New Paradigms In Higher Education - Integrating For Synergy In Management And Relevant Technology Education

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Abstract - Purpose of this paper is to study the effectiveness of iSMART education (Integrating for Synergy in Management and Relevant Technology education). To test whether it caters to the industry requirement of Tech savvy Management graduates who can leverage latest technology for Business goals in terms of enhanced employability opportunities, befitting profiles, compensation packages and future career paths among students. Is there a differentiated value addition for major stakeholders - students, parents, recruiting companies and the academic institutions, due to the integration of disciplines?

The model offers value proposition to all concerned stakeholders. Students of iSMART education are industry ready and get a lead of one year over their peers, they secure jobs with competitive compensation packages that effectively use knowledge of their Engineering & Management disciplines and maintain focus throughout education on experiential learning. Industry gets Business Managers abreast with latest technology and Educational Institution optimises resources by eliminating redundancies.

Keywords – higher Education, Technology, iSMART, Synergy Management.

I.   INTRODUCTION

Research suggests that the future of education lies in integration amongst disciplines in order to nurture youth who would become multiskilled workers as well as holistic thinkers. Understanding the synergies among various academic disciplines and their interconnections would provide for a rich and more realistic model of the real world in their minds. Since they will be better equipped to define and solve real life problems, they would be preferred for employment by the industry over the ones groomed in siloed approach.

The Model Curriculum released by the AICTE in January 2018 prefaces that "The business world has changed significantly in the past few decades. The pace at which technology has evolved is unheard and unseen. The fourth industrial revolution is bringing advanced robotics and autonomous transport, artificial intelligence (AI) and machine learning, advanced materials and biotechnology. For instance, AI will almost certainly automate some jobs, particularly those that rely on assembly lines or data collection. The mobile internet and cloud technology are already impacting the business world to a larger extent. What is certain is that the future managers will need to align their skillset to keep pace in this VUCA world. It is

therefore imperative for management education to meet the challenges of rapid changing times and technologies."

According to the India's National Science foundation report (2006), most of the businesses are drawing their strategies with Technology as the platform and are implementing them using appropriate technology. There is a strong need to cater to this tech based businesses by parallelly grooming youth with necessary competencies to take on the tech based challenges and ensure smooth implementation of these business strategies. Rampal Anita(2018) quotes the premises of UGC education elaborates that "an integrated curriculum, envisioning an equal status for diverse areas such as liberal, professional, technical and vocational education would be the key to progress."

Today most of the Businesses are leveraging Technology for furthering their business goals. Whether it is about financial technologies that are creating new business models and products in the BFSI industry, digital marketing which is redefining marketing strategies or operations that rely heavily on Data analytics for the best use of enterprise resources; all businesses today are looking for growth to come through the latest technology route.

The changing paradigms in business, are altering the way we conceive opportunities, manage business, and handle

opportunities surrounding business. The young students who would enter the business management field would have to necessarily be equipped with multiple skills in business and appropriate technology usage, integrated in a manner that makes him/ her a T- shaped person where the vertical bar of the 'T' represents their technical domain expertise, the horizontal bar represents the broad horizon of economic, social and business context of the organization to apply his knowledge for fulfilling organizational commitments. Such an integration should help in creating a synergy between engineering, technology and management for creating an integrated SMART education system. (Integration for Synergy in Management and Relevant Technology). The attempt is to address the need of building this newer competencies required by new age managers who will run the technology enabled businesses.

II.   LITERATURE REVIEW

Researchers and authors on the subject of Multidisciplinary approach have been propagating that the real world problems are not separable into disciplines. To understand the concept of discipline Petrie H (1992) quotes Kuhn (1974) "An organized grouping of people who study the discipline, are involved in training of practioners and form social mechanism for arbitrating among various truth claims with in discipline. This usually involves university departments and degrees, national societies and conferences and peer reviewed scholarly journal publications."

Gordon Wolman (1977) stated "The departments in universities and educational institutions influenced by convenience and associated administrative ease tend to encourage specialized, research and education focusing on a particular discipline. However, it would be productive and more meaningful if educational institutions also grapple with socio, economic and environmental challenges, which do not necessarily get slotted into separable groups along disciplinary lines. This helps in cross fertilization of ideas demanded by the solution of such problems and can attract students interested in solving them". The authors further suggest that the problem oriented programs are not a new phenomenon in universities. Recurrent surges of interest in social, economic problems coupled with ever changing technological challenges constantly demand newer , integrated, interdisciplinary courses from educational institutions. In cases where disciplines are irrelevant and insufficient to provide practical solutions, it is not at all clear if they can provide justification for good interdisciplinary education. According to Roy (1979) "At least in those cases where problem is a practical one, the success in solving the problem cannot be the only justification for interdisciplinary education."In general, knowledge fusion is not a change of one's own interest into another, but a process of solving complex problems by creating a concept, theory and methodology for new knowledge with a tool of logical negotiations. Here, logical

negotiations play a role of mediating among various fields, areas, culture and customs, that is a trading zone for gathering ideas from various academic disciplines, solving complex problems creatively, and then producing creative outcomes (Gorman,2010, Park, 2013).

Borrego, Maura; Newswander, Lynita K (2008) quote Davis (1995) who argues that "In an information driven society students need to cope with multiple perspectives to address problems as a system and solve them comprehensively and that interdisciplinary courses can help in developing this perspective." Lattuwa (2004) used case studies to explore the types of learning that interdisciplinary courses might provide. The study suggest that there is a strong need for this kind of training that increases interdisciplinary especially in engineering to encourage systematic problem solving of complex problems faced by information driven society.

Researchers like Sherein Hamed Abou- Warda, (2016) highlight the pivotal role of pedagogy in integrating technological education for creating tech savvy ventures. "The suitable pedagogy should include classroom, labs, informal learning, mentoring, networking, simulations, and action learning to make students more innovative, pro-active, highly motivated, self-confident, willing to challenge, better negotiators, communicators, problem solvers, leaders, decision makers, thinkers, less risk averse, less dependent, able to live with uncertainty, capable of recognizing opportunities." Further nudge on interdisciplinary education was reported from the study by Naseem, Jawiria, and Lora Fleming. (2018) who state "Reshaping pedagogy in all disciplines, so that there is a greater emphasis on active and inquiry- based learning, will make university education move beyond the current instrumental use. This starts with making degrees interdisciplinary, and providing students with a sound foundation in lifelong learning education."

Guided by the secondary academic research of Corwin (1993);Lattuca et.al.(2004); and speltet.al. (2009) showing the need of integrated education, and employability studies conducted by Organ (2001); Nair et.al (2006) the researchers focussed on studying the educational programs being conducted globally that were integrating Technology, Engineering and Management disciplines. It was found that there were a number of institutions across the world offering the integrated programs in Engineering, Technology and Management. Some of them were at the undergraduate level while some others were offered as a Post graduate level one year program.

III.   GAP ANALYSES

Independent secondary research and benchmarking data compiled by the placement department of the institution under study reveals certain gaps in the area of integration of academic disciplines.

The secondary research shows that while there are a few integrated programs globally, and most of them are catering to the industry demands and running successfully, no attempts were made by earlier researchers to study the efficacy of the integrated programs. Hence some questions remain unanswered, viz.-

Are these programs which integrate engineering and management education, successful or a fiasco in delivering exactly what they are expected to deliver, need some exploration? The idea of interdisciplinary teaching and learning is a very appealing and powerful tool, however can interdisciplinary knowledge be integrated into curriculum to promote cross hybridization of education? How can research on interdisciplinary education help in creating opportunity value for institutes of higher learning?

This paper takes cognizance of the fact that studies indicating the success of integrated programs, particularly when Engineering, Technology and Management disciplines are blended together, are sparse. In Indian context, there were hardly any comparable courses offering higher education through integrated curriculum of this nature, thus comparisons with similar programs was not possible. This further highlights the gap and emphasis the need for studies on efficiency of integrated programs. To study and explore further using a scientific approach, the researchers studied the models of academic programs being offered at various Institutions in India and created the theoretical framework which best describes the model as an instance of the framework. The researchers have named it as *iSMART* educational framework.

CONCEPTUAL FRAMEWORK

The *iSMART* Educational Framework – Connecting the dots. Objective of the *iSMART* framework is to build professionals who possess technical & managerial education plus an expertise in aligning technology with organizational strategy. Such young professional will be able to improve firm's effectiveness, efficiency, and competitiveness in future Businesses. Graduating students will develop the ability to recognize technology as a key success factor for the enterprise and to harness emerging technologies in their chosen sectors such as finance, marketing and operations.
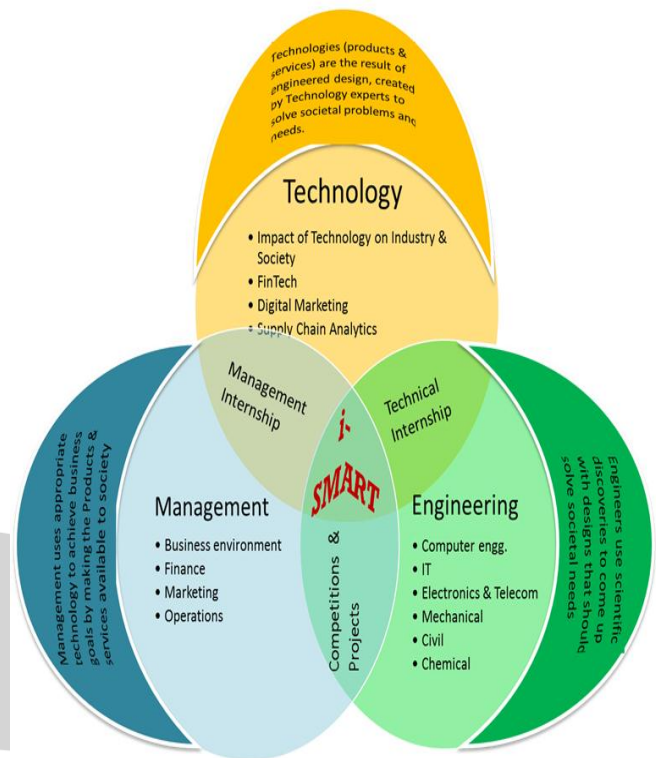

Figure 1: The i-SMART Framework – Developed by Anuja Agarwal & Dasika Chaitanya

Case: Model program of the *iSMART* framework

The *iSMART* framework blends Engineering domain with Management streams and the applications of relevant technology emanating from engineering domain in various functional areas of Management. For instance a student from Civil Engineering should be able to apply the new construction technologies for meeting business goals of quality, efficiency and profitability.

The integration is brought about by including subjects from each domain and creating new blended subjects that highlight the influence of one discipline onto the other. Besides this, integration is brought about by creating opportunities for experiential and challenge based learning through internships that help the students in connecting the dots and finding their own pathways through the mesh of criss-crossing disciplines. (Refer fig 1)
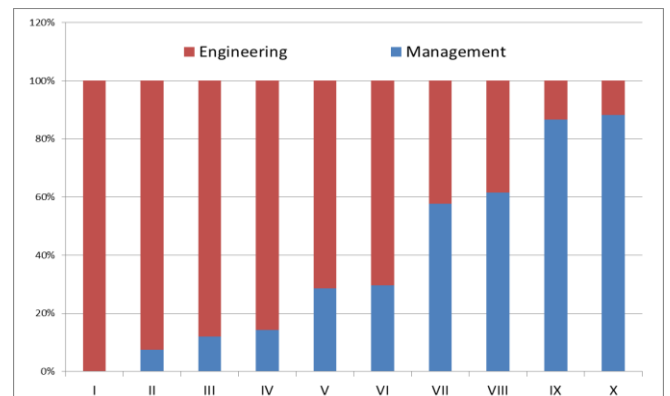

Figure 2: Proportion of engineering and management subjects in the model.

The above model draws its essence from the work of Bull, P., et.al (2017) on "Competency- based education combines an intentional and transparent approach to curricular design." The course stucture and content development is integrated by adopting a systematic integration process (Refer fig 2).This system of having regular board of studies meeting involving industry – academia interaction, guest lectures by industry experts, alumi meets, MOU with industry to develop industry ready curriculum help in designing and developing courses which cater to industry requirements. (Refer fig 3).
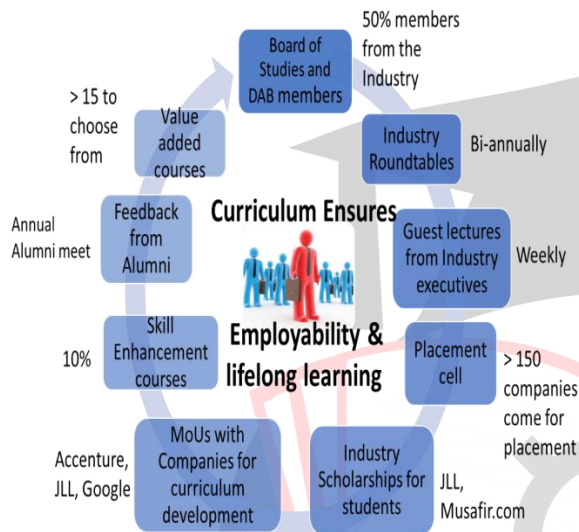

Figure 3: **curriculum designing and course development model**

IV.   RESEARCH METHODOLOGY

Nature of research: Researchers have used an exploratory, longitudinal study incorporating both the qualitative and quantitative research methods to study the model program of *iSMART* framework. This research is exploratory as studies focusing on outcomes of integrated education are sparse, and the present study is exploring one such integrated course using *iSMART* model framework and exploring the deliverables in detail. The present research explored the curriculum integration in detail by studying the structure of program by understanding the engineering course and its blending with technology and management curriculum. The outcomes were measured by reviewing the industry acceptance of this program by observing the placement data over past five years. Longitudinal study provided researchers an opportunity to have a focused approach towards examining the impact of integrated education on placement secured by the students over past five years in terms of job profiles and salaries of graduating students in a single frame thus facilitating a detailed study of the model framework.

Objective: The prime objective of the paper is to study the effectiveness of integration of engineering, technology and management curriculum delivered as *iSMART* framework, and its impact on various stakeholders(like students, faculty, academic institution, and to the industry). To understand whether it adds value to the graduating students and prepares them to the industry requirement of Tech savvy Management graduates who can leverage latest technology for Business goals. The study attempts to answer the following research questions

Research Questions

RQ1: Are the students of *iSMART* education securing befitting employment after graduation?

RQ2: Is the job secured by integration giving them an opportunity to convert their learning into a relevant job profile – Technology leveraging Managerial jobs?

RQ3: Are there any ideal combinations of Engineering streams and Management specializations that work better in terms of salaries and profiles offered?

RQ4: What is the Value proposition of the *iSMART* framework for various stakeholders?

Sample description: With an aim to explore the answers to research questions, researchers have identified one such integrated course, which combines engineering and management specializations as *iSMART* education framework and studied the same in detail. The graduates of theses program would secure an engineering degree in one of these six branches like information technology, Computers, Mechanical, Civil, Chemical and electronics and telecommunications and the management degree would help them specialize in Finance, marketing, operations or Business analysis and analytics. The sample for the longitudinal study includes the process of curriculum integration used in the program and also includes the stakeholders of this programme like students, academician delivering the course, the industry employing these students, the parents, coordinators and the parents.

Methods used for data collection: The primary as well as secondary data were gathered . The data pertaining to curriculum of engineering branches and management specializations were sought by detailed review of secondary data and in-depth interviews formed the sources of Primary data to understand the curriculum. To understand the outcomes the industry perspective was collected by using in-depth interviews with associate dean, course coordinators and faculty members, which provided qualitative insights into placement trends of *iSMART program*. This was supported by Secondary data collected from the placement department of the school, collated over a period of five years from 2012-2018, to study employability and job fit of graduates of this program. The research draws its essence from the research of Nair S.K.et .al (2006) to understand the employability of the students

as seen by the relative performance of students (as against their peers). However this study moves ahead and explores the profiles sought and secured by students of *iSMART program* by tracking the past five year's placement records from the placement department of the school.

Tools for analyses: The study has employed both the qualitative and quantitative research methods to study the model. The quantitative tools were used on placement data to understand the impact on the overall employability in terms of Best fit jobs secured by the graduating students of *iSMART* program. To interpret the salary differentials across verticals of engineering streams and management specializations ANOVA was used. Qualitative data obtained through in-depth interviews was content analysed which formed the basis for identifying value proposition for the program under study.

V. DATA ANALYSIS, INTERPRETATION AND DISCUSSION

RQ1: Are the students of *iSMART* education securing befitting employment after graduation?

Researchers started by plotting the projected salary of an *iSMART* students taking the base salary as the average salary received by the students in the year 2012. The projections were made based on the assumption of an optimistic 4% increase in annual base salary (Strategic human resource management, 2018).

The data obtained by the placement department of an *iSMART* student from 2012-2018 indicate that the actual salaries received are far higher than the projected salaries (Refer figure 4). The salary comparison clearly highlights that the students of *iSMART* have fared comparatively well and receiving higher average and median and maximum salaries as against the projected salary calculations.

This is a strong indicator to suggest that *iSMART* education is proving to be an advantage in terms of positional employability in Tech enabled Businesses.
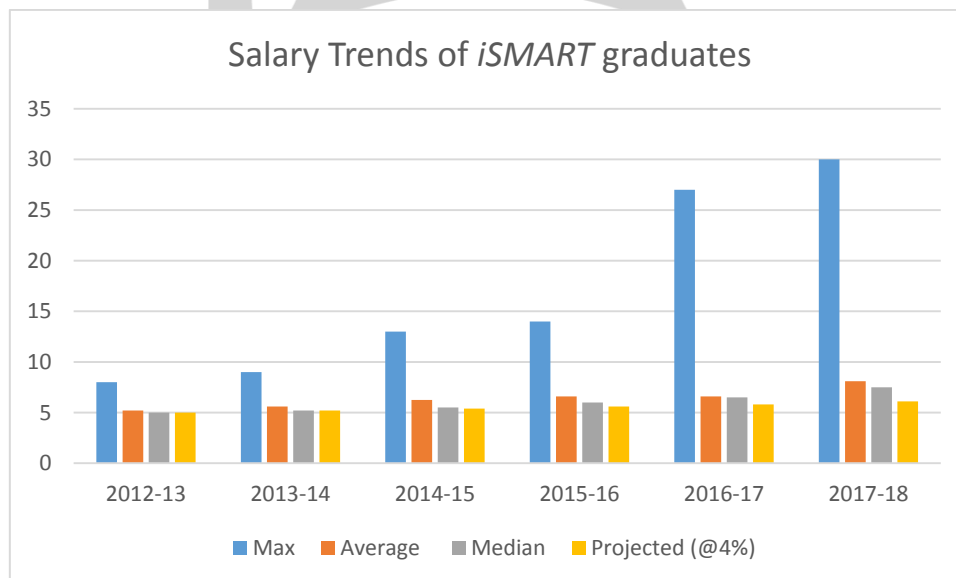

Figure 4: Salary trends of iSMART students

RQ2: Is the job secured by integration giving them an opportunity to convert their learning into a relevant job profile – Technology leveraging Managerial jobs?

The past five batches of graduating students are securing nearly hundred percent placements, reflecting the trend that integrated courses are catering to the growing demands by the businesses and more than 63 % graduates are absorbed in job profiles that use their technical domain expertise in their management function which is appropriate in the domains of tech enabled managerial jobs. The data pertaining profiles of students spanning over last five years was collected, however since it was difficult to secure the complete profiles of all the students of the previous batches, and given the fact that students have shifted their jobs the data was no longer relevant. The researchers therefore included the latest data pertaining to profiles and the salary range of the present batch.

Placement Data showing the best job fits for the *iSMART* students according to their Engineering and Management combinations

Representation of Best-fit placements by the combination of Engineering and Management streams											
	Finance			Marketing			OPS			BIA		
	Total placed in Finance	Techno-Fin jobs	Pure Fin jobs	Total placed in MKt	Techno-Mkt jobs	Pure Mkt jobs	Total placed in Ops	Techno-Ops jobs	Pure Ops jobs	Total placed in BIA	Analytics jobs	Blended jobs
IT	24	18	6	32	20	12	-	-		17	14	3
CS	17	11	5	22	14	8	-	-		11	8	3
EXTC	27	11	16	27	18	9	1	1	0	20	18	2
MECH	33	11	22	27	18	9	8	7	1	5	5	0
CHEM	9	3	6	8	6	2	3	3	0			
Civil	13	5	8	9	5	4	4	4	0	1	0	1

Table 1: Source: iSMART placement Files

The following discussion is about the profiles of the students based on their management specialization.
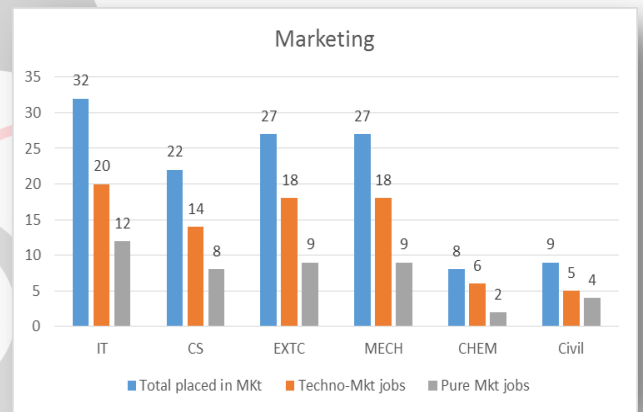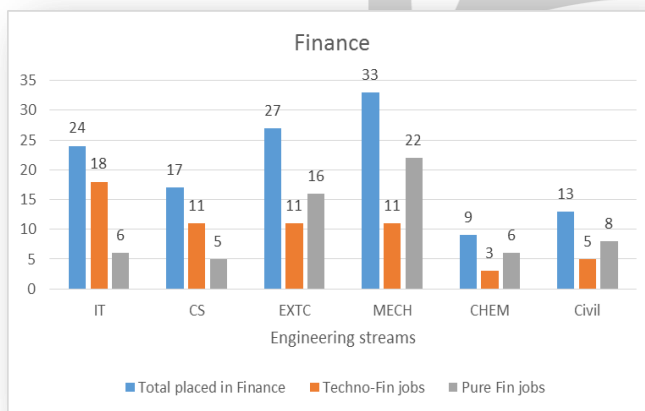

Fig 5: Placement data pertaining to finance profiles

The students of finance specialization (refer figure 5) are offered profiles like Associate business analyst where in the duties revolve around analyzing financial information. Some other profiles also demand tasks that involve creating models to value potential investment opportunities. The roles offering techno financial fit offer an opportunity to work with enterprise architecture team, and identify solutions and develop, and implement it into BFSI to work with cash management teams to understand technicalities pertaining to users' needs for designing systems; and developing technical solutions for user centric interfaces and also ensuring the delivery of the interfaces

Fig 6: Placement data pertaining to marketing profiles

The students of marketing are securing techno marketing jobs that provide (refer figure6))an opportunity to utilize their knowledge of marketing domain and develop solutions based on their engineering expertise. Techno marketing profiles offered to *iSMART* students give an opportunity to perform jobs involving cohort lifestyle modelling using IT platforms. This in turn helps them in developing and designing marketing models based on clusters or in segmentation and predict conversion or customer preferences or arriving at the next best actions .
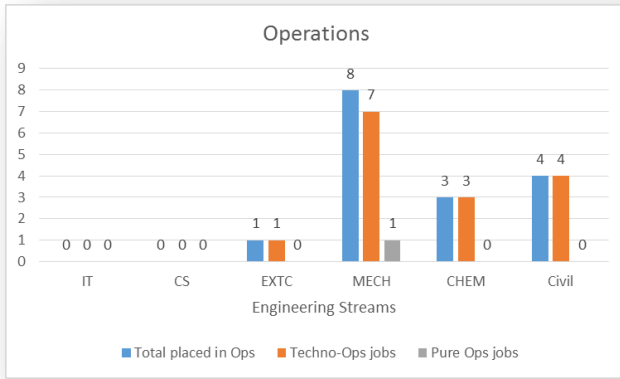
Fig7: Placement data pertaining to operations

Fig 8:. Placement data pertaining to BIA profiles

The placement data pertaining to students opting for Operations as a management specialization highlight that the graduating students are securing techno operations profiles. They have an opportunity to utilize their knowledge of operations and supply chain domain and help their organizations by giving meaningful insights based on their engineering

an opportunity to identify automation blockers and enhancers and evaluate the process cost and ensure articulating the technical details to the clients seeking their approval and ensure implementation of the same based on client approvals. They also have an opportunity to work with knowledge workers to incorporate usability and user interface needs for designing systems and developing customer friendly interfaces.
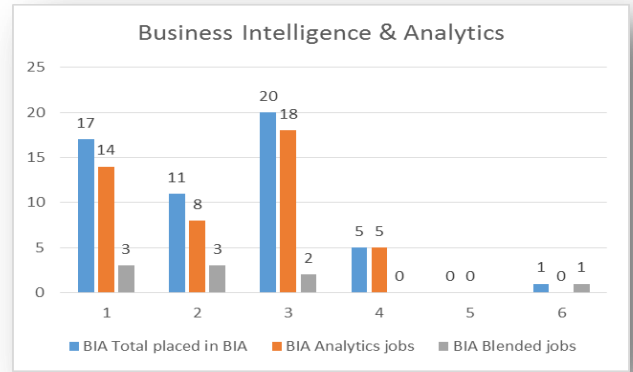
Insights into Business Intelligence & analytics placement data indicate that students of this specialization are securing profiles as an associate business analyst in consulting firms. The profile calls for interaction with multiple stakeholders to understand organizational needs and problems and propose design solutions or suggest modification after crtically evaluating the client based data. Finally, we can interpret that the end result of Integration is creating a synergy between engineering, technology and management for creating an integrated SMART education system. (Integration for Synergy in Management and Relevant Technology-i-SMART education.

RQ3: Are there any ideal combinations of Engineering streams and Management specializations that work better in terms of salaries and profiles offered

Results of ANOVA analysis to summarise Salaries based on Engineering and Management specialization					
Salary					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	595431337341.884	18	33079518741.216	1.166	.302
Within Groups	2977775210133.891	105	28359763906.037		
Total	3573206547475.774	123			

Table 2: Anova table on salaries drawn across engineering and management specializations

On the basis of the data available collected from placement department over the past 5 years, the researchers attempted to find out if the Engineering stream chosen by the students or the Management specialization selected has any significant role to play in the salary offered? Likewise does the combination of engineering and Management specialization paly a decisive role in the salaries and profiles offered to them?

The results obtained by comparing means in all three cases (viz. Salary v/s Engineering stream, Salary v/s Management specialization, Salary v/s Combination of Engineering & Management) using the ANOVA tool shows that there is no

significant impact(Ref fig 9, indicating level of significance .193) of any particular Engineering and Management specialization combination on the salaries offered. However, there is evidence of varying salaries according to the engineering specializations. Again the management specializations do not contribute to the variation in salaries.

RQ4: What is the Value proposition of the *iSMART* framework?

The study indicated that the students of *i-SMART program tend to have the following advantages against their peers.*

Value proposition of integrated education offered by *i*SMART *education* for the Student, parents and recruiting companies:

The integrated approach of *iSMART* curriculum in Engineering and Management effectively removes duplication of courses which would have resulted if the two disciplines were pursued one after the other. As per the AICTE curriculum released in Jan 2018, the Engineering programs should have about 10% courses on humanities, likewise the Model curriculum for MBA/PGDM released by the AICTE mandates that the curriculum should include technology focussed courses, which is approximately 10%. Taking that thrust of cross-disciplinary approach being propagated by the regulator, we can easily see that if a curriculum were to integrate the two disciplines, approximately 10-12% of the redundancy can be removed in all. This means that by simply removing redundancy we could shorten the time period required to cover the entire syllabi of the two disciplines without compromising on the content and credits.

This saving of time in delivery of the courses, helps the students save almost an year, which can be invested later in pursuing further education, or being one year ahead in career as compared to his peer group, who did their B.Tech + MBA as separate degrees. One year advantage in career progression as the student would make him one year senior to his batch mate if they both join the same company as a Management trainees. The student of the program needs to take only one entrance exam and earn double qualification - Technical and Management. The graduating student of this *iSMART* who adds one more year to his education is able to earn double salary(Glassdoor.com) as compared to a four year B. tech student from a comparable tier institution.

As for the learning environment during the course of study, the integration breaks monotony of only doing technical studies because of the interactive nature of Management education. It helps the student broaden his vision and understand the business value of his technical/ engineering knowledge. As a result he/she is socially more active as compared to his pure technical counterparts. For the parent it is big mental satisfaction of having facilitated two degrees to the child. The parent feels he has made his child an Engineering Graduate and a Management post graduate. From the parent's perspective, their children start earning one year earlier that their peer group. And very importantly, their ward does not have to go through the anxiety of having to run for admission in another Post graduate course. For the companies the value proposition is that they are getting a student who is abreast with the latest technology and at the same time understands how to leverage the latest technology for achieving business goals. Such an employee will adapt more quickly to the dynamic Business world and bring innovations powered by technology in the organization.

Performance Analysis on Best-fit Placements achieved by the students of iSMART Framework

The data of the placements of the students was analysed against the hypothesis that the students of iSMART framework helps them get techno-managerial jobs, as this is one of the main objectives if the course. The analysis was done as per the Engineering stream taken by the students and his subsequent choice of selection of the Management Specialization. Attempt was to see whether the students is able to obtain a job that requires him to be able to demonstrate his capability in both his engineering as well as managerial domain.

The following series of tables plots the total jobs secured by the students (categorised as per their engineering streams) and the Management streams.

Analysis of jobs obtained by the Students who chose Finance/Marketing/Operations/BIA as their Management Specialization				
Engineering streams of the students	% of students who were placed in Techno- Finance job profiles	% of students who were placed in Techno-Marketing job profiles	% of students who were placed in Techno-Operations job profiles	% of students who were placed in Pure Analytics job profiles
IT	75	62.5	---NA--	3
CS	64.70588	63.63636	--NA--	72.72727
EXTC	40.74074	66.66667	100	90
MECH	33.33333	66.66667	87.5	100
CHEM	33.33333	75	100	--NA--
Civil	38.46154	55.55556	100	0

Table 3: Analysis of Best-fit jobs obtained by students according to their management specialization and Engineering streams

The data shows that more than 70% of the students actually got the jobs that are Techno-Managerial in nature, which was one of the main objectives of the Integrated program.

The data pertaining to engineering stream wise analysis suggests that out of the students who took up Finance, 48% received job offers in the Techno-Finance domain. The

numbers were much higher for the students who came from the IT and Computer Science streams of engineering. The students who took up Marketing, the percentage of students receiving Techno-marketing jobs are more than 65.5%. The best fit seems to be in case of operations students where the Techno-Operations jobs obtained are as high as 96%, closely followed by the students who took the Business intelligence & analytics domain where the percentage of best-fit is 86.5%.

VI.   CONCLUSIONS

This research attempts to study effectiveness of integration of engineering, technology and management curriculum delivered as *iSMART* framework, and its impact on various stakeholders(like students, faculty, academic institution, and to the industry). Further, it attempts to understand whether it adds value to the graduating students and prepares them to the industry requirement of Tech savvy Management graduates who can leverage latest technology for Business goals.

The data obtained by the placement department of an *iSMART* student from 2012-2018 indicate that :

a. The actual salaries received are far higher than the projected salaries .The salary comparison clearly highlights that the students of *iSMART* have fared comparatively well and receiving higher average and median and maximum salaries as against the projected salary calculations. This is a strong indicator to suggest that *iSMART* education is proving to be an advantage in terms of positional employability in Tech enabled Businesses.

b. There is no significant impact of any particular combination of Engineering and Management specialization on the salaries offered. However, there is evidence of varying salaries according to the engineering specializations, but the management specializations do not contribute to the variation in salaries.

c. Since more than 70% of the students have got jobs that fall into the Techno-Managerial domain, it indicates the positive performance of the framework meeting it's objective of fetching Best-fit jobs for the students.

d. The results of stream wise analysis indicate, out of the students who took up Finance, 48% received job offers in the Techno-Finance domain. The numbers were much higher for the students who came from the IT and Computer Science streams of engineering. The students who took up Marketing, the percentage of students receiving Techno-marketing jobs are more than 65.5%. The best fit seems to be in case of operations students where the Techno-Operations jobs obtained are as high as 96%, closely followed by the students who took the Business intelligence & analytics domain where the percentage of best-fit is 86.5%. Since more than 70% of the students have got jobs that

fall into the Techno-Managerial domaim, it indicates the positive performance of the framework meeting it's objective of fetching Best-fit jobs for the students.

e. The integrated curriculum adds value to all the stakeholders involved. The right kind of integration (in terms of curriculum integration, pedagogy, and offering the hybrid subjects) is helping the students with better job opportunities in the era of rapid digitalization of the business world. The students are increasingly securing futuristic jobs in the domains of Financial technologies, Machine learning, Cloud computing, Block chain, Industry 4.0 etc. and commanding higher salaries year on year as compared to graduates of comparable tier institutions.

f. For the graduating students, it provides an opportunity to obtain multiple skills (technical and managerial), because of which he/she is in a better position to grab the growing opportunity of jobs that require technology to be leveraged for business goals.

g. The integration of two curricula removes redundancy and saves time for the student and promotes better utilization of the academic resources.

h. The study indicates value proposition for the recruiting companies is that they are getting a student who is abreast with the latest technology and at the same time understands how to leverage the latest technology for achieving business goals.

In conclusion the results of the model following *iSMART* framework advocates that it is replicable , sustainable and adoptable model which can be followed for integration among other academic disciplines also.

The *iSMART* framework prepares the nation's youth to handle VUCA world's futuristic businesses.

Suggestions: The present research demonstrates that graduating students of *iSMART* programme are securing befitting roles and earning relatively higher salaries ; implying that the integration between Engineering and Management is yielding desirable results. The current study suggests exploring further options for integration of curriculum of other domains could be taken up across multiple programs to ensure cross hybridization of courses. This cross-hybrization of courses if developed after industry interactions and if facilitated by having interdepartmental dialogue will surely equip the graduates to be industry ready and help them secure befitting jobs.

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