Changes to Be Brought in Curriculum for 4IR

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Bangladesh is already experiencing the socioeconomic changes of the Fourth Industrial Revolution (4IR). Some industries have used automation and many online businesses on Facebook have also begun and thrived. Blockchain technology is being used by several banks to dispense loans and conduct other financial activities. In Bangladesh, there are more than 5000 registered software and IT businesses (BASIS). ICT-related industries contribute about approximately 13% of the GDP. The 4IR is transforming the workplace. People are saying that many traditional jobs will no longer exist and no one knows what kind of jobs will come. As a result, we confront a scenario in which humans may not even be required for production. In this circumstance, one would wonder why the curriculum of the undergraduate program needs to be redesigned. Universities cannot predict the kind of graduates they will generate in circumstances where the nature of the professions is unknown. If so, will we keep using the existing curriculum that was created primarily for the purpose of information transmission to teach students? For 4IR, a different kind of curriculum is essentially necessary. Creating a curriculum for 4IR is undoubtedly fraught with difficulties. The existing curricula are criticized for lacking integration of disciplines, focusing almost exclusively on theory and single-subject teaching and learning. This form of information transfer cannot equip students with innovative skills, let alone content skills, necessary for the 4IR economy. 4IR needs university graduates equipped with innovative skills such as creativity, problem-solving ability, creative thinking, emotional intelligence, empathy, big business decision-making, entrepreneurship, and adaptability more than ever.

To satisfy the present and future needs of students, the existing structure necessitates a creative reimagining of the curriculum. The issue is that in universities in Bangladesh, there is an over-reliance on paper qualifications rather than the skills and attitude needed to generate competent graduates. The primary barrier to modifying the curriculum, as well as teaching and learning, is this.

Prior to anything further, understanding what 4IR is capable of and what it is not, is important. Tasks that could be automated by robots and machines now or tomorrow will be eliminated or replaced by the 4IR. However, humans continue to be crucial to 4IR since it is their creativity and ideas that are bringing about the change. It is not as straightforward as all routine and predictable work being taken over by machines. Humans will work alongside robots, artificial intelligence, and the internet of things (IoT), and together

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they will amplify what is possible. Innovative skills cannot be programmed or automated.

Should universities be held responsible for producing graduates with innovative skills? Students expect that universities will help in their personal growth and career preparation and/or contribute to social development and progress. Universities will still exist to ensure the highest possible standards of education through their teaching, enable students to learn the most recent information through their exploratory research, and support social progress through their service. However, universities must play some additional roles. Graduates from universities should possess both the necessary knowledge and employability skills. In comparison to a group of people with subject-specific knowledge, a cohort of highly-educated university graduates with the knowledge and 4IR innovative skills will have a significantly bigger impact on the overall performance of an economy. The development of 4IR skills should, therefore, be one of the primary outcomes of higher education.

According to education scholars, we cannot go back to the traditionally used teacher-based classroom paradigm, in which students are told to recall facts to demonstrate their retention of knowledge. The brain activity of students is essentially nonexistent during lectures, according to MIT Media Lab research. It is interesting that it is even lower than while they are asleep. Since the 4IR age does not require rote memorisation, this instructional pedagogy does not impart the abilities required for the 4IR economy. According to studies, when problem-based learning with a genuine consequence is used as the educational model, students learn more and retain information better. A crucial aspect of learning is when students collaborate in groups to solve unsolvable issues. Other methods such as project-based learning, flipped classroom learning, inquiry-based learning, and cooperative learning are excellent teaching strategies. The method or procedures chosen by the course instructors will be suitable for their courses. To continue to have an education system that provides what the economy requires, plans should be made to establish more holistic education systems that educate students on how to study rather than what to learn.

For Bangladesh, like many countries in Asia, the creation of a competitive higher education system is a new experience. We need to redesign syllabi in such a way that each syllabus contains a specific section labelled "Innovation skills development". Every teacher should demonstrate how s/he wants to develop innovation skills within the core subject knowledge. The curriculum should be interdisciplinary and transdisciplinary due to increasing systems complexity. In an interdisciplinary curriculum, many academic fields are combined into a single subject area, and interdisciplinary connections and methods are deployed among curriculum elements. Different disciplinary fields are combined in a transdisciplinary curriculum. For example, Artificial Intelligence (AI), big data, and IoT have an interdisciplinary nature, and they are sometimes combined with other disciplines to form new technology fields. Japan has changed its rote-based learning system by removing 30% of the content in its curriculum to encourage deeper learning and added a greater emphasis on creativity. In Singapore, computational thinking – namely statistics and programming – is required for all undergraduate students regardless of their major.

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