

CHALLENGE BASED LEARNING FOR PATIENT CENTEREDNESS: EDUCATIONAL REFORM

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Abstract: The purpose of this study was to gather recommendations from organizational leaders, faculty, and students as an input to curricular reform for healthcare programs. The method was a qualitative research with a focus group and interviews with 26 leaders, faculty, and students. Focus group participants were leaders who dialogued reflect on the future tasks of healthcare professionals of the future. The data from the focus group was analysed learning environment dimensions. Five themes emerged from the focus groups. Eight leaders from associations, hospitals and medical schools remarked the importance on: 1) patient centered care, emphasis on prevention and well-being, 2) professionalism and identity formation, 4) innovation, research, and technology, 5) leadership for healthcare systems. Interviews showed that biomedical contents develop critical thinking and self-directed learning. Interviewees recommended starting patient care earlier on the program. There was a significant curricular reform to address opportunities and suggestions from participants. Perspectives from different stakeholders helped to develop inter-professional education for five programs. Patient Centeredness is learned from the first year of the programs through challenge-based learning. This approach which started on August 2019 is intended to develop leaders for the improvement of the healthcare systems. Even that scientific and technological advances demand radical change for universities, there are centuries of history that restrain them. At Tecnológico de Monterrey, School of Medicine and Health Sciences an integrated curriculum with challenges for wellness instead of diseases is now a reality.

Keywords: Challenge Based Learning, Curriculum design, Patient Centered Care, Leadership, Higher education

Introduction

Higher education institutions have been conceived as change agents and allies to detonate a better quality of life for individuals and society. Universities have been founded on such transcendent principles that they have been associated with prestige and credibility as a constant for centuries (Beraza & Rodríguez, 2007). The community of practice of faculty and students has made important contributions to progress and innovation in their regional or national contexts. The impact on health and financial sectors positively correlates with increasing life expectancy and comfort for society

Sociologists agree that universities serve as a meritocratic mechanism for social mobility through occupational allocation of labor positions (Stevens *et al.*, 2008). However, recently it has been questioned the value-added of the university for employment since several informal new jobs are now better economically rewarded than professional position (Brown *et al.*, 2020). According to White (2018), American universities are experiencing financial crises due to the difficulty of increasing their market, which is jeopardizing the future of these institutions.

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An avalanche of changes on the higher education sector demanded authorities to provoke a dramatic curricular reform, considering a fusion among theory and practice and a distinctive pedagogical (Barber *et al.*, 2013). Current trends in higher education, remark that in order to stay relevant and sustainable, institutions need to adjust their courses, curricula, and degree programs to meet learners' needs, as well as the demands of emergent industries and an evolving workforce (e.g., automation, digital literacy, gig economy) (Brown *et al.*, 2020). The COVID-19 pandemic has accelerated those changes.

Since 2012 the New Media Consortium (NMC) established some trends that needed to be considered for curricular reforms. Those trends included: a) a new emphasis should have challenge-based learning and active learning, b) educational paradigms should change to include online education, hybrid learning, and collaborative models (Johnson *et al.*, 2012). Challenge-based learning includes both active learning and a collaborative model since it is an experience where the participants develop solutions that require an interprofessional and creative approach for the development of transversal skills (Olivares *et al.*, 2019). At Tecnológico de Monterrey, in 2019, a new curriculum designed was introduced based on challenges instead of disciplines.

Medicine is one of the oldest professional disciplines to heal people, even since ancient times when palliative care was the only available professional activity. Medical schools have been part of the university since the X century (Valdez García, 2004). However, its own sector's traditional domination has moved to face constrained centralization (assurance companies, healthcare institutions, regulatory boards), which reduces autonomy, self-regulation, and sense of power to the medical doctors (Coburn, 2006). Then interprofessional collaboration is required to increase patient-centered care, which has shown better clinical practice results in terms of quality and safety offered to the patient (Koehn & Charles, 2019).

The schools of medicine in Mexico must address the requirements for medical professional tasks of the future. According to the OECD (2019), employers consider that graduates lack generic competences as responsibility, teamwork, and other transversal skills. So, it is urgent to move forward to generate curricular reforms in healthcare professions to couple with the changes that are currently taking place, which is not aligned correctly among the government, healthcare institutions, and government. According to D'Amour & Oandasan (2005). Interprofessional education creates links among learners, teachers, and professionals (micro level), between teaching and health organizations (meso level), and among systems such as political, socio-economic, and cultural systems (macro level).

These accelerated regulatory, social, and technological changes in the environment demand a versatile doctor able to provide customized patient care, long-life learning, complex challenge solver and critically think about their own actions (Valdez García, 2019). Therefore, it was necessary to inquire about the readiness to evolve the legacy program into an integrated interprofessional curriculum, challenged-based, and patient-centered learning.

Methods

During 2016, at the School of Medicine and Health Sciences at Tecnológico de Monterrey in Mexico, authorities started a reflection towards a curriculum reform to ensure greater alignment with required

future skills for healthcare programs. A qualitative design was conducted with a focus group and structured interviews. Focus groups allow exploring different perspectives among several participants and interviews to collect data to gain insights from one individual (Hanson *et al.*, 2011).

The purpose of this study was to gather recommendations from organizational leaders, faculty, and students as input for a curricular reform for healthcare programs.

Participants were six leaders (educational and hospital institutions and accrediting boards), six students, and 12 faculty members. Leaders were individually invited to the focus group to reflect on future trends for medical education and health sciences. The results presented here are from those who agree to participate in the study.

Results

Focus groups with leaders

The question for participants was: What will be the leading professional tasks for health professionals of the future, considering social, scientific, and technological trends? Answers were documented following the affinity diagram method (Evans & Lindsay, 2014). The first step was to brainstorm ideas to answer the question, followed by the categorization of results. Five themes emerged as presented in table 1.

Table 1: Emergent topics to be addressed on the healthcare programs

Categories	Codes
Patient-centered care	Patient relationship (2) Management of resources Customized medicine
Emphasis on prevention and well-being	Health promotion Prevention
Professionalism and identity formation	Social responsibility (2) Ethics Humanism
Innovation, research, and health technology	Knowledge/ Research (5) Technology (2) Problem/Challenge solving Complexity
Leadership for the improvement of health systems	Leadership attributes (2) Global perspective Teamwork and networking (2)

Patient centered learning refers to patient care as a person who collaborates with the health team to decide every clinical intervention, considering holistic quality healthcare services aligned patient preferences in every phase of clinical care: patient knowledge, diagnosis, intervention, and monitoring/follow up (Olivares Olivares & Valdez-García, 2017). Authors include four perspectives on the model: a) human, b) biomedical, c) managerial, and d) entrepreneurial. In a previous study,

semi-structured interviews were conducted with 55 medical students of three different schools, and qualitative analysis showed that an interpretation based on the classic model that focuses on the autonomy and status of the profession prevails, underestimating the centered patient approach (González et al., 2019).

Promotion of health, disease prevention, and education towards a healthy lifestyle is a trending requirement for healthcare professionals. This holistic or medicine functional approach is oriented to prevent diseases or promote lifestyle changes to reduce risk factors (Scattergood, 2010). Considering that health professionals must take care of other people, curricular reforms also focus on caring about themselves (Abreu et al., 2020). According to Cohen et al. (2009) medical students face identity challenges since the novice role. The authors describe the growing demands of the medical culture, particularly emotional and workload stress burdens, and cognitive-moral development challenges. Humanities, ethical commitment, and social responsibility are then necessary for the new medical programs.

Participants expressed concern about technology trends and healthcare practice for future graduates. This reflection is consistent with Thornton and Russek's report (2019) who predict leaps in artificial intelligence (AI), Virtual Reality, and Augmented Reality with digital identity. This accelerated socialization with technologies demands students' education for innovation, research, and coexist with health technology to solve every day or extraordinary health challenges. An interprofessional approach with the appropriate leadership is suggested to improve and innovate quality and safety in clinical care.

Interviews with the academic community

Students and faculty members were interviewed to suggest the most significant changes that should be applied to the school's current programs. There were 18 interviews with 12 faculty members and six students whose responses were categorized according to learning environment psychosocial dimensions (personal, social, and organizational). Material dimension includes physical spaces, facilities, and infrastructure (Gruppen et al., 2019). Table 2 shows the synthesis of the interviews.

Table 2. Data from interviews

	Strengths	Opportunities
Personal	Self-directed learning Critical thinking and analysis	Increase innovative ideas Feedback and assessment Excess of contents
Social	Clinical practice (2) Relationship with patients Learning communities Faculty experts Collaboration with residents and faculty	Lack of communication among faculty members Late contact with patients (5th year) (3) Limited human orientation with patients More participation in projects
Organizational	Program structure International experience Pedagogical practices (PBL) Small groups	There is no congruence among course instructed by different teachers.

Material

Simulation labs

More lab practices

As the personal dimension, Gruppen *et al.* (2019) recommend vitality, well-being, purpose, development, and identity formation. Both faculty members and students considered the importance of this topics for the curricular reform. Students also recognize that favors critical thinking and self-direction. However, they might be excessive besides medical topics.

Participants agreed that clinical practices on starting on their fifth year develop relationships with patients, residents, and faculty for the social dimension. The dense interconnections from the academic community, patients, and hospital staff are part of universities' social role (Stevens *et al.*, 2008). The human contact with actual patients occurs until the 5th year when students mentioned being motivated by this interaction. Faculty members consider that it is late for students to integrate doctor-patient relation skills. The curriculum innovation in medical education is significantly expanding in health systems to be shifted to a patient centered approach (Pelzang, 2010; Domenco *et al.*, 2012). This approach contrasts with the medical doctor's traditional dominances, the protagonist in the doctor-patient relationship (Coburn, 2006).

There were some mentions regarding the organizational dimension. Even that participants considered an adequate program structure. There are opportunities for collaboration among faculty members. Additionally, both groups mentioned international experiences and participation in public and private hospitals, which develops skills to manage situations in different contexts.

Conclusions

The demand in medical education is to educate future professionals who recognize the values, preferences, and needs expressed by the patient as part of their professional identity (Gerteis *et al.*, 1993). Information technology and virtual or real contexts are part of the organizational and material environment that need to be blended with education.

The results previously presented in this study were used as an input for the new curriculum design for healthcare programs at Tecnológico de Monterrey. It was decided to introduce Challenge Based Learning (CBL) for Patient Center Centeredness for Physician and Surgeon (MD), Nutrition and Wellness, Clinical Psychology, Biosciences, and Dentistry bachelor programs. Challenge Based Learning has the purpose of addressing real complex problems from multiple perspectives. Collaboration among faculty and students from different disciplines is the proposal for this curricula reform. Challenges from the first year and a half are oriented to prevention and wellness for individuals and society. Clinical experiences are covered since year one to prevent diseases and timely detect potential risks on health.

Even that scientific and technological advances demand radical change for universities, there are centuries of history that restrain them. At Tecnológico de Monterrey, School of Medicine and Health Sciences, an integrated curriculum with challenges to educate leaders is now implementing. Maybe this transformation inspires other institutions to educate for the wellness of the patient.

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