

Management Education 5.0, the NEP and AI: The Unwired Connection

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ABSTRACT

Ever since we embraced a new phase of Globalization in the early nineties and faced the glimmer and glitter both as outcomes, our thought process must explore how the further onslaught of the information age has changed the very fabric of 'Management education'. We all understand why is management education set to intrude more and more in every other field of education in the years to come. Not only the Higher Educational Institutions (HEIs) but also school curricula have begun integration of management thoughts and practices into secondary and higher secondary classes. It is not merely an educational fad but a necessity. It is generally talked of that what matters today is the tussle between the resources and its utilization. And the astutely managed operations pave the way for success.

In a recent development, the educational system has been subject to an overhaul through a mandate called the 'New Education Policy' (NEP) and still is being phase-wise implemented to recast an educational system that worked for more than a century, just to make our system more suitable to the emerging world trends and henceforth our young generation which is so zealous about achievements and excellence in the 'quickest' possible time, even over-powering gestation periods in some cases! Also, there has been a recent buzzword about the array of Information technology related interventions in everyday affair, professional works and even education – Artificial Intelligence (AI), Machine Learning (ML), Internet of Things (IoT) and many more alike! Now considering the current situation, it becomes imminent for us to ponder about the 'unwired' connections involving these three entities, that is, management education, the New Education Policy and of course, the AI. This article tries to look into the subject with a beamed approach on how our Management educational system shall be able to accommodate, assimilate and evolve over a certain time period to emerge as a transformational recourse towards the desired objectives.

Keywords: Management Education 5.0, New Education Policy, Artificial Intelligence, Machine Learning, Bloom's Taxonomy, Design thinking, Collaborative learning.

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INTRODUCTION TO MANAGEMENT EDUCATION AND GENERATIONS

We are effectively into the fifth generation of Management education in India. Or let us call it Management Education 5.0 for the purpose of understanding how transitions and transformations have had an impact on its functioning. The *first generation* dealt with breaking up the Commerce stream and emergence of 'management education' being positioned as an education meant to provide trained, seasoned and immaculate managerial and executive personnel to emerging industries within the country. It pinned its presence and functioning on borrowed learnings from traditional streams of sociology, psychology, statistics, anthropology, law, engineering

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apart from of course the parent – commerce and got managed by educationists drawn from grandmother stream Economics and mother stream Commerce. Also, there were separate Institutions established by the Government, like the Indian Institutes of Management (IIMs) in addition to big Universities appending

Management education programmes to their basket. The objective was merely to provide a more suited executive to the changing needs of our industrial set up, specially big industrial units set by either the Central or the state Government or a few by big Industrial houses of that time.

The *second generation* of Management Education came up with the Government setting a new tone of business called 'Liberalization' meaning breaking away from the license raj that was actually harming the business in the longer term. The then financial situation of the country prompted the Central Government for outrightly opening up some sectors of the economy for competition where even foreign players could play. The result was thought of for our industries becoming more competitive. From the perspective of Management education, it was a challenging job providing managerial work force to the industry as an upsurge was expected in the Human Resource needs. So, through the regulatory body, the All India Council for Technical Education (AICTE) under the then Ministry of Human Resource Development, proposals were invited from privately funded, managed institutions (existing or upcoming) to start new Management programmes in the post graduate studies by the name of Post Graduate Diploma in Business Management (PGDBM) on the lines of what IIMs were doing. This ought to be two-year full-time programme, supposed to be equivalent to the fancy 'Master of Business Administration' (MBA) programme of the traditional Universities operating under the regulations of the University Grants Commission (UGC).

Several such programmes and new standalone Management Institutions came into existence in the nineties, the era to which I belong! There was a boom in the Management Education sector too. There was a dearth of Management teachers in India, so the task was largely taken up by allied subject teachers already doing the job, some Industry professionals adding up a faculty credential to themselves by assigning themselves a tag of visiting faculty (at multiple Institutions at their place of stay). There were Management education hubs created – Delhi, Noida, Bombay, Bangalore, Pune, Calcutta, Ahmedabad, Lucknow, Jaipur, Hyderabad, Cochin, Madras, Bhubaneswar, Indore, Raipur, Bhopal, and a few more becoming prominent centres. Later smaller cities caught up. Specialized Management Education Institutions emerged. And everything went ahead with leaps and bounds. It brought newer initiatives, newer educational directions and novel business placements but then challenges outnumbered these!

The *third generation* of Management Education comes to the fore around 2010. This education is marked by firstly consolidation which led to the Business Schools defining excellence parameters, related to curriculum, pedagogy, industry liaison (training and placement), ratings (nationally and globally by some private rating and ranking agencies), hiring learned teachers exclusively drawn from Management stream with core Management knowledge (mostly youngsters at Lecturer or Senior Lecturer levels) and a surge in educational cost to the seeker. Simultaneously, as it happens, simultaneously with consolidation, there also goes weakening, and it happened in Management Education too, those who could not manage consolidation or further building up the institution and resources, ended up their operations or were somehow able to survive with a more generic basket of programmes other than Management. Definitely, Management Education is not a cup of tea for all aspirants! Further, the global slowdown too affected the functioning of Management Institutions across the country. Overall, the trend continued till the Corona Virus stagnated the world for quite some time.

In the second decade of the twenty-first century, the focus began on enriching and diversifying the content of Management Education. For this, impetus grew within teaching community for further higher studies, those armed with only a PG degree plus some teaching experience started getting enrolled for M.Phil. or Doctorate degree programmes and it was rather difficult for working persons getting enrolled for PhD programmes. By the end of this decade, India was witnessing a growth of private Universities, some funded by corporate houses while others by budding entrepreneurs who were already in some business. And we should not hesitate to say that a business angle too was prevalent in the thoughts of such establishments. The Government was preparing to launch a draft on the New Education Policy not only for Higher Educational Institutions but also Secondary-Higher Secondary and School education, in other words, for the entire educational set up in the country.

Reasons were simple, we had an extremely big aspirants for higher studies and it is really not possible by any Government to scale up educational system without the cooperation of venture capitalists or promoters from private sector. Moreover, the Information Technology catalyst was already in vogue, the Corona Virus accentuated the usage of the different IT based educational platforms during 2020-21 that also presented

an idea of Online education as an approachable, simple, cost effective medium of instruction. Many Institutions adopted the practice as the only available alternative but even today, many such practices continue.

The pros and cons are always debatable and it is outside the purview of this article to comment on the same, but then this unfolded the *fourth generation* of Management Education which is going to be lived till say 2026-27 and then the *fifth generation* Management Education shall begin with full scale matured involvement of tools related to Artificial Intelligence or Machine Learning for different Management Programmes, the contents of which too shall change as per the industrial needs! It is really astonishing that many Private sector Universities in India have begun talking about usage and integration of AI in the curriculum across streams – be it Engineering, Technology, Humanities, Basic Sciences, Legal Studies, Business Studies or Management Education. This actually marks the beginning of Management Education 5.0. This seems to be running parallel to the fourth generation. Many Institutions in the country are still in the mid of the processes of the fourth generation of Management Education while few proactive ones are expanding to new campuses in heavy demand cities with integration of the newer tools like AI and ML which are supposed to work in consonance with rapid changes in industrial demand which is springing up due to tech-embrace by industries across the world, and we are no exception!

Management Education 5.0

Management professionals have the instinct to generate a lot of notions, and the latest in Management Education is Five point Zero! We have been through an educational process where most of the things we learnt were teacher or trainer centric. We liked few subjects (nomenclature is Courses, now!), disliked few but had no option. We had to undergo that sturdy though robust learnings highly concentrated with in-depth syllabi being taught by senior academicians who were supposed to be experts (within the then defined parameters). No deviations were allowed, just classroom lectures, practicals where necessary, field-work if the subject permitted and year end examinations. Similar structures continued in many traditional Universities for years until it was mandated by the regulatory bodies to turn to Semester system with a more variety of evaluations and accommodating 'continuous' evaluations as a part of entire academic exercise. All these earlier continued without any mention of the *Bloom's Taxonomy* (an educational

model that splits learning into *three* domains of knowledge, emotion and skill, revised in 2001 for change from noun to verb) which is increasingly finding usage in educational system in India for learnings and assessments along with the (compulsory) roll-out of the NEP!

Management Education 5.0 (ME5) will definitely incorporate the Bloom's Taxonomy (BT). Before we move further, let's understand it briefly. It is based on a premise that all learners must start with basics, before progressing to advanced and complex learnings. As per the latest domain, the terminologies include – Remembering, Understanding, Applying, Analyzing, Evaluating and Creating. Cognition (mental process of knowledge acquisition and understanding through thought, experience and senses) has been put into Factual knowledge, Conceptual knowledge, procedural knowledge and Meta Cognitive knowledge. The focus is on 'need for Achievement' (drawn from perhaps Behavioural Sciences / Applied Psychology) to be successful.

Now an educator or course designer uses this framework to design courses and hence, programmes. The first one is how to structure the course? It needs to cater to basic facts and concepts without straightaway forging into higher-order thinking. The second one is How quickly to introduce new concepts? Means whether progression to higher levels is possible or not! The third one is reinforcing the concepts during the progression while the next one deals with assessment levels. There have been criticisms across, as is expected in a healthy debate, but out of context here. We need to understand why the BT could be of some value in ME5. With BT, NEP, the ME5 seems to be aligning itself to the 'digitization' and upcoming 'global practices'. Alternatively, it means unleashing and leveraging the power of data analytics and artificial intelligence to offer 'personalised learning experiences' to the learners.

Now, let's move further, what else does ME5 signify? The major part is obviously the digital transformation that has already begun since a couple of years now. The other attributes are human-centrism and more so learner centrism. Taking NEP into consideration, one major input is multi-disciplinary and holistic nature of the institutions imparting Higher education (contextually – Management education) that needs to be developed within the upcoming decade with a targeted enrolment, less dependency on affiliations and more on self-sustainability and also life skills and extensive use of technology (here is the catch!). The



systems are expected to be such that all learners thrive in it. And it speaks about teachers being at the core, obviously, of the learning process. Need for outstanding research, its continuous review and progress, is yet another dimension unique to the HEIs. We shall pick up these now for discussion.

In the Management Education system, let's say during the third to fourth generation transition, we witnessed a lot of emerging fields (obviously from the core ones) that means more fragments in specialization areas of management suiting to 'niche' needs of the industry, for example, the traditional studies in Production and Operations Management gave rise to studies in Logistics, Supply Chain, Warehousing, Process automation, Packaging, Transport optimization, digital twins, and many more, and each of these meanwhile have grown too big to become a super-specialized area of this core! Now, ME5 shall talk about how the digital technologies shall come down to innovation across these fragments. It is here that the student and the teacher shall learn and discuss simultaneously.

It means, the modern learner, by choice or by compulsion, is closer to technology and hence, this has become a learner-centric approach. It comes as a closed loop with this education preparing young generation with necessary skills, mindset and adaptability required for thriving in a rapidly changing scenario to develop a society which needs to be technologically integrated for sustainability. Such a society shall impact directly on the educational system, including ME5, by integrating it with welfare and holistic learning. The pursuance of such learning experiences shall enrich the overall educational process focusing on personalized, holistic and continuous learning in perfect consonance of the NEP objectives. In ME5, there is obviously more attention on emotional skills, social awareness and ethical values for inclusivity as well as well-being.

Technology has to be considered as the modern enabler for a better quality of life and social living and progress. Digital literacy and technical dexterity are bound to contribute to societal advancements. Collaborations have been existing between various stakeholders in almost all genres of Management Education. ME5 calls for the same but through technology initiatives and integration, be it Institution-Government or Teacher-student or Institution-Corporate. All such collaborations shall intend to generate the needed eco-system for the proper assimilation of educational and learning efforts.

Let us first see as to how 'Artificial Intelligence' (AI) shall impact the ME5? AI talks about replicating the human brain almost similarly. Problem solving and decision-making through AI is expected to be on similar line using machine learning, simplified, we can say that machine can do a process similar to a human being by learning the same through repeated acts of the humans hence few things we can hand-over to the AI system. UNSECO too is committed to help the member states achieve the agenda meant for 2030 through equity and inclusion. AI is expected to impact the education through an array of attributes which are considered to be game changer in ME5. The first one is *personalised learning*. Content what student wants to study and can study shall be put accordingly by the AI system. It can be done through data analysis of students and their performances. Personalized recommendations are made through AI for learnings and assessments enabling students to learn accordingly. This is what is learner-centric approach. Moreover, AI enabled learning systems can provide interactive and real-time succor to learners. Machine Learning and Natural Language Processing (NLP) get involved to solve student queries! Further, virtual classrooms and remote learning, flipped classes, hybrid classes, etc. can help students gain knowledge and exposure from across the world by the experts.

AI can also help in *assessment and evaluation*. It can automate the grading process for assignments, tests, examinations or any other evaluative mechanisms for the learners. It can provide *feedback* to help students continually improve on their performance. AI can analyze large data to identify patterns, trends and correlations like between learner performance and engagement and correlating further to learning outcomes. It can help redesign curricula pedagogies and other student support mechanisms. AI can create *adaptive assessments*, means, adjusting questions as per the capability of students, again a learner-centric mechanism. It helps gauge the performance and help students identify the weak areas and work towards improving the same. NLP helps AI to develop chatbots, *virtual assistant* that can interact with learners, answer their pertinent queries, provide guidance as needed. *Predictive analytics* can forecast student performance and identify challenges like drop-outs. AI can muster up *collaborative learning* like document sharing, collaborative problem solving, community engagement and gain further insights into newer literature that too gets identified through AI based upon relevance and requirement.

The Upcoming Industrial Scenario and ME5

With the onslaught of emerging technologies intervening to redefine Management education over the upcoming decade, the industries too are witnessing shifts in their overall business operations. There is a core sector that not only contributes, or at least is expected to contribute, to the country's GDP and overall industrial scenario but also inflicts fresh thoughts on how the new generation should be guided and trained to meet the emerging needs arising out of the techno-embrace. This core sector is actually the traditional industrial base that is 'asset heavy' (more so manufacturing and related) whereas the emerging services industry may be partially or completely digital in its operations making it somewhat 'asset light'. Services have been contributing more to the nation's GDP for decades now but then co-existence of manufacturing and services must remain.

It was understood before that the modern IT enablement shall be restricted to mostly the services sector until the wave of AI and ML that has started impacting the manufacturing sector too. Businesses are supposed to be at the inflexion point. Innovation, disruption and transformation are here to stay for every industry. With advances in computing and availability of big data, the industries have begun reshaping themselves, and that is exactly what Management education is expected to follow. The new drivers of value creation shall undoubtedly be the AI and ML linked operations. The very productivity of industrial assets and delivery of personalized business solutions is bound to push Management education to newer dimensions not thought of as yet by many. Industries shall coalesce their best practices (and hence products) along with the digital best to get the best through a new strategic approach. And later we would find a merger of industrial and digital domains led by AI and ML.

There will be more real-time insights leading to a new and better competitive advantage where strategy shall get managed digitally with a better and elated Customer experience. Asset heavy industries or more so the core sector is likely to integrate with the business propositions of Asset light industries, more so the services that are digitally integrated. Automobiles are no longer only machines; they are actually moving computers managed through AI and ML (for cars read Tesla!).

Real Estate industry shall see new concepts with climate control housing and also other controls. It is like leveraging the intelligence and power of humans

and machines respectively to redefine the competitive advantage. Computing algorithms were thought of hitherto as restricted to engineering and technology but then these are finding new usage in fields like Healthcare-Medicine, Legal affairs, Psychology, Finance etc. The Education sector is seeing personalized tutoring. In all, the products' and services' experiences are to be made better through application of AI and ML and data being increasingly generated.

Few observations that we need to run quickly on the industrial platter could be – integration of physical and digital domains (Thereby creating real-time data that is never static), humans and machine, both learning together to reap possible business benefits, businesses becoming more skewed towards digital technologies at the behest of humans only, decision-making increasingly being handled by such digital technologies leaving humans for a more creative work rather than routine ones that can be handled more precisely by digital interventions, partnering with delivery institutions who can provide with real-time data (partnerships for data-based alliances). The signal is clear – combine the human and machines (technologies) to leverage the same for more effective efficient business operation!

So, what could be the changes we can or need to witness in Management Education as a result of the discussed shifts in the industrial operations? We need to have the A-B-C-D-E-F formula: A for AI, B for Blockchain, C for Cloud, D for Data, E for Executional excellence (digital) and F for Futuristic. The Future Next Managers need not only knowledge, skill and competency of the modern era but overall possess a mentality to prosper in the ever-changing business environment. Business models have changed and so have business operations and are likely to alter more incorporating more innovations and disruptions. AI can provide insights in analyzing, simulating, predicting the success of potential business models which are supposed to be game-changers in future. Students need to understand how traditional business models evolved over a period of time and how changes can be incorporated in near future. *Business modelling* through AI and ML should be learnt as cases in the management curriculum.

Continuous innovation and adaptability are necessary to forge ahead on the competitive landscape. AI powered tools can help the students in analyzing the dynamism of competitive advantage by analyzing the real-time data and trends embedded therein. This can predict impact on future business performance. Modern businesses cite the trio of ESG – Environment, Society



and Governance as important metrics to analyze the success of any business. Financials are undoubtedly important but then they might not reflect the complete picture of stakeholders' expectations, hence, inclusion of the ESG may provide a more comprehensive measure of business performance and AI can help do it better through real-time data analyses and business cases.

Another in-thing is the *Design thinking*. Succinctly putting it, Design Thinking is a human centric approach to innovation and it draws from designer's toolkit to integrate the needs of people, the possibilities of technology and the requirement of business success. Cross functional teams work here. Out-of-the-box thinking is required to considered the traditionally rejected solutions to any problem. The process aims to satisfy three criteria – desirability, feasibility, viability. Means, people combined with technology can bring in profitable solutions, similar to the concept aired elsewhere before in this article. This thing can be embedded in the management curriculum. Virtual assistants and AI-based *collaborative tools* can also encourage cross-disciplinary learning, bringing together design, business, and technology viewpoints to develop ground-breaking solutions.

Another major area of AI intrusion happens to be in the arena of Marketing. Traditional techniques of Marketing Research have given rise to another field called *Marketing Analytics*. AI based and enabled Analytics and Digital Marketing platforms are going to rule over at least for the upcoming 10-15 years and since big data generation is already in vogue, it shall provide good hands-on to the students with real-time data and advanced analytical tools. Further, more *inter-disciplinary* nature of courses can be explored with the applications of design, technology and data science. As far as entrepreneurship is concerned, the AI has already started painting a bigger canvas than expected to unfold many start up scenarios where investors, mentors and the ideators share common platform in expanding their ideas beyond the imaginations.

Time has arrived to have more 'DeBonos' (author of Out-of-the-box thinking, Six thinking hats etc.) in the curriculum and practices of creative execution and innovative non-traditional approaches of understanding and solving problems – here, business problems. Curricula should necessarily integrate environment and tools encouraging problem solving through innovative approaches. AI in fact prompts us not to discard weird thoughts and ideas as they might be doable. *Immersive learning*, hands-on experiences have become order of the day for learning. Theoretical base undoubtedly is

necessary but then more emphasis is needed in the real-world scenarios. By simulating such real-world scenarios, AI (and other intervening tech tools) can help learners gain practical experience and apply their theoretical knowledge to real-life situations. Sensitization to *data privacy and security* issues in the light of the 'AI-hype' needs to be bolted to the modern curricula. And not to forget that it is the time for collaborative learning!

CONCLUSION

Some preliminary thoughts regarding the temporal connection, unwired one, involving Management Education, the New Education policy and Artificial Intelligence has been put forth at a time when the AI is in a state of hype and the NEP is getting evolved slowly. And Management Education, we know, is here to stay, rather shall become more spread across every professional endeavour that could be thought of. Some important conclusions can be put as under:

It is no more a transition, but a transformation in Management Education that we have started witnessing across few dynamic Institutions in the country.

Business transformations (through AI) is forcing Management Education to change and hence the entire curriculum is in for a major shake-out.

Real life experiences have been traditionally incorporated in learnings across Management curricula but the availability of real-time data and the analytical tools have thrown up more challenges in this context.

Data driven decisions (3D) are the order of the day in industries, irrespective of being Asset-heavy or Asset-light, hence, students' training should be across those tools that find applications in industries, such tools shall increasingly be AI-ML based.

All students, irrespective of any stream within the management realm, have to necessarily possess knowledge and skills for data privacy or secrecy and security issues.

The pedagogies need to be overhauled to incorporate learning mechanisms like hybrid and flipped classes, in vogue at premier Institutions now.

Implementing AI-based learning tools, including personalized learning platforms, virtual assistants, and adaptive assessment systems, can improve the educational experience as it can assist instructors in tailoring the learning process to suit individual students' requirements, guaranteeing targeted care and mentoring.

Project-based learning in collaboration with relevant companies across key performing sectors, can help the

students to apply their AI learnings and expertise to real-world business problems or scenarios.

There exists a need to promote redefined business ethics along with cyber dimensions in legalities in the management education scenario. This shall make the students more sensitive to modern corporate and societal requirements and norms.

Cross disciplinary collaborations shall be the order of the day, integrative studies, as also suggested through the NEP guidelines, will provide the students a clearer view of the business situations.

Along with students, the faculty too needs to learn both the concepts-applications of the emerging fields affecting businesses along with pedagogical tools that modern learners identify to stay with.

The fifth generation of Management Education is here to stay for 10-15 years and it shall not be possible to directly adapt sixth generation from fourth, hence, the via mechanism is necessary for all.

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