

*Sir Syed Ahmed Khan Lecture: Key Messages***Pakistan Must Position Itself to Benefit from AI,
Automation, and Bio-engineering
or Risk Losing Out**

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Technology is progressing very rapidly and becoming central in our lives. It took IBM over 20 years to develop a program to beat the reigning chess master of the time. It took three years to develop a computer champion of the 300 times more complex Chinese game the ‘Go’. Then it took only seven months for a computer AI program, developed with no knowledge of the game or its rules, to beat the old ‘Go’.

An AI-based program, which is purely local, has been developed to help children learn. The program is called “Parhai Buddy”. We need to realise that AI, automation, and bioengineering are all coming together soon, and Pakistan must position itself to benefit or risk losing out. What we see today in terms of work, education or learning is changing rapidly. The drivers of the change are:

- Artificial Intelligence
- Automation
- Bio-Engineering

If an office clerk gets a file on the table, undertakes the required paperwork, and processes the administrative cycle daily as a matter of routine, then the AI can assess a repeated pattern of clerks’ daily tasks and perform those repeated “predictable” tasks much more efficiently and effectively than the clerk can. AI’s ability to perform repeated tasks better than humans will change the future of work for blue-collar and white-collar jobs.

More specifically, the greater the predictability of the tasks involved in a job, the greater the chances of replacement of human beings with machines. For example, a doctor with a patient sitting in front, waiting for a diagnosis of his/her illness, recalls similar previous cases, based on textbook knowledge or his/her personal experience. The computer using AI can look through the history of millions of similar cases stored in the database to make decisions—human beings (Doctors) having limited cognitive abilities can recall only a few cases, whereas the computer can process millions of such cases in a flash of a second—this gives AI an edge in diagnosing illness. Doctors’ job being diagnostics is predictable and therefore replaceable with AI. However, a nurse’s job being physical care of the patient, as per the patient’s need, is less predictable and is therefore not easily or is at least not fully replaceable.

In the future, there will be no long-term singular full-time jobs. The job eligibility criteria are changing—many multinationals, instead of asking for specified degrees and experience, focus on the skill set, work attitude, creativity, and ability to learn new things.

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Pakistan exports significant unskilled manpower overseas. Our export of manpower could be adversely affected as the skillset demanded may change with greater use of technology and AI. For instance, drivers will be replaced by safer AI driving systems. Therefore, four key areas need our attention to prepare for the changing nature of work and skill set. These include:

- Autonomous Learning
- Language
- Future of work
- 21st Century Skills

The traditional model of learning through mentors and teachers is undergoing a change—reliance on human mentors would reduce and they would be replaced with cell phones, computers, and the internet. The role of the mentor would remain as a mere facilitator rather than a teacher. In sum, the learning process would become ‘autonomous’.

If we look at the top ten richest persons in the world, then eight of them happen to be connected to the technology business in one or the other way. This clearly suggests that the future will be different both in terms of the nature of work and the workplace, especially with reference to AI. To keep up with the changing nature and pace of work, one must take learning into one’s own hands—self-learning and planning for growth are equally vital. Youngsters may utilise help and guidance from teachers, schools, and universities, but they must do it on their own.

In the future, the skills that would matter include effective communication, collaboration, critical thinking, problem-solving, creativity, networking, and innovation in products and services.

Learning the global language i.e., English, is exceedingly critical with all due respect to the national languages. Given that about 45 percent of the material on the web is in English and Chinese, it is important to learn these languages to excel in any field, be it research, business, AI, etc. It is said that those who don’t learn from the past ought to repeat it; similarly, those who don’t study the future are destined to miss out on it therefore it is essential to prepare for the future—the future of the world is the future of every individual.

The correct, productive, and effective use of mobile phone devices is very important. All the knowledge of the world is accessible through mobile phones. Use it the right way to learn new skills, technology, AI, and of course, the English language on your own - “you may not be interested in Artificial Intelligence and Automation, but Artificial Intelligence and Automation are interested in you, so you either accept it and use it to grow yourself or take the ‘Universal Basic Income’”.