

Project-based learning: a possible path towards controlling “educonomic” inflation

By Aditya Mittal, Kusuma School of Biological Sciences, IIT Delhi

ET Insights 0



On one hand, the currently persistent Covid-19 pandemic has revealed the fragile nature of human life in spite of all the technological advances. On the other, challenges thrown up by the pandemic have also highlighted the resolve of humanity to combat threats collectively across the globe, rather than in pockets created by national boundaries. In fact, it may be argued that there is a burst of “innovation” triggered by the pandemic in all spheres of human life. This innovation is probably driven by reduced distractions, coupled with a will to sustain and survive. Here, I focus on how the current situation has forced us to innovate in the area of instructional learning, and more importantly introspect on the landscape of education on all levels.

Problem statement 1: While there is a burst of activity across the globe in quickly adapting to “online” learning to prevent or minimize “discontinuity” in our educational pursuits, this activity could carry a huge cost that may not yet be apparent. Sitting alone in a room, with a headset in front of a computer, we are expected to “learn” skills that will enable us to become productive contributors to the world. I am of the opinion that this rush of online activity may certainly be contributing to some knowledge acquisition, but its contribution to meaningful and holistic education is questionable at best. Holistic education requires appreciation of first-hand peer interaction along with in-person discourse with teachers.

Traditionally a key difference between a teacher and a student has been in their respective access to literary material – a teacher had much more access/exposure to material that could be compiled towards creating a big picture compared to students. However, with technology (specifically affordable internet and numerous search engines) bringing universal accessibility, there is no premium on literary data; that said, authenticity of this data is often not reliable or obvious. In this exponentially growing data dump, the role of a teacher has evolved and become more significant. Teaching methodologies are now evolving towards allowing students to develop critical thinking skills in order to extract actual information from the available data.

However, in this new world of online classes, educational practices based on the principle of *‘Give a man a fish, and you feed him for a day. Teach a man to fish, and you feed him for a lifetime’* are being threatened by limited power-point presentations and selected question sets to be solved in the name of learning. The “art” and “skill” of reading a textbook involve making an informed interpretation on what is in the text, even for the text that has been authenticated and reviewed before being presented to students. Unfortunately, discussions on multiple interpretations or different methodologies of reaching similar interpretations, critical thinking and tying together trains of thoughts to create a highway of ideas is being heavily undermined in the current quick-fix in the name of online learning. This undermining of thought-currency in our educational development, in my

view, is a strong sign of “educonomic” inflation – the decrease in purchasing power of our educational experience.

Problem statement 2: While the “old” education policies and the New Educational Policy (NEP) in India focus on holistic development in our educational pursuits, in practice they end up in a literary data dump of moderated evaluations and inflated marks. There was a time when “first division” (equivalent to 60% or 65% marks) was considered good enough. A distinction (75% or more marks) was simply outstanding and any score above 80% was truly exceptional. Setting of question papers and evaluations were aimed at extracting “normal distributions” of scores/marks with the above systems in mind.

However, today, we experience multi-modal distributions of scores/marks, with even a 90-95% aggregate unable to secure admissions in courses of one’s choice in the university system. Beyond the obvious futility of such a marking system, we need to also realize a long-term negative impact it is having on the current generation (and more importantly for the generations to come). Have we thought about the pressures on the coming generations based on such highly inflated marks of the current generation? These inflated marks, while possibly reflecting “literacy”, are certainly not indicative of “education”. This undermining of value-currency in our examination and evaluation systems, in my view, is a direct sign of “educonomic” inflation – again the decrease in purchasing power of our educational experience and more importantly threatening the experiences of generations to come.

Problem statement 3: While “*practice maketh a human perfect*”, practice without thought makes one a machine without humanity and possibly morality (of course, morality may be deemed to be subjective). Repeated solving of questions based on a set of formulae are surely a way to memorize the formulae, however they do not lead to development of a conceptual understanding in most cases. Why do we solve problem sets? A key aspect of “education” is to develop problem solving skills, so that one day we are able to first identify unsolved problems and then attempt to find solutions to the unsolved problems. Education aims to develop an

intellectual integrity, so that we become capable of not only asking questions to which answers do not yet exist but also of answering the same question in different ways even if they arrive at the same conclusion(s). This is what drives discovery and innovation.

On the contrary, limiting our educational pursuits into the boundaries of literacy by simply practicing only question banks and pushing these question banks in the name of sophisticated terminologies such as AI (Artificial Intelligence)-based learning may provide the illusion of mechanically sound results which come with a baggage of severe mental restrictions. An unforeseen, and unfortunate, side-effect of such illusions is the loss of “dignity of labor” in our newer generations – instead of appreciating the value of creating the best outcomes for any job that comes our way, we seem to be preparing a generation that are interested only in materialistically “best jobs”. This undermining of creative-currency in our current approaches, in my view, results in another aspect of “educonomic” inflation – the decrease in purchasing power of our educational experience aimed at extracting the creative best out of us in whatever sphere/area interests us.

Possible solution: How do we overcome the above problems? In some ways, the development and emergence of the Montessori education system in Europe, and subsequently the United States, in the early 1900s mirrored the educational excellence achieved in ancient India through “gurukuls”. Interestingly, in modern times, the IIT system in India is reflective of the ancient gurukul system of education by design. The emphasis is on maximizing teacher-pupil contact inside and outside classrooms, while allowing students to explore their co- and extra- curricular interests. Further, the freedom along with the responsibility of making creative choices for a holistic undergraduate experience is inbuilt into the curriculum.

For example, at IIT Delhi more than 50% of the academic curriculum comprises of elective courses. There is a large portion of project-based learning, both in required and elective courses, where students have the freedom and the responsibility to not only execute a project, but also

conceptualize, design and comprehensively plan it. This brings variety into the classroom – every individual or a group of individuals plan their own activity according to their own interest(s). Everyone is also immediately able to observe the different approaches used by everyone else in the different projects. There is a much better appreciation for the effort put into a project rather than simply how flashy the outcome appears. The simplest idea, executed thoroughly, collectively stands out for its elegance.

Thus, it is possible to control this “educonomic” inflation, even if it appears to have gone out of control – introduction of more project-based learning at the school level, especially in current times. The possibility of integrating more project-based learning into our education system holds the promise of a child, and hence coming generations, appreciating the intrinsic motivation of conducting the activity for learning, rather than looking for extrinsic rewards for carrying out the activity. An appreciation of “*the work is its own reward*” is an important aspect for a child to imbibe from early on. When one is asked to design, plan and execute a project, a teacher fulfills the need for tools, techniques and guidance. As one plans and/or proceeds to execute a project, appreciating the value of learning what is “inside the box” (i.e. in the curriculum) automatically emerges before falling into the cliché of “think outside the box”. This promotes more creative and collaborative interaction not just within peers but also amongst teachers and pupils.

Of course, such an educational practice has to ensure a safe distance from personal biases and beliefs (for teachers, students and their parents). The evaluation system of such project-based learning depends on how much depth one went into rather than how much flashy the outcome appears to be. Maybe this is one of the implementable solutions to the problem of “educonomic” inflation.



The author is grateful to the Macmillan Education India for constructive inputs in this article. He is currently a Professor at IIT Delhi. He was one of the founding faculty members for the Kusuma School of Biological Sciences at IIT Delhi and was also instrumental in execution of the IIT-PAL (Professor Assisted Learning) initiative of MHRD (now MoE) of Government of India. He has been associated with Macmillan Education India for the last few years as a part of the “Macmillan Budding Scientist” awards program for middle school children across India since its first iteration. Recently, he was consulted by Macmillan Education India for the development of a learning solution called ALTURA – Advancing Learning and Teaching Using Resources and Assessment. ALTURA is an LMS based collaborative learning solution for young learners and focuses on project-based-cross-curricular approach to learning thereby encouraging children to develop 21st century skills of collaboration, critical thinking and creativity. In addition to active collaborations with education experts such as the author, the Macmillan Education India team finds inspiration in the following thoughts:

“Creativity now is as important in education as literacy, and we should treat it with the same status.”

– Ken Robinson

“There is no doubt that creativity is the most important human resource of

all. Without creativity, there would be no progress, and we would be forever repeating the same patterns.”

– Edward de Bono

