

Education 4.0 in Higher Education Institutions: The Need

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“Change is the only constant in life” as quoted by the Greek Philosopher Heraclitus. The rapid growth of science, technology, and education has played a significant role in describing the human generations of each century. Each system has undergone several revolutions marking a significant level of upgrade in that sector.¹ Industry, technology, healthcare, media, and education behave as interconnected systems influencing each other (Fig. 1). The industrial revolution started with water and steam power and mechanization in its first revolution, crossed electricity, robotics, and connectivity, and is currently in mass customization in 2020 as the 5th revolution. Technology evolved from 1G large-size portable phones to 5G Internet of Things and advancing further in a rapid phase. Communication media has undergone major reformation from carrier Pigeons to Twitter-like social media. Healthcare revolutions started with germ theory and vaccines to artificial intelligence, precision, and telemedicine. Education has evolved from behaviorism, constructivism and andragogy, connectivism, and heutagogy, and currently toward cybergogy and collaborative learning.² Further, the recent pandemic had led to much more changes in all these interconnected streams.

With the revolutions in all sectors, the skills required during each of these phases are also not an exception. The skills revolution aged back to the agricultural age passed through the industrial age, the information age, and at present dwelling in the concept age. It is anticipated that the future will hold more employment issues, not due to lack of opportunities, but lack of skills matching the opportunities. It's high time higher education institutions

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including health professions education focus on these issues and bring in a change.

There is a dire need to change the way of curriculum delivery and assessment apart from the content themselves.^{3–5} Education 4.0 demands more innovation-based learning that is personalized, engaging more tools, activity based, and self-paced with access to remote learning opportunities and authentic assessment strategies. They need an accelerated learning cycle in which the acquired knowledge makes sense, gets consolidated by connecting it with prior knowledge, and finally demonstrates what was learned. Future graduates require knowledge to rule the technology, more complex problem-solving skills, critical thinking, creativity, collaboration in a team, decision-making skills, and emotional intelligence as well. The teaching skills of the faculty need to be fine-tuned to match the intended learning outcomes,

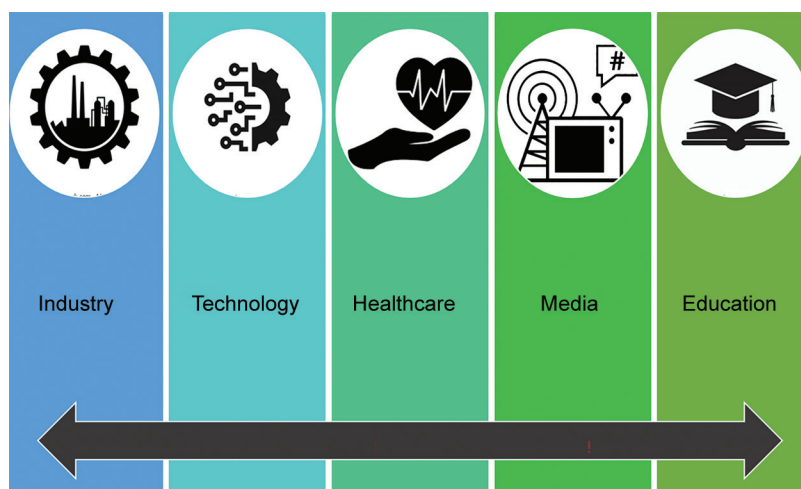


Fig. 1: Interconnected revolutions

as a networked teacher with smart teaching skills who are willing to upskill and reskill their teaching abilities.⁶

The institutes need to be proactive in up-skilling and retraining the faculty members, provide technology-enhanced infrastructure, do curricular reforms incorporating academic flexibility, offer multidisciplinary programs for improving skills, introduce intellectual property rights and research dimensions in the undergraduate program, permit multi-disciplinary and multi-center collaborations in the form of student electives and exchange programs, and include faculty from various disciplines and faculty exchange programs for enhancing the quality and diversity.

Unless higher education institutions are sensitive to the various revolutionary changes around and commence proactive steps to meet the multi-directional demands, the future of the students would become extremely uncertain. "Change is hard at first, messy in the middle, and gorgeous at the end".

– Robin Sharma.

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