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*Review article*

# The Transition of Medical Education from Traditional to Lifelong Learning and Its Impact on Health Care Providers: A Review Article

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**ABSTRACT**

*Lifelong learning is a concept that has been recognized by governments and educational institutions worldwide as essential to keeping pace with the rapidly changing world. In the field of medicine, continuous professional development (CPD) is an integral part of a physician's lifelong learning journey. Over time, the term "Continuing Medical Education" (CME) has replaced CPD, although both terms are used interchangeably. Lifelong learning is considered an integral component of professionalism and practice-based learning and improvement in medical education. Therefore, it is essential for primary care physicians to maintain and improve their clinical knowledge, skills, and attitudes by continuing to learn throughout their careers. This article dives into the history of medical education to identify the evolution and impact of lifelong learning methods*

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## INTRODUCTION

Medical education is an important aspect of every country's development. This form of education is crucial to the progress of any nation [1]. Over the last two decades, there has been significant progress in medical education. The success of developing nations may be measured by how they implement this sector of education into daily life and how this affects the quality of healthcare supplied [2].

Medical education, including assessment, has been altered in both the UK and the US during the last 30 years, spurred by changes in the medical environment in which graduates will work. There has been a shift away from the traditional apprenticeship model of learning in medicine: the student is no longer viewed as an empty vessel to be filled by those who have obtained the desired competencies [3], but rather as preparation for the multitude of demands of professional practice [4]. Clinical competency has traditionally been measured by students' ability to retain and apply knowledge. This is no longer regarded as an adequate predictor of ability and later performance. Instead, before beginning their careers as medical professionals, students must demonstrate competency in professional attitudes, skills, and knowledge [5]. This means that medical schools must have the resources and knowledge to assess medical students' competency systematically, properly, and consistently.

Lifelong learning is an indispensable aspect of medical education and practice that has numerous benefits for both students and practicing physicians. One of the primary benefits of lifelong learning is that it provides a comprehensive and updated knowledge base to medical professionals [6]. It is common knowledge that medical training is incomplete, and there are considerable knowledge gaps, especially in the management of chronic disease and wellness [7]. Therefore,

lifelong learning, which updates obsolete knowledge, completes medical training, and helps discard outdated ideas, is essential for physicians to provide a comprehensive approach to patients, ensuring that patients are aware of all of their options for any given medical problem [6]. For instance, continuing to learn after medical school helps doctors realize that some of their previously cherished ideas become obsolete and even dangerous [8]. Lifelong learning is also beneficial in terms of making better medical decisions for patients, presenting patients with good information, and enabling physicians to provide a comprehensive approach to patients, ensuring that patients are aware of all of their options for any given medical problem. Moreover, lifelong learning teaches intellectual humility and leads to intellectual flexibility, which is an essential component of unlearning wrong ideas and letting new and better ideas in [9]. Therefore, this paper explores the development of traditional medical education to lifelong learning and aims to highlight the significance of lifelong learning in the medical field and its impact on patient care.

***Development of medical education***

Medical education has changed significantly throughout history, from informal apprenticeships to formalized training programs. Today, medical education is a complex and dynamic field that prepares future healthcare professionals to meet the needs of diverse patient populations [10].

Medical education has a long and rich history, dating back to ancient times. In early civilizations such as Egypt, Greece, and Rome, medical knowledge was passed down through apprenticeships with experienced healers [11]. However, it was not until the Middle Ages that the first formal medical schools were established. The University of Salerno in Italy, founded in the 9th century, is widely regarded as the first medical school in Europe [12]. Over time, medical curricula evolved to include more rigorous training in anatomy, physiology, and pathology. In the 19th century, medical schools in Europe and North America began to adopt standardized curricula and requirements for graduation. The Flexner Report, published in 1910, revolutionized medical education in the United States by calling for higher standards and more rigorous training for medical students. Moreover, the report emphasized the importance of subjective integration of evidence-based medicine and medical ethics in medical education to enable medical students to adapt to public perception toward future medical care [13]. Furthermore, in the 21st century, medical education stimulates students' inquiries and critical thinking during problem-solving [14].

Nowadays, medical education systems vary widely across the world. In the United States, medical education typically consists of four years of undergraduate education followed by four years of medical school. In contrast, in some countries, students may enter medical school directly after high school and complete their education in six years [15]. Despite these differences, medical education faces many common challenges. These include the need to keep pace with rapidly evolving medical knowledge and technology, the need to provide training in interprofessional teamwork and communication, and the need to address health disparities and global health challenges. In response to these challenges, medical education is undergoing significant innovation [16]. For example, many medical schools are adopting new technologies such as virtual reality and simulation to enhance clinical training. Additionally, there is a growing emphasis on interdisciplinary and team-based learning, recognizing that healthcare is a collaborative effort that requires effective communication and coordination among different healthcare professionals [17-18]. However, in many developing countries, lesson time is primarily devoted to lectures, leaving little time for in-class practice.

***Lifelong learning in medical education***

Lifelong learning is a continuous process that is implemented in undergraduate medical education and can be improved along the undergraduate to graduate medical education and career continuum. The concept is aimed at preparing medical students to become independent lifelong learners, enabling them to provide high-quality care to patients throughout their careers [19]. Lifelong learning involves regularly updating knowledge and skills, reflecting on practice, and seeking feedback. It happens in both formal and informal ways throughout the journey to becoming a primary care physician [20]. The key components of lifelong learning in medical education include beliefs and motivation, learning opportunities, and information-seeking skills. Prioritizing learning objectives and setting a date to finish them can help trainees to achieve higher-level learning objectives. Workplace experiences can be turned into realistic and achievable learning objectives for trainees [21]. Physicians need to be lifelong learners to keep up with rapidly changing knowledge, technology, and social requirements in the medical field [22]. The concept of lifelong learning is crucial in medical education because it helps healthcare professionals to provide better care to patients.

***Lifelong learning strategies for practicing medical students and healthcare professionals***

The integration of lifelong learning into the medical education curriculum requires a multi-faceted approach. Medical students must be encouraged to cultivate personal development through the continuous acquisition of knowledge and skills, and this must be facilitated by the medical education program. However, current medical school curricula do not typically provide early learners with the support and opportunity to engage in new approaches to learning [23]. Therefore, there is a need for educators to encourage practice, reflection, and reinforcement to guide students in cultivating habits of continuous improvement for integration into practice [24]. To achieve this, the program should continuously evaluate student progress and provide advice for a better learning experience [25]. One way to integrate lifelong learning is through self-awareness and self-regulated learning. Highly integrated courses with case-based learning facilitate context-based reflection, which enhances confidence in clinical competency. Moreover, the program must aim to create standardized medical education that allows students to be aware of their progress and fulfill their own needs accordingly, which also promotes lifelong learning [6]. Additionally, medical education programs should promote community medicine and general medicine education to ensure lifelong learning.

Another important trend is the emphasis on interdisciplinary and team-based learning. As healthcare becomes increasingly complex and specialized, healthcare professionals need to be able to work effectively as part of interdisciplinary teams [26]. Medical education programs are recognizing this need and incorporating training in teamwork, communication, and leadership into their curricula. Finally, medical education must adapt to address global health challenges such as pandemics, climate change, and social determinants of health [27]. Medical schools are increasingly incorporating training in public health and global health into their curricula, recognizing that healthcare is not just about treating individual patients, but also about addressing broader social and environmental factors that impact health [28].

On the other hand, the impact of technology, project-based learning, and student-centered learning on medical education is very important. Student-centered learning includes mediation tools such as collaborative learning, problem-based learning, small group learning, and project-based learning [29]. Technology has also the potential to improve the quality of education by providing learners with additional practice opportunities. The technology could potentially address the problem of learners struggling to understand material during lectures by allowing them to review topics at their own pace. Video tutorials for self-paced learning and presenting exercises as games and/or gamifying practice are potential ways in which technology could address the challenges in education [30]. Technology also has the potential to increase learners' engagement with the material, since regular classroom instruction prioritizes educators' exposition over opportunities for learners to ask clarifying questions and/or contribute to class discussions [31]. However, classrooms in many developing countries include a large number of learners, which partially explains why the majority of those students are several grade levels behind curricular expectations. The future of medical education is likely to be shaped by ongoing advances in technology and changes in the healthcare landscape. One key trend is the integration of technology into medical education, including the use of digital platforms for learning, telemedicine, and artificial intelligence [32-33]. These tools have the potential to enhance medical education by providing personalized learning experiences, improving clinical decision-making, and increasing access to healthcare services.

## CONCLUSION

Medical education is a field that is constantly evolving, with discoveries and advancements being made regularly. To stay up-to-date and provide the best possible care to patients, medical professionals must engage in lifelong learning. Lifelong learning provides a solid foundation for medical education, equips students and practicing physicians with a general toolkit to approach any medical problem, making it an important aspect of medical education for both students and practicing physicians Therefore, the medical community values and appreciates institutions that provide lifelong learning training.

***Conflict of Interest***

There are no financial, personal, or professional conflicts of interest to declare.

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# انتقال التعليم الطبي من التعليم التقليدي إلى التعلم مدى الحياة وتأثيره على مقدمي الرعاية الصحية: مقالة مراجعة

**زينب الفيتوري 1 * عبير الشريف 2**

1قسم الفسيولوجيا الطبية ، كلية الطب ، جامعة الزاوية ، مدينة الزاوية ، ليبيا
2قسم الجراحة وفروعها ، كلية الطب ، جامعة الزاوية ، مدينة الزاوية ، ليبيا

**المستخلص**

التعلم مدى الحياة هو مفهوم اعترفت به الحكومات والمؤسسات التعليمية في جميع أنحاء العالم على أنه ضروري لمواكبة العالم سريع التغير. في مجال الطب ، يعد التطوير المهني المستمر (CPD) جزءًا لا يتجزأ من رحلة التعلم مدى الحياة للطبيب. بمرور الوقت ، حل مصطلح "التعليم الطبي المستمر (CME)" محل CPD ، على الرغم من استخدام كلا المصطلحين بالتبادل. يعتبر التعلم مدى الحياة جزءًا لا يتجزأ من الاحتراف والتعلم القائم على الممارسة وتحسين التعليم الطبي. لذلك ، من الضروري لأطباء الرعاية الأولية الحفاظ على معارفهم ومهاراتهم ومواقفهم السريرية وتحسينها من خلال الاستمرار في التعلم طوال حياتهم المهنية. تتعمق هذه المقالة في تاريخ التعليم الطبي لتحديد تطور وتأثير طرق التعلم مدى الحياة

**الكلمات الدالة**. التعلم مدى الحياة ، التطوير المهني المستمر ، التعليم الطبي المستمر ، التعلم القائم على الممارسة ، أطباء الرعاية الأولية.