Generalized Field Base Data Model for Improve Productivity of Education Envelope

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Abstract : *The day by day the people are more concentrates on quality education. For this agenda overall need to be in improvement in education system. If not possible to system working, then imaginably system need to be change. There are lot of opportunities available in most higher repeated institute till today. Even higher level student doing high class education but still today sinario very pathetic. At the University level no guidance technique. For technique development of quality Six Sigma Concept, TQM concept & so many techniques are implemented but till lot of scope remain in education orbit. Quality education broadly defined as that management technique by means of which products of uniform acceptable quality. In society education reform need to develop the Institution. Therefore author take the decision to do do the research work on this theme to reduce the problems in educational field. The need of continuous quality research paper also for overall education envelop development point of view.*

Keywords : *Quality, Student Performance, Gossopy, Faculty Member Performance, Medical case study.*

Introduction : Education is the manifesto to improve the system. At the University level in throughout the world the students are giving poor feedback, again question aries why students are not satisfy after implementing new demonstration view. In the education processes hardcore research aspect. the quality of technological long term training, short term training , workshops needed. The lot of philosophers are available in this process but still negativity remain in fresh faculty member, probationary, young graduates. May be possible after 20 year of professional experience the people can change, but why not imaginably effect not get in system. Quality system run from 100 years back. But still lot of inclusion are present today. Even no one bother about it.

Literature Review :- Practically found in educational institute lot of lacuna. Need to develop the total continuous improvement processes by applying six sigma concept. It has been observed that in one institute XYZ the faculty members doing gossipy. Not taking serious lecture (time to time) & always busy to exhaust other higher qualified , experience holder faculty. Always tries to busy to spoil the activity. Is the ABC University level , the people are not communication with each other. They are spoiling the student life but no one bother. Education system also they are making poorest. Even University people not working properly. The SWOT Analysis discuss about the strength , weakness, opportunity & threats.[37] For developing educational system need of all factors take into consideration.

Ease: In the education system the initial era no method engineering no time management system. But day by day people want to be accept good qualities . Again polluted it by some of bad people.

Object: Standard top class University & higher ranking institute.

Objectives: 1] Defects in faculty members, not follow the higher authority rules & regulation
2] Defects in syllabus design / Gap analysis.
3] Weak student file
4] Gossipy among the faculty.

Terminology: The meaning of education to provide well educated technochrates to society, but faculty members not possible to supply to needful work. Even in IIT, NIT, any other top class university the faculty members making gossipy. The new techniques having lot of defects, not follow the senior faculty member suggestions.

Methodology: 1] Research base system
2] Innovative & Invention Teaching learning Processes
3] Incubation center.

Observation :
1] Faculty member leave the early time still 5 minuits or more time remain to complet the lecture time.
2] Not response to senior faculty.
3] Arrogance
4] Environment pollution.
5] Syllabus not coverage
6] Wrong data interpret.
7] No fear about management
8] Always on faculty on leave without adjusting their load.
9] Teaching faculty roaming with non teaching members & spread confidential. Not maintain secretly even qualified.
10] The probationary people not serious in their work.
11] The faculty member doing lot of time same mistake.
12] Wrong faculty member select through interview process.
13] Even faculty member having no suitable background or age but still they select through manipulation & whole environment going to be spoil;.
14] Lot of complaint from students side to change the faculty member or he/ she not possible to deliver the knowledge but still arrogant faculty doing the work there.
15] Faculty member taking heavy decision, even without taking any higher faculty in confidence.

Experimentation:
i] The arrogant faculty call in conference room and council them about the motivational speech. Consider them to avoid negativity & fill up positivity inside his/her mind to prove their self to produce good quality technocrats.
ii] Attend lecture such thoughtful faculty.
iii] Make video-graph of negativity faculty member lecture.
iv] Concentrates on him/ her, who is making gossipy with seating negative faculty.
v] Some punishment is to be need such negative faculty member, otherwise the future of same student will be spoil.
vi] Extend probation period, still not changes in the behaviour of respective faculty member, vii] Change the whole committee or punish to particular faculty member.
vii] If faculty member not doing work, time to time fill up some format with signed on documents.
viii] When the mistake doing the faculty, at the same time council them. Otherwise they will spread wrong massage among other.

Mathematical Modeling: I] Dependent variables:1] Faculty member o/p [I]

2] Quality student[M] (Quality means desirable students want take upgraded knowledge)
3] Quality of learning material [N]
II] Independent variable: Y
1] Time [U]
2] Leader (Head of Department, Principal, Dean [V]
3] Student feedback [W]
$Z= f (X+ Y)$----------equ.[1]
System Output $Z= X+Y$
$Z= X^X + Y^Y$ ----------equ. [2]
Taking log both sides
$\log Z= x \log X + y \log Y$----------equ. [3]

X=[L+M+N]----------equ. [a]
Y=[U+V+W]----------equ. [b]
Putting equ [a] & [b] in equ. [3]
logZ = x log [L+M+N]+ y log [U+V+W]- -----equ. [4]

Analysis: According to the mathematical model dependent variable faculty members output means t(hey are teaching quality lectures with using power point presentation), Quality of students (entry level merit of students), Quality of learning materials with considering (journals, video lectures) & independent variable , time management policies, leader means head of department, Principal, Various Dean such as Academic, Research, Student Council & Stakeholders feedback means (laboratory equipment supplier, alumni students , parents, industrialist, Job providers) . The combination of these parameter get the 100% result from the system. Which is very clear from the above mathematical model.

Student-Faculty Ratio (SFR)

No. of UG Programs in the Department (n) : 01
No. of PG Programs in the Department (n) : Nil
No. of Students in UG 2 Year = u1
No. of Students in UG 3 Year = u2
No. of Students in UG 4 Year = u3
No. of Students in PG 1 Year = Nil
No. of Students in PG 2Year = Nil
S= Number of students in the Department = UG1+UG2+UG3
The table 1 indicats the students & faculty ratio in institute.

Year	CAY	CAYm1	CAYm2
	18-19	**17-18**	**16-17**
u1.1	60+12*=72	60+12*=72	60+12*=72
u2.1	60+12*=72	60+12*=72	60+12*=72
u3.1	60+12*=72	60+12*=72	60+12*=72
UG1	216	216	216
Total No. of Students in the Department (S)	216	216	216
No. of Faculty in the Department (F)	8	12	12
Student Faculty Ratio (SFR)	27	18	18
Average SFR	**21**		

Table:1 Student Faculty Ratio

Faculty Qualification

Table3 examine the faculty Qualification activity

Year	X	Y	F	FQ= 2.5 x [(10X + 4Y)/F]
18-19	2	6	8	13.75
17-18	2	10	12	12.5
16-17	1	11	12	11.25
Average Assessment				12.5

Table:2 Faculty Qualification

FQ = Faculty Qualification,
X = No. of regular faculty With Ph. D.,
Y= No. of regular faculty With M. Tech.
F = No. of regular faculty.

Faculty Retention

Table 4 indicats the Faculty retention systen in institute

	Year	No of regular faculty member	% faculty retention
CAYm2	2016-17	6/12	50.00 %
CAYm1	2017-18	6 /12	50.00 %
CAY	2018-19	8 /10	80.00 %
Average			60.00 %

Table:3 Faculty Retention

Expected and Actual PO Attainment :
Course Name : BEME503T Year of Study : 2018-19

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	3	3	2	2	2	2	2	2	3	2
CO2	3	3	2	3	3		3		3	3	2	3	2	3
CO3	3	2	3	3	3		3		3		3	3	2	3
CO4	3	3	3	3	3	3	2		3		3	3	3	3
CO5	2	2	3	3	3	3	3		3	3	3	3	3	3
CO6	2	3	2	2	3	3	3		2		3	3	3	3
AVERAGE	2.67	2.67	2.67	2.67	3.00	3.00	2.67	2.00	2.67	2.67	2.67	2.83	2.67	2.83
or Threshold Value	52.61	52.43	52.32	52.26	52.30	34.44	52.16	55.04	104.52	52.57	52.03	52.14	52.14	52.14

Table:4 - CO [Course Outcome], PO[Program Outcome] BEME503T [Advanced Production Processes]

Innovation:

1] Knowledge Data Bank

Department of Mechanical Engineering Department works to improve quality in technical education for the betterment of students. To solve the purpose which department aims faculty of the department provides course material to the students from knowledge data bank. Course material includes hard copy and soft copy material. We have seen tremendous improvement in the students to face the exams. Students response for the knowledge data bank was remarkable which helps us to provide more technical knowledge through knowledge data bank. Knowledge data bank concept specially initiated to reach under prepared students and to get them prepare in technical terms.

2] Virtual Lab

The Virtual Labs project started in July 2015 under the National Mission on Education through ICT. Initially, approximately 12 labs were developed as proof of concept. The Main (First) Phase began in Aug. 2015 with several web-enabled experiments being designed for the remote operation and viewing. Number of experiments were conducted by the Department of Mechanical Engineering of Priyadarshini Institute of Engineering & Technology, Nagpur.

Salient Features:

Common website for all Virtual labs

At the user end, a PC and broadband connectivity enables the users to access Virtual Labs.

Front-end

All users see a common web-based front-end which has been designed for ease of use. The Virtual Labshave standardized look and feel. All web pages are icon based.

Needs of Quality:

No one desired to take medical post graduation course today. Such situation create in education processes. Assign smart village project to students. Introduced software licensee & server base system. Show workshop, Guest lectures, Intellectual Property rights, Industry Institute community Partnership workshop & programs meeting, ISO Quality academic system, Remedials, Higher study workshops & lectures, Placement at XII standard, Course outcome & Program outcome mapping need, Target result show, Subject file, course file, lab file need, Student CGPA decide, STTP, Workshop for faculty need, Adjanct faculty need, Teacher performance report need, Practical Log book, Research Project, Extra classes time table, Weak student file, National Social Service, National Assessment & Academic committee, National Board of Accreditation in education institute, Quality Inspection Committee required.

Case Study: Improve the Human Heart Productivity

Preamble: It has been observed in Apollo hospital Mumbai the lot of people are facing heart problems. This is injustice with human being. Through out world human desired to live the life & in medical science field very poor development. Therefore author taking research work to finding out the solution. People must be enjoyed life more than 100 years but medical science not help here. Still scope is remain in medical. Here author applying mathematical model to cover the output from heart. Increases the life span of human body. In Nagpur Meyo hospital errect in [1905], Medical College cum hospital open in [1947], M. S., India. Through out world numbers of hospitals are open such as in India, Mahdya pradesh Pithampur, Devas, Indor, Selam in Kerala, North America, Africa, Netherland, Sauth Koria, Australiya, China & Canada are very pathetic condition. Today the urbanization very tremendously increasing on. In This hospital care more require. For the development purpose need of productivity improvement to increase the facilities rate in hospital. Therefore to developed system to improve the facility rate by applying some advanced technique like, Doctors team assaining extension / design method, Plant layout improvement, maintenance system, chart display system, time management technique, quality control process, ergonomics system applying here. The costing of plant in carores of rupees. For manual machine used in ancient days, but now fully automated hospital used. Personally survey in 2000, april month & discuss with owner why the hospital system weak. After long discussion it had been observed that there is the plant layout problems, maintenance schedule & quality control problem.

Name of Hopital: Apollo Hospital, Mumbai, (Maharashtra), India.

Object: Human life span increase & save from heart fail.

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Objectives: 1] Improvement hospital system.
2] Plant Layout improvement.
3] Maintenance schedule prepare.
4] Chart display system.
5] Time management Technique.
6] Apply Method study.
7] Ergonomic Principal
8] Appoint experience holder Doctors for Heart surgery

Independent parameter : Respective parameter such as, area of hospital, working environment, experience holder doctors, volve activity, changing new heart, positiveness, availability of surgical instruments, hospital demand, Patient satisfaction, Staff variation.

Dependent variable : Heart life span increasing.

Mathematical Model:
Heart life span = Capacity of Doctors + Manpower utilizing & other factors ----------equ. [5]

Output Parameter: Y= (Humain life span increase)
K= Propornationality Constant

Input parameters such as: A, B, C, D, E, F, G, H, I, J = Are the variables of raw Materials.
a,b,c,d,e,f,g,h,i,j = Indices for respective materials
The output waightage shown in as following table,

In the following **table:5** shows the probable values of hospital parameter.

S.N.	N	A	B	C	D	E	F	G	H	I	J
1	Z□	.27	.31	.07	.08	.02	.06	.11	.04	.01	.03
2	Z□	.26	.32	.05	.12	.01	.09	.09	.08	.01	.03
3	Z□	.26	.31	.07	.09	.02	.09	.09	.06	.02	.04
4	Z□	.25	.34	.06	.11	.03	.08	.12	.07	.03	.02

Table:5 Mathematical Model Results

N = Name of Hospital
P_1 = Seven Star hospital, Nagpur , M. S., India,
P□ =Appolo Hospital, Chennai, Tamil nadu.
P□ =Appolo Hospital, Mumbai, Maharashtra.
P□ = GLobal Hospital, South Dacuta, South America, USA.
Wt. A + Wt. B + Wt. C + Wt. D + Wt. E + Wt. F + Wt. G + Wt. H+Wt. I+Wt. J = are respective raw material waightage w. r. t. plant owener assinged the qualitative quantitity.----------equ. [8]
Therefore: Z□ + Z□ + Z□ + Z□ =1----------equ.[9]

The parameter are given below table : X

Institute Model					
S. N.	**Constant Variables**	**Movable Variables**		**Classification of Movable Variables**	
Variables:1	Faculty Members[A]	Education	A_1	Technical	Non- Technical
		Age	A_2	20-30	30-58
		Place	A_3	Native	Transferable
		Wages	A_4	High	Medium
		Experience	A_5	Higher	Lower
		Maintality	A_6	Sound	Normal
		Family Background	A_7	Industrial Oriented	Non- industrial
		Intellectual Capability	A_8	High	LOw

		Add-on Program attd.	A_9	High Number	Low Number
		Software awareness	A_{10}	Modern software	Normal software
		Vehical using	A_{11}	Own	Industrial vehical
		Higher study deserving	A_{12}	Part time	Study leave
		Categories of operator	A_{13}	Permanant	Contract
		Working Capability	A_{14}	Hardcore	Software
		Operator Availability	A_{15}	Mass Quantity	Limited
Variables:2	Location [B]	Hill area	B_1	High hill	Lower hill
		Distance from city	B_2	Nearby	Not possible to operator up-down
		Quality of Land	B_3	Dry	Stone oriented
		Facility	B_4	Gardening	Robust area
		Water facility	B_5	Amples	Only working
		Land ownership	B_6	lease	owen purchased
Variables:3	Transport [C]	Bus facility	C_1	Road	Rail
		By Monthly convence	C_2	Logistic	Daily/ Weekly/ Monthaly
Variables:4	Working Environment [D]	Ergonomics	D_1	Light system	Colour light system
		Seating arrangement	D_2	Suitable m/c operating oriented chair	Abedent
		Air system	D_3	Air conditioning	Naormal
		Suitable to body	D_4	Healthy	Tidious
Variable:5	Electrification [E]	Power Consumption	E_1	Heavy	Normal
		Current Flowing Capability	E_2	A/C	D/C
Variable:6	Finance [F]	Money Mode	F_1	Bank	Own Finance
		From Market Collection	F_2	Share	Bond
Variable: 7	Laboratory[G]	CNC M/c	G_1	Automatic	Semi- automatic
		M/C Orientation	G_2	Traditional	Unconventional
Variable:8	Innovation[H]	Place of invention	H_1	Institute Invention	Industrial Invention

		Invention	H_2	Industry Incubation	Business Incubation
		Idea	H_3	New idea	Research Idea
		Enhancement Level	H_4	Corporation level	Institute level
		Opinion invention	H_5	Interactive invention	Experimental invention
		Categories of invention	H_6	Number of idea	Complete Invention
Variable:9	Marketing [I]	Spread in Market	I_1	Order base	Door to Door
			I_2	Mass Quantity	Retailor
			I_3	Digital	Communication
Variable:10	Feedback [J]	Inventional Product	J_1	Individual	Group
			J_2	student placement Improve in compus	student placement Improve off compus
			J_3	Passout students Limited Demand	Passout students Heavy Demand

Following equ. put in equ. [i] to [x] put in equ.[6]

$A=A_1^a, A_2^a, A_3^a, A_4^a, A_5^a, A_6^a, A_7^a, A_8^a, A_9^a, A_{10}^a, A_{11}^a, A_{12}^a, A_{13}^a, A_{14}^a, A_{15}^a$ ----------equ.[i]

$B=B_1^b, B_2, {}^bB_3^b, B_4^b, B_5^b, B_6^b$----------equ.[ii]

$C=C_1^c, C_2^c$----------equ.[iii]

$D=D_1^d, D_2^d, D_3^d, D_4^d$----------equ.[iv]

$E=E_1^e, E_2^e$----------equ.[v]

$F=F_1^f, F_2^f$----------equ.[vi]

$G=G_1^g, G_2^g$----------equ.[vii]

$H=H_1^h, H_2^h, H_3^h, H_4^h, H_5^h, H_6^h$----------equ.[viii]

$I=I_1^i, I_2^i, I_3^i$----------equ.[ix]

$J=J_1^j, J_2^j, J_3^j$----------equ.[x]

$Y= K [(A_1^a, A_2^a, A_3^a, A_4^a, A_5^a, A_6^a, A_7^a, A_8^a, A_9^a, A_{10}^a, A_{11}^a, A_{12}^a, A_{13}^a, A_{14}^a, A_{15}^a) \mathbf{X} (B_1^b, B_2, {}^bB_3^b, B_4^b, B_5^b, B_6^b) \mathbf{X} (C_1^c, C_2^c) \mathbf{X} (D_1^d, D_2^d, D_3^d, D_4^d) \mathbf{X} (E_1^e, E_2^e) \mathbf{X} (F_1^f, F_2^f) \mathbf{X} (G_1^g, G_2^g) \mathbf{X} (H_1^h, H_2^h, H_3^h, H_4^h, H_5^h, H_6^h) \mathbf{X} (I_1^i, I_2^i, I_3^i) \mathbf{X} (J_1^j, J_2^j, J_3^j)] = 1$ ----------equ.[10]

Nomenclature :

Heart operation: Heart open use good quality of surgical untelsiles

Simulation : Depending upon capacity of hospital. Sketches of heart shape.

Operation Theoter capacity
Bed: No. ranges.
Trolley : Patient shifting.

Flow chart Heart Operation :
–- Open the heart
-- Doctor team
–- Instrument
–- Check valves & blood tubes.
-- Currect the air & Blood flow.
–- Make the stiches
-- Keep patient in positive thoughts
-- Remove the stiches
-- Enjoy the patient.
Hospital Machine : i) X-ray Machine
ii) Stress Relive activity.
iii) Heart blockages checking machine
iv) Design of transportation trolley. How many no. of patient shifted
v) The design of ward
vi) Depending upon the availability of land, finance & staff.
Vii) Design of quality circle.

Expected outcome :

1] Save the humanbeing life.
2] Utilization of space very exactly.
3] Less maintenance of machine.
4] In Hospital instruction display on notice board for safety from any accident.
5] Work measurement / time management very essential to improve productivity rate .
6] Display process chart, to easily any operator perform the assigned task.

Sub-Analysis: In the following tables [1],[2],[3] there were three hospital data collected. The data indicates the hospital physical infrastructure. The above mathematical model implemented here to find the positive results. The people want leave the life & they are die. try to increase the life span of of human. convert it 100 year to 125 year with applying suitable modern tools. Medical Institute improve their quality. Find out the solution on every desise. To apply the quality education in nursary level. Then automatically life span will increase.

Data collection :1 Umred Hospital, Tahsil Umred, Dist Nagpur, M. S. , India.

Table:6 indicates the hospital establishment parameters on daily basis. In below table given the analysis of Umred hospital. The depending upon the capacity of finance the hospital facility will open. As clear indicats in table [6] 1-2 caror need to establish the hospital.

S.N.	Data	Numerical values	Units
1	Hospital size	5-6	Acer of land
2	Set up valuation	1-2	Caror Rupees
3	Operation Theotor	15	Feet height.
4	Operation processes Type	Daily	Continuous
5	Hospital bed capacity	2500	Bed Quantity

Table:6 Data Umred Hospital

Data collection :7
Tumsar Hospital, Tahsil Tumsar, Dist Bhandara, M. S. , India.

Table:7 Found the hospital requirmental parameters on daily basis. In the below table it is clear that if the numbers of bed increase the cost of hospital will increse Again need of quality educatated practioner.

S.N.	Data	Numerical values	Units
1	Hospital size	7-8	Acer of land
2	Set up valuation	1-2.5	Caror Rupees
3	Opration Theotor	18	Feet height.
4	Operation processes Type	Daily	Continuous
5	Hospital bed capacity	2600	Bed Quantity

Table:7 Data Tumsar Hospital

Data collection :8 Hudkeshwar Road Hospital, Tahsil Nagpur, Dist Nagpur, M. S. , India.

Table:8 shows the hospital errection set up. In the below table [8] again the bed quantity increase the funding will rise to establish the hospital. Construction cost of building more. Quality of Doctors need.

S.N.	Data	Numerical values	Units
1	Hospital size	9-10	Acer of land
2	Set up valuation	3-4	Caror Rupees
3	Opration Theotor	20	Feet height.
4	Operation processes Type	Daily	Continuous
5	Hospital bed capacity	3200	Bed Quantity

Table:8 Hudkeshwar Road Hospital,

Costing : Low cast for human heart surgery.
Output : Enhance the productivity of hospital.

Significance:
1] Owner 25% more profit.
2] In a limited time period maximum patient check.
3] Reduce death rate..

Remedies: 1] Faculty member should be busy with research work & full time teaching process with result oriented.
2] All student must be present in class, if they want to leave, submit the application.
3] 100% student should be placed i. e. Run only, job guaranteed course. No killing of time.
4] Faculty member should be respectful.
5] Felicitate the meritorious student.
6] Every faculty member should be busy in their work.
7] The bunch of non teaching should not be collect at one laboratory or one spot.
8] Faculty member should not be mixed with non teaching or not shared their view.

Conclusion:
1] In a education system lot of corruption going on. Specially on time management techniques not properly adopt. People are spent their time lavishly
2] Must apply graphical system on every faculty member for quantitative quality work.

3] Check their Research activity Level.
4] If the faculty member not provide quality communication, education, knowledge, must be liable to punish them.
5] Apply guest lecture facility in institute from nursary to Doctorate level. Appoint fresh updated knowledge faculty members.
6] Internship need to take into every institute not only in medical colleges but also in every educational
7] Apply industrial visit policies writing reports by the students.
8] Assignment need to submit every subject otherwise teacher will not sign the practical journal.
9] When applying all activities need to cultural programs, workshops for students, student forum, students activities is added in curriculum.
10] Assaign final year class to good encouragetive Adhok faculty member, to provide the advanced knowledge.

Result: Effectively change to get new rebound faculty member to share their view. In equation[10], equ =1, is the output, result to improvement in productivity of the education envelop. The negative team will be change urgently. For effective quality education establish in University/ Institute level achieved by positively progress. Hence the continuous quality improve in education pocket.

Outline: Educational institute data very confidential. Management easily not release it. Most of the data cover in this research work for human being comfort educational policies providing purpose. This publication useful to the all world educational School, Colleges, Institute, Vocational Courses, Intellectual Property Rights, Add on Program Module, Technical Campus, Medical Campus, State University, Autonomous University, Central University & Deemed University.

Abbreviation:
CAY = Current Academic Year.
TQM= Total Quality Control.

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