

The future of public health education: the post Covid-19 era

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Abstract

The Covid-19 pandemic revealed once again the unsustainable social inequities that resulted in a disproportionate number of illnesses and deaths among different social groups. Public health must take its leading role in public policy to advance the social determinants that affect the health and well-being of populations. Public policy and the workforce must continue to prioritize population's wellbeing and health equity by challenging the *status quo*. Thus, it is a pressing necessity to evolve and transform public health education by developing and integrating the culture of agile change, embracing structural transformations and shifting to a lifelong learning approach. The paradigm shift in public health education should emphasize interprofessional and intersectoral approaches, the development of human and social competencies, a lifelong learning perspective and the implementation of new pedagogical and technological strategies. A holistic curricular approach which highlights the importance of public policy and the right to health and social justice should also be emphasized. This transformation must occur taking into account/considering faculty development, investment in technology, flexibility for accreditation, and collaboration with employers in various sectors. Public health education must evolve in order to remain relevant and adequately prepare and equip the leaders and practitioners that the world requires. The current crisis is an opportunity to renew and redefine public health education.

Keywords: public health; education; transformation; paradigm; cognitive competencies

Resumen

La pandemia de Covid-19 volvió a poner de manifiesto las insostenibles desigualdades sociales que se tradujeron en un número desproporcionado de enfermedades y muertes entre los diferentes grupos sociales. La salud pública debe tomar su rol de liderazgo en la política pública para avanzar en los determinantes sociales que afectan la salud y el bienestar de las poblaciones. La política pública y la fuerza laboral deben continuar enfatizando el bienestar colectivo y la equidad en la salud, desafiando el *statu quo*. Por lo tanto, es necesario evolucionar y transformar urgentemente la educación en salud pública, desarrollando e integrando la cultura del cambio, implementando iniciativas de diversidad y cambiando a un enfoque de aprendizaje permanente. El cambio de paradigma en la educación en salud pública debe enfatizar los enfoques interprofesionales e intersectoriales, el desarrollo de competencias humanas y sociales, una perspectiva de aprendizaje a lo largo de toda la vida, la implementación de nuevas estrategias pedagógicas y tecnológicas y un enfoque curricular holístico que destaque la importancia de la política pública, el derecho a la salud y la justicia social. Esta transformación debe ocurrir teniendo en cuenta el desarrollo docente, la inversión en tecnología, la flexibilidad para la acreditación y la colaboración con los empleadores en varios sectores. La educación en salud pública debe continuar evolucionando para seguir siendo relevante y preparar y equipar adecuadamente a los líderes y profesionales que el mundo necesita. La crisis actual es una oportunidad para renovar y redefinir la educación en salud pública.

Palabras clave: salud pública; educación; transformación; paradigma; competencias cognitivas

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Throughout history there have been turning points and forks in the road; the chosen path determines survival. Although this is true for many disciplines, it is especially true in education. 2020 will be remembered as the time when one crisis was made worse by another: a global pandemic exposed long-standing inequities that resulted in uneven disease and death in minority populations. The world wasn't ready, although public health professionals had warned, for years, of the potential emergence of a global pandemic. When the Covid-19 pandemic began, some higher education institutions provided online teaching experiences, but many others reacted by implementing what was essentially emergency education to continue the school year. The pandemic exposed other crises that have been around for a long time: social inequality, discrimination, privileges. Besides being a health emergency, the pandemic has also affected economies around the world. Although higher education has been slowly advancing to meet societal demands, the 2020 pandemic forced us to consider a radical change in health education. Nevertheless, the change that has taken place is insufficient; evolving the educational paradigm must include a series of fundamental transformations across the entire educational system.

Discussion

From professional silos to an interprofessional and intersectoral approach

We can no longer focus solely on our individual professions; we must collaborate interprofessionally with other health disciplines, to emphasize a preventive approach, as well as with a range of non-health disciplines that decisively influence the health and well-being of populations. We need to achieve a collective approach of well-being, health, and equity. Success in collaboration is about individual competencies rather than job positions. Thus, collaborations must develop integration and management strategies, arrangements and joint problem solving, as well as an open, receptive professional culture and the will to cooperate and communicate openly.¹ Health professionals require transformative competencies, including cognitive, metacognitive, social, and emotional ones. In order to develop them, awareness of the learning process, which fosters the ability to solve problems, is necessary: "It means acquiring, processing and accepting new knowledge and developing new skills, as well as seeking advice and using it".² These competencies should include creativity, autonomy, strategic and critical thinking, effective communica-

tion, empathy, collaboration, resilience, appreciation for diversity, and an awareness of others and of the planet.

We could have dealt with the Covid-19 pandemic better if there had been true collaboration among our fellow health professionals across sectors and the global community. This, beyond teamwork, implies learning about how each one contributes to the team to enhance every point of strength and improve every (point of) weakness. But this requires an over-all educational rethinking in which the contents and common competencies are developed in multidisciplinary and multi-professional groups so that the practice of the common good is revealed in work practice.

From online emergency Covid-19 education to transformative education

The 21st century crises have accelerated the need for urgent transformations and innovation in higher education in general, and particularly in public health. We must challenge the *status quo*, because automation is not transformation. The impact of the digitized learning environment on traditional education is changing the way teachers teach and students learn. Technological development is exerting great pressure on our teaching and learning paradigm. In this regard, we have only changed our means of communication without making real transformations in educational and pedagogical models. In fact, technology has accentuated and magnified the issues. Although the pandemic accelerated online learning mechanisms, and therefore allowed access to students who could not attend face-to-face classes, the change occurred without significant modifications in teaching, rather as a mere copy of face-to-face content,³ without appropriate curriculum redesign and largely without the critical resource of academic tutoring to help guide students in their educational process. We are going through an important shift in higher education that consists of an evolution from short-term emergency education to making strategic and sustainable investments in a future that will be very different from our past. This shift involves, according to Pelletier and colleagues,⁴ five teaching and learning trends: social, technological, economic, environmental, and political.

The social trend involves hybrid, online, and competency-based learning, as well as remote work. The technological trend focusses on learning analytics and big data, while redefining instructional modalities. This trend also implies collaboration with all the key stakeholders, including faculty. The economic trend embraces the cost and value of college degrees, digital economy and financial deficits, while the environmental trend deals with the structures of the physical campus

and enhancement of sustainable development goals and planetary health. Finally, the political trend deals with the political instability leading to uncertainty in higher education due to political ideologies that impact pedagogy and reduce public funding.

From degree completion to lifelong learning

Higher education can no longer remain limited to granting degrees. Professionals need ongoing access to improve and diversify their competencies. Public health education began as a postgraduate degree. The number of postgraduate degrees in public health in the US increased from 4 481 in 1992 to 19 124 in 2016,⁵ and between 2003 and 2016, a total of 75 165 undergraduate degrees in public health were awarded by 271 institutions, increasing from 1 448, in 2003, to 12 895, in 2016. More than half of public health graduate degrees were awarded between 2011 and 2016.⁶

Lifelong learning is a key competency for the future. The workforce needs to continue learning and developing competencies throughout their working lives. Higher education institutions must transit from receiving applicants at a single-entry point, to multiple entries throughout their working lives. In order to redefine their instructional models, regarding the emerging learning environments of lifelong learning, higher education institutions need to redesign the learning experiences by developing multimodal courses, address technology and internet-access barriers for students and create optimal support systems, and rethink their physical campus structures so as to address the need for hybrid learning spaces.⁴

From focusing on content and isolated courses to focusing on the necessary competencies for enhancing the health and well-being of the population

Public health education must focus, more than ever, on human, cognitive, and metacognitive competencies in order to enable students to quickly cope with and adapt to change. Students must develop the necessary competencies to be able to anticipate and solve problems, operating within variable and shifting scenarios to achieve progress on the largest social challenges.

According to Kumar and colleagues,⁷ there are six strategies to consider for building the US public health workforce of the future:

1. Reassess capabilities and roles by investing in a systematic exercise to identify competencies needed

for the future, assess current competencies and staffing levels, and create tailored, role-specific workforce expansion plans.

2. Share resources and engage partners by leveraging momentum gained through partnerships during the Covid-19 response to redefine state-local collaboration and the role of external partners.
3. Overhaul the recruitment process by building innovative recruitment platforms that streamline processes, broaden talent pipelines, and increase accessibility.
4. Invest in employees by ensuring that the workforce feels well supported with clear paths for development and advancement, especially given the extreme burnout experienced during the pandemic.
5. Cultivate strong leaders by recreating the ranks of public health leadership through internal upskilling and external recruitment, especially given the exodus of public health leaders.
6. Promote diversity, equity, and inclusion to ensure that the workforce reflects the community being served; potential initiatives can include creative recruitment efforts, refreshed job classifications, and trainings focused on diversity, equity, and inclusion.

The mission of improving the health and well-being of our populations strengthens our commitment to continue learning in order to succeed in the urgent social transformations of our countries. The engagement of students and teachers is essential for the teaching-learning processes. To achieve critical reflection on transformative learning, these processes must deepen the interaction and participation of students and teachers.⁸ Schools must constantly ask themselves the following fundamental questions:

- What competencies do students need?
- What are their characteristics?
- How should we design learning scenarios to ensure their success?
- Are the curricular contents pertinent and relevant?
- Are there better ways to design learning spaces?

Likewise, we must redefine the educational purpose by prioritizing approaches based on evidence, science, and public health practice. The current crisis has once again reminded us of the importance of collective, inter-professional, and planetary approaches. Right now, students and lifelong learners pay close attention to more practical, personalized, and competency-based courses and micro-workshops as more flexible opportunities for advancing their careers.⁴ Current challenges remind us

of the responsibility to include health and wellness content from the earliest possible stage of basic education, in order to ensure that all citizens have a fundamental understanding of public health principles.

Harnessing the power of technology in education

Technology is a great ally regarding educational processes. Technology in education encompasses much more than online education; it offers the possibility of integrating dynamic, accessible, and personalized learning both inside and outside the classroom and serves to maximize the educational process by permitting new and unique facets of learning that are not possible in face-to-face modalities. Digitization is advancing much faster than education, and higher education institutions must refocus their academic approaches and adapt to rapid change.

We know that educational institutions have not evolved to achieve the teaching models that this century demands. Digital transformation is no longer an aspirational goal for higher education institutions but the key to addressing the necessary pedagogical approaches in the evolving learning models that students need today. Think of personalized technologies like Amazon or Spotify. When we buy a product using the Amazon application, it immediately shows us additional items we could buy, because each product we have chosen has contributed to a predictive algorithm. It is time to rethink higher education funding and invest in technology to change the teaching-learning paradigm, since we all witnessed that the current model is unsustainable. Higher education must focus on transformative learning, and technology is the best ally for achieving this. The new curricula must focus on human competencies that transcend structures to improve social models and use of technology to develop better learning scenarios. The emergency switch to online education due to the 2020 pandemic happened overnight, a sudden conversion which prohibited adequate time to design quality online courses; many classes simply became remote and were not well-suited for a comprehensive online teaching environment.⁹ However, this change demonstrated to many skeptics the power of the virtual environment to support educational processes. The fourth industrial revolution, in which our society must work with big data and artificial intelligence, requires competencies based on the interaction between information, the digital world, and the application of knowledge.¹⁰ It is time to rethink the current approaches by learning from experience and continuing the transformation of education in order to guarantee its relevance, meaningfulness, and capacity

for evolution to tackle the challenges of the present and future.

As Azorín¹¹ states, we must consider Covid-19 as a supernova—one that heralds the end of obsolete education—and profit from digital change, redesigning the current approach that integrates equity for the well-being of students. In order to do this, we must put an end to passive forms of learning and memorization in higher education and use more interactive methods that encourage critical thinking, so that students can respond and adapt to the complex changes and challenges of a globalized society. Higher education programs must undergo a major transformation toward a new global social contract to acquire human, cognitive, and digital competencies for the changing reality. Digital competencies will allow students and teachers to be informed recipients of content. This is already happening in basic education in some countries. In Polish schools, the Ministry of National Education launched a program called “Digital School”, in which the entire education system now focuses on modern technologies to create teaching and learning environments to increase the digital competency level of students and teachers.¹² We must provide students with digital literacy and basic cognitive, human, and social competencies for the world that is being built. By doing so, graduates will be able to engage with and move between multiple jobs throughout their lives, because they will have the tools required to design their own career paths. By including digital literacy—knowledge and skills enhanced by digital technology, social engagement, and collaboration, as well as cognitive competencies and creative problem solving—in the curricula,¹⁰ we will have graduates who think and act creatively and sensitively to develop new ways of living and new social models.

From content-centered to learner-centered

This perspective focuses on personalized education, considering not only learning styles but also the background and basic knowledge of students, so that teaching can be adapted to their needs and professional goals. Teachers are faced with the task of designing learning scenarios that will help students develop the problem-solving competencies relevant to the 21st century, while simultaneously complying with the curricula of their educational centers. Teachers must adapt their approach to the context in which they live (language, culture, climate, etc.), as well as to the unique characteristics and needs of their students. If we reflect about the “traditional” educational context in force over the last hundred years, we know it is

no longer effective; it has become obsolete and cannot continue to respond adequately to the needs of a constantly changing and evolving world. We also have a different learning scenario that includes new technologies, tools, resources, and possibilities, in which students teach themselves and follow their own interests. However, another educational context must be considered: life “after education”. Students will now face a completely different world from the one they knew before engaging in self-education. Education is currently understood as the process of professional development throughout life; a professional degree is no longer enough. Instead, education must be designed as a process that is carried out across people’s personal and professional lives with both the educational and labor systems collaborating to allow spaces for the development and growth of individuals throughout their life.

From students’ interests to societal needs

Public health education should move towards integrating competencies in global health, as well as toward the generation and use of scientific knowledge to solve problems by focusing on social determinants and social justice to promote a healthier way of life.¹³ Public health education must evolve towards programs driven by social and planetary needs, so that health professionals can participate as agents of change and social transformation to enhance the health of populations. This means that educational leaders must be closely connected to employers and to the needs of society, and recruit students based on the extent to which their strengths and interests align with those needs.

Knowledge vs. character

The Covid-19 pandemic has shown that society needs more empathetic and compassionate approaches. Health inequities have led to an increase in mortality among minority populations, a burden which is disproportionate not only due to underlying conditions but also, in received health care services, resulting in the unnecessary deaths of both patients and staff. The importance of transversal competencies in public health, such as leadership, teamwork, and communication, has been sufficiently emphasized. If science lacks communication, leadership, and trust, it will not produce the desired result. Structural, systemic, and individual inequity has had a serious impact on the health conditions of many populations. Knowledge of their root causes and of the proper way to address them must be combined with the personal conviction that progress in the elimination of

these health disparities is the responsibility of public health professionals.

A change in the educational paradigm and the transformation of educational institutions can only occur intentionally, considering at least the following essential elements:

- 1) Faculty development: the success of educational transformation depends largely not only on an up-to-date curriculum, but also on competent, up-to-date, and committed teachers. Without strategic faculty development, the transformation will not take place. The areas in which the faculty staff must develop are a) innovative and effective teaching-learning methodologies; b) design, monitoring, and evaluation of learning environments; c) effective and timely use of technology; and d) competency-based teaching centered on social values.

The institutions’ academic staff should include faculty focused on professional practice to prepare students for the application of their public health knowledge and skills. In this regard, the students’ interaction with faculty members and their field experience are as important as learning the scientific evidence of the discipline they study. Research and practice must interact and transform each other in order for teaching and learning to be current, relevant, and meaningful.

- 2) Updating accreditation criteria: the criteria used to accredit a school or an educational program, as well as the accreditation process itself, need to be rethought so as to offer the flexibility, innovation, and nuance that a paradigm shift can bring.
- 3) Constant collaboration with employers: the market changes much faster than education. This means that when students finish the curriculum in which they initially enrolled, it will be at least two years older than the market they are going to face. Constant communication and collaboration between academic leaders, the labor market, graduates, and the community is required.
- 4) Dynamic, flexible, and agile academic institutions to respond to changes and innovation: the current academic structures and processes regulations, as well as the validity of the curricula, must adapt to the needs of an innovative and changing education that is feasible throughout the professional life. The flexibility in the curricula, the various accreditations, and formats, such as academic degrees, certifications, and tailor-made courses, should serve as opportunities for students to continually train, progress, and remain apprised of developments in the field.

Conclusion

Every time the modern world faces natural disasters, social challenges or pandemics, voices appear pressing for social change, health governance, justice, and equity. However, health systems and health education have changed very little. The most important issues –an educational reform, and equity in health– are still pending. The global public health model must definitely evolve and adapt to the dynamics of political, economic, social, and cultural issues between and within countries. Public health education programs must be modernized, innovated, and must establish essential human, professional, and interdisciplinary competencies. It is crucial to center the curriculum on these challenging social issues in order to improve inequities and address the social determinants of health.¹⁴ Public health education must continue advancing in order to influence and improve interventions and policies that have so far been based solely on the medical model. Progress must be made in generating scientific evidence and developing new knowledge approaches to address the main social challenges and enhance the health and well-being of communities and the planet.

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