

# Transforming Education to Strengthen Health Systems in the Sultanate of Oman

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## تحويل التعليم لتعزيز النظم الصحية في عُمان

جيليان وايت

**المُلخَص:** ثغرات واضحة تثبت الفشل العالمي في النظم الصحية وهم يحاولون علاج المطالب المعقدة والمكلفة. في الأونة الأخيرة قامت لجنة لانسييت من خلال منظور عالمي متعدد التخصصات ونهج منتظم للنظر في التحالفات بين المهنيين في التعليم الصحي والنظم الصحية، وخلصوا إلى أن النتائج الإيجابية تتطلب تصاميم تعليمية ومؤسسية جديدة. النتائج التي توصلت إليها لجنة لانسييت لها آثار على تطوير التعليم المهني الصحي في عُمان ولا سيما في الدعوة إلى التعليم التكاملي والتحويلي للجيل القادم. يجب أن يكون التعليم المهني في القطاع الصحي العُماني مواكبا للتحديات المتزايدة في قطاعي الصحة والتعليم على حد سواء.

**مفتاح الكلمات:** تعليم، مهن طبية، تعلّم، مناهج، عُمان.

**ABSTRACT:** Conspicuous gaps demonstrate a collective global failure in the world's health systems as they struggle to manage complex and expensive demands. The Lancet Commission recently took a global interdisciplinary perspective and systematic approach to consider alliances between education for health professionals and health systems in order to address these problems. They concluded that positive outcomes require new instructional and institutional designs. Findings from the Lancet Commission have implications for the development of health professional education in Oman, particularly with regard to the call for integrative and transformative education for the next generation of health professionals. Education in the Omani health sector must keep up with increasing challenges in both the health and education sectors.

**Keywords:** Education; Health professions; Learning; Teaching; Curriculum; Oman.

EDUCATION FOR HEALTH CARE professionals has evolved over many centuries through complex interactions between health and education. Reforms have been propelled by new discoveries that affect health care delivery, health care expectations, and health professional education. However, medical wisdom has prevailed for centuries, emerging from early Mesopotamian, Egyptian, and Greek thinkers including Hammurabi, a Mesopotamian physician who lived around 1700 BC; Ibn Sarabiyun, a 9<sup>th</sup> century Syrian; Muhammad ibn Zakariya Razi, a Persian physician of the early 10<sup>th</sup> century; and Avicenna or Ibn Sina, also Persian, whose early 11<sup>th</sup> century books were standard medical texts.<sup>1</sup> Arabic medical literature between the 9<sup>th</sup> and 12<sup>th</sup> centuries AD provided some of the ideas and practices from

which modern medicine arose. Nursing was also valued in the early Arab world and, according to Ibn Khaldun, nurse midwives were recognised in the 14<sup>th</sup> century as being one of the highest ranking professions.<sup>2</sup>

By the 19<sup>th</sup> and 20<sup>th</sup> centuries, scientific discovery had become the root of medical knowledge, and science-based curricula were developed. This was prefigured in the 11<sup>th</sup> century by Ibn Sina in the opening to his *Qanun fi al-tibb* (Canon of Medicine), "Medicine is a science from which one learns the states of the human body with respect to what is healthy and what is not, in order to preserve good health when it exists and restore it when it is lacking."<sup>1</sup>

The growth and promotion of scientific technology has encouraged the creation of genuine

open-minded enquiry and has encouraged the call for democracy, where citizens are adequately informed and able to make decisions according to their own best interests as they see them.

Through democracy, people have the opportunity to have their voices heard. The term is derived from the Greek *dēmokratiā*, from *dēmos* (“people”) and *kratos* (“rule”) and, while normally associated with political ideology, the term can be applied to health and education in terms of access, affordability, and appropriateness for all.<sup>3</sup> Recent demonstrations have brought about an interest in democracy in the Middle East. Concurrently, there has been a backlash against consumerism in many Western countries, including against the proliferation of medical ‘treatments,’ illness ‘cures,’ alternative health ‘strategies,’ confusing dietary advice, fast ‘healthy’ food outlets, and medical tourism. In addition, the quest for quality has begun to supersede the demand for quantity in the ongoing search for excellence. Thus, for different reasons, people all over the world are seeking greater self-determination and demanding equal rights to medical knowledge and high-quality health care.

Oman recognized its citizens’ rights through the establishment of a Consultative Assembly in 1981, which was replaced in 1991 by the Majlis-Al Shura (Consultative Council). The *An-Nizam-al-Assasi-lil-Dawlah* (Basic Charter), Article 13, was adopted by Royal Decree in November 1996. Article 13 contains “the rights and duties of the people” and a number of basic principles, including the right to education and to literacy, and the obligation of the state to produce a generation which is physically and morally strong, proud of its country and its cultural heritage and equipped with the knowledge of modern science and technology.”<sup>4</sup>

When Qaboos bin Said Al Said became Sultan of Oman in 1970, the country was struggling with endemic disease, illiteracy, and poverty. One of his first acts was to improve the country’s educational and health facilities. Since then, Oman has enjoyed prosperity and has not only progressed rapidly but with shrewd foresight. Lessons from world history, however, show that economies change; thus, Oman must look toward political and financial global transformations and capitalise on its human resources to grow knowledge and build capacity and capability for continuous development.

Human capital is essential in growing a knowledge economy, which in turn is crucial for economic competitiveness in developing countries. As a nation’s wealth depends on the health of its people, quality higher education of health professionals cannot be compromised, and developing effective and high-quality processes becomes a vital challenge for academic enhancement.<sup>4</sup>

In Oman over the last 45 years, steps have been taken toward national development, global competitiveness, and fostering the flow of knowledge. Oman is privileged to have debt-free health professional graduates with guaranteed jobs compared, for example, to the debt of American medical graduates which averages US\$200,000 (c. OMR 76,900). The Ministry of Health (MOH) has made phenomenal strides in achieving exceptional outputs in health professional education while at the same time preparing Omani academics as education providers (unpublished Quality Audit Portfolio, Directorate General of Education & Training, Ministry of Health, Oman ).

In this article, a century of global reforms will be described as the foundation for focusing on the future of health professional education and urging the development of transformative education that will strengthen Oman’s health system. The vision outlined in the Lancet Commission’s Report 2010 will be referred to extensively, and its implications for health professional education in Oman will be discussed.<sup>5</sup>

## Lancet Commission’s Re-examination of Health Professional Education

The Commission was launched in 2010 at the centennial of the Flexner Report<sup>6</sup> to re-examine health professional education for the 21<sup>st</sup> century, and to ensure global quality and comprehensive services for advancing health equity.<sup>5</sup> The need for the Commission was fuelled by the systemic problems noted throughout the world concerning gaps in health services, new health challenges, and complex health systems that place excessive demands on health care professionals. Twenty professional and academic leaders, supported by their own advisory bodies, were commissioned from countries as diverse as Bangladesh, Canada,

China, the USA, Pakistan, the UK, Peru, South Africa, India, Uganda, and Lebanon.

The Commission undertook research guided by an integrated conceptual framework aimed at understanding “the complex interactions between two systems: education and health.”<sup>5</sup> In this framework, the population is endogenous to both education and health systems, being the supplier of the services and the recipient. The education system provides the educated workers to work in the health system and the health system meets the demands for a healthy labour workforce, both nationally and globally. Interdependence is crucial for balance and equity in the respective services; however, the global reality is that there is imbalance and inequity within and between countries, and within and between populations. The Commission aimed to develop a fresh vision with practical recommendations regarding the two interdependent systems. Two generations of reforms during the 19<sup>th</sup> and 20<sup>th</sup> centuries were noted, and a call for a third generation in the 21<sup>st</sup> century was made.

## First and Second Generation Reforms in the Education of Health Professionals

First generation reforms were ignited by developments in the biomedical sciences arising from 19<sup>th</sup> century discoveries in medical science and driven by the identification of microorganisms, or germ theory, leading to modern health care. Science underpinned health professional education, and reforms were found in institutional design (i.e. university-based, academic medical hospitals) and instructional design (science-based curricula and research).

The Flexner Report of 1910 informed a new medical curriculum that took medical education from apprenticeship to academic preparation (university-based science plus hospital clinical training).<sup>6</sup> Scientific research also informed public health, which was then connected to medical schools. The Welch-Rose Report, a public health classic of 1915, initiated the education of public health workers who paralleled the medical profession and refined the interface of the curative and preventative.<sup>7</sup> In the early 1900s, there was a movement to improve nursing education and,

supported by the Rockefeller Foundation, a 500-page report on nursing and nursing education was authored which recommended university education for nurses, transforming them from technicians to professionals.<sup>8</sup>

Second generation reforms accelerated medical and nursing education into graduate schools throughout the 20<sup>th</sup> century. McMaster University pioneered problem-based learning in the 1960s, and integrated curricula were designed. Patient surrogates were utilised and students were introduced to the needs of the wider community.

Oman was influenced by these two generations through the importation of foreign education programmes, notably from Western systems of health professional education. Even though the higher education sector is relatively young, the Oman Higher Education Admission Centre lists 55 higher education institutes, including a number which are associated with ministries such as that of Awqaf and Religious Affairs; Higher Education; Manpower; Health; the Central Bank, and 24 private institutions sanctioned by the Ministry of Higher Education.<sup>9</sup>

## Health Care Education in Oman

Sultan Qaboos University (SQU) is an Omani public institution that has been offering Ph.D. studies in medicine and health sciences, among others, since 2008. Oman also offers programmes for the preparation of nurses and physicians at private universities. A number of health professional programmes for paramedics, nurses, specialist nurses and midwives, radiographers, assistant pharmacists, physiotherapists, medical technicians, dental assistants, and health information specialists are run under the auspices of the MOH at both basic and post-basic levels. Omanis aspiring to careers in the health professions have been sponsored or have taken up opportunities privately to undertake baccalaureate, masterate, and doctoral degrees overseas following a sensible plan of diversification and exposure to a variety of international institutions, both traditional and new.

However, there has been concern in Oman about the low level of English proficiency among students admitted to institutions of higher education. Some enter at a zero level, and over 40% score below level

2 on the International English Language Testing System (IELTS) test. Given that students have had 12 years of English at the primary and secondary levels, and that they graduate with a general education diploma and a minimum general score of 70%, such low levels are unexpected.<sup>10</sup> For basic health professionals, such a low level of education places an exceptional burden on teachers. Students take a surface approach to learning and are more concerned about grades than the implications of what they are learning. In 2011, the MOH higher education institutes commenced the new National General Foundation Course which comprises English language, mathematics, information technology (IT), and general learning skills. Prior to selection for entry into its health professional education programmes, students must achieve an IELTS score >5.0.

### Third Generation Reforms

As Oman builds its own capacity and capabilities in health professional practice and education, a third generation of reforms, benchmarked on global transformations in health and education, yet contextualised to Oman's unique needs, should be fashioned. This can be achieved by instituting strong measures of quality control and enhancement, ensuring social equity and access to the health professions, setting national standards, improving teaching methodologies (including establishing sound evaluation practices), and investing in resource materials.

Third generation reforms emphasise patient and population centredness, competency-based curricula, inter-professional and team-based education, IT-empowered learning, policy formation, and management and leadership skills. The Lancet Commission identified four types of reports that initiated the call for third generation reforms in the education of health professionals: education and training of the workforce; nursing education; public health, and medical education.<sup>5</sup> World-wide education and training reports draw attention to shortages, imbalances and maldistributions, inadequate rural coverage, unemployment, and international migration.<sup>5</sup> Nursing reports stress professional identity; bridging the theory-practice gap, and mainstreaming nursing into national service planning.<sup>5</sup> Public health

reports recommend transdisciplinary approaches to life-long learning; integrating public health skills into nursing; engaging with local communities, and expanding funding for public health development.<sup>5</sup> Lastly, medical education reports agree that health professionals are not being adequately prepared to address the challenges of modern society, especially those of ageing populations, cultural diversity, chronic disease, and high public expectations.<sup>5</sup>

Students of the 21<sup>st</sup> century have expectations for success that are not congruent with the effort they make in the classroom. Price outlined five instructional strategies for engaging today's students: research (active learning methods); relevance (connecting course content to current culture); rationale (the need to know the reason); informal interaction, and rapport (when teachers are perceived as on their side).<sup>12</sup> Easy access to Google has led students to prefer non-authoritarian instructors who facilitate discovery, social interaction, and peer collaboration, and help with the application of knowledge, all in a laid back learning environment.

The challenge of teaching 21<sup>st</sup> century students demands a transformation in widely-held beliefs about teaching. Accepted wisdom and research suggests the concept of teaching is divided into teacher-centred/content-oriented, and student-centred/learning-oriented categories, which are further divided into imparting knowledge and transmitting structured knowledge (teacher-centred), and facilitating understanding and intellectual development (student-centred).<sup>11</sup> Integrating the two is the student-teacher interaction. Upholding traditional competitive ideologies of the importance of getting high marks, for example, hinders teachers from encouraging students to value learning for the sake of deep life-long learning rather than superficial learning for the sake of gaining marks on a particular test. Outcome measures should not just focus on grades but rather on graduate employability; salary levels; student and staff satisfaction; student completion rates, and student engagement as valuable indicators of institute and programme effectiveness.<sup>13</sup>

Thus the Lancet Commission recommends that reforms in institutional design (structure) and improvements in instructional design (process) will transport health professional education into the 21<sup>st</sup> century and build on the first and second generation

reforms of the 20<sup>th</sup> century. The outcomes that depend on the configuration of structure and process will be competent practitioners.

## Institutional Design in Oman

In Oman, most academic institutes are situated in urban areas, raising concerns about equity of access for students from rural and remote regions, as well as the resourcing for such institutes. MOH students are supported through government allowances for transportation and accommodation to study in Muscat or their nearest regional institute. When compared to countries where students pay for their own education and graduate with heavy debts, this is a privilege. However much the MOH will pay, the problem of inequality of access still exists. Online learning might be a possible solution for the teaching of theory subjects, but only if the delivering institutions were to be resourced and maintained in a supportive IT environment and teachers were experienced with online teaching. The clinical-practice nexus is also an issue for all institutes that deliver education to health professionals: it is vital that institutes are situated close to clinical practice facilities or have access to modern simulation laboratories, and that is not always a possibility in the case of many of Oman's potential health sciences students.

Currently, Oman is progressing toward accreditation of higher education providers. This accreditation aims to reflect the aspirations of students, meet professional requirements, and embody the professionalism expected by society. The challenges to accreditation are the lack of institutional networking that would enhance interdisciplinary collegiality; a shortage of professional development opportunities, particularly in building faculty research capacities; leadership and management challenges; the need for a seamless integration of primary health care facilities, and the ongoing journey toward the transformation of the learning environment. The sharing of educational resources such as simulation laboratories, libraries, and IT support for online learning between disciplines and across institutes; the exchange of faculty and students, and the establishment of multidisciplinary research will help break down the current silo mentality inherited

from historical learning settings and will be cost effective as well.

## Instructional Design in Oman

While education research is abundant, there is little documentation about the impact of nursing or medical education innovations in Oman.<sup>1</sup> There is, therefore, vast potential for systematic research, from admission criteria to career pathways. Research opportunities include the evaluation of foundation courses, teaching methodologies, student-centred learning, assessment strategies, competency-based curriculum development, developing knowledge and skills through simulation, life-long learning, and transformative education.

Third generation transformation does not negate first and second generation advances in health professional education. Indeed, science remains the foundation of both transformation and integration while problem-based learning and the wider conceptualisation of health to society at large have produced valuable advances in health care. The difference is that while first and second generation transmission of knowledge was largely inert, objective, limiting, and reductive, the third generation style is richly relational, asserting the power of experience and imagination. The student has a relationship with the state of learning and its effects, and is affected by that relationship. In third generation reforms, the teacher facilitates the relationship, encouraging the student to explore phenomena from various perspectives. The teacher moves from the didactic (teacher-controlled) to the interactional (student-centred). If teachers do not engage and excite students through valuing their experiences and insights, then genuine solutions for the myriad of everyday problems will never be achieved.

If education remains true to the human condition, then it "must reflect our nature in all its subtlety and complexity".<sup>14</sup> Transformative education stimulates intellectual and emotional faculties—and increases relational, reflective, and physical knowing. It integrates values and respects the human soul. Never has this been more important than in the education of health professionals in their pursuit of truth within an environment of compassion and social justice.

## Conclusion

The rapid pace of change and the development of scientific theories that challenge existing knowledge demand an examination of any values concerning teaching and learning which continue to remain based in first and second generation ideologies. For example, quantum and relativity theories, discovered by scientists such as Einstein, Bohr, and Schrödinger, are transformational, stressing relationships at the micro and macro levels rather than discrete units. Similarly, transformational education allows students to have experiences, assess the reliability of those experiences, and reflect upon the hidden interrelationships and transfer of knowledge to new situations. Thus education becomes expansive and life-long, merging philosophy and science, and art and logical reasoning.

Health professional education leaders in Oman must look to reform both institutional and instructional designs to be able to find solutions for the challenges of the 21<sup>st</sup> century. Health professional education reforms, however, do not belong only to teachers. The vision and innovative ideas of government and private employers, professional bodies, international health care agencies, experienced educators, and young aspiring Omani academics and students who met at the International Conference on Health Vision 2050 in Oman in May 2012 must also be heard.

Finally, the Lancet Commission concluded their report with reference to Pulitzer Prize winner and Harvard professor of English and American Literature and Language, Louis Menand: "...the pursuit, production, dissemination and preservation of knowledge are central activities of a civilization. Knowledge is social memory, a connection to the past; and it is social hope, an investment in the future." Such wisdom is a good place to end this article.

### NOTE

This topic was presented at the First International Nursing Conference at Sultan Qaboos University, Oman, in November 2011.

## References

1. Islamic Culture and the Medical Arts. From: [www.nlm.nih.gov/exhibition/islamic\\_medical\\_index.html](http://www.nlm.nih.gov/exhibition/islamic_medical_index.html). Accessed Jul 2011.
2. Khaldun I. *The Muqaddimah: An Introduction to History* (Bollingen Series XLIII). Princeton, NJ: Princeton University Press, 1967.
3. Encyclopædia Britannica Online. From: [www.britannica.com/EBchecked/topic/157129/democracy](http://www.britannica.com/EBchecked/topic/157129/democracy). Accessed: Jul 2011.
4. Rassekh, S. Education as a motor for development: Recent education reforms in Oman with particular reference to the status of women and girls. Geneva: International Bureau of Education, 2004. P. 12.
5. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, et al. Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *The Lancet* 2010; 376:1923–58.
6. Flexner A. *Medical education in the United States and Canada: A report to the Carnegie Foundation for the Advancement of Teaching*. New York: The Carnegie Foundation for the Advancement of Teaching, 1910.
7. Welch WH, Rose W. *Institute of Hygiene: A report to the General Education Board of the Rockefeller Foundation*. New York: The Rockefeller Foundation, 1915.
8. The Committee for the Study of Nursing Education. *Nursing and Nursing Education in the United States*. New York: The Rockefeller Foundation, 1923.
9. Higher Education Admissions Center of Oman. From: [heac.gov.om/index.php?lang=en](http://heac.gov.om/index.php?lang=en). Accessed: Jul 2012.
10. Al-Mamari A. General Foundation Programme in Higher Education Institutes in Oman: Presentation, Regional Conference on Quality Management and Quality Enhancement in Higher Education. Muscat: Oman Quality Network in Higher Education. Pp. 20–1.
11. Devlin M. Challenging accepted wisdom about the place of conceptions of teaching in university teaching improvement. *Int J Teach Learn High Educ* 2006; 18:112–9.
12. Price C. Why don't my students think I'm groovy? *Teach Prof* 2009; 23:7.
13. Jongbloed B, Vossensteyn, H. Keeping up performances: An international survey of performance based funding in higher education. *J High Educ Manag* 2001; 23:127–45.
14. Parker PJ, Zajonc A. *The Heart of Higher Education: A Call to Renewal*. Hoboken, New Jersey: Jossey-Bass, 2010. Pp. 152.