ROLE OF IT REDESIGNING AND RETHINKING MANAGEMENT EDUCATION

Ankita Sharma	**Natasha Narang**
Jagan Institute of Management studies	Jagan Institute of Management studies
Rohini, New Delhi	Rohini, New Delhi

ABSTRACT

Today, information technology has significantly contributed in bringing change to our lives not only in day to day operations but also in the means and mechanism of imparting education. For example, students are no longer required to attend regular classes as they have other options available such as the facility of pursuing online courses wherein they can attend the videos or study materials, discuss issues and problem with the counsellor, submit assignments and perform any other tasks which are required for obtaining degree or diploma once they clear the exams. In other words, today, Information technology in this digital age has relegated education to act as a back end tool while he focuses on performing core tasks. This paper is focussed on an evaluative study which is focussed on the aspect of rethinking and redesigning of management education in this digital age with Information technology acting as a catalyst. The following are the objectives are addressed in this paper. (a) To identify the components which are responsible for rethinking and redesigning the management education? (b) To determine the role that these components play in the rethinking the management education. (c) To determine the means and mechanism which Information technology can play in bringing a change in management education? The design of the paper follows a structure approach. The paper addresses experimental design as the base. The sample so collected is based on the random and convenience sampling with a balanced proportion of technical and managerial students from the NCR region. The sample initially targeted comprised of 150 students, however, after verification and validation activities they were reduced to 120. The data was collected by means of structured questionnaire containing 10 questions. The statistical treatment of the data was performed by means of MS Excel software. The findings indicate that Information technology can be widely used to include aspects such as data analytics and artificial intelligence in the rethinking of management education.

KEYWORDS: Digital age, Information Technology, Management Education

INTRODUCTION

The rapid advancement in information technology has brought a significant transformation in various facets of our life. The education sector is too impacted. Gone are the days when the education system in India was confined to the Gurukul system of education wherein the students were required to be *educated* under the guidance of a teacher who taught them the various components of education from several perspectives in the sense that the students were groomed on the art, skill and application of techniques which were required for a successful living. For example, the students were educated in the art of carrying out day to day activities pertaining to household activities while in other parlance they were educated in the art and usage of weapons and artillery. However with the passage of time, the education system too underwent transformation. For today, we there is a limited the concept of Gurukul and instead we have the concept of mentor and mentee wherein the scope of education is reduced to a specialised stream of education. For example, the mentor is required to educate and guide the student on the basics of career development or preparing the student to become a top class cricketer. Thus, it can be said that in the present scenario, it is the student which decides as to what he wants to become and the skills he wants to develop or enhance according to his career plan. This is in sharp contrast from the Gurukul system of education wherein it was the guru who was the focal point and *who decided* the career path for the student and accordingly developed the path of educating the student. Of late there have been incidences wherein the students *have shown the way* to the teacher to take up a particular stream or career path by developing necessary skills.

With the advent of globalization and the liberalization of economy, significant changes were introduced in the education system of India. The changes were in the form of introduction of new courses and the

redefinition of the existing courses. The prime driver for bringing this change was to meet the demands of the industrial world which was growing up rapidly. Thus, the era was marked with the introduction of Management and Information technology courses. These courses were immediately adopted by various educational centres across the country as the government gave the way to the private sector to venture into the educational domain. With the passage of time, Information technology and Management courses combined with one another and produced the output which is unmatched in the world as it is widely being applied by business units. Thus, today, we are witnessing the emergence of several fields such as Business analytics, Data Analytics, Business intelligence and the like.

According to Carr (2012) the advances in the technologies in the analytics field and business intelligence are assisting Chief Information Officers to delve big, delve faster, delve deep and to delve into the power of mobile business data and the same time focus on cost considerations which will provide the competitive advantage. In the same parlance, Davenport and Harris' (2007) analytics is an extensive usage of data which makes use of statistical, quantitative, qualitative, exploratory and predictive models which provide deep insight into the working of the business processes. And, with the Information technology as the back end the task of delving deep into the data is greatly simplified. In other words, the Information technology acts as a catalyst to *look into the several business operations* at one go.

METHODOLOGY

The study in its present form is designed to address the issues pertaining to the achievement of the following objectives

i. To identify the components which are responsible for rethinking and redesigning the management education
ii. To determine the role that these components play in the rethinking the management education.
iii. To determine the means and mechanism which Information technology can play in bringing a change in management education?

Patrinos (2017) corroborates that technology changes in the workplace demand skills which must constantly be revalidated, modified and upgraded to meet the requirements of the industry and the education systems are prone to be slow to adopt to the changes of the market. Thus education system must constantly be upgraded to address the demands of the industry. Thus, the education system and management education system must be constantly groomed so as to make the students employable for the job market. And, this may be achieved by imparting the necessary skills in the usage of automation, robotics and artificial intelligence. Also, going by the current rate, the usage and applications it is surmised that the machine intelligence is expected to surpass human intelligence. In the same parlance, School, Oxford Martin, (2017), in their study on the vulnerability of jobs with respect to automation concluded that future work force must develop the necessary skills to remain immune to automation as a process. They further contended that the current era is witnessing the return of cognitive skills, specially the non-routine skills that is the skills which require the application of thinking, evaluative and analytical skills. The skills which require attention are

i)   Problem-solving skills to think critically and analyse various data, issues and challenges generated from day to day to operations
ii) Learning skills to acquire new knowledge and to apply the knowledge
iii) Communication skills, including reading and writing and drawing conclusions from the same
iv) Personal skills for self-management, making analysis and judgments and managing risks
v)   Social skills for collaboration, teamwork, management, leadership, and conflict resolution and the ability to solve the same

Based on the available literature, the above points from the basic components of the evaluation process. Regarding the role of these components, School, Oxford Martin, (2017), in the same context highlights that the role played by the above components can be classified in the following order

i)   Formulation of assessment mechanism in the management education. The usage and application of data analytics from the assessment mechanism will provide several inputs to the process of redesigning the curricula of management education and this can be achieved by means of data mining

processes which are catalysed by Information technology tools. In the same context, the school contented that the assessment mechanism will enable the management institutes to develop their own benchmarks and set a program mechanism to surpass the same.

ii) Grant of autonomy as a means to excellence attainment. This is another important role which will be played by the grant of autonomy to the institutes in the form of grants, resources and other requirements which will enable them to stand out among the crowd. Examples, include the IIM's wherein the students have performed wonders

iii) Focus on accountability. This is the another role which is must be enabled as it enables the autonomous institutions to make their own decisions and to take ownership for their decisions

iv) Focus on attention to teachers. This is another important role which will be enabler in the process of redesigning the education system. The teacher must develop the qualities in the students as well as in him/her so as to add value to the society, community and the people at large.

The role of information technology in the bringing about a significant change in the above components.

i) Formulation of assessment mechanism. Mansell, Robin(1999), in his research study concluded that rapid innovations and advancement in Information technology and communications and its applications with the power of performing rapid processing of data is creating several opportunities for tailoring the large amount of data which can be applied to produce several benefits in the form of development of assessment mechanism for various institutes, for various students, for various teachers and for large community of educationalists in particular. For example, the data pertaining to students strengths can be rapidly *data mined* to determine the areas where they can be assessed on parameters which are similar in nature but which can prove to be asset for the students as well as to the institute

ii) Grant of autonomy as means to attainment of excellence. According to The Institutes of Information Technology Bill 2010, the grant of autonomy enables the management institutes to develop their own parameters for excellence. The information technology can assist the institutes in the process of *mining the data,* generating several leads from the online as well as offline data, from primary as well as from secondary data to develop the parameters for autonomy and develop the corresponding plans for excellence.

iii) Focus on accountability. Rochleau,Bruce (2006), in his study concluded Information technology acts as a backbone for the automatic allotment of autonomy for the various interfacing units. This he contends that Information technology acts as a catalyst by bringing about a transparency in the various educational processes and it is this visibility, transparency and hence the accountability is properly taken care off due to pressure from peers, boss and sub-ordinates

iv) Focus on attention to teachers. Britland, Mike (2012), in his study contented that with the Information technology acting as a catalyst in the execution of various operations of educational system, the focus is shifted to the teachers as well. The teachers of today's era are required to upgrade their skills in the usage of technological tools and to be well versed in the application of various critical thinking skills so as to guide the students properly. For, the students of today are also tech savvy and which means that they are required to be taken care off in a different manner. In the same manner, Richtell, Matt (2012) contends in his study that with the advent of Information technology, students are also well versed and this implies that the teacher must be groomed in the art of handling shorter attention spans of the students which is a by-product of Information technology

The study being evaluative in nature, the above components were evaluated on the basis of q well developed questionnaire comprising of 10 questions. The design of the questionnaire was constructed on the basis of the above components. The questionnaire was comprised of two parts with part one capturing the demographic profile of the students. Part 2 of the questionnaire was designed to capture the information pertaining to the above identified components.

Initially the authors had targeted the sample size of 150 students but after verification and validation activities the target sample size was reduced to 120. Thus the response rate of the sample so chosen was to the tune of 80%. The profile of the samples comprise of the students from the NCR region with technical as well as management education background. The choice of the inclusion of technical students was the fact that technical students too are exposed to several management related papers while pursuing

their technical degree course. For example, project management, Database management system (DBMS), Principles and practices of Management and not to mention Quality Management system in IT projects. Thus, invariably management is an integral part of technical students. On the other hand, management students too are groomed to study Information technology subjects such as Microsoft Excel, Microsoft PowerPoint and the like. Thus a balanced approached is maintained in this evaluative study. The data was collected by means of preparing a Google spread sheet and the link to the Google spread sheet was mailed across several management and technical institutions. The data once collected was subjected to verification and validation processes and then was exported to Excel worksheet. Wherein it was subjected to statistical treatment.

FINDINGS
The statistical analyses of the findings of the study are discussed below.

Table 1, below depicts the various components for the evaluation purpose. Each of the measures of the components were evaluated on the scale of 1 to 3 with 1 indicating strong agreement, 2 indicating neutral and 3 indicating strong disagreement.

Components of Evaluation
Formulation of assessment mechanism in the management education
• IT as an enabler to display information pertaining to improvement in current assessment mechanism
• IT as an information sharing to stakeholders to provide open platform regarding assessment improvement
• IT as an enabler to display the results of measurement parameters
Grant of autonomy as a means to excellence attainment
• IT as an escalator mechanism for various tasks which require excellence
• IT as a means to provide objective data base results i.e. display of achievements which will lead to grant of autonomy
• IT as means to display pertinent financial information which will assist in the grant of autonomy such as cost cutting measures
Focus on accountability
• IT dashboard to display relevant information to all stakeholders
• IT dashboard to display academic problem for finding the solutions
• IT dashboard to display proportion of work done by each of team members in group task
Focus on attention to teachers
• IT as an enabler to upgrade skills and knowledge
• IT an enabler to disseminate the knowledge from net and research work to students
• IT an enabler to pursue online courses from leading universities sponsored by the institute

Note: Each of the sub components were evaluated on the scale of 1 to 3 with 1 indicating strong agreement, 2 neutral and 3 strong disagreements

The following are the findings of the above table 1.

Formulation of assessment mechanism in the management education	**Count of Rank of 1**	**Count of Rank of 2**	**Count of Rank of 3**	**Median Score**
• IT as an enabler to display information pertaining to improvement in current assessment mechanism	28	52	40	40
• IT as an information sharing to stakeholders to provide open platform regarding assessment improvement	38	42	40	38*
• IT as an enabler to display the results of measurement parameters	31	64	25	31*

* Median score not being equal to average score of 40.

The above table demonstrates that there exists an element of negative skewness on the response to the variables #2 and #3 as the median score is less than the average score of 40. This indicates that the buy in for the variables pertaining to IT providing a platform for sharing the information is not being looked upon in right sense. In other words, there exists a somewhat an apprehension that IT will not be able to provide what t he respondents are looking for. Also the parameters pertaining to the display of the results of the measurement parameters are not taken earnestly.

Grant of autonomy as a means to excellence attainment	Count of Rank of 1	Count of Rank of 2	Count of Rank of 3	Median Score
• IT as an escalator mechanism for various tasks which require excellence	44	53	23	44*
• IT as a means to provide objective data base results i.e. display of achievements which will lead to grant of autonomy	25	29	66	29*
• IT as means to display pertinent financial information which will assist in the grant of autonomy such as cost cutting measures	35	57	28	35*

*Median score not being equal to average score of 40.

The above table demonstrates that there exists an element of negative skewness on the response to the variables #2 and #3 as the median score is more than the average score of 40 on the parameter pertaining to IT as an escalator for various tasks which require excellence. This is a positive sign which needs to be exploited with IT providing the background and hence measures can be developed to utilize the same. On the other hand there is a negative approach to the variables pertaining to provision of objective information from the data base which will lead to grant of autonomy. Perhaps the reasons needs to be determined and action plans may be developed to make IT a catalyst for the changing scenario in management education.

Focus on accountability	Count of Rank of 1	Count of Rank of 2	Count of Rank of 3	Median Score
• IT dashboard to display relevant information to all stakeholders	30	62	28	30*
• IT dashboard to display academic problem for finding the solutions	27	47	46	46*
• IT dashboard to display proportion of work done by each ofteam members in group task	38	54	38	38*

*Median score not being equal to average score of 40.

The results of the analysis of the findings indicate that there is a mixed response and skewed data set. The variables pertaining display of dashboard pertaining to academic problems and findings solutions gains a positive response. This indicates that students are open to the usage of IT in finding the solutions to the problems. On the other hand there is a negative skewness towards the stakeholders for making use of IT and to bring out an open culture in the management educational institutions.

OVERALL FINDINGS

The overall findings indicate that there are positive indications that information technology can provide definite catalyst for enabling the rethinking process of changing the various approach to the management education. Perhaps, more sustained measures are required to be taken up into consideration for bringing in this significant change in the management education.

Analysis of the various measures which can be deployed to bring the changes in the management education

Table 2, depicts the analysis of the response from various respondents in the study that the various measures which can be deployed.

Variables	Count of Rank of 1	Count of Rank of 2	Count of Rank of 3	Count of Rank of 4	Count of Rank of 5	Median Score& average score being 24
• Problem-solving skills to think critically and analyse various data, issues and challenges generated from day to day to operations	35	26	32	6	21	26*
• Learning skills to acquire new knowledge and to apply the knowledge	20	31	42	10	17	20*
• Communication skills, including reading and writing and drawing conclusions from the same	47	26	29	13	5	26*
• Personal skills for self-management, making analysis and judgments and managing risks	43	40	24	12	1	24
• Social skills for collaboration, teamwork, management, leadership, and conflict resolution and the ability to solve the same	24	46	23	12	14	23*

Note: Each of the sub components were evaluated on the scale of 1 to 5 with 1 indicating strong agreement, and 5 indicating strong disagreements

The analysis of the above table indicates that a communication skill is the key factor that is required in the process of bringing about a change in the management education. Though the data is slightly skewed, but yet it is a strong indication that this aspect holds the key to bring the significant improvement in the process of imparting knowledge in the management education domain. Similar is the case of problem solving skills needed to face the practical problems and solutions for day to day problems. This indicates that the management education should be more practical oriented and must involve more and more of the application of analytical skills as well as the communication skills so as to make it more effective and to meet the demands of the industry. On the other hand the development of social skills and the team management skills are most sought after as in the industrial world most of the work is based on the team management and hence this skills needs to be developed as a part of the management curriculum. The parameter pertaining to learning of new knowledge needs to enhance as it has been rated as low. The reason for these needs to determine and perhaps this may be another case of separate study.

LIMITATIONS OF THE STUDY
Though the study was an evaluative study, yet the study may be customized to include other aspects and variables which can be applied in the process of bringing changes in the management education. For example, we may include the aspect of the role of the aptitude test and the role of the work experience which may provide useful insight in the process of transforming the management curriculum

CONCLUSION

The study in its present form includes the respondents from NCR region with the sample size being 120. The sample size can be increased to 500 and more variables can be included to determine the various factors which can be used to bring changes to the education system

REFERENCES

1. Carr, David F (2012), "5 Business Analytics Tech Trends and How to Exploit Them" retrieved from https://www.cio.com/article/2397920/business-intelligence/5-business-analytics-tech-trends-and-how-to-exploit-them.html
2. Davenport, T.H. and Harris, J.G., 2007. Competing on analytics: The new science of winning. Harvard Business Press
3. Patrinos, Harry A, (2017), "The skills that matter in the race between education and technology", retrieved from http://blogs.worldbank.org/education/skills-matter-race-between-education-and-technology
4. School, Oxford Martin, (2017), "Patrinos, Harry A, (2017), "The skills that matter in the race between education and technology", retrieved from http://blogs.worldbank.org/education/skills-matter-race-between-education-and-technology
5. Mansell, Robin(1999), "Information and communication technologies for development: assessing the potential and the risks", retrieved from http://eprints.lse.ac.uk/26649/1/Information_and_communication_technologies_for_development_(LSERO).pdf
6. Institutes of Information Technology Bill 2010, retrieved from http://www.prsindia.org/uploads/media//draft/IIITBill-2010.pdf
7. Rochleau,Bruce (2006), "Information Technology, Accountability, and Information Stewardship", retrieved from http://www.irma-international.org/viewtitle/28228/
8. Britland, Mike (2012), "How has technology transformed the role of a teacher?" retrieved from https://www.theguardian.com/teacher-network/teacher-blog/2013/jun/18/technology-transform-teaching-students-schools
9. Richtell, Matt (2012),"Technology Changing How Students Learn, Teachers Say" retrieved from http://www.nytimes.com/2012/11/01/education/technology-is-changing-how-students-learn-teachers-say.html