação acerca da amostra ou faltas claras de informação.

Para esta revisão bibliográfica foram apenas considerados artigos em Inglês publicados entre 1986 e 2014.

No final, foram selecionados 52 artigos, que se encontram referidos na bibliografia.

Resultados

A principal perspetiva usada para esta revisão foi o modelo de Harden e Crosby: *“The good teacher is more than a lecturer: the twelve roles of the teacher”*

No entanto, outra perspetiva também teve grande influência, o CanMEDS, uma vez que fornece outra visão acerca dos papéis sociais e clínicos do médico. Tendo estas duas perspetivas em consideração, esta revisão bibliográfica considerou 15 principais papéis do docente na educação médica, organizados em 3 áreas principais: Ser um modelo/exemplo – como fator essencial para qualquer docente (Profissional, Comunicador, Colaborador, Defensor da Saúde, Estudante), Académico – foco no processo de aprendizagem docente-estudante (Facilitador; Mentor; Avaliador/Examinador, Criador de Recursos; Palestrante; Clínico; Investigador), Administrador- foco na organização dos processos de ensino (Avaliação do Currículo; Planeamento do Currículo; Organização do Curso).

Relativamente a ser um modelo/exemplo, foram encontrados artigos que defendem que um dos papéis fundamentais e com mais relevância é ser um exemplo para os estudantes, principalmente nas áreas do código de conduta e prática médica (i.e. profissionalismo). O docente deve estimular o espírito crítico dos estudantes, demonstrar competência no ensino e dedicar tempo para ensinar.

Os docentes devem atuar de forma profissional à causa da medicina, com o objetivo de conseguir excelência na prática médica. Os docentes também devem colaborar com os outros membros da equipa e outros profissionais de saúde, de forma a permitir que sejam obtidos melhores cuidados de saúde para o paciente. Para conseguir isto, o docente também deve ser um excelente comunicador.

Também é relevante realçar o papel do docente enquanto estudante. O docente deve estar sempre atualizado acerca das mudanças da sociedade e aceitar críticas e sugestões dos colegas e pacientes.

O docente deverá ser um defensor da saúde, de forma a melhorar os cuidados de saúde, não só no serviço hospitalar, como em toda a comunidade.

Relativamente ao papel do docente, enquanto académico, foram realçados diferentes papéis que o docente pode ter. Como palestrante, o docente pode dedicar-se mais a providenciar aulas teóricas. No entanto, é preciso ter em atenção o surgimento de novas ferramentas virtuais, que estão a mudar este paradigma.

Na área clínica, foi realçada a possibilidade da utilização de ferramentas de simulação de forma a suportar a aprendizagem do estudante. Também é fundamental ter em conta a motivação e suporte aos docentes clínicos para ensinar.

O docente deverá ser um facilitador, de forma a garantir mais independência ao estudante, de forma a este encontrar a sua melhor forma de aprendizagem. Também é importante ter em conta o papel como mentor, de forma a orientar o estudante na sua aprendizagem e ajudá-lo nos problemas que ele possa enfrentar.

A produção de materiais para suporte de ensino e a avaliação dos estudantes, é também um dos papéis importantes do docente.

O docente também tem um papel relevante enquanto investigador. No entanto, a investigação não deverá ser a prioridade principal da escola, mas sim o ensino. O docente também deverá ter um papel mais ativo na área de investigação na educação médica.

Por fim, o docente poderá ter como um dos papéis a administração do ensino e desenvolver a sua atividade na organização dos processos de ensino. Isto poderá passar por processos de avaliação do currículo, planeamento do currículo ou organização dos cursos. Isto levará a uma maior integração horizontal/vertical do currículo, maior implementação dos objetivos de ensino e permite uma maior e mais eficiente adaptação às necessidades da sociedade e comunidade escolar. É no entanto necessário ter em conta a existência de docentes preparados especificamente para trabalhar nesta área.

Como é referido na revisão bibliográfica, um docente poderá não ter todos os papéis, mas todos os papéis deverão existir na escola médica. De forma a garantir a existência de todos os papéis do docente na escola médica, será importante a implementação de um departamento de educação médica. Este departamento poderá garantir o acompanhamento dos docentes e melhoria do ensino, através de programas de educação profissional contínua para docentes, de forma a preparar estes para as mudanças que existem nos sistemas de saúde e na sociedade em geral.

Conclusões

Foram encontrados 15 diferentes papéis durante esta revisão bibliográfica sendo possível demonstrar que o ensino é uma tarefa complexa. A definição dos diferentes papéis do docente na educação médica ajuda ao melhor planeamento dos recursos da escola médica, à melhor adaptação dos modelos educacionais às necessidades nacionais e globais da sociedade, à clarificação acerca das tarefas diárias dos docentes e à melhor transmissão do conhecimento médico.

O docente deverá ter como papel base o exemplo/modelo, uma vez que tal influência diretamente todos os outros papéis. Ao aspirar a ser um exemplo, o docente irá interessar-se em ganhar novas competências de forma a ensinar da melhor forma possível. Os docentes também têm um papel fundamental enquanto

defensores da saúde, de forma a motivar futuras gerações de médicos a melhorar os sistemas de saúde nos quais estão envolvidos.

No entanto, o docente necessita de suporte contínuo, de forma a desenvolver os diferentes papéis. Devido à sobrecarga de tarefas nos sistemas de saúde e cenários educacionais, o docente necessita cada vez mais apoio da faculdade, de forma a ser possível para ele desenvolver a atividade docente. Uma das propostas decorrentes deste trabalho e da análise do papel do docente na educação médica é a criação de um departamento de educação médica na escola que possa apoiar docentes em diversos papéis e tarefas que são esperados por este, como planeamento e desenvolvimento do currículo escolar e investigação, que também poderá ser realizada na área da educação médica.

Também é importante os docentes clínicos receberem suporte para se dedicarem especificamente ao ensino de forma a ser possível a realização das suas tarefas diárias normais. Em sistemas de saúde sobrecarregados, não é possível para o docente praticar totalmente as suas tarefas educacionais.

Nem todos os docentes têm que desempenhar todos os papéis identificados nesta revisão mas é importante a escola médica ter todos os diferentes papéis presente no dia a dia do ensino da escola. Estes diferentes papéis devem estar interligados e não devem ser encarados de forma independente uns dos outros. É essencial a escola ter uma boa estrutura de liderança e de gestão de forma a garantir que isto aconteça.

Em conclusão, é também importante avaliar o grau de existência e implementação de todos os papéis do docente, de forma a produzir mudanças concretas no modelo educativo da escola e criar programas de desenvolvimento na área da educação que podem suportar a melhoria de ensino na escola. A escola médica também deverá promover uma discussão acerca do seu papel na educação e envolver os docentes e estudantes nesta discussão de forma a conseguir excelência no ensino médico.

Palavras-chave

Educação Médica; Papel; Mentor; Docente; Professor; Tutor; Educador

List of abbreviations

AMA – American Medical Association

CanMEDS - Canadian Medical Education Directives for Specialists

GMC – General Medical Council

MOOC - Massive Open Online Course

WFME – World Federation for Medical Education

WHO – World Health Organization

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Problem definition and goals of the dissertation

The goal of this literature review is to provide a better clarification on the role of the teacher in the context of medical education, due to the continuous changes in society and the need to adapt this role to the demands of education of health professionals. It is also important to notice that the role of the teacher in medical education has been constantly changing since its origin with Hippocrates more than 2000 years.

This work has the goal to define the different roles in the process of teaching and learning in medicine, so it is also important not only to define the role of the teacher *per se*, but also the role of a student as a teacher of medical subjects. It is important to define these roles and perspectives in order to define policies based on evidence, which can create a concrete impact on the improvement of healthcare systems and care of the patient.

In summary, this work was developed to answer to 3 key questions:

- Who are the key actors and factors involved in the teaching and learning in medicine?
- Why is it important to define the role of the teacher in the context of medical education?
- What are the different roles of the teacher in the field of medical education?

Introduction

The importance of medical learning and teaching starts since the beginning of medical practice. One of the most important moments of medicine was the birth of “*western medicine*” by Hippocrates around 400 BC. It is possible to read in the oath, the importance of the respect between different medical generations to ensure the continuation of medical education throughout the times.(1)

Since the beginning of medical practice, education in medicine was based in the Socratic Method, method based on the traditional method that takes hierarchy and held authority almost without a question as base. However, the present educational paradigms in medical education demand a more flexible dynamic scenario due to the advancements of technology, mainly in the area of e-health and online learning tools; population demands; requests for professional differentiation and epidemiological and demographic transitions.(2-4)

Based on the challenges of a new era, it is important to know how to define and adapt the roles of the teachers to the future.

1. Challenges on teaching and learning

The medical educators found the biggest challenges which they faced to be limited recognition by different stakeholders (patients, policy makers, practitioners, the public and the media); lack of teachers with proper training in medicine; lack of teachers to fit the number of students in the medical school; insufficient institutional and financial support; pressure to dedicate to research and to publish instead of teaching; lack of teaching resources and of resources and programs for faculty development. Inadequate incentives and insufficient leadership in this area can be considered the “*single most important cause of deficiency in health system performance*”. (5-9)

Another possible difficulty is the generation gap between four generations that are working together: traditionalists, baby boomers, generation Xers and millennials. Members of each generation carry with them a unique perspective of the world and interact differently with those around them.(2)

The conflict between generations can accentuate “*crisis of professionalism*” and has the potential to divide the profession along generational lines, creating many unintended and negative consequences.(10) However, it was also found that attributing difficulties in teaching and assessing professionalism cannot be blamed uniquely on differences between the generations.(11)

2. WHO Recommendations on the education of health professionals

It was accepted by the Commission on the Education of Health Professionals for the 21st Century that there must be a shift from the reforms of the Flexner Commission, where the learning was focused on the education of healthcare professionals in hospital setting and biomedical approach to education. (3)

WHO launched in 2013 a set of educational guidelines - Transforming and scaling up health professionals' education and training - that give some recommendation about the improvement of the educational model of health professionals. In these guidelines, medical education was included in a bigger broad field of health education, which joins all the healthcare professions and underlining education factors common to all of them. (4)

However, it is recommended by WHO to shift to “*a more comprehensive understanding of social and community health problems*”(4), since has been a “*...mismatch of competencies to patient and population needs, poor team work, persistent gender stratification of professional status, narrow technical focus without broader contextual understanding; episodic encounters rather than*

continuous care; predominant hospital orientation at the expense of primary care; quantitative and qualitative imbalances in the professional labour market; and weak leadership to improve health system performance.” (3)

It is also recommended by the guidelines not to focus on curriculum changes only, but to adapt according to the environment and technologies that exist in the present. This will allow the health professional to be ready to adapt “*to cultural variations and values, as well as attitudes to the different health problems of populations.*”(4)

3. Possible teaching and learning strategies and methodologies

It is recommended to push forward the concept of interprofessional education and team working, in both undergraduate and postgraduate programs, when delivering healthcare “*in order to ensure that all members of the health team understand each other’s roles, core competencies, basic language and mind-sets, and that they develop attitudes and behaviours that facilitate collaboration.*” However, it also stated that more evidence is needed to reinforce this aspect.(3, 4, 7)

E-learning should be other methodology strategy to implement, since it improves the some skills of healthcare professionals and possibility of educating professional in remote areas. It is also recommended the usage of simulation methods in the education of health professionals.(3, 4) However, as the WFME states, it is also important to maintain face-to- face learning and contact with patients as the foundation for medical education. (7)

4. The key players in medical education

4.1 Definition of teacher

The GMC defines a teacher or educator as any individual with a role in teaching, training and supervision. (12) The doctor is also considered to have a fundamental role as teacher. (9, 12-18) The perspective of GMC was also taken in consideration since in medical education in the clinical practice education is usually provided by a doctor. It is also requested to the teacher of medicine to have expertise in theoretical and practical methodologies of teaching, in order to the teaching process be efficient.

The GMC also states that the act of teaching depends in the environment (academic or clinical) and the activities can vary from formal educational activities (timetabled events such as providing tutorials or teaching ward rounds, assessing students, conducting educational appraisals and being involved in educational management, such as coordinating placements or committee work) and informal educational activities (spontaneous case-specific way within the clinical role such as supervising practice, workplace assessments and giving feedback, being observed during surgeries theatre or clinic practice and providing unplanned explanations and information).(12)

4.2 Students as teachers

The GMC underlines the important task to develop medical students' core skills in education and teaching. (16)

There is also an interest from the students in learning teaching skills and teach during medical school and during residency. (19) It is also stated that teaching ability is correlated positively with the perception of clinical competency. (20-22) Some medical schools and healthcare institutions are providing teaching courses and opportunities to deliver teaching to peers, subject to appropriate supervision, and to receive feedback and mentoring. (12, 22-24) However, proper preparation is needed before assigning students as teachers. (20, 22-25) In

preliminary results, residents who received education in a program to prepare them as educators reported higher gains in their confidence in core medical education skills compared to residents in the traditional resident-as-teacher program. (23)

Whenever there is a lack of formal training programs to educate them as medical educators, medical students' may participate in other informal teaching activities that accompany, facilitate, and complement many important aspects of their medical education. (22, 25)

However, medical students related as obstacles to be a teacher "*competition with other educational demands, difficulty in faculty recruitment/retention, and difficulty in convincing others of program value.*"(24)

Methodology

The following research methodology was used to identify all possible relevant published articles:

- 1) A search on the electronic database PubMed; in all the searches in the databases were used the following keywords: “*Medical Education*”; “*Role*”. The variables in the research were the following terms: “*Mentor*”; “*Teacher*”, “*Tutor*”, “*Educator*”, “*Professor*”.
- 2) a search for additional references from the references section of each relevant, electronically-retrieved article;,

Once all possible relevant published articles were identified via the broad search, these articles were selected or excluded taking in consideration the content, title and abstract of the article in order to identify only the most pertinent articles. It was also considered as exclusion criteria, studies or articles that do not meet the scientific rigour, without information about the sample, or which have obvious gaps in information.

Only articles in English published between 1986 and 2014 were considered for this literature review.

In the end, a total of 52 articles described in the reference list were selected.

Results

1. The roles of the teacher

A major perspective was taken from the Harden and Crosby model: *“The good teacher is more than a lecturer: the twelve roles of the teacher”*(9)

However, another perspective – CanMEDS - is also of great influence, since it gives another perspective about social and clinical roles that are not so explicit in the first perspective.(15) The goal is to have the best overview of all the major roles of the teacher in medical education.

The Harden and Crosby perspective identifies 12 important roles, grouped in 6 different areas (9):

1. Assessor (Curriculum evaluator; Student Assessor)
2. Facilitator (Mentor; Learning Facilitator)
3. Role Model (On the Job Role Model; Teaching Role Model)
4. Information provider (Lecturer; Clinical or Practical Teacher)
5. Resource developer (Resource Material Creator; Study Guide Producer)
6. Planner (Course Organizer; Curriculum Planner)

It is also stated by Harden and Crosby that this perspective has the role to clarify that all of those teacher roles must be present in the institution or teaching organization and act in an interconnected way. However, not all of the teachers need to have all the roles stated before. (9)

This definition helps in the staff recruitment and allocation, since it helps the institution to detect which areas need more development in the area of education.(9)

The CanMEDS was created by the Royal College of Physicians and Surgeons of Canada in order to have an overview about the role of a medical expert. According to it, *“Medical Expert is the central physician role in the*

CanMEDS framework". This medical expert applies "*medical knowledge, clinical skills, and professional attitudes in their provision of patient-centred care.*" (15)

This also gives an insight about the necessary skills of doctors and how can teachers help the students to achieve those skills.

Taking these perspectives in consideration, in this literature review it was considered as 15 major roles of the Teacher in Medical Education, organized in 3 main areas:

1. **Role Model** (Professional; Collaborator; Communicator; Learner; Health Advocate) - as underlining role for any teacher;
2. **Scholar** (Lecturer; Clinical or Practical Teacher; Facilitator; Mentor; Assessor; Resource Developer; Researcher) - focus more on the learning process teacher-student;
3. **Manager** (Curriculum Evaluator; Curriculum Planner; Course Organizer) - focus more in the organization of the teaching process.

1.1 The teacher as role model

The GMC (1999) states that "*the example of the teacher is the most powerful influence upon the standards of conduct and practice of every trainee, whether medical student or junior doctor*". Role models in medicine fulfil their roles in virtually any situation in which a student can observe a clinical or academic teacher.(9, 26)

A role model should stimulate critical thinking and give the medical student opportunities to act independently.(27) An "*excellent role models will always inspire, teach by example, and excite admiration and emulation*" (28) It is also expected from a role model "*to be aware of being a role model, demonstrate clinical competence, protect time for teaching, show a positive attitude for what you do, implement a student centred approach to teaching, engage in pertinent staff*

development, work to improve the institutional culture and, whenever possible, be explicit about what he/she is modelling.” (26)

The skills needed to be a role model can be learned and can change behaviour of students and teachers (4, 29, 30) It is important to notice, that often, role modelling can be negative rather than positive, if the role model has an unprofessional behaviour. (26, 28)

1.1.1 Role models act in a professional way

Role models have professional values that include attributes that promote healing, such as compassion, honesty, integrity and a commitment to their patients, profession and society through ethical practice; participation in profession-led regulation. Effective interpersonal relationships, enthusiasm for practice and teaching, an uncompromising quest for excellence and commitment to physician health and sustainable practice are equally important. (9, 15, 26)

1.1.2 Teachers as collaborators

A Role Model Teacher promotes a collaboration and partnership with the students in the learning process.(9) It is also expected from physicians to effectively work within a healthcare team to achieve optimal patient care.(15, 31)

If the students are aware of the point of view of other professionals, they will be more aware of clinical error, more willing to discuss everyday ethical dilemmas and be more prepared to learn from the patients. (28, 31)

This aspect is also essential, in order to implement the processes of interprofessional education. When possible, the teacher must also collaborate with other healthcare professionals and even students from other fields of health in order to improve the quality of learning. (3, 4, 28, 31)

This important collaboration has to be one of the topics of “*lifelong learning for all grades of staff*”. (28)

1.1.3. Role models are communicators

It is expected to from teachers as role models to be excellent communicators with the students in the learning process.(9) This is also important, because it is expected from physicians to effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.(15) A lack of communication in the healthcare service can put in danger patient safety. (31)

1.1.4. Role models are learners

It is important to all the members of the learning process to be open to learn, in order to change the medical professional “*from one that is paternalistic to one that is self-aware and quickly responsive to society's expectations*”. This value will allow any doctor, in any position in the institutional hierarchy, to self-evaluate their own values, attitudes and behaviours from the view point of patients and be open to accept critics by colleagues and patients. At the end, this can provide a huge opportunity for continuing self-improvement. (28)

1.1.5. The teacher as an health advocate

The AMA states that physicians must “*advocate for social, economic, educational, and political changes that ameliorate suffering and contribute to human well-being*” and “*educate the public and polity about present and future threats to the health of humanity.*”(17) The CanMEDS also affirms that physicians must be Health Advocates and responsibly use their expertise and influence to advance the health and well-being of individual patients, communities, and populations (15) Finally, the Edinburgh Declaration also affirms that “*The aim of medical education is to produce doctors who will promote the health of all people.*” (32)

The teacher has an essential role in this area since there is a demand in education future physicians to be socially responsible.(3, 4, 33, 34) Teachers must have an active role in educating medical students as advocates, since it is considered a skill that must be meet by all the physicians. (35)

It is also considered that physicians are aware of their role as advocates for the rights of the individual patient. However, there aren't so aware about the requirement for "*public advocacy on the part of each physician.*" (35) In health advocacy, it is important to clarify two distinct activities; agency and activism. "*Agency involves advancing the health of individual patients ("working the system"), and activism involves advancing the health of communities and populations ("changing the system")*". Distinguishing between agency and activism within health advocacy "*provides opportunities to explore their distinct goals and skill sets in a manner that will advance the debate about health advocacy, a conversation that remains critically important to the medical profession*".(36)

1.2 The teacher as a scholar

Teachers must be prepared, as Scholars, to educate physicians so they can demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application and translation of medical knowledge. (15)

The teacher also has 7 important additional roles as scholar: Lecturer, Clinical or Practical Teacher; Facilitator; Mentor; Assessor; Resource Developer and Researcher.

1.2.1. Lecturer

One of the traditional roles assigned to a teacher is the role of lecturer. In this setting, the goal is to transmit knowledge and assist the student to assimilate the information, through several educational strategies.(9, 37)

The lectures are considered “*a cost-effective method to provide new information not found in standard texts, of relating the information to the local curriculum and context of medical practice and of providing the lecturer’s personal overview or structure of the field of knowledge for the student.*” (9)

Presently, several ways are available to transmit the information, both printed and electronically. The rising of e-learning brings new challenges to the teacher as lecturer in the transmission of the information to the students. (3, 4, 9)

One of the special mentions in this topic is the rise of MOOC, which provide access to courses online to be available to hundreds of thousands of people.(38) MOOC can combine short video lectures, frequent comprehension testing, active participation in an online community and it can be an effective learning tool. However, the registration-to- completion ratio is likely to remain low and it is still needed more research on the validity of reliability of MOOC. (38, 39)

It is also important to notice than a MOOC cannot be implemented 100%, due to the required contact patient-student and face-to-face learning. (7) Nevertheless, e-learning is valued as an “*adjunct to experiential and lecture-based teaching, and most prefer it as part of a blended learning program at work or at home*”. (40)

1.2.2. Clinical or practical teacher

The teaching in the clinical setting is fundamental, in order to the student to gain relevant knowledge, skills and attitudes to the practice of medicine.(7, 9)

This teaching happens during ward rounds, ward-based tutorials or more informally with the student in the role of the clinical apprentice. (9) The teacher shall provide the student with opportunities for working in the clinical context, observing the student and giving feedback (41) (42)

It is important in the clinical teaching to establish at an early stage the expectations and consequences of the learning process, to explicitly reinforce the patient-centred care model, the usage of peer modelling and support, and to emphasize a more interactive and small-group learning techniques.(42)

The usage of simulation is also an important tool of support for clinical skills teaching.(3, 4, 43)

However, it is fundamental to clarify if the clinicians in the unit are expected to teach medical students or specific staff must be assigned to teach in those clinical units. (9) The assignment of this role to clinicians without any kind of preparation or support can lead to overwork in the clinical practice and it can jeopardize the importance of teaching the students.(6, 8) (26)

1.2.3. Facilitator

It is considered important to move to a more student- centred view of learning and give more freedom to the student. The teacher's must encourage and facilitate them to learn by themselves using a problem based learning approach (44)

It is also a responsibility of the teacher to provide learning resource materials and facilitate their use by the students in order to overcome any deficiencies in the materials and by integrating them into the curriculum. (9)

1.2.4. Mentor

Mentoring had been defined as an *“off-line help by one person to another in making a significant transition in knowledge, work or thinking”*.(45)

Usually, the mentor is not the person responsible for teach or assess the student, but a coach, asking questions more often than giving answers.(9, 28)

The goal of mentoring is to have a bigger overview about what are the difficulties and relevant learning difficulties related to the student, helping him to learn within a supportive relationship, that can last even after a single learning process.(9)

Good mentoring is usually related with a better learning experience both to the mentor and mentee and it improves the achievement of learning outcomes.(46-48) Still, this role requires proper training, time, and mutual trust between the mentor and mentee. (28)

1.2.5. Assessor

Assessing the students' competencies is one of the most important roles of the teacher, since it can impact directly students' lives and careers.(9)

Institutions need staff with knowledge and understanding on assessment in order to provide guidance on the choice of instrument, marking procedures and standard setting and act as test developers. It is fundamental that the assessment of students be valid, open, fair, and congruent with course objectives.(9)

1.2.6. Resource Developer

The teacher should provide study guides, suitably prepared in electronic or print form. The teacher can also find the best resources available and direct the students to those sources and guide the students' use of them in study guides prepared by the teacher.(9)

The study guides must orientate the students to the "*expected learning outcomes for the course, how they might acquire the competences necessary the learning opportunities available, and whether they have learned it the students assessing their own competence*".(49)

Teachers shall also provide resource materials in order to support the students in their learning. This assumes even bigger importance with the shift to a problem-based learning and other student-centred approaches. It is important to notice that the majority of those materials exist now in online platforms. (9)

Due to the fast development of the electronic technologies, teachers need training from proper staff in order to deal with the amount of information that exists in online platforms. (9)

1.2.7 Researcher

It is also expected from the teacher to have a role on research. However, there is a “*relentless pressure to publish at all costs in order to increase the number of publications*”. (8)

In the last decades, publishing changed from optional to mandatory, and teacher spend considerable time writing papers. This is stated by the motto “*Publish or Perish*”. (8, 50)

It is recommended to a more dominant attitude toward medical education. One of the biggest present problems is that education becomes a secondary priority of the schools since the focus of it is mainly research and publication.(8, 50, 51)

1.3 The teacher as a manager

Teachers have the responsibility to educate doctors to be managers, since they are integral participants in healthcare organizations, organizing sustainable practices, making decisions about allocating resources and contributing to the effectiveness of the healthcare system.(15)

The teacher also has 3 important additional roles as manager of the educational process: Curriculum Evaluator, Curriculum Planner and Course Organizer.

1.3.1 Curriculum Evaluator

It is a responsibility of the teacher to verify and evaluate if the intended curriculum was delivered at the end of the educational process. This evaluation has the goal to make rigorous, informed judgements and decisions about the curriculum, so that appropriate development may be facilitated. This assessment of

the curriculum can be done by student feedback and peer evaluation and can be conducted at an institutional level.(9)

The curriculum evaluation increases the accountability of teachers to the education system, to the public, to the profession, to those who fund the education and to the students themselves and allows the teachers to self-evaluate themselves about their own teaching.(9)

1.3.2 Curriculum Planner

Teacher can have the role of planning a curriculum. This is an area that needs specific expertise and time to be done properly and only a reduced number of teachers will be able to work in this area. However, this is one of the roles that can have bigger impact in all the learning process of the students.(9)

1.3.3 Course Organiser

The teacher has an important role of interconnecting the curriculum with the provided courses, in order to ensure the efficiency of the learning process. This assumes even bigger importance to ensure the implementation of interdisciplinary or integrated teaching. (9)

As the curriculum planning, this also requires specific expertise and time to be done properly.(9)

2. Importance of Medical Education Departments

It is recommended to create a Medical Education Department inside the medical school, in order to ensure the presence 15 roles of the teacher in teaching and learning process. This department can also ensure a proper horizontal and vertical alignment of the curriculum and teaching methods. (52)

Medical education departments are established in response to increased public expectations relating to healthcare, societal trends towards increased accountability, educational developments; increased interest in what to teach and how to educate doctors and the need to train more doctors.(52)

A medical education department is mainly responsible for:

1. Research on medical education
2. Teaching support
3. Service Provision
4. Nurturing the careers of academic staff

Medical Education Departments assume even more importance when they can provide continuing professional development programmes for teaching staff relevant to the evolving health-care needs of their communities and support the teachers on researches connected with the advancement of medical education. (3, 4, 7, 9, 52)

Conclusions

After characterizing the different 15 roles, it is possible to observe that teaching is a complex task. However, it can be classified and explained in order to improve the global strategy of the school and not only its educational models.

It is also possible to observe that teaching and learning is a very dynamic relationship. A teacher is a learner and a learner can be a teacher and there are different ways of transmitting knowledge to the students. It is important to reflect about the new challenges in the society, not only at national level but also global level, in order to provide better adaptation of the curriculum, teaching and learning strategies in the school.

One of the most underlining aspects is the importance of being a role model in the teaching aspect. By aspiring in being a role model, the teacher will move forward in getting the competences to perform is teaching skills in the best way as possible. Teachers also have an important role as health advocates, in order to motivate a future generation of doctors to improve the healthcare settings where they are involved into.

However, the teacher needs ongoing support to perform his/her teaching. Due to the overload of tasks in the healthcare and educational scenarios, the teacher needs ongoing support from the faculty in order to be possible for him/her to educate. One of proposals is the creation of medical educational departments that can support teachers in dealing with the wide variety of expected roles such as management roles, as curriculum design and development and also in the preparation of research, which can even be done in the area of medical education.

It is also important to allocate specific time and resources to allow clinical teachers to perform their daily tasks. In overloaded healthcare systems, it will not possible to keep clinician teachers to perform full time educational tasks.

Not all the teachers have to play all the roles as it is stated in this literature review but it is fundamental to any medical school to have the different roles present in their daily education model. These different roles must act in an interconnected way and not independently from each other. It is essential to have a strong leadership structure and managing skills from the school in order to make this happen.

In conclusion, it is also important for the school to evaluate the degree of existence and implementation of all the teacher roles', in order to produce concrete changes in the educational model of school and create educational development programmes that can support the improvement of education in the school. The schools must also promote a discussion on its role in education and involve teachers and students in this discussion in order to excel in the teaching of medical education.

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