

# Assessing The Critical Success Factors of Restructuring a Higher Education Institution Using BPR (Business Process Reengineering): A Case Study of National Post Graduate College

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**Abstract**— Purpose: Educational institutes are facing new challenges daily for which the need new strategies for organizational effectiveness and efficiency. Reengineering is one of the tools used in administering the improvement of productivity, better-cost control and asset management. The purpose of this paper is to examine the critical success factors of BPR in a higher education institute and to find the relative impact of each.

**Design/Methodology/Approach:** This paper examines the reengineering process of a higher education institute based in India. An observation of before implementing restructuring process and after implementing restructuring process has been discussed. Several aspects of an academic institute like governance, academics, student aspect, development aspect, best practices and achievements have been covered.

**Findings:** It was observed that the restructuring process improved the teacher-student ratio of the college. An increase in the number of learning centers increased including the number of teaching and non-teaching staff. There was a marked improvement in knowledge exchange and transfer. It was observed that of the five factors development aspects played the most important role in restructuring the higher education institute as compared to best practices, which came significantly less than others.

**Originality/Value:** A number of studies have been conducted on organizational restructuring but very few have considered the case of restructuring a higher education institute. Implementing the restructuring program helps meet the objectives of high quality education and training.

**Keywords**— Business Process Reengineering, Restructuring, Higher Education Institute.

## INTRODUCTION

Business Process Reengineering involves a radical redesign of core business process to achieve dramatic improvements in productivity and quality. It is an attempt to redesign core processes to improve service, cut costs and in turn make the organization more profitable. Ascari et al. (1995) have suggested four elements leading to successful BPR, viz., culture, process, structure and technology.

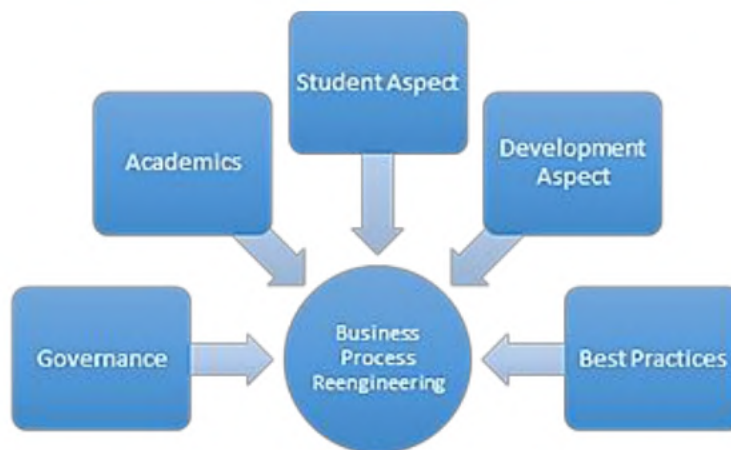
In the 20th century, almost all Fortune 500 companies have either tried or have planned to incorporate business process reengineering as their core business process.

The usability of the technique of BPR to make educational institutes profitable is very new and in a nascent stage. Initiatives from both the corporate and academia are required so as to implement a logistical

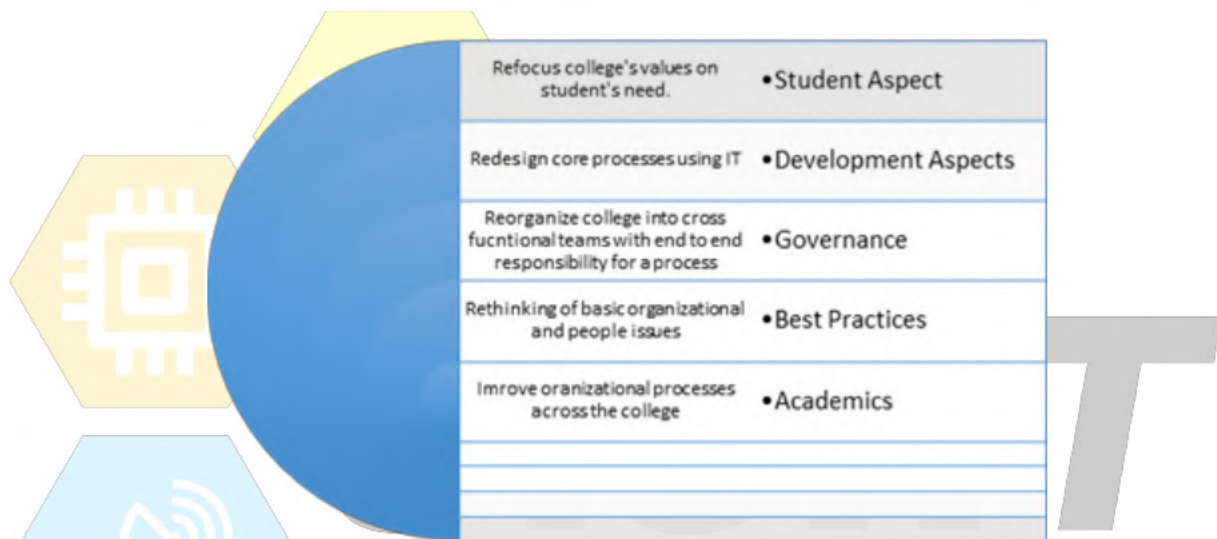
model of BPR in the higher education sector. To achieve the above stated, the paper takes a case study based approach where an attempt is made to structure a BPR model for higher education sector which may be eventually be generalized by overcoming the present limitations.

The case study covers the business process reengineering in five major steps:

1. Refocus college's values on student's need.
2. Redesign core processes of the college using information technology to enable improvements
3. Reorganize college into cross-functional teams with end-to-end responsibility for a process.
4. Rethinking of basic organizational and people issues.
5. Improve organizational processes across the college.



**Figure 1:** Critical Success Factors of BPR in Higher Education



**Figure 2:** Description of Relatedness of Critical Success Factors with BPR Factors.

To cater to the uniqueness of this study, researcher has suggested the above-discussed five aspects as the critical success factors of BPR in higher education institutes in India.

Hall et al. (1993) claimed that 50-70 percent of business process reengineering initiatives fails to deliver the expected results. Smith (2003) noticed that since the focus shifts on increasing development, profitability of the institute substantially declines.

Of the five factors considered studies (Smith, 2003; Peppard & Fitzgerald, 1997; Zinser et al. 1998) have shown that the aspect of development which refers to redesigning core process using information technology proves the most important aspect of reengineering process.

## RESEARCH GAP

A significant gap of application of the BPR process to higher education institutes has been found out by the review of literature. An inherent need of developing a comprehensive model of BPR pertinent to the higher education institute is required.

The few studies, which discussed application of business process reengineering, focused primarily of private sector. This study aims to be unique in its approach proving as one of the first such study in India in the public sector.

## METHODOLOGY

This research aims to achieve the following objectives:

1. To determine the various critical success factors of BPR in higher education.
2. To examine the impact of student aspect on process reengineering

3. To examine the impact of development aspect on process reengineering.
4. To examine the impact of governance on process reengineering.
5. To examine the impact of best practices on process reengineering.
6. To examine the impact of academics on process reengineering.
7. To suggest a relevant conceptual model of BPR in higher education
8. To provide recommendation for future development of BPR in higher education.

The study was conducted in following phases:

1. Theoretical Review of Literature
2. Data Collection
3. Data Analysis
4. Proposal of BPR Model relevant to Higher Education

#### QUESTIONNAIRE DESIGN:

Two separate questionnaires on a 7 point likert scale with 25 items each were administered to gauge the responses of students and teachers.

Experts in the field established the validity of the questionnaire. To check the internal consistency of the questionnaire the value of Cronbach's Alpha was calculated for which the results were as follows:

*Table 1: Cronbach's Alpha for Questionnaire 1:*

Cronbach's Alpha	N of items
.971	25

*Table 2: Cronbach's Alpha for Questionnaire 2:*

Cronbach's Alpha	N of items
.934	25

#### HYPOTHESES

- H1:** There is no significant impact of student aspect on process reengineering.
- H2:** There is no significant impact of development aspect on process reengineering.
- H3:** There is no significant impact of governance on process reengineering.
- H4:** There is no significant impact of best practices on process reengineering.
- H5:** There is no significant impact of academics on process reengineering.

#### SAMPLING

The sampling unit considered for the study was "the employees and students of National Post Graduate College". To obtain the sampling frame the various departments in the college were considered. The sample size for the study was kept at 300. The sampling technique employed was multi-stage sampling.

#### RESULT AND ANALYSIS:

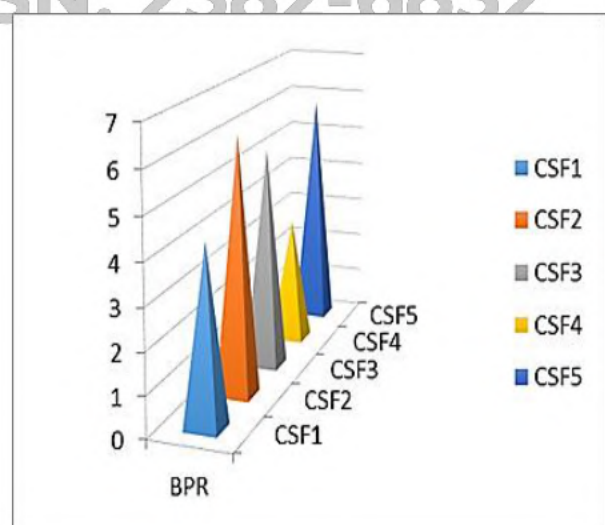
*Table 3: Profile of Respondents:*

Title	No.	No of People who observed BPR	No.	Percentage
<b>Students</b>	232	Less than a year	149	49.66%
<b>Teachers</b>	68	1-5 years	66	22.00%
		5-10 years	47	15.66%
		10 years and above	38	12.66%

As is evident from the table above presenting a brief profile of the respondents. It has been observed that more number of students participated as compared to teachers.

The people having spent less than a year in the college was significantly high (49.66%) as the study was conducted during fresh enrolment period.

*Students' Response Analysis:*



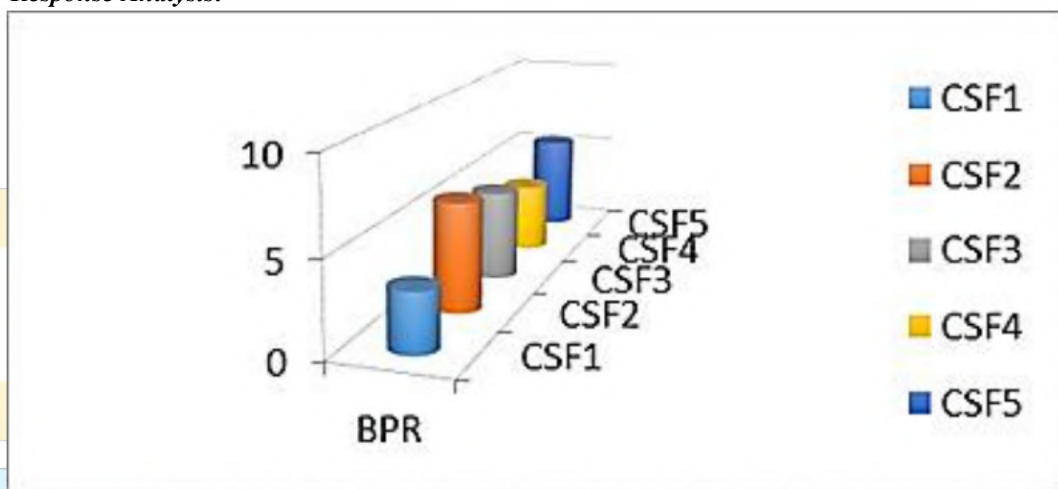
*Figure 4: Graphic Representation of Students' Responses*

**Table 4: Values of Mean, Standard Deviation and Variance of Students' Questionnaire**

	N	Mean	Standard Deviation
Student Aspect	5	4.3	.632
Development Aspect	5	6.2	.724
Governance	5	5.4	.714
Best Practices	5	3.1	.448
Academics	5	5.8	.478

An analysis of the student responses clearly indicates that development aspect proved to be most important criteria for process restructuring followed by academics

and governance. Student aspect presented an immense scope of improvement.

**Teachers' Response Analysis:**

**Figure 5: Graphic Representation of Teachers' Responses**
**Table 5: Values of Mean, Standard Deviation and Variance of Teachers' Questionnaire**

	N	Mean	Standard Deviation
Student Aspect	5	3.2	.950
Development Aspect	5	5.9	.815
Governance	5	4.9	.704
Best Practices	5	3.8	.763
Academics	5	5.3	.695

An analysis of the teacher responses clearly indicates that development aspect proved to be most important criteria for process restructuring followed by academics and governance. Student aspect presented an immense scope of improvement. But it has a high standard deviation, which means that there is a substantial amount of population, which believes that student aspect has improved, and a substantial amount, which doesn't.

The majority for student aspect has averaged out on 3.2. In teacher responses, it is seen that following of best practices also closely matches with student aspect.

**HYPOTHESIS TESTING**

The hypothesis was tested using multiple correlation analysis:

**Table 5: Pearson Coefficient of Correlation among Critical Success Factors and its Impact on BPR**

	CSF 1	CSF2	CSF3	CSF4	CSF5
BPR Score	.585	.843	.789	.643	.734



As is evident from the table above that development aspect has the highest impact on BPR and Student aspect the least. But an observation to be made is that all five critical success factors correlate positively with BPR, which means that each factor significantly impacts the process reengineering.

The null hypotheses stated above are therefore rejected and each factor is found to have significant impact on business process restructuring.

### CASE ANALYSIS

#### *Brief Accomplishments:*

The college was established in the year 1974. Since then, the college has various accolades to its accord. The Arts faculty was introduced along with PG classes in commerce. In 2005 college introduced the science and computer faculty followed management and arts in 2006. In 2009 the college was granted the status of autonomous by UGC and in 2013 NAAC accredited the college on a CGPA of 3.20. In 2014, the college received financial assistance from UGC for establishing Deen Dayal Upadhyay KAUSHAL Kendra. This is a consistent growth chart.

Other than running various conventional courses, the college has pioneered in introducing courses in the field of retail management, analytical techniques and instrumentation analysis, web designing, multimedia application, GIS and remote sensing, forensic science and criminology,

#### *Automation of Administration and Academics:*

The college was gradually automated with the current status being that admissions are also conducted online. An attempt is being made to bring an examination reform but automating the examination procedure. The pilot testing of this phase was conducted six months before.

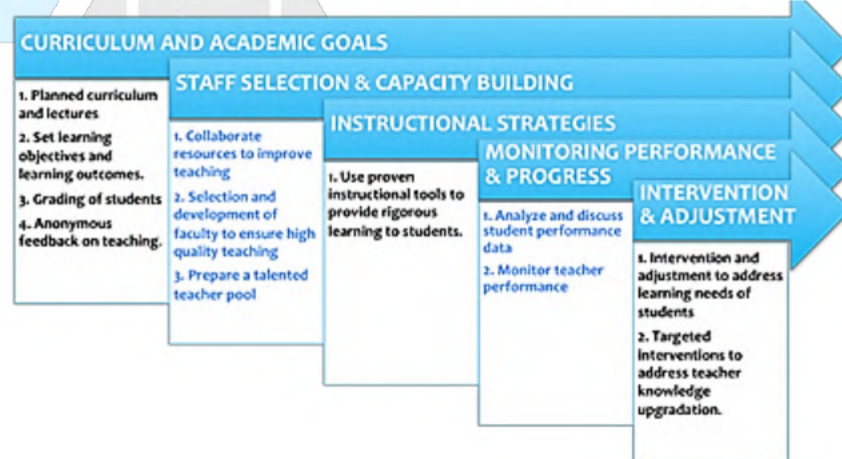
#### *Inclusion of Transparency in the System:*

To increase transparency in the system various changes were brought about. Semester system was included at both undergraduate and postgraduate level. Various modification in syllabi were brought about to make them more industry specific. A rigorous internal assessment procedure was introduced for continual evaluation Model answers from paper setters were procured and answer scripts of toppers was kept in the library for display. A seven step student support system was established and new job oriented courses were started.

#### *Consistent Academic Improvement:*

The college implemented the choice based credit system to make transition between courses more smooth. The college offers a disciplined and a congenial academic environment. Various capacity building programs for both faculties as well as students are regularly organized. Encouragement to use technology amongst students is consistently present. A regular interaction of industry and academia is kept and the administration conducts academic audit frequently.

The core practices of the college are displayed below:



*Figure 6: Core Practices of the College*

The college follows an innovation cycle to renovate the curriculum and syllabi regularly. The result of this innovation cycle has been that various electives and soft

skills courses have been introduced. Curriculum has been designed to meet the 21st century global job market. Remedial, tutorial and practical classes form an

essential part of each paper imparted. The board of studies have both industrial nominees as well as student nominees for better representation.

The college has a total of 31 different labs to cater to the diverse needs of the students.

### Technology in Academics and Administration:

All academic and administrative activities have been computerized to ensure transparency and decentralization. Focus on development of e-content for each course is emphasized and the curriculum is regularly updated in the college. Both teaching and research is conducted using technology-based tools. The campus is wifi enabled and student takes up online internship programs. Database management system is followed pertaining to administrative activities of the college. All financial accounts are electronically maintained.

### Student Support System:

A student support system has been put into place which focuses on three aspects primarily:

1. Student Performance: which is being assessed by class participation, assignments, semester examinations, group presentation, summer

internships, dissertation, on the job training and tutorial/remedial classes.

2. Student Participation: in various committees like admission committee, student welfare committee, cultural activities committee, science club, anti ragging committee, grievance redressal committee, parents meet, etc.
3. Student Support: This mechanism focuses on slow learners, providing disability services, psychological counseling and student security.

The student support system is a 7 step system whereby:

- Step 1: Admission counseling of students
- Step 2: Counselling during admission
- Step 3: Faculty Orientation Programme
- Step 4: Unsuccessful student meet with faculty head and parents
- Step 5: Open house feedback from last year's students.
- Step 6: Confidential feedback / suggestion from students
- Step 7: Meeting of teaching and non-teaching staff to address issues in step 6.

The consistent result of improvement in above cited best practices has resulted in increased student enrolment numbers.

**Table 6: Student Enrolment in the past five years:**

	1	2	3	4	5
<b>Total</b>	7,800	6,349	5,267	3,248	4,946

The college has also emphasized on research output of the faculty. The result of which has been

**Table 7: Research Output of the Faculty over past five years.**

Five Years		Overall	
Details	Number	Details	Number
<b>Research Papers (International)</b>	15	Research Papers (International)	98
<b>Research Papers (National)</b>	76	Research Papers (National)	245
<b>Chapters in edited Books</b>	08	Chapters in edited Books	22
<b>Books (International)</b>	02	Books (International)	07
<b>Books (National)</b>	12	Books (National)	43
<b>Consultancy</b>	50	Consultancy	70
<b>International Conference (Organized)</b>	03	International Conference (Organized)	05
<b>National Conference (Organized)</b>	13	National Conference (Organized)	24
<b>International Conference Attended</b>	29	International Conference Attended	45
<b>National Conference Attended</b>	112	National Conference Attended	236
<b>Workshops Organized</b>	24	Workshops organized	46
<b>Workshops Attended</b>	27	Workshops Attended	85

The college has been sanctioned 6 UGC projects. To increase industry linkages, the college has MOUs with various public and private sector organizations:

*Table 8: MOUs with various public and private sector organizations*

Name of the Institution	Nature of the Understanding
1. Tata Consultancy Services	Community College
2. Aircel Limited	Campus to Corporate Program
3. IIT Bombay	Online Test (Software)
4. Sherlock Institute of Forensic Science	Forensic Sciences and Digital Crime
5. Aarambh Welfare Foundation	Promoting social concern
6. Census of India, GOI	GIS Town Mapping
7. National Commission for Women, GOI	Legal Awareness- Women Related Laws
8. Samadhan Samiti	Internship Training, Entrepreneurship Development Program
9. PNB IIT	Industrial Partner for Campus Placement & Training
10. Geotech	Cadastral Mapping of Uttar Pradesh

### CONCLUSION

In conclusion, though the review suggests that only 30-40% of organizations succeed in implementing process reengineering, but as is evident from both primary and secondary data analysis BPR has been successfully implemented by National PG College, and the college has gained immense popularity in the region because of the best practices it follows. In almost all the five critical success factors of BPR, the college has performed immensely well and this has resulted in increased profitability of the college.

National P.G. College is amongst the only public sector higher education institute in India to have presented a successful restructuring example and have so far been successful in doing so.

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