



Reimagining Management Education from Design Thinking to Actionable Insights: Technology as a Game Changer

Dr. Satendra Kumar¹, Ayushi Singh²

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¹Director, Master School of Management, Meerut, UP, India
 Email: satendrasoam@gmail.com

²Associate Project Manager, Rakuten Insight. Email: ayushi121196@gmail.com

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ABSTRACT

This paper evaluates how technology serves as a game changer in contemporary management education, successfully bridging the gap between theoretical design thinking and actionable insights. Driven by rapid environmental shifts and changing stakeholder expectations, business schools (B-Schools) are moving away from traditional, purely conceptual instruction. Utilizing an exploratory methodology based on secondary data, the study explores how the integration of advanced tools like Big Data, data visualization, and Artificial Intelligence (AI) enhances student competitiveness and prepares them to navigate complex, data-driven corporate environments. The research underscores the transformative impact of the COVID-19 pandemic, which acted as an unprecedented catalyst for digital migration, boosting remote enrollment and propelling the Ed-Tech sector forward. Although B-School leaders report high confidence in their ability to supply tech-savvy graduates, a notable gap remains between academic pedagogy and actual industry requirements. The paper concludes that successfully institutionalizing a design thinking approach requires comprehensive faculty training and curriculum updating across all functional domains. Ultimately, embracing these digital ecosystems is essential for fostering adaptable, future-ready business administrators and entrepreneurs.

1. INTRODUCTION

The management education is a field of study expanding its roots deeper and wider in respect to its scope and usefulness for the corporates. The business giants needs the employee who not only understands the business but also is good at coping up with the changes expected in the environment and the technological changes are the most common and ready to implement change these days. Hence, mindful scholars have now starts thinking the technology as the part of management education. The Management Education is one of the disciplines of Higher Education in which the students are taught to be business managers, leaders and administrators. It is a process of imparting or acquiring knowledge to develop the members of executive or administration of any organisation or business. Students are trained with techniques, practice, science and art of

managing, organising, controlling and decision making being resourceful and efficient in respect to time. Students are also instructed to be able to work in the broad spectrum of business development.

Design thinking is a non-linear and iterative process where a team use to understand the challenges, redefining problems and get creative and innovative solutions to test. It involves phases like: Empathize, Define, Ideate, Prototype and Test and is useful to tackle problems those are not properly defined or are still unknown to the world and then to reframe the human-centric ways and focus on what's most important for the users.

Design Thinking revolves around a deep interest in developing an understanding of people for whom the solution is being designed. It helps to develop a relation of empathy with the target user. It gives scope of questioning the problem,

assumptions and implications. It is an on-going process of experimentation, prototyping, testing and trying out concepts and ideas.

The above phases are not necessarily being followed in the same sequence. They might occur in parallel or and repeat iteratively. We

Table 1: The Five Phases

Impact Area	Effects
Empathise	with the users
Define	The needs of users, their problem, and your insights
Ideate	By challenging assumptions and creating ideas for innovative solutions
Prototype	To start creating solutions for defined problems
Test	Solutions

should look at it as an overview of the modes or phases that contribute to an innovative project, rather than sequential steps.

India is rising as an education hub and management education in particular is among the fields having high demand. Since, management education is getting varied; the education providers are looking for more ways of leveraging the infrastructure that is available and focusing on more design thinking as per the changing scenario. Students these days are more aware and have opportunity to choose the right B-Schools as per their career aspirations, field of interest and learning style. Not only that, but B-Schools are also coming up with the ways to upgrade the curriculum in respect to the corporate requirements and changing environments. The teaching methods have also changed in accordance to the modern society that should sound appealing to the students. It wouldn't have been possible without the presence of technology into it. Technology played a bigger part in the management education by bringing different ways and to add life to the content provided and converting designed thinking into actionable insights.

The technology is helping management education cross the hurdles in the last few decades which has made management education a dynamic and robust field of study. The technology has partnered flawlessly with the management education to enable few changes like these:

1.1 Change in Learning Behaviour

The days are gone when the classrooms were filled with students, diligently listening to

the teachers with their heads in the books. Today the education is needed to at student's pace and they loom for the information through different sources to augment and find the best possible solutions to business challenges. To put this into action, modern classroom uses technology to make course content more interactive and discussion based.

1.2 Facilitating Business Forums

It is important for B-Schools to make connections with the peers and industry experts to provide a base to their students. This connection is often be fostered through interaction over the professional forums and groups. The modern management education is trying to achieve this though creating an open online communication group for the students. Through this, students will not only be involved in academics but also in other facilities in the campus life.

1.3 Better Tools for the Students

Students in the management studies are not only provided with the quality education but also some great technological tools at their campuses that makes them more competitive. Now-a-days tools are not just confined to Microsoft Office suit for processing Word, Excel or Power point, but they have extended to the whole array of cutting edge data network to leverage databases and video conferencing as well as Adobe suite. Even the programming tools and the big data that are taking world to storm, and some advanced analytics programs are now also the part of student's course program, so that they can have a hands-on experience on what is relevant to world.

Better Academic Experience: The good academic experience must be enriched with the integration of web based learning being augmented with the classroom based learning. This type of learning model where the web based courses are often self-paced and can be taken by the students in the comfort of their laptops and environments are becoming a common sight. Online quizzes are also in use to get a quick check of the student's comprehension and understanding without waiting for classes to end, breaking the monotony of the lecture and gives the students an increased factor.

These are the few points, how technology is very much integrated into management studies, not only expanding its scope but competitiveness of students in the ever-changing corporate environment.

Management Education being a concern and ever expanding field of study need to be furnished with the changing environment and corporate requirements and design thinking is the way to solve the upcoming challenges. Design thinking in management education has become a necessity because of various factors.

The very first factor would be the whole environment, that is, business, technology or social which are changing rapidly. According to the same, the expectations of the stakeholders including students, guardians and the recruiters have also altered substantially. The second reason would be the rapid advancement in the technology, the offered job profiles and desired skills are also changing. So, to cope up with this change the B-Schools, who are in the race of preparing future managers, are implementing various courses and curriculums to make their students excel in dynamic corporate environment.

The other reason is the competition that is stiff with lots of avenues of learning available to the students in both the online and offline modes. Hence, B-schools are reinventing themselves through their curriculum and pedagogy programs.

For the implementation of Design Thinking as a part of learning environment in

Management Education, both faculty and students must be capable of adapting to change. In the present scenario, it is essential to prepare a management student to become both entrepreneurs and intrapreneur, and this can only be done effectively by imbibing design thinking approach.

Some of the ways through which the Designed Thinking can be implemented in Management Education are:

- By modifying some of the courses and teaching pedagogy.
- By making maximum use of technology, in the regular classrooms and courses.
- By stimulating creativity among the students through different sources in the learning environment.
- Involving small projects that fosters critical problem solving approach.
- Imbibing research and exploratory mindset among the students.

Design thinking in B-schools can be incorporated across all the courses and the functional areas including Admissions, Teaching, Examinations, Research and Training. The purpose is to make students competent enough to identify the problems existing around them, find viable solutions and implement them.

Technologies explore the tools and processes that can improve the quality, flexibility and scalability of management education. New technologies and particularly new information technologies are dramatically changing the higher education institutions and practices. The curriculum now involves the programming language, the different analytics for different field of study in integration with the basic IT courses. This is enabling students, not just to understand the business but also to play with data available to divert the business operation in their favour. Data is playing a vital role in every field of business and technology provides the best tools to bring the data in best of their use.

These courses are now not just confined to engineering or computer courses, but also in use of management studies, to bring non IT background students to that level of

competitiveness. These courses are even mould in regards to the particular subject with the basics of it. All these inclusions are enabling students being the subject expert and with that, students are now able to absorb the whole competitive environment more firmly than before. These courses are so dynamic that it would be very convenient for students to adapt changing environment and requirements of corporates.

2. LITERATURE REVIEW

The demands placed on today's organizations and their managers suggest that we have to develop pedagogies combining analytic reasoning with a more exploratory skill set that design practitioners have embraced and business schools have traditionally neglected. Design thinking is an iterative, exploratory process involving visualizing, experimenting, creating, and prototyping of models, and gathering feedback. It is a particularly apt method for addressing innovation and messy, ill-structured situations. We discuss key characteristics of design thinking, link design-thinking characteristics to recent studies of cognition, and note how the repertoire of skills and methods that embody design thinking can address deficits in business school education. (Roy Glen, Christy Suci and Christopher Baughn, 2014).

Approaching managerial problems as designers approach design problems—and its potential impact on management education. Under a design-thinking paradigm, students would be encouraged to think broadly about problems, develop a deep understanding of users, and recognize the value in the contributions of others. The concept of design thinking can potentially address many of the criticisms currently being leveled at MBA programs. (David Dunne and Roger Martin, 2017)

Design thinking is not only a tool applied to fostering innovation in business, but it is also a novel and prominent approach in education. Being a creative process that enables academics to meet students' needs and to raise innovative individuals, it emerges as a contemporary pedagogic tool, which can be used in all levels of

education. Despite its growing importance, the implementation of design thinking into business education is slow and partial, although business education today is in a crisis as traditional pedagogic tools fall short of raising individuals who can meet the challenges of the 21st century. This study explores current trends in applying design thinking into higher education, with a particular focus on the strategies of leadingschools. Using a case study approach, we provide an initial road map for educational organizations, and in particular for business schools, which strive for integrating this new tool into their curriculum. (Gökhan Mura and Melike Demirbağ-Kaplan, 2017)

Global competitive strategies are increasingly becoming technology- driven. Technology has become the great equalizer among companies and countries. Technological innovation cannot be achieved without corporate management devoting considerable energy and investment to developing effective linkages between science, engineering and management. Done well, these linkages can ultimately produce and provide products, processes and services that represent a cohesive and distinctive corporate technological competence. This competence, then, becomes a primary a tool for achieving the firm's competitive advantage. (Michael K. Badawy, 1998)

The design and delivery of a graduate-level course in management at two universities via advanced information technology, which was used to enable collaborative learning, teaching with transcontinental student teams and multiple instructors, and integration of external expertise. This partnership enriched student learning and expedited faculty and institutional development. We predict that such transformations will increase as schools of management and institutions of higher learning in general seek to add educational value at low cost. (Alavi Maryam, 2017)

In response to recent technological advances and the trend toward flexible learning in education, the authors examined the factors affecting student satisfaction with flexible online

learning.

The authors identified 2 key student attributes of student satisfaction:

- a) positive perceptions of technology in terms of ease of access and use of online flexible learning material and
- b) autonomous and innovative learning styles.

The authors derived measures of perceptions of technology from research on the Technology Acceptance Model and used locus of control and innovative attitude as indicators of an autonomous and innovative learning mode. (Judy Drennan, Jessica Kennedy & Anne Pisarski, 2010)

3. OBJECTIVES

- To study how technology has revitalised the designed thinking process of Management Education.
- To study the changes occurred due to technology in Management Education in respect to Pandemic.

4. RESEARCH METHODOLOGY

Research Methodology is a strategically defined plan for the exploration of the research problem and to find out the answers of any query in research. It is a complete layout, covering up all the factors for analysis. This study is exploratory in nature, where it will describe the technology as game changer in management education through bringing the design thinking into actionable plan. It would also try to study, what technological changes have been came and implemented in Management Education in the situation of pandemic, looking forward to suggesting the proper combination of them. The paper is prepared in a descriptive way using secondary data as, Online published Data, Data from journals/articles/research papers & Unpublished Data.

5. DATA ANALYSIS AND INTERPRETATION

The total enrolment of students in 2013-14 was 5.47 lakh, having 65% of male students. The foreign student's enrolment was 4.54 lakh students, having 2.87 male students in

Management Education. (AISHE, 2013-14)

This number has increased in 2019-20 registering the growth of 3.04%. Still they believe that there is a wide gap between industry requirements and curriculum taught at colleges. The situation of COVID-19 pandemic, has given the opportunity of leveraging the potential of digital education/ e-learning to address the challenges in education sector. Research and Innovation in digital education is the need of hour. (AISHE, 2019-20)

As the data says, the higher education, especially the management stream has shown a growth in the enrolment of students due to online mode, giving a boost to the distance learning. No matter what platform they used but the scope of India management education have attained heights due to pandemic and technological solution inclusion. Still, a wide gap can be experienced between the teachings in the college and industry requirements that could be because of lesser experience and incapability to adapt changes. There is still a requirement of proper research and innovation to cope up with the changes.

There is rapid spread of digital technologies and their potential value to the Indian economy by 2025 if government and private sector work together to create new digital ecosystems. Uttar Pradesh alone added close to 36 million internet subscribers between 2014 and 2018. There is still the chances to grow in the same field for India. While many people have digital bank accounts, 90 per cent of all retail transactions in India, by volume, are still made with cash. E-commerce revenue is growing by more than 25 to 30 per cent per year, yet only 5 per cent of trade in India is done online, compared with 15 per cent in China in 2015. (Kaka, 2019)

As the digitalisation have covered up a larger part of economy and became a regular part of it, the management education need to prepare its students to cope up with the changes and be digitally smart enough to accept any challenges coming up in future. Awareness and uses in regards to changing technologies, digital platforms, and other analytical requirements are needed to be in the course curriculum to build a

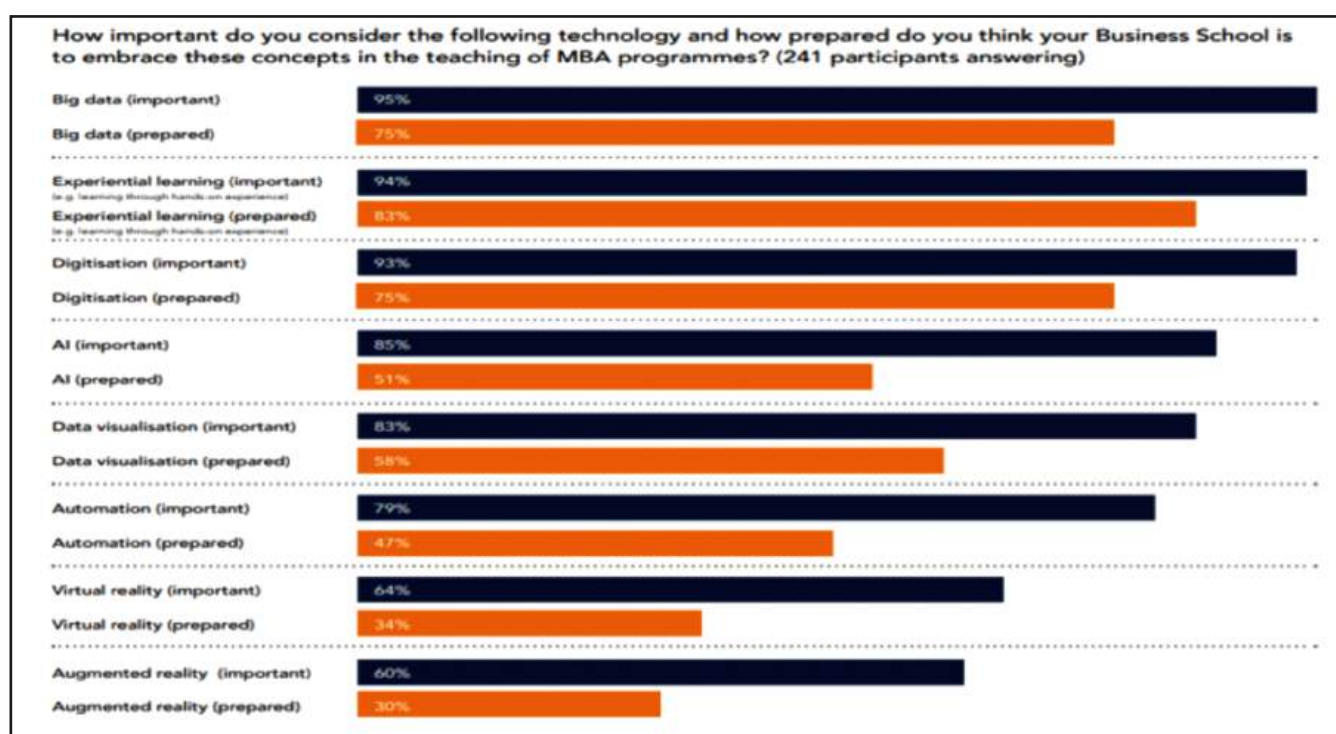
flexible population of students adapting what economy demands.

Big data is perceived to be the most important of technologies with 95% of Business School leaders stating that it is either 'very' or 'fairly' important (64% saying it is 'very important'). This is closely followed by experiential learning (94%), digitisation (93%) and AI (86%). Data visualisation is considered to be important by more than four in five leaders (83%), followed by automation (79%), virtual reality

(63%) and augmented reality (60%). Schools are most prepared to embrace experiential learning (83%), closely followed by digitisation (75%) and big data (75%). Perceived preparation is lower for other technologies (58% for data visualisation and 51% for AI). When asked about the introduction of automation perceptions are equally split, with almost half (47%) saying that they are prepared and not prepared. (Business Graduate Association, 2020).

They tried to reflect it in the chart:

Chart 1: Schools in The Next Decade

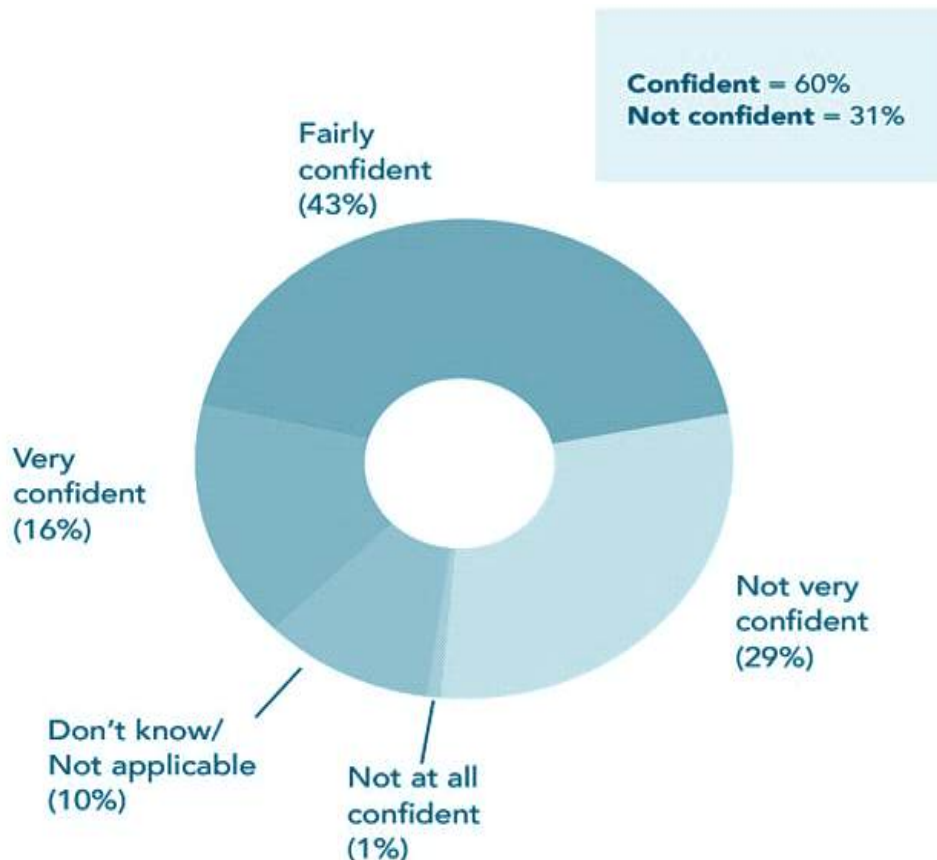


The data reflects, how important these digital changes are and how prepared the colleges, faculty and students are to accept and implement in this into their regular courses. As the Covid-19 pandemic has knocked the economy, it has changes the ways of learning too. The studies are expected to be more technical, than just being conceptual. As every field is now playing on the data, they expect employee to be experts or at least have basic knowledge to get the understanding and bring fruitful insights from them. For these, they need to understand the nature of data and implement their analytical and intelligent ways to figure out the requirements and solutions out of it.

There is mixed level of confidence in MBA curriculum, meeting the needs of the biggest tech employers. Approximately one in six (16%) leaders are very confident, a figure which rises to three in five (60%) when the figure is combined with those that are fairly confident. Three in 10 (29%) are not very confident and 1% are not at all confident. It is also notable that one in 10 (10%) indicated that they 'don't know' suggesting that there is some lack of awareness about how MBA programmes can support technology focused employers. Optimistic leaders are also more likely to be confident that their MBA curriculum meets the needs of the biggest tech employers (60% vs. 20% who are not optimistic). (Business Graduate Association, 2020)

The data is shown with the chart:

Chart 2



As per the shared data, it reflects that to meet the needs to big employers, more than 50% of B-Schools are confident that they can provide the employers will tech-savy employees, who are going to take them to heights in this economical change, combining their intelligence with the artificial intelligence.

Over 1.5 million schools across India closed down due to the pandemic A switch to large- scale digital education is not possible now. Only 24 per cent house-holds have access to the internet, according to a 2019 government survey. A study, done before the Covid-19 outbreak, estimated that the online education market in India was set to grow to \$1.96 billion (Rs 14,836 crore), with 9.6 million users by 2021, up from \$247 million (Rs 1,870 crore) and 1.6 million users in 2016. The coronavirus-induced lockdown further propelled the market demand for Ed-Tech players. India has now emerged as the second biggest market for massive open online course (MOOC) in the world after the US. (KPMG &

Google Study)

Hence, the major changes that took place, were in regards to digital users leading to increasing revenues of Ed-tech players, software providers, and other beneficiaries, who were playing in the same field as source of providing education. Various Ed-Tech start-ups have also been come into role, not just by providing education, but by employing the MBAs in their start-ups.

Market is now playing digitally, so does the education and to create a match between them, there need to be proper designed thinking that is actionable in various ways and through various terms.

The shutdown of universities has also affected the student's learning in universities. In order to ensure the continuity in institutes and universities, one immediate measure is essential. To conduct the class smoothly, online teaching methodology is adopted. Learning management software and open-source digital learning

solutions are adopted by the universities to run online classes. (Tarkar, 2020) This has led to the involvement of parents into the daily classes as well, increasing the productivity of the students.

The online education market size in India is set to grow by USD 14.33 billion during 2020-2024, registering an incredible CAGR of over 21% over next four years. (Technavio)

The companies that came in front as beneficiary of the situation are: BYJU's, Dexler Education, Educomp Solutions, IGNOU, NIIT, Edukart, Simplilearn, Zeus Learning, Meritnation, Excelsoft.

6. FINDINGS

The following finding can be drawn from the data and reports:

- a. Management Education is now more about technical view and implementation, rather than just being a book worm, reading concepts and applying it physically on the business.
- b. Designed thinking for management education has come up with the technological solutions to cope up with the corporate requirements and changes in operation of economy.
- c. Data is now the key of success. Better the data analysis, more will be the success. Various tools and techniques are now in use to play with data. The students of management education must have a great understanding of these tools like, Big Data, Data Visualisation, AI etc. to stand on the expectations of business giants.
- d. Business giants have accepted that what they expect from an MBA graduate is to be experts in technologies and help them to get insights and be decisive regarding those insights.
- e. With the same, the business schools are quite confident about accepting and implementing the changes in their curriculum, so that, the MBA graduates can stand equal to the Engineering graduates and other students who have technical degrees.
- f. Understanding the importance of the same, various subjects like, analytics, digital marketing, automation, programing, etc. have been added to the curriculum.

g. The Covid-19 pandemic has knocked the studies and forced students to sit at their home. It further gave birth to more digitalised form of learning that not only have made chaos for backward class of society, but with that in a positive way have given chances to students for distance learning, that increased the enrolment of students in various courses. Even the foreign students are enjoying the benefit of it.

h. The Covid-19 pandemic has also knocked the economy. Where few business are shutting down, new Ed-tech start-ups are attaining heights in their revenues. Start-ups are coming up with more digitalised ideas to maintain its presence in the market.

i. With the same, they are hiring MBA graduates who are tech-savy and are inclined towards technological learning and implementation of the same in the businesses.

j. Due to all above, the online education market size have shown a great rise and is expected to grow even more in upcoming four years.

k. The Ed-tech giants are enjoying a more than satisfactory revenue out of the pandemic situation.

7. CONCLUSION

The only constant thing in the world is the changes and we must respond to it in an appropriate way to survive. In the same way, as the world is changing in respect to the technology, we must be ready to learn and adapt those changes to remain in the market any anyways. Whether it is a business, education or anything, we must always ready to match the demand that world demands. The technologies have entirely covered the world with its presence, usefulness and ultimately satisfactory results.

The management education is no different from other fields, even it needs to be regularly updated to maintain its importance as a filed and to help its students stand confident, when it comes to corporate requirements. The Covid-19 pandemic is also playing a crucial role in the increasing importance of technology in the field of education, giving boost to online learning,

emergence of online educational platforms and new tools and techniques to be learned by the student.

Ultimately, the solution for revitalising the management education is design thinking that have come up with the solution that is use of technology in the course curriculum. Subjects and topics like, big data, analytics, IT, artificial intelligence are now the focus of both professors and students.

Still a wider gap can be found in respect of proper application of such solution as nothing new can be learned in a day, especially when it comes to technology. The teachers must be trained for accepting and teaching the same to produce a trained student.

As a growing economy, India would definitely be able to attain that situation in management education, as the technology is playing a role of game changer and mother of emergence of various solutions. ■

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