# What to teach - the challenge of AI?

Prof Prabhakar Tadinada, Formerly COL Chair, BHU Varanasi
tvp@iitk.ac.in

## Abstract

The developments in AI and its consumer level deployments have thrown multiple challenges. Blue collar jobs (physical labor) are threatened by robots, white collar jobs (cognitive labor) by technologies like genAI (chatgpt). Creative labor may also come under threat soon.

As teachers and educational policy workers, we have the responsibility for preparing the next generation for life's challenges and equipping them with competencies that will last an active lifetime, say 30-40 years. With advances in medical technologies this period is likely to be longer - life spans and general health are increasing. AI is changing workplaces/opportunities and the question we need to ask is “what do I teach a child to prepare her for her **last** job?”

While this is a complex question, it appears an ability to communicate effectively with other human beings, an ability to reason in abstract spaces (like in mathematics) and an ability to teach oneself seem to stand out. This paper is about highlighting the problem and coming up with some directions for thinking about it. It is important for the educational community and is likely to generate a lot of interest and debate.

## Introduction

The science and practice of Artificial Intelligence has seen rapid developments in the last few years. The adoption of chatgpt-like technologies**[chatgpt 25]** has been unprecedented in human history. Many many tasks which required substantial labour - most mental and physical - have become trivial to achieve. It is anticipated that the capabilities of machines is likely to develop a lot more in the coming years and soon achieve what is termed AGI - artificial general Intelligence, a state where the program is capable of human-like performance in any task that requires intelligence and knowledge.

This AGI, or even the pre-AGI technologies are likely to impact our society. While at one level they may enable wide deployment expert level competencies(like health care diagnosis), they are also likely to disrupt the society in many different ways. In this paper we are interested in the impact of such technologies in the education domain. This paper is not about how to use AI in education. But given that AI is coming, how do I prepare the younger generation for it? What does one teach the younger generation that empowers them to live in an AI-intensive world? We confess that we do not have firm answers. We would like to highlight the questions and make some comments on it.

ChatGPT, launched by OpenAI in November 2022, has seen an unprecedented adoption rate compared to other major technologies. This has been the fastest growing consumer application in human history. The chart below illustrates this phenomenon.

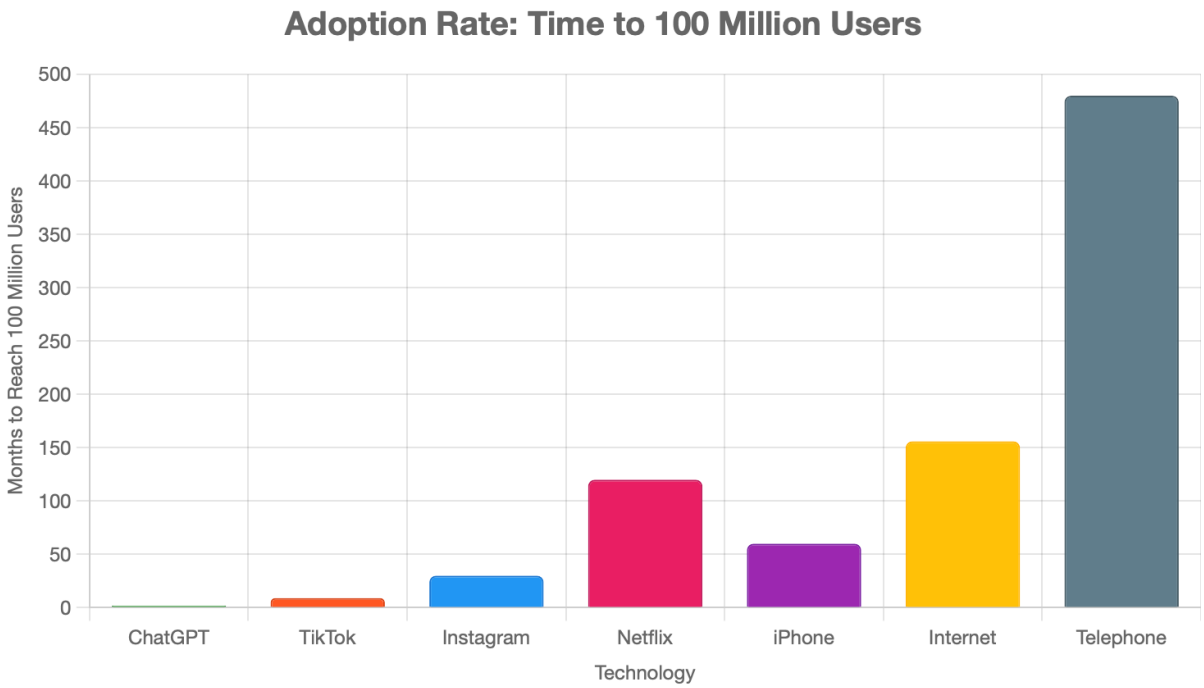


**Fig 1. Adoption rates of some technologies**
(Image generated with the help of Grok 3, **[Harv 24]**)

Such a rapid proliferation has resulted in several digital divides. For example, Chatgpt is not accessible to all humanity equally. The dominant user community is predominantly male, younger, highly educated and concentrated in some geographies **[Worldb 24]**. We are not interested in addressing the issues related to this, but talking about a situation when chatgpt-like technologies usage becomes ubiquitous.

**The Question**

Artificial Intelligence is quite likely to disrupt the job profiles in society**[Gates 25]** . Whether it will lead to unemployment, a mere change in the job profile or an increase in the number of opportunities is difficult to say. Probably the influence will be sectoral - different in different sectors. But nevertheless it leads to a situation where we really need to rethink our education where we prepare the society for the available jobs.

Given that medical and healthcare technologies will improve, we will be living longer and more active  for a longer period of time. It may be that instead of around fifty years of productive life, we can expect a gradual and continual increase in how long a person will be able to work. One can easily envisage a situation where a person is fit to work till a hundred years of age. That is about eighty years after completion of formal schooling for many people.

The society might evolve into a ‘welfare state’, with the government taking care of every citizen’s universal basic needs - food, housing, healthcare etc. Mechanisms like ‘robot tax’

may be imposed for using a bot instead of a human to generate revenues for this. Humans may not need to work at all! However work is not just to earn a living - there is a lot of expression of one's own self. Emotional and mental well being may be impacted. Simply speaking, one needs work. We need to empower a person to have a fulfilling life in a society which is becoming very technology(AI) intensive and rapidly changing.
To summarise the basic question we ask in this paper can be paraphrased as - How does one train a person for her last job?

**Some recommendations**

At the outset we would like to say that we do not have an answer to this question. Quite likely there is no single answer. And surely the answers will change every few years or so. Especially considering the rapid pace of technology development. As educationists we have a responsibility to come up with broad guidelines and directions that we can adopt to the changing and individual scenarios.

One of the first things that seems to be important is the ability to communicate. Not just with each other but with machines as well. While it appears that this is nothing new, the requirement for communication - with precision and efficiency - becomes paramount when we are dealing with artificial intelligence. AI systems may require greater clarity to comprehend properly. We have to make sure there are no ambiguities and also recognise that every single word of 'processing' is a burden on the energy demand of the machine. Even saying thank you to chatgpt results in substantial energy consumption**[Altman 25]**. Further, software programs may themselves be machine-written with instructions from humans - vibe coding**[Roose 25]**. It appears that the industry is already moving in this direction with companies like Google and Microsoft reporting that close to 30% of the new code is developed with AI assistance **[Nadella 25]**. Vibe-coding will require even more precise communication with the machine. To summarize, our first recommendation is to give much greater emphasis in our education to communication and comprehension skills - "stop reading java manuals and start reading Harry Potter".

In the coming time, technology is going to be all pervading. We will be using it to do many of our day to day tasks. But more importantly a large number of people will be involved in creating these technologies. They would be needed at all levels of competence. From those who conceptualise, design, develop, test, deploy and so on. All this would require an ability to think in abstractions.The ability to generalise, instantiate, reason and talk of incorrectness. This kind of ability is what is basically taught in Mathematics. Mathematics is all about interacting with worlds which are conceptual and are abstract creations. A student of mathematics is best prepared to deal with a 'new world' or a constantly changing world. We feel an emphasis on mathematics skills in education will be very useful. We may have to rethink what mathematics to teach and we may have to work on the math-phobia in society. What parts of mathematics also needs discussion. This is our second recommendation.

Finally, everyone has to learn to learn. While the learning process is life-long, we are likely to encounter even more rapid changes in living leading to having to learn new things more frequently. Formal education is typically 12-16 years. In this period of time, it is not possible to equip an individual with all the formal methods and skills needed to survive and flourish for

another eighty years. The only thing that will help is, if the individual is trained to teach herself. Learn from non-formal sources, from the internet( a Robot teacher) and such new mechanisms. Can we add this as a learning in our curriculum?

In conclusion the society is likely to face a major upheaval in the near future. As teachers, educators and education planners we have a responsibility to prepare the society for these changes.

**References**:


**[Chatgpt 25]** https://chatgpt.com/

**[Nadella 25]** Nadella, S. (2025, April 29). [Fireside chat with Mark Zuckerberg at Meta's LlamaCon conference]. Menlo Park, CA: Meta. Available at: https://www.youtube.com/watch?v=FZ-RZ0dKO8o&t=2633s[](https://www.theverge.com/news/658584/up-to-30-percent-of-some-microsoft-code-is-now-written-by-ai)

**[Roose 25]** Roose, K. (2025, February 27). Not a Coder? With A.I., Just Having an Idea Can Be Enough. The New York Times. Retrieved from https://www.nytimes.com/2025/02/27/technology/ai-vibe-coding.html[](https://christianscholars.com/christian-reflections-on-vibe-coding/)

**[Harv 24]** Generative AI embraced faster than Internet, PCs https://news.harvard.edu/gazette/story/2024/10/generative-ai-embraced-faster-than-internet-pcs/

**[WorldB 24]** Who on earth is using Generative AI? https://blogs.worldbank.org/en/digital-development/who-on-earth-is-using-generative-ai-

**[Gates 25]** https://economictimes.indiatimes.com/magazines/panache/bill-gates-predicts-only-three-jobs-will-survive-the-ai-takeover-here-is-why/articleshow/119533999.cms?from=mdr

**[Altman 25]** **https://www.ndtv.com/world-news/saying-thankyou-and-please-to-chatgpt-costing-openai-millions-of-dollars-says-sam-altman-8210245**