Skill Development in Educational Institutions

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ABSTRACT

According to (Durant) *Education is a progressive discovery of our ignorance.* Education is about to what extent an institute can increase the salability quotient of students. Greater salability results in better job prospects and greater return on investment in education. The salability depends on the skills that a person possess and how proficient he or she has become in those skills. Every individual has some hidden talents and those are showcased to the world at various platforms .The model of Skill Development in Educational Institutions proposed in this paper is based on Dr. Deming's PDSA Approach.

The premise related to Educational Institutions on which this paper is based: Education industry is a service industry where the institute provides education to students. Students act as customers as they are availing the educational services from the institute which they require to improve their salability quotient and in turn skill development. Hence Quality Function Deployment should be used to map and take necessary action to fulfill the requirements of students and parents.

According to (Ravishankar) *Education has to make us flexible and not rigid, innovative and not obsessive, faithful and not fanatic, and all inclusive* The authors recommend that institutions should assess the skills of their own students after taking requirements from customers (i.e. recruitment firms, other higher educational institutions etc.) and then build on the gaps found which will have an impact on the Key Performance Indicators and Results of the institute .The authors recommend the PDSA Model for student skill Development in educational institutions.

KEYWORDS: Plan Do Study Act, Salability Quotient, Student and Skill Development, Quality Function Deployment

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1. INTRODUCTION

Skill Development aims at (csvt):
1. Creating a workforce with necessary skills and knowledge
2. Creating a workforce with internationally recognized qualifications
3. Getting an employment with good salary and workplace environment
4. Ensuring that India remains competitive in the dynamic global market.
5. Increasing the productivity of workforce
6. Increasing employability of workforce in all sectors
7. Seeking better participation from all
8. Bringing efforts of different sectors together to develop the capability of present system which adapts to technology changes and labour market demands.

(Commerce, 2010)**Report mentions the need for skills in India and states that** for the growth of the economy and development of all income groups together India's GDP has to grow consistently at 8 to 9 percent per annum. This requires progress in areas which include development of infrastructure, growth with productivity improvement in agriculture, growth in financial sector, a healthy environment for business supported by a skilled workforce.
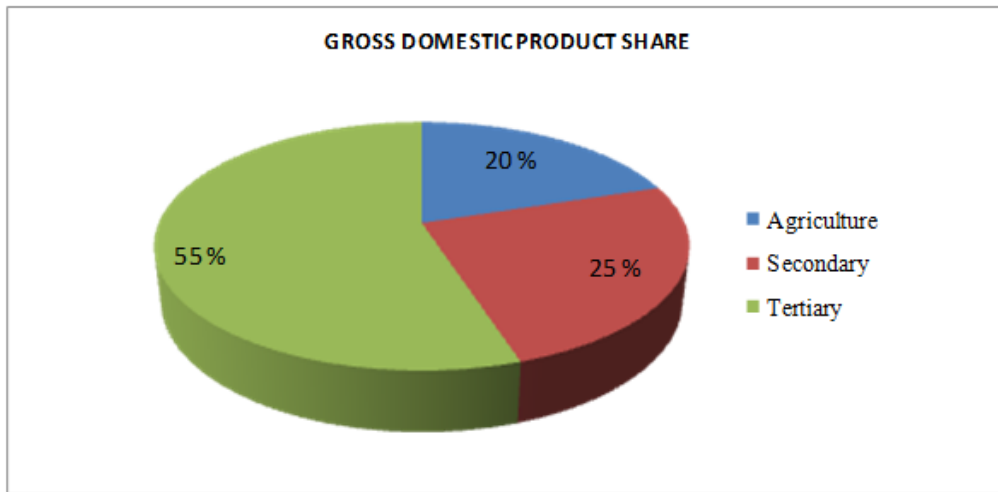
Figure 1: Sector wise GDP Distribution (Commerce, 2010)

According to (Wikipedia description of Gross Domestic Product) construction, telecom, software and information technologies, infrastructure, tourism, education, health care, travel, trade, banking and other components of its economy belong to the fastest growing part that is the service sector in India.

(Commerce, 2010) report states that as compared to Indian workforce where only 5% have marketable skills, in other countries 50 to 60% have marketable skills. It is a big challenge as about 12 million persons each year are expected to join the workforce. Complete Quality structures should be in place for successful implementation looking at the importance of skill development as well as the amount of funding involved .Each segment of skill development value chain should have quality standards and processes.

(Prasad H. A. C., 2014) state that Education is the part of concurrent list in the Constitution of India with controls and regulations both in the hands of Central and State Governments and statutory bodies and hence there is a need for fast implementation of skill development policy and quality measures.
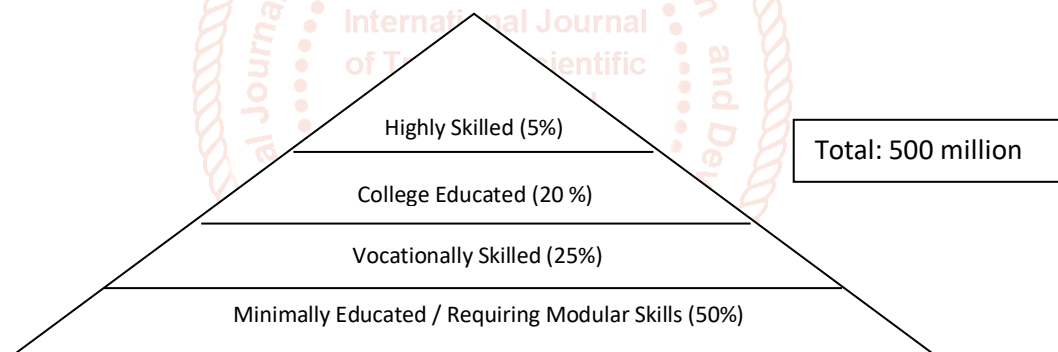
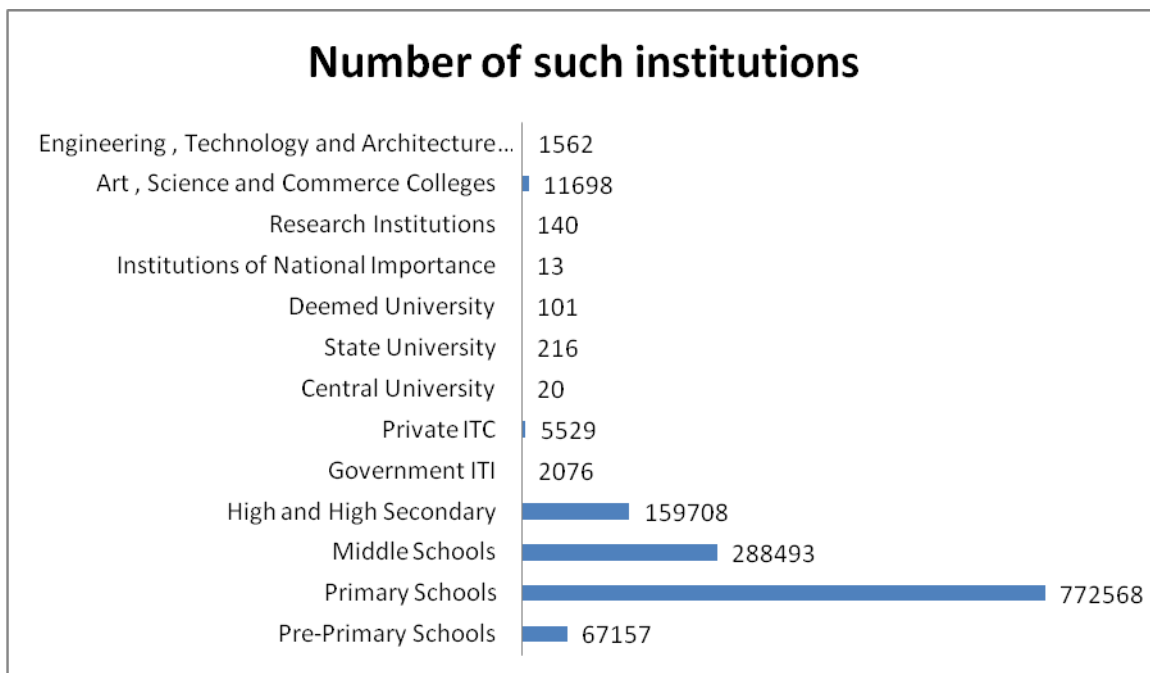

Figure 2: Skill Pyramid Source: (Commerce, 2010)

Figure 1Number of Institutions at various levels (Commerce, 2010)

The demand supply gap is not only in terms of numbers i.e. not only because of lesser number of educational institutions in the country but also because of the skill gap in the existing students i.e. students lag in the skills expected by the recruiters even after having the required qualification.

(Prasad H. A. C., 2014) state that the quality of education in India is deteriorating and is a big concern where reforms are needed. This also raises the issues of employability as people say that B.Tech is the new B.Sc. and MBA is the new BA. AICTE (the regulator) also has weaknesses which need to be reformed.

There is a gap between the knowledge, skills, abilities, interests, aptitude, personality, health that university graduates possess and what is required by prospective employers. This gap exists due to the differences in the perceptions between industry leaders and academicians as highlighted in (Cushman's, 2014) study. They found that industry respondents believed that strong effective skills such as **"leadership" and "decision making"** were the most desirable characteristics for **future executives,** while academicians favored **interpersonal effective competencies and ranked cognitive skills** higher than skills in the other groups.

Figure 3: Illustrative Human Resource Requirements Across Selected Sectors Till 2022 (Commerce, 2010)

According to ICRA report (August 2010) with 12 million persons expected to join the workforce every year and existing skill development capacity of 3.4 million India has to enhance the skilling and technical education capacity to about 15 million.. As per the 11th 5 year plan the following sectors are expected to drive the growth of the economy and play a significant role in employment –1. Auto and Auto Industries 2. Building and Construction Materials 3. Building and Construction 4. Real Estate Services 5. Electronics and IT Hardware 6. Education and Skill Development Services 7. Food Processing 8. Gems and Jewellery 9. Healthcare 10.Textiles 11.Leather and Leather Goods 12. Organized Retail 13. Tourism and Hospitality 14. Transportation and Logistics 15. Media and Entertainment 16. BFSI 17. Chemicals and Pharmaceuticals 18. Furniture and Furnishings 19. IT 20. ITES

Table 2: Key Skills in Demand in selected sectors (illustrative): (Commerce, 2010)

| Sector	Key Skills in Demand
Textiles & Clothing	Power loom operators, Apparel Manufacturing, Fashion Design, QA, Knitwear Manufacturing, Sewing Machine Operators
Building & Construction Industry	Crane Operators, Electricians, Welders, Masons, Plumbers, Carpenters, Painters etc. .
Auto and Auto Components	Auto OEM's, Auto Component Manufacturers, Drivers, Sales, Servicing, Repair, Financial Services sales, Insurers / Values
Organized Retail	Shop floor executives, back-store operations, merchandising
Banking, Financial Services, and Insurance	Financial Intermediaries (including Direct Selling Agents), Banking and Insurance (including agents), NBFC, Mutual Funds
Gems & Jewellery	Jewellery Fabrication, Grading, Faceting, Polishing, Cutting
IT & ITES	IT-Software testing, Maintenance and Application Development, End to End Solutions, Infrastructure Management, Testing etc. ITES- BPO, KPO-Legal, Medical, STM, Analytics and Research
Leather & Leather Goods	Training, Cutting, Clicking, Stitching, Lasting, Finishing
Furniture and Furnishings	Carpenters, Operators engaged in stitching, Sewing, Stuffing
Electronics & IT Hardware	Computers, Telecom, and Consumer Electronics Manufacturing, Sales, Servicing / After Sales Support of electronics goods, High Tech
Tourism and Hospitality Services	Front office staff, F & B Services and Kitchen and Housekeeping staff, Ticketing & sales, Tour Guides
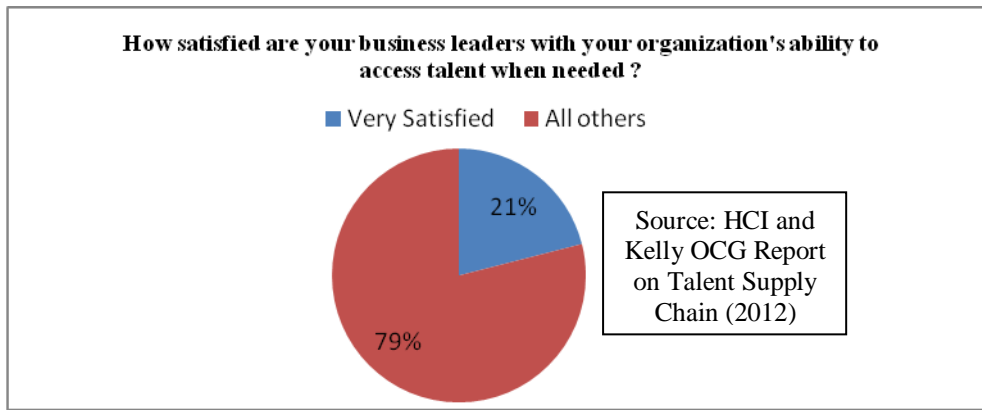
Figure 4: How satisfied business leaders are with organization's ability to access talent when needed

Conclusively following points clearly highlight the importance of skill development:
1. Demand Supply Gap.
2. Sustaining the existing economic growth and inclusive development
3. Increase in the % of workforce having marketable skills
4. The Quality standards and processes wherever applicable
5. Access to skilled talent whenever required.

Research Methodology
1. Date Type: Primary (Data from Survey) and Secondary Data from website
2. Data Source: Survey (Abhinav, Joohi, & Renu, 2014) and (Top Full time MBA/PGDM institutes in India) which reveals data about ranks of institute and some institute parameters
3. Sampling 1: Simple Random Sampling (questionnaire sent to selected institutes and firms randomly)
Sampling 2: Non Random Sampling: Quota Sampling :Top 5 institutes selected from an article published by shiksha.com and used in competitor analysis in quality function deployment diagram .College names are not disclosed in competitor analysis.

2. Survey Results: People's view on skill development in Indian Educational Institutions
In order to capture people opinion on skill development the survey was done to find out the opinion of the people from skill development value chain about skill development in educational institutions.
Respondent Details –
1. **IIM (Ahmedabad, Indore) Professors, Assistant Professors.**
2. **IIM Indore Research Students**
3. **General Manager from Transpek Silox**
4. **Ex and present Bosch Employees of different cadre**

There were around 27 people who participated by sharing their opinion .Our survey consisted of some 7 questions and the questions and survey results are shown below:
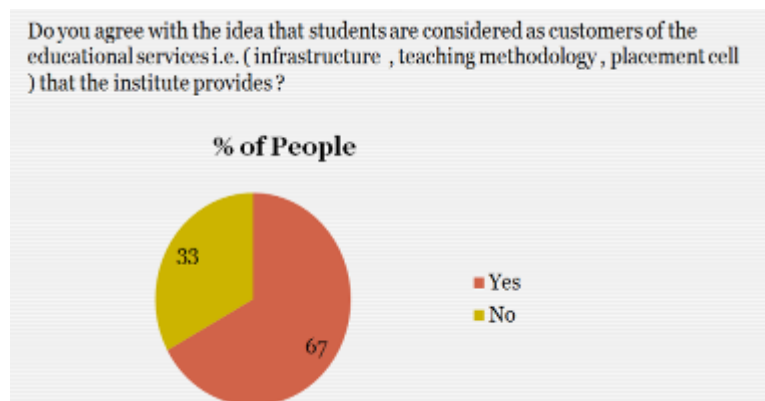

Figure: 5.1 (Abhinav, Joohi, & Renu, 2014)

67% of the people agreed with the idea that students are the customers of the educational services i.e (Infrastructure, Training Methodology, and Placement Cell) that the institute provides.
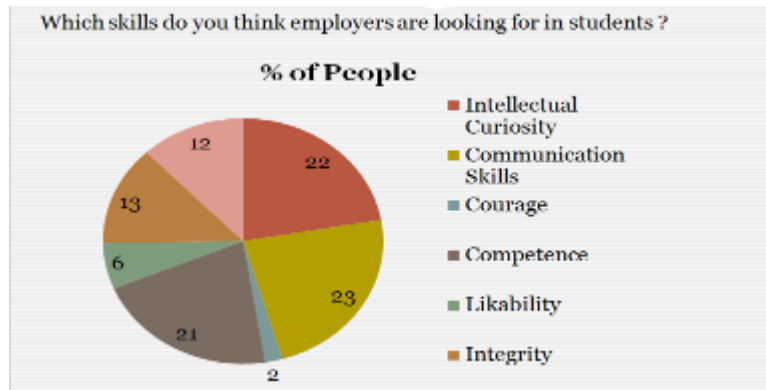
Figure: 5.2 (Abhinav, Joohi, & Renu, 2014)

According to the survey results the top 4 skills that the employers are looking for in students – **Communication Skills (23%), Competence (21%), Intellectual Curiosity / Intelligence (22%), Integrity (13%)**
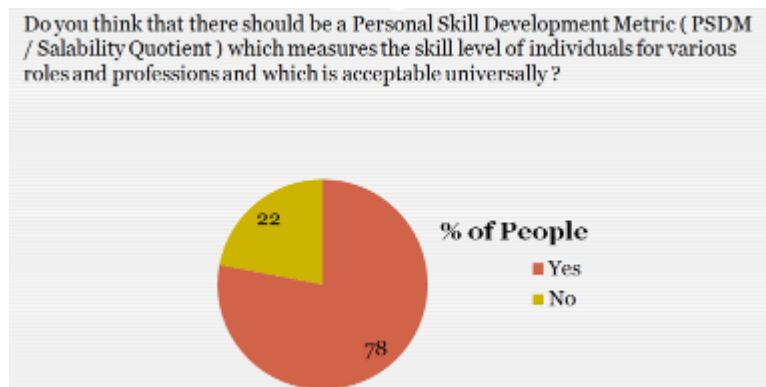

Figure: 5.3 (Abhinav, Joohi, & Renu, 2014)

78% of people felt that there is a need of PERSONAL SKILL DEVELOPMENT METRIC (PSDM) which measures the skill level for individuals for various roles and professions and which is acceptable universally.

Figure: 5.4 (Abhinav, Joohi, & Renu, 2014)

On asking what will be your strategy to develop skills of students 24% felt through on job trainings / internships, 24% wanted to take the requirement of recruiters and plan accordingly, another 24% depended on the type of skill to develop, 24% felt like taking generic skill requirements for the role mentioned from market and plan accordingly .
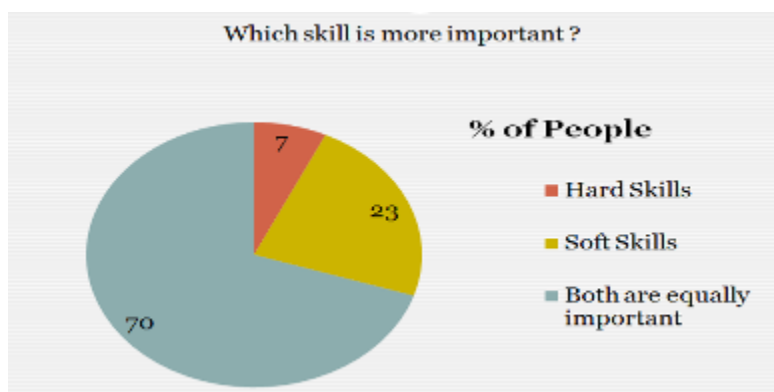

Figure: 5.5 (Abhinav, Joohi, & Renu, 2014)

On asking which skill is more important 70% of people felt that both hard and soft skills are equally important and 23% felt soft skills are more important.
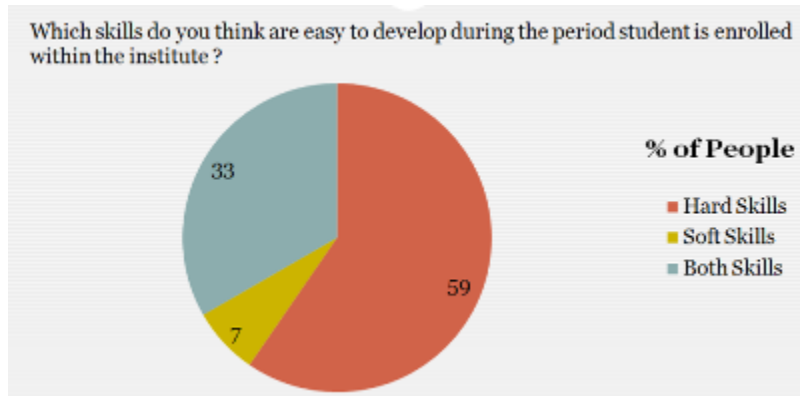

Figure: 5.6 (Abhinav, Joohi, & Renu, 2014)

59% of people felt that it is easy to develop hard skills during the period student is enrolled within the institute.
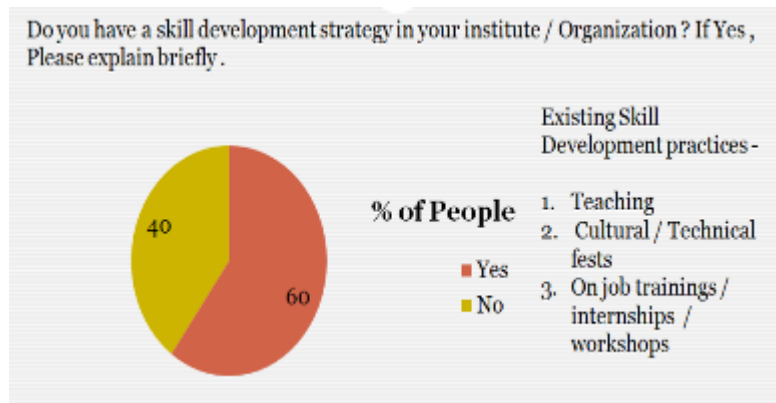

Figure: 5.7 (Abhinav, Joohi, & Renu, 2014)

Another important observation from the survey was that around 40% of people felt that there was no specific strategy for skill development in their institute which clearly highlights the loopholes in deployment and execution of NSDC's skill development strategy to the bottom level and is definitely a point of concern in this competitive world.

The remaining 60% had some skill development initiatives in the institute but there was no input from customers (i.e. recruiters etc.). In this era of customer centric culture the above fact clearly advocates that institutions need to re look their skill development strategy.

3. Objectives, Key Performance Indicators and Results for an Educational Institute
The objectives of an educational institution are primarily –
1. Spreading knowledge and developing knowledge resource
2. Helping students realize their goals and then supporting them by supplying talent to the best recruiters / best higher educational institutes
3. Developing realistic ideas /working models through industrial support and promoting research in unexplored areas.
4. Grooming talent (technical, cultural i.e. .acting, dancing, singing skills)by providing platforms and trainings (on job and others)
5. Developing a sense of ownership towards the society in students and contributing towards social causes wherever possible
6. Providing world class infrastructure to the students for their complete and thorough education and relevant activities.

Performance is based on the attainment of objectives. Hence, the KPI's are based on the main objectives of an educational institute. The key performance indicators for an educational institution are -
1. Number of students recruited – fulfillment of recruitment criteria
2. Faculty Expertise (Knowledge and expertise) - Faculty training, TEQIP attended.
3. Number of students selected for further education – Knowhow of subject
4. Number of students filing patents (Application of knowledge) – Research and innovation
5. Number of awards (Performance in fests – Cultural / Technical talents)
6. Number of Trainings conducted/ students trained /Number of Collaborations with different industries / scholarships awarded to students as a joint initiative of industry and institute
7. Number of acts of social welfare, (contribution towards society) Good deeds, Number of cases against students, faculties for failing to abide by laws.

The key to all these indicators is skill development and hence it is of high importance not only for an educational institute but also for the students, recruiters and the entire nation.

4. Quality Function Deployment in an Educational Institution

As per the Survey for Skill Development 67 % of the respondents felt that students are the customers of the educational services of the institute. The main customer requirements were listed from student perspective and Quality Function Deployment was done as given in (H., Carol, H., & Mary). Quality Function Deployment is a tool to know the customer requirements and then finding about what is technically required to fulfill these and then finding out the relationship between the technical requirements and customer requirements. After this the customer and technical requirement fulfillment is compared for competitors to find out where the institute stands and what it can benchmark

As in Quality Function Deployment for a product customer requirements are taken in advance here the institute has to take requirements not only from the students but also from the recruiters who are the customers of the skills that the students inculcate during their educational journey.

Refer annexure 1 for the QFD Diagram: Proposed QFD for an Educational Institution.
Responsible – Cross Functional Team of Institute or Organization
Why – To fulfill the expectations of the customers more appropriately
When - During the establishment of the institute
What – Quality Function Deployment

The QFD here compares 5 MBA colleges (names are not disclosed) on demanded quality or Customer Requirements and states following conclusions:
1. College 5 is to be benchmarked for **faculty development** and recruitment strategy.
2. College 1 has the **best infrastructure** and other colleges can find out where is the gap and bridge that gap.
3. In the eyes of the students, parents College 5 provides **best platforms to develop skills**
4. College 4 has produced the most **ethical students** and has set standards which others can also follow.
5. College 1 has the **best recruitment results** and others can learn some points in terms of the placement strategy and recruitment collaboration.
6. College 4 is the **best in terms of fees and in terms of value for money** as there is a big difference in the fees and questions affordability for students of lower class, middle class background.
7. College 5 provides best opportunities for **on job trainings and internships** and has an established bond with some top recruiters which is beneficial for students as well as recruiters.
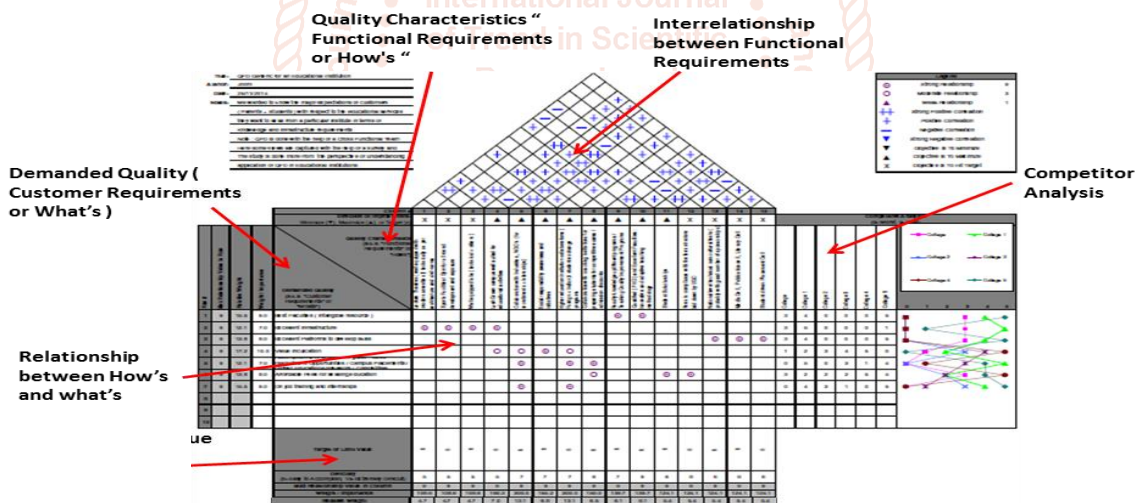

Figure 6: Quality Function Deployment Basics (H., Carol, H., & Mary)

Talking about the "Functional Requirements "or how the following customer requirements can be achieved the how's or technical requirements corresponding to the customer requirement are written after customer requirements -
1. Best Faculties – Faculty knowledge upliftment programs / teaching quality improvement program, Qualified (PHD) and excellent faculties: innovative and adaptive teaching methodology
2. Excellent Infrastructure – Lecture theatres (well equipped with modern amenities) / technically as per architecture and civil norms, Sports facilities / Gym for all round development and exposure, well equipped labs (technical + others), lush green campus well suited for educational activities
3. Value Inculcation – Social responsibility awareness and initiatives, collaboration with industries, NGO's for (recruitments and internships).
4. Accomplishment of futuristic goals, good recruitment opportunities, campus placements, higher education endeavors, competitive examination preparation – Higher Education Institute Collaborations (Foreign + Indian)/ Student Exchange Programs, Collaboration with coaching institutes for preparing students for competitive exams / admission discounts
5. Affordable Fees – Student Scholarships, Fees in compliance with the fees structure laid down by UGC
6. On job training and Internships – Student driven placement cell, Student scholarships, National level Technical cum Cultural fests with good number of sponsorships, Media Cell, Publication Cell, Literary Cell.

5. Salability Quotient or Personal skill Development Metric and Competency Mapping

Figure: 7: Relationship between Skill Development and Salability Quotient

Skill Development and Salability Quotient are directly proportional to each other. As 60% of people felt that there are some measures specific to skill development already within the institute the analysis of the existing processes in an educational institution which contribute to skill development with the help of SIPOC Diagram is done and shown below as figure 8. The big question here is how to measure the PSDM or Salability Quotient. The proposed measurement basis is the average of competency levels in the skills specified by the recruiter.

Suppose the recruiter demands 5 types of skills S1, S2, S3, S4, and S5 where S1, S2, S3, S4, S5 represent the skill level on a scale of 5 where 0 represents not knowing and 5 represents proficient for a particular skill.

$$PSDM = [(S1+S2+S3+S4+S5) / 5] \quad (1)$$

Skill development can be through the following activities depending on the skill type -
A. Training
B. Teaching
C. Cross Functional Teamwork using group discussion and brainstorming method
D. Workshops

Skill development without knowing what to develop and how much is a superficial term because after knowing what and how much only the strategy for accomplishing a task can be defined.

SIPOC Diagram

Process contributing to skill development in an educational institution

Suppliers	Input	Process	Output	Customers
Man - Coaching Institutes , Institutes where student attained prior qualification , Institutes where faculties attained their final degree Machine Suppliers , agents ,sellers	Man - Knowledge resource (Faculty knowledge)(intangible)- competency mapping , Students with required qualifications and skills Material- Course handouts , Course work material , Books , Student Feedback Questionnaire , Exam questionnaires Machine - Computer , laptops , projectors , air conditioners (if required) ,fans ,tubelights , mikes etc Method - Classroom Teaching , Group Discussion or any other as applicable Environment - Conducive noise free environment to learn and study	Teaching	Man -Students with required qualifications and skills , Faculty with more experience Method - Student feedback for improvement in infrastructure and facilities	For the documents - Auditors , Assessors assessing the quality of education of the institute For the students - Recruiters from various firms Institutions where candidates enroll for higher education Coaching centres where students take coaching for furthur examinations
Man - Participating Institute sending their students for participation Material & Machine Suppliers	Man - List of student volunteers handling individual events Environment - Conducive as per number of participants for individual events Machine- Loud speaker , Computer etc and other equipments as per the requirement of event Method - League / knock out for specific events as per participation ,Training sessions and preparatory coaching wherever required , SWOT of internal students for various events for better results Material- List of similar events , previous year schedules , Sponsor contacts , Institute contacts , awards , Budget Sheet , Training feedback form , Student Skill Mapping , documents for enrollment	Organising Cultural cum Technical Fests a) Budget allocation b) Advertising and publicity of event , bringing sponsors c) Selection of events d) Promoting Participation e) Finalising awards and rewards f) Website updation	Material - Event schedule, Overall event Finance sheet with individual event finance details , training feedback, upgraded skill mapping , records of participation Man- Students with better exposure and developed skills	For the documents - Auditors , Assessors assessing the quality of education of the institute For the students - Recruiters from various firms Institutions where candidates enroll for higher education Coaching centres where students take coaching for furthur examinations
Man -Trainers with high calibre	Material -Skill Mapping	On job trainings and internships / workshops	Students with upgraded skills & exposure	For the documents - Auditors , Assessors assessing the quality of education of the institute For the students - Recruiters from various firms Institutions where candidates enroll for higher education Coaching centres where students take coaching for furthur examinations

Figure: 8: SIPOC Diagram for Skill Development (Global)

The recommendation is the introduction of skill matrix or competency mapping for students at the institute level itself so that students can be saved from the sudden pressure to perform during recruitment weeks and they have better clarity about the direction in which they need to work or to raise their salability quotient to match the expectation of recruiter. The level of competency required for effective performance in a particular role will be used to determine the competency levels that new hires should possess. Thus the knowledge of skills required and mastery (eg :level 1-10) required in these skills will help in hiring of an employee who can perform better in the role assigned to him/her.

This way the cost of training of the newly hired employees can be reduced. The selected candidates will be a better fit for the roles they are expected to perform and hence will be more productive from Day 1 and lesser financial investments and number of hours will be required to train them .

A firm which is well equipped with the knowledge to assess competencies can effectively hire the best at a reasonable cost to company, for example it can hire management graduates from business schools which are not widely known but produce graduates /post graduates having a good entrepreneurial mindset.

Assessing competencies effectively is one of the few ways in which companies can generate quality products at a lesser cost. Nowadays companies are competing for limited resources and talent so it is very important for organizations to continuously reassess their competencies, update it and make the necessary changes. It is equally essential for a firm to define a set of core competencies which is required for differentiation in market. This is where competency mapping plays an important role.

Figure: 9 Competency Model and Relevant Processes in Organization (Commerce, 2010)

6. PDSA or PDCA

(H., Carol, H., & Mary) states that PDCA stands for the Plan-Do-Check-Act which was developed by Walter. A Shewart .The PDCA was later on modified into PDSA (Plan Do Study Act) by Dr. Deming. PDCA is also used to monitor the Key Performance Indicators and then actions are taken to achieve the Key Performance Result. **The 4 phases are -1.Plan the activities for the opportunity for improvement. 2.Do the activities as planned 3. Check whether the activities are progressing as per plan or not. Also check whether the outcomes of the activities match our expectations. 4.As per the results of point 3 act accordingly to take new actions or modify existing actions and standardize results.**

Our Model: PDSA / PDCA for Skill Development

A student enters the portals of an institution with high hopes of not only gaining the relevant knowledge but also polishing some natural talents by participating in various platforms provided by the college to showcase the talent.. Students and parents act as customers to avail the facilities of the institution be it the infrastructure or the knowledge resource in form of faculties.

Our model proposes to measure the skills of the students at the entry stage as well as at various stages of educational journey within the institute which advocates continuous use of PDSA.
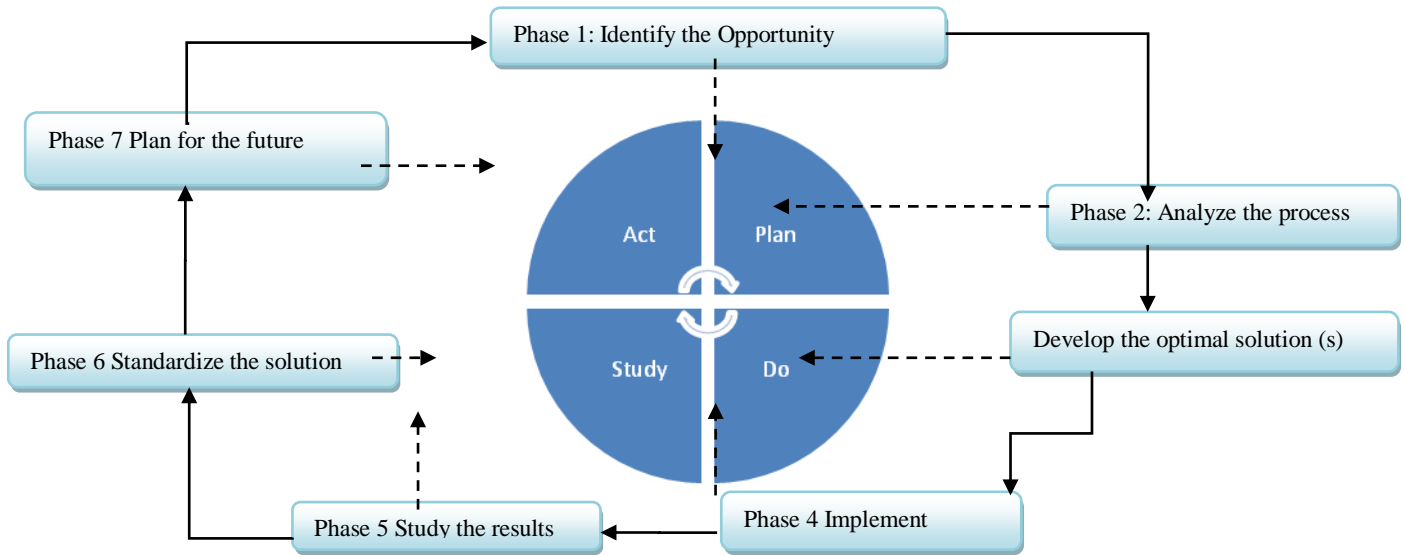
Figure: 10 PDSA (H., Carol, H., & Mary)

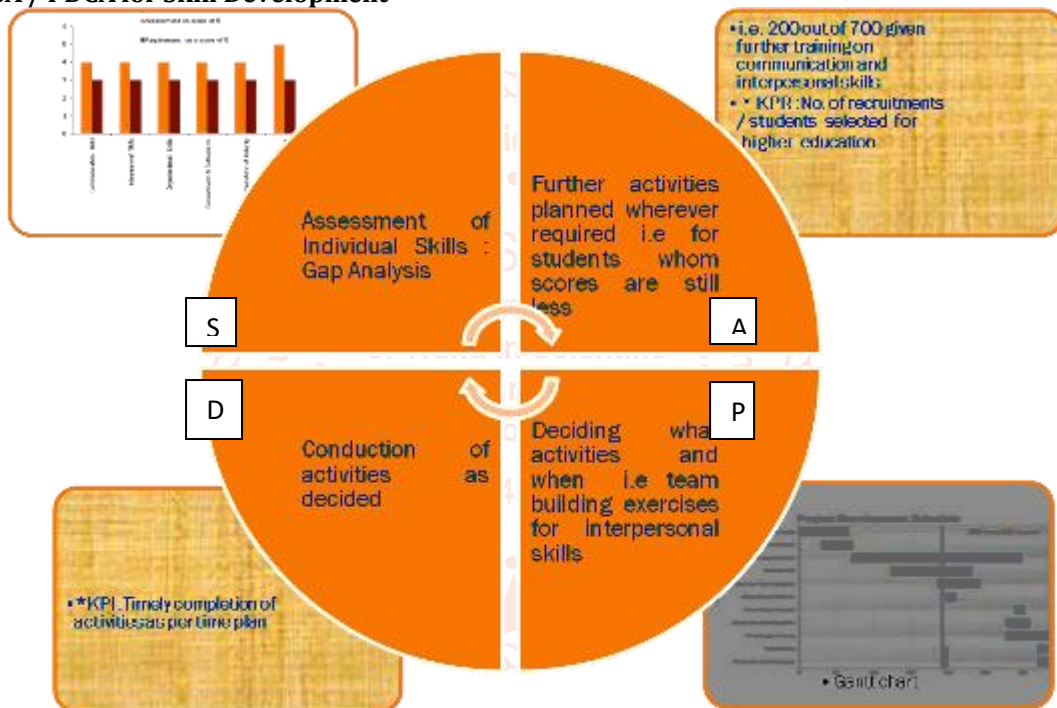**Our Model: PDSA / PDCA for Skill Development**

Figure 11: PDSA (H., Carol, H., & Mary)/ PDCA for Student Development

Simultaneously the proposed action is that the institutions should take the skill requirements of the recruiters also so that they can prepare the students well in advance and match up the expectations of the end customers. Here the end customers are not only recruiters but also the society, hence the inculcation of values and promotion of ethics is of utmost importance because every institution aims at producing students who are law abiding and are ethical citizens. The most important aim is developing a sense of responsibility towards society in students. This will not only help India to progress towards the desired requirements of skilled talent but it will also ensure that educated youth is not involved in bad activities and will put a bar on crime rate as well. In turn the Global Happiness Index for India will also improve. PDSA/PDCA means -

Plan – Take the skill requirements from the recruiters and plan the activities accordingly. Map the competency of students before the development initiatives.

Do – Maintain a Gantt chart for the activities done to develop skills.

Check / Study – Reassess the skills of the students and update the competency mapping. Identify gaps from the requirements of recruiters.

Act – Take further actions to bridge gaps wherever required.

7. Conclusion

➢ Quality Function Deployment is a necessity for any educational institute in order to know their present position with respect to their competitors.

➢ Every Institute should have a strategy for skill development aligned with the strategy of National Skill Development Centre or Government of India Strategy.

➢ Following PDSA approach can work wonders in not only tracking the results but also in formulating an effective strategy.

➢ Another recommendation is the competency mapping of students at college level which can be handed over to the recruiters /higher education institutions / parents at the time of their selection .This will be of advantage to the recruiters as well as parents as they will come to know how much the child has gained during the tenure as a student in the educational institute. Also it will be a proactive approach from the recruiters as well as educational institutions to mould the career of students.

➢ The practice of PSDM / Salability Quotient will ensure a speedy recruitment because of the clarity of thought in students and recruiters .The PSDM will help us know where the candidate stands with respect to the job of their choice and similarly the recruiter will be clear about who fulfils the criteria for being selected .
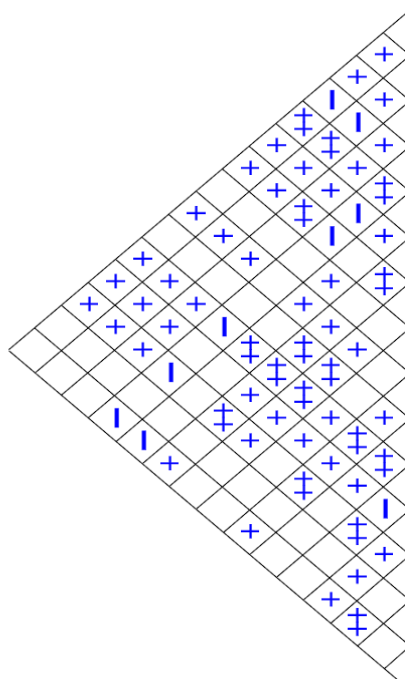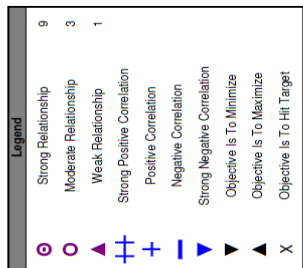
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Annexure 1: Quality Function Deployment

Legend

Symbol	Meaning
9	Strong Relationship
3	Moderate Relationship
1	Weak Relationship
⊙	Strong Positive Correlation
○	Positive Correlation
◀	Negative Correlation
‡	Strong Negative Correlation
+	Objective Is To Minimize
I	Objective Is To Maximize
▶	Objective Is To Hit Target

Title: QFD Generic for an Educational Institution
Author: Joohi
Date: 25/11/2014
Notes: We wanted to know the major expectations of customers (Parents + Students) with respect to the educational services they want to avail from a particular institute in terms of Knowledge and Infrastructure requirements.
Note : QFD is done with the help of a Cross Functional Team. Here some views are captured with the help of a survey and The study is done more from the perspective of understanding application of QFD in Educational Institutions.

Competitive Analysis (0=Worst, 5=Best)

Demanded Quality	Weight / Importance	Relative Weight	College	College 1	College 2	College 3	College 4	College 5
Best Facilities (Intangible resource)	9.0	15.5	3	4	0	0	0	5
Excellent Infrastructure	7.0	12.1	3	5	0	0	0	1
Excellent Platforms to develop skills	8.0	13.8	3	4	0	0	0	5
Value Inculcation	10.0	17.2	1	2	3	4	5	0
Recruitment Opportunities / Campus Placements	7.0	12.1	0	5	0	3	1	4
Affordable Fees for availing education	8.0	13.8	3	2	2	2	5	4
On job training and internships	9.0	15.5	0	4	3	1	0	5

Quality Characteristics (a.k.a. "Functional Requirements" or "Hows")

Column #	Direction of Improvement	Quality Characteristic	Target or Limit Value	Difficulty (0=Easy to Accomplish, 10=Extremely Difficult)	Max Relationship Value in Column	Weight / Importance
1	×	Lecture Theatres (well equipped with modern amenities)/ technically as per architecture and civil norms	5	5	9	108.6
2	×	Sports Facilities /Gym for all round development and exposure	5	5	9	108.6
3	×	Well equipped labs (technical + others)	5	5	9	108.6
4	◀	Lush Green campus well suited for educational activities	5	5	9	160.3
5	◀	Collaboration with Industries , NGO's (for recruitments + internships)	5	7	9	300.0
6	◀	Social responsibility awareness and initiatives	5	7	7	155.2
7	◀	Higher education institution collaborations (Foreign + Indian)/ student exchange programs	5	7	9	300.0
8	◀	Collaboration with coaching institutions for preparing students for competitive exams / admission discounts	5	6	9	150.0
9	◀	Faculty knowledge upliftment programs / Teaching Quality Improvement Programs	5	7	9	139.7
10	◀	Qualified (PHD) and Excellent Faculties : Innovative and adaptive teaching methodology	5	9	9	139.7
11	◀	Student Scholarships	5	6	9	124.1
12	×	Fees in compliance with the fees structure laid down by UGC	5	8	9	124.1
13	×	National level technical cum cultural fests (probably with good number of sponsorships)	5	6	9	124.1
14	×	Media Cell , Publication cell , Library Cell	5	6	9	124.1
15	×	Student driven Placement Cell	5	6	9	124.1

Authors' Biographical Notes

Renu Chaturvedi *is a retired Associate Professor from Government College Bundi Rajasthan. Currently she is the Director at Abhinav Arts NATA Academy .Recently she has published a book on " Hadoti Kshetra ke Kshailchitra " which was inaugurated by ex Prime Minister Dr.Manmohan Singh .She has also worked with Sri Satya Sai College for Women and has more than 30 years of experience .Her research interests include Arts and Crafts & Skill Development. She has done 3 refresher courses from University Of Rajasthan and has also organized workshops on Fresco and Miniature Painting. She has participated and presented paper on Maintaining Motivation of Employees in a National Level Conference on Human Resource Management and Skill Development in Educational Institutions .*

Abhinav Chaturvedi *is the Principal in the Department of Architecture and Planning with more than 12 years' experience in Teaching + Architectural Consultancy at various organizations such as MA Architects, Pramod Jain Associates and Aayojan School Of Architecture, presently working at NIMS University Jaipur. Since Jan 2018 he is registered as a Research Scholar at Manipal University Jaipur in the Architecture Department .He received the B.Arch. Degree in 2007, M.Arch. Degree in 2012 from University of Rajasthan &*

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Joohi Chaturvedi with overall experience of more than 10 years is working as a Senior Quality and HR Manager at Abhinav Arts NATA Academy of AARDAS since Jan 2016 and started kaizen initiatives and has become a ZED Certified Consultant. She is a Research Scholar at IIS (Deemed to be) University Jaipur and earlier she has worked as a Craftsmanship Auditor, Internal Auditor QMS ISO 9001 and WPS Auditor at Whirlpool of India Limited, Pune and assisted faculties at IIM, Indore and with organizations like Bosch Limited, Jaipur as a Coordinator Quality Methods (QAM, 8D, LPC, Lessons Learned, Trial Order, Good Practices, FMEA), Internal Auditor QMS ISO 9001 and JECRC as an Asst. Professor in Mechanical Engineering and was responsible for Quality-HR Management and faculty for General Aptitude at AARDAS .She did M.S.in Quality Management from BITS Pilani in 2012 and B.E.in Mechanical Engineering in 2008 JECRC, Rajasthan University. Her research interests include Skill Development, Statistical Process control, applications of Quality Function Deployment and Risk Management and Maintaining Motivation of Employees, Line Balancing, 5S and Quality Methods, Ergonomics, Solar Photovoltaic's, Measurement System Analysis.