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Estd. 1917

101 years of EXCELLENCE

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Date : 15/4/19

To
The Principal Secretary
His Excellency the Governor-cum-Chancellor of the Universities of Bihar
Raj Bhavan, Patna.

Sir,

As per your direction to the Pro Vice Chancellor, Patna University for reviewing and recasting of the Blue Print for Higher Education for the Universities of Bihar, the work has now been completed accordingly. Hence, I am forwarding the reviewed and recasted documents for the needful.

Regards,

Rash Bihari Pd. Singh
Rash Bihar Pd. Singh
Vice Chancellor
15-4-19

BLUEPRINT of HIGHER EDUCATION in BIHAR

Preface

Our vision for excellence comprises of a responsible reevaluation of the rich traditions of the state of Bihar and focus on the dynamics of future challenges to build worthy human values and capital for Bihar, India and the world.

In the resurgent march towards excellence, the Universities of Bihar need to introduce qualitative innovations through information technology, accountable-governance, inclusive social ethics and meaningful research and high-end development. The challenges include building a scholarly community engaged in regular and committed teaching; quality research, co-curricular and socially productive activities, fair and timely examinations. The Universities must re-established their domain as temples of learning where knowledge, skills, values and wisdom are fearlessly pursued and where intellectual integrity and artistic freedom combine to facilitate the microcosm of an enlightened civilization. If we can build such institutions through collective, democratic, disciplined and committed participation, we can truly be proud to contribute to inclusive development in Bihar. Responsibilities of our Universities to the civil society therefore must include: innovation and creative re-interpretation of existing forms of knowledge, connecting productively with industry, government and civil society in promoting common interests; facilitating professional competence and socially conscientious human resource; encouraging leadership qualities and cultivate positive interests, attitudes and moral intellectual values and producing worthy ambassadors for the state and the country in every discipline.

In our pursuit of excellence we strive to build in the Universities of our State:

- A disciplined scholarly community engaged in a sincere search for knowledge, skills, values and wisdom. It is a place where students irrespective of their background learn to pursue truth through rational enquiry;
- where teachers inspire students to higher levels
- where research is valued
- where academic freedom is encouraged and protected

- Where independence of mind, intellectual integrity and artistic expression promotes understanding and where students inspired by their dedicated teachers learn to become responsible citizens and leaders of human civilization.

Patna University was given the responsibility by the H/E Governor cum Chancellor of Universities in Bihar to organize a two day Seminar to find out modalities and prepare the roadmap of Higher Education in Bihar. A number of Scholars and expert Resource persons took part in the discourses and discussions held in the Seminar during 4-5th February 2019 at the Rajendra Mandapam, Rajbhawan, Patna.

This report contains 10 chapters, the first eight (08) Chapters are based on the suggestions and ideas generated during the two day seminar to prepare a roadmap to stream line the state of Higher Education affairs in the University campuses of Bihar and subsequently achieve excellence. A list of experts/ resource persons/ contributors and compilers is available as Annexure 1. on P. – .

1.1 Identification of the areas needing attention

In order to bring the things on right track, eight areas were identified. These need immediate attention and to be strengthened.

- i. NAAC Accreditation of all Universities and its units**
- ii. Digitization and Automation**
- iii. Academic Reform**
- iv. Excellence in Research and Innovation**
- v. Examination Reform**
- vi. Library Automation**
- vii. Promotion of Students activities and Institutional Social Responsibilities**
- viii. Participation in NIRF**

1.2. The Timeline

There are 14 state universities in Bihar as on date. Out of these only ___ are NAAC accredited. It was suggested that the first initiative to be taken by all universities is to get all formalities completed to obtain NAAC accreditation within one year i.e. by 2020. Timeline was set for all the universities to obtain appropriate reform in each of the above mentioned parameters mentioned in section 1.1 so that all universities can to apply for the National Institutional Ranking by 2022. Table.1. on P.3 mentions the timeline.

BLUEPRINT OF HIGHER EDUCATION in BIHAR
Time Line for Achieving the Targets by state universities of Bihar

S.N	Name of University	NAAC Status	Digitization & Automation	Academic Reform	Research & Innovation	Examination & Evaluation	Library Management	Student Activities & Institutional Social Responsibility	NIRF
1	Patna University Patna	1 st Cycle (SSR submitted)	2020	2020	2021	2021	2020	2021	2021
2	T. M. Bhagalpur University, Bhagalpur	Grade B (CGPA 2.5)	2020	2020	2021	2021	2020	2021	2021
3	L. N. Mithila University, Darbhanga	Grade B (CGPA 2.46)	2020	2020	2021	2021	2020	2021	2021
4	Aryabhatta Knowledge University, Patna	1 st Cycle 2020	2020	2020	2021	2021	2020	2021	2021
5	K.S.D. Sanskrit University, Darbhanga	Grade B (CGPA 2.7)	2020	2020	2021	2021	2020	2021	2021
6	Nalanda Open University Patna	1 st Cycle 2020	2020	2021	2021	2021	2020	2021	2021
7	B.R.A. Bihar University, Muzaffarpur	Grade B (CGPA 2.27)	2020	2021	2021	2021	2020	2021	2021
8	Jai Prakash University Chhapra	1 st Cycle 2020	2021	2021	2022	2021	2021	2021	2022
9	Veer Kunwar Singh University, Ara	1 st Cycle 2020	2021	2021	2022	2021	2021	2021	2022
10	Magadh University, Bodh Gaya	Grade C (CGPA 1.76)	2021	2021	2022	2021	2021	2021	2022
11	B.N. Mandal University, Madhepura	1 st Cycle 2020	2021	2021	2022	2021	2021	2021	2022
12	MMH Arabic & Persian University, Patna.	1 st Cycle 2020	2021	2021	2022	2021	2021	2022	2022
13	Patliputra University, Patna	1 st Cycle 2022	2021	2021	2022	2021	2021	2022	2022
14	Munger University, Munger	1 st Cycle 2022	2021	2021	2022	2021	2021	2022	2022
15	Purnea University, Purnea	1 st Cycle 2022	2021	2021	2022	2021	2021	2022	2022

Phase1 - Within one year (2020)

Phase 2 - Within two years (2021)

Phase 3 - Within three years (2022)

BLUEPRINT OF HIGHER EDUCATION in BIHAR

Time Line for Achieving the Targets by state universities of Bihar

S.N	Name of University	NAAC Status	Academic Reform	Research & Innovation	Examination & Evaluation	Library Management	Digitization & Automation	Student Activities & Institutional Social Responsibility	NIRF
1	Patna University Patna	1 st Cycle (SSR submitted)	Phase 1	Phase 2	Phase 2	Phase 1	Phase 1	Phase 2	Phase 2
2	T. M. Bhagalpur University, Bhagalpur	Grade B (CGPA 2.5)	Phase 1	Phase 2	Phase 2	Phase 1	Phase 1	Phase 2	Phase 2
3	L. N. Mithila University, Darbhanga	Grade B (CGPA 2.46)	Phase 2	Phase 2	Phase 2	Phase 1	Phase 1	Phase 2	Phase 2
4	Aryabhatta Knowledge University, Patna	1 st Cycle Phase 1	Phase 2	Phase 2	Phase 2	Phase 1	Phase 1	Phase 2	Phase 2
5	K.S.D. Sanskrit University, Darbhanga	Grade B (CGPA 2.7)	Phase 1	Phase 2	Phase 2	Phase 1	Phase 1	Phase 2	Phase 2
6	Nalanda Open University Patna	1 st Cycle Phase 1	Phase 2	Phase 2	Phase 2	Phase 1	Phase 1	Phase 2	Phase 2
7	B.R.A. Bihar University, Muzaffarpur	Grade B (CGPA 2.27)	Phase 2	Phase 2	Phase 2	Phase 1	Phase 1	Phase 2	Phase 2
8	Jai Prakash University Chhapra	1 st Cycle Phase 1	Phase 2	Phase 3	Phase 2	Phase 2	Phase 2	Phase 2	Phase 3
9	Veer Kunwar Singh University, Ara	1 st Cycle Phase 1	Phase 2	Phase 3	Phase 2	Phase 2	Phase 2	Phase 2	Phase 3
10	Magadh University, Bodh Gaya	Grade C (CGPA 1.76)	Phase 2	Phase 2	Phase 2	Phase 2	Phase 2	Phase 2	Phase 3
11	B.N. Mandal University, Madhepura	1 st Cycle Phase 1	Phase 3	Phase 3	Phase 2	Phase 2	Phase 2	Phase 2	Phase 3
12	MMH Arabic & Persian University, Patna.	1 st Cycle Phase 1	Phase 3	Phase 3	Phase 2	Phase 2	Phase 2	Phase 2	Phase 3
13	Patliputra University, Patna	1 st Cycle Phase 3	Phase 3	Phase 3	Phase 2	Phase 2	Phase 2	Phase 3	Phase 3
14	Munger University, Munger	1 st Cycle Phase 3	Phase 3	Phase 3	Phase 2	Phase 2	Phase 2	Phase 3	Phase 3
15	Purnea University, Purnea	1 st Cycle Phase 3	Phase 3	Phase 3	Phase 2	Phase 2	Phase 2	Phase 3	Phase 3

Phase1 - Within one year

Phase 2 - Within two to three years

Phase 3 - Within Five Years

1.3. Planning, strategies and effective implementation

Judicious planning and setting strategies to improve on each of the criterion mentioned in section 1.1 and their effective implementation are extremely important to achieve the goal within the set timeline.

The suggestions outlined by the experts followed by feedback received from the peers on each of the criterion during deliberations in various sessions of the seminar are compiled and presented in the subsequent eight chapters (Chapter 2 to 8). This will provide guidelines to the respective University to plan their course of action to earn a respectable position in the NIRF eventually.

1.4 About the Budget

Appropriate budgets need to be prepared in order to initiate and complete improvements in various areas to achieve the goal within the stipulated timeline. Budget for all the eight criteria were prepared for Patna University and presented in Chapter 9. The templates for all criteria are available in Chapter 10. It is expected that these will be helpful to any HEI to prepare its own budget.

“Budget is a proxy for project planning.” This aphorism was a live-tweet of a talk given by Aidan Byrne, CEO of the Australian Research Council. In other words, when you finish laying out a budget, you should feel like you’ve walked through the entire project.

1.5 List of Experts / Resource Persons

National Seminar
on
Blueprint of Higher Education in BIHAR
Organized By
Patna University
Date: 04-05 February, 2019

Venue- Rajendra Mandap, Rajbhavan, Patna

S.N.	Topic/Area	Resource Persons /Speakers
1	NAAC Related Issues	1. Dr. Virendra Singh Chauhan, Chairman, NAAC
2	Digital Initiatives in Higher Education	1. Sri Rahul Singh, IAS Principal Secretary, I.T. Govt. of Bihar 2. Dr. N. Saravana Kumar, IAS Joint Secretary (ICC & Tel) Ministry of HRD, Govt. Of India 3. Dr. Vivek Samant Maharashtra Knowledge Corporation, Pune
3	Academic and Examination Reforms, Quality Improvement of Higher Education	1. Dr. Rama Kodapalli, NAAC Bengaluru 2. Dr. K. Ramachandran, Advisor, NIPEA (Faculty Development)
4	Students Activities, Social responsibility and Alumni University Interface	1. Dr. Ranbir Chander Sobti, Advisor to His Excellency the Governor of Bihar
5	Issues of Quality and relevance, research Improvement and Funding Agencies	1. Prof. Shyam Menon, Ex- Vice Chancellor, Ambedkar University, New Delhi 2. Dr. Ashok Kumar Ghosh, Chairman, Bihar Pollution Control Board 3. Dr. Tanuja, Associate Professor, Dept. Of Botany, T.P.S. College, Patna
6	Library Facility	1. Dr. Raj Kumar, Librarian(Rtd), Punjab University, Chnadigarh 2. Dr. Ashok Kumar Jha, Assistant Librarian (Incharge), Patna University Library
7	Extra Curricular Activities, Sports and Cultural Activities	1. Dr. Sanjay Sinha, IAS, Director (Sports) Art, Culture & Youth Department Govt. of Bihar 2. Prof. Shanker Ashish Dutt, Head, Dept of English, Patna University
8	NIRF Related Issues and Industry Academia Interface	1. Dr. Suchindra Kumar, Director, Higher Education (EY) 2. Sri Gaurav Singh, Senior Manager (EY) 3. Prof. Dolly Sinha, Pro Vice Chancellor, Patna University
9	Role of Private Universities in the in the Development of Higher Education in Bihar	1. Prof. T.R. Venkatesh, Vice Chancellor, Amity University, Patna

1.6 List of Compilers

National Seminar
on
Blueprint of Higher Education in BIHAR
 Organized By
Patna University
 Date: 04-05 February, 2019

Venue- Rajendra Mandap, Rajbhavan, Patna

S.N.	Topic/Area	Compilers
1	NAAC Related Issues	Dr G B Chand Dr Santosh Gupta
2	Digital Initiatives in Higher Education	Prof. Birendra Prasad Dr. Sandeep Kumar Garg
3	Academic and Examination Reforms, Quality Improvement of Higher Education	Dr. Sameer Kumar Sharma Dr Gaurav Sikka
4	Students Activities, Social responsibility and Alumni University Interface	Dr. Rakesh Ranjan Dr. Md. Nazim
5	Issues of Quality and relevance, research Improvement and Funding Agencies	Dr. Ashok Kumar Jha Dr. Naqvi Ahmad John
6	Library Facility	Dr. Pushpanjali Khare Sr. Manish Kumar Verma
7	Extra Curricular Activities, Sports and Cultural Activities	Dr. Deepti Kumari Dr. Stuti Prasad
8	NIRF Related Issues and Industry Academia Interface	Dr. Anuradha Sahay Dr. Saima Jamal
9	Role of Private Universities in the in the Development of Higher Education in Bihar	Dr. Amrita Prasad Dr. Priyadarsahni

Blue print for Higher Education

Chapter 1

NAAC Accreditation

Introduction

In recent years, there has been a strong drive to improve the **teaching-learning-research performance in higher educational institutions (HEIs)** particularly the **quality of research and employability outcomes in the universities**. Whether it is a state University or a Central University or a Centre or a Research Institute, the Government wants the **institutions to become more accountable for their funding**. As part of this accountability process different countries have introduced different assessment exercises. In India too it is mandatory for any HEI to be accredited by the **National Assessment and Accreditation Council (NAAC)**.

The NAAC grade and the CGPA is an indicator of the absolute quality of the particular institution. The Chancellor's Secretariat is therefore, rightly given direction to all Universities to take the necessary steps to complete all formalities and get themselves NAAC accredited along with all their constituted/ affiliated units by the end of 2019.

The NAAC manuals/ NAAC website describe all details. The HEI going for NAAC assessment must go through the manuals and consult the website regularly to do the preparation in the right direction. HEIs are suggested to conduct workshop/ seminars on NAAC assessment to skill their faculty members, support staff and students. They can invite one/ two experts in this field.

CAUTION:

NAAC categorically cautions that third party intervention for preparation of materials for IIQA/ Self Study Report (SSR)/ AQAR etc. falls under unethical practice and is punishable.

Chapter 2

Digitization and Automation of Universities : University Management System

Digitization

Introduction

Application of technology has revolutionized the way teaching is conducted. It offers the flexibility for learning to be available to students at any desired time or place. Digitalization of education has also blurred the borders that were previously defined by students and teachers being present in the same location at the same time. Online learning courses are on the rise and have been facilitated by the increase in digital technology now being available in most of the country. With the introduction of the learning management systems (LMS), student assessment through digitalization technology is now a reality. Students can also interact with their peers in and outside of the classroom. The aspect of peer centered learning has also helped to steer the soft skills of the students. LMS would positively impact the teaching process and student assessment.

This type of delivery has some substantial conveniences. It has no regional boundaries, so the internationalization of education has become a common phenomenon with satellite campuses mushrooming all over the world. New ways of teaching may include development of new information and communication technologies such as cable and satellite transmissions, audio and video conferencing, PC software and CD-ROMs and in particular the Internet sources. This wide variety of means increases the accessibility to the rest of the world.

Phase- wise Implementation

The action plan has been divided into three phases:

Phase I – Short- term Action Plan

Phase II – Medium- term Action Plan

Phase III – Long- term Action Plan

Phase I components:

- Detailed website of the University
- Office Management System including file tracking.
- Online fee payment system including admission, examination and other components.
- Online admission and result declaration.
- Detailed faculty information including research interests to be made online.
- Online University prospectus with academic and activity calendar
- Purchase through GEM portal
- Biometric attendance of teachers and students
- Introduction of **Swayam** courses for students:

SWAYAM courses at present are coordinated by nine top institutions of India. Students can opt 20% of their courses. For this to happen, all VCs and Heads of Institutions are requested to take approval of the Competent Authority (Academic Council/Senate) for these courses so that students can opt for them, and seek transfer of credits. The SWAYAM courses shall be publicized by printing posters, What's App messages, Facebook posts and Twitter accounts of the University. The objective is to reach as many people as possible so that they can get benefited by these courses. If some of the talented teachers in the Universities who are willing to place their course on SWAYAM, they should be encouraged. Such proposals may be sent to the National Coordinator for approval and for providing funding to prepare the courses. All teachers may be asked to use the SWAYAM courses during their own teaching process so that we can have a blended learning process. The flipped classroom model, where the SWAYAM videos are seen at home, along with the discussion in the class would help in improving the quality of learning. Every University should have a Digital Learning Monitoring Cell (DLMC) which reviews the current use of these digital resources and suggests way to improve their utilization in both the university and the affiliated institutions. SWAYAM also provide online training and refreshers courses such as ARPIT for teachers.

- **SWAYAM Prabha** as an outreach program is to approach the rural as well as urban area via DTH channels, where internet connection is not proper. There are 32 channels, and apps for the same are available. In connection with this IIT – Pal developed by IIT Delhi, help those students who interested to prepare for IITs.
- Introduction of **National Digital Library (NDL)**:
All the Universities and their constituent and affiliated colleges should join NDL. This will help students to access more than 80 lakh digital resources at no cost. The students should be acquainted to these resources at time of admission and during class work & assignments. All books in the libraries may be digitized and shared with the NDL at IIT Kharagpur so that it would add to the digital resources and there is greater sharing of the digital resources by all institutions.
- Adopt **Anti-plagiarism policy** for maintaining quality assurance and high quality research in the universities of Bihar. All the University of Bihar should sign Memorandum of Understanding (MoU) with Shodhganga Inflibnet to access the anti-plagiarism software URKUND free of cost. In addition

UGC Inflibnet provides financial help to digitize all the PhD. Thesis submitted over the last 5 years in the University. Universities should upload the entire thesis in the Shodhganga database.

- Hybrid model of teaching where there should be a combination of physical presence of the teacher and technology.
- **National Academic Depository (NAD)** : Every institution should join the NAD which holds all the certificates digitally. All the past certificates/degrees/diplomas issued should also be uploaded on to the NAD.
- Creation of knowledge portal and post of **Chief Digital Officer**

Phase II components:

- Every University should have a **Digital Learning Monitoring Cell (DLMC)** which reviews the current use of these digital resources and suggests way to improve their utilization in both the university and the affiliated institutions.
- **Smart Campus:** Every campus shall plan for efficient and economical use of water, electricity and waste. Use of solar power and water recycling systems may be planned for, as they would bring sustainability and savings in the long run.
- **Digital campus:** All campus processes like admissions, academic calendar, attendance, assessments, result declaration, administration, pay roll, financial and such other processes shall be computerized.
- **National Digital Payment Mission:** Every institution should move towards a complete digital payment system in their campus covering all transactions by the institution. The digital payment modes like BHIM App should be introduced to all students and commercial establishments on the campus, including the canteens.
- Digitalization of accounting system in hostels improves the collection of fee and their distribution among the hostels.
Registration of the received and sent documents created in information system.
- Signed contracts between the university and other organizations are registered under the information system.
- Digitalization of human recourses allows the receiving of the complete information concerning university staff, to observe the staff occupancy, to execute the control of certification of the university workers.

Phase III components

- Universities of Bihar implement the UMIS based on open source softwares and cloud based server meeting all the necessary security requirements (Secure Socket Layer SSL certificate) complying with National Information Centre (NIC) norms. Meghraj an initiative by NIC could be one such option.
- Encourage collaborative research through teleconferencing and online management system.
- Digital Tracking of prospective bright and creative students at nascent stages of learning
- Convene college and university teachers to gather digital feedback and promote initiatives, establish links with industry world-wide
- Open up for nontraditional students through complete digitalization
- Cater to changes in workforce demand by automation
- Inculcate cloud delivery systems, video streaming and other broadband intensive applications.
- Customization of courses through digitalization

- Introduction of dynamic accreditation
- Global transparency
- Digital laboratory
- Outsourced data centers
- Smart and green buildings
- Digital research project management system
- Personalized website development by students

Automation

Introduction

The university information management system (UIMS) is created as the integrated system, aiming to digitalize all university processes. Processes use general university registers, general classifications. It allows for individual users to avoid the different interpretation of the same data. All data are stored in a centralized database. This way it allows the avoiding of data duplication. Information is gathered, put to the database and managed, where the first sources are placed, i.e. in the university subdivisions. That is why the circulation time of documents decreases, less logic mistakes are made, and search and elimination of mistakes can be done effectively.

The information system is based on University computer network. The fiber optical lines connect the most university subdivisions. It ensures quick and reliable information transmission.

Automation Components

The university information system contains all basic processes at university:

- I. Student cycle;
- II. The management and administration of university;
- III. Human resources;
- IV. Financial activity and accountability;
- V. Library management system (discussed in Chapter 7)

(I) Student cycle:

This process is one of the main the university's activities. The enrolment of new students into the first and the second levels, as well, is computerized in studying process. The enrolment for the first studying level is executed together with other universities.

The digitization enables the control of studying students of studies process. The precise and operative information about studying students amount in each studies program is presented, the changing of this number and the tendencies of changing allow for the university administration to control this process, to make the conclusions about each studies' program demand and to correct the admitted student's number. The accountability of student's progressiveness quantitatively allows the evaluating of the studies process. The database stores the information about the student's received studies modulus evaluation, the date of exam and the examiner.

(II) Management and Administration of University:

The information system is a model of the majority processes, executing at university.

The fact that the university administration operatively can get reliable information helps to control them in real environment. The registration of the received and sent documents is created in information system, improving the university administration. At the same time, the executing control of assignments and responses according is carried out. In addition, the signed contracts between the university and other organization are registered. Information system renders the information concerning these contracts and helps to control their execution.

(III) Human Resources:

The digitization of human recourses allows the receiving of the complete information concerning university staff, to observe the staff occupancy, to execute the control of certification of the university workers. Exhaustive and operative information about university staff provides the university administration with the opportunity of effective using of human resources. In addition, precise information about taken posts, the work time, and the salary of every servant is necessary for bookkeepers for the accounting of salaries.

(IV) Financial Activity:

The nomination of payments for students, the accounting and payment process are computerized. The processes of connected different university subdivisions to the continuous system, allowed to prepare funds, from which the payments are done, to distribute the disposition of these funds better among students, speed up this process and to enhance reliability of the control of funds using implementation. The direct distribution of payment data from information system to banks allowed for university to reject quite many expenses of work and speeded up they are receiving for student. The one united system forms the payment of student fees, which usually is done in the bank, and the use of these fees. Precise information about the fulfilled payment operatively reaches from the bank through the computer network the university information system, which facilitates to fulfil the fees administration and their distribution to funds. The fund administrators have used the information system for the disposition of the received funds. The information system is also used for the disposition of other non-budgetary incomes of the university and the execution of the accountability.

Conclusion:

The use of computer and digital technologies is usually more productive when it supports collaboration and interaction, particularly collaborative use by learners or when teachers use it to support discussion, interaction and feedback.

Teachers and/or learners should be supported in developing their use of digital technology to ensure it improves learning. Training for teachers (and for learners), when it is offered, usually focuses on technology skills in using the equipment.

The use of digital technology is usually more successful as a supplement rather than as a replacement for usual teaching. It is therefore important to identify carefully what it will replace or how the technology activities will be additional to what learners would normally experience.

To make online education successful we need to modify the entire education sector and the mind-set of the employers. The hybrid model is proposed to meet the requirements of Indian students in special context to Bihar where there should be a combination of physical presence of the teacher and technology.

Digitalization should be introduced in phased manner in consonance with traditional teaching.

Chapter 3

Academic Reforms

Introduction

At present most of the Institutions in Bihar are generating degrees without proportionate knowledge base. The performances of students in various external examinations are not satisfactory and need improvement. The learning outcomes of students are rarely evaluated on mid-term basis. The teaching-evaluation systems need to be more student centric rather than being only university examination based. The enhancement of seats in different academic programmes to improve Gross Enrolment Ratio (GER) has been done without scientific evaluation of required physical and academic infrastructure. The “autonomy” of Universities is not coupled with “Accountability”.

The involvement of faculty in standard research and publications is presently not satisfactory across the state. Besides, integrated courses and integrated teaching are also not available in the universities of Bihar.

Referring to serious challenges like the availability of adequate resources, qualified faculty and an ecosystem in the form of a sound and consistent education policy and a strong academic leadership, it is the need of the hour to address suitable academic reforms in the state of Bihar to ensure a prestigious ranking at par with International Institutions.

The purpose of higher education institutions (HEI) is to generate a finished product having academic excellence and critical and innovative mind. Apart from academic pursuit, the blueprint of various policies and its social implications should be debated without bias of any political and administrative interests. Such grooming of pupils in the campuses shall generate more evolved and socially conscious citizens. The competence of faculty members has to be converted into performance and performance into excellence.

Phase-wise Implementation

Physical infrastructure and academic support:

Phase I Components

- In colleges / Universities with poor infrastructure and faculty strength, the classes for one or two academic sessions should be suspended.
- In this period of suspension, nearby college/University Departments having comparatively better infrastructure may be entrusted with the task of running the courses in two shifts.
- Additional resources in terms of manpower (Ad-hoc / Guest faculties) and requisite infrastructure should be provided to the facilitating centres.

Phase II Components

- In response to student-teacher ratio adequate number of faculties on ad-hoc basis, must be appointed by universities themselves. The justification of requirement of faculty at the post-graduation level must also be based on the number of elective papers to be taught.
- Some of the courses from SWAYAM portal should be introduced compulsorily by all the universities.

Phase III Component

- In view of the requirement, adequate number of faculties, on permanent basis, must be appointed judiciously through statutory bodies. At this stage it has to be stressed that the justification of requirement of faculty must also be based on the number of elective papers to be taught.

Regular Academic Auditing

To oversee the learning outcome of students, continuous academic auditing must be incorporated as part of teaching-learning methods. Many employers in India have lost confidence in the quality of the degrees awarded by the country's universities. Whether these universities offer the skills and competencies to their graduates is many a times questionable and does not match the expectations in the labour market.

Phase I Components

- At University Department (fortnightly basis) / College (monthly basis)/ University (bimonthly basis) evaluation of progress of syllabus and its acceptance by learners needs to be adopted by involving students' representatives at each level.
- The selection of representatives from students should be based on their academic pursuit.
- At the end of each course (semester system), the students must give their feedback on teaching/support of individual faculty members along with the learning outcome.
- The attendance mechanism must be decentralized. Each subject teacher should have his or her own separate attendance so that evaluation of student and teacher should have counter balance system.

Phase II Components

- In order to regain the credibility and enhance the relevance of university qualifications, necessary steps must taken by HEIs of Bihar to achieve learning outcomes, employability skills and competencies in the light of National Higher Education Qualification Framework (NHEQF).

Phase III Components

- On the long term basis, the quality of intake in the universities has also to be improved by strengthening lab-based teaching as well as socially relevant vocational/ skill-oriented courses at the secondary/higher secondary levels.

Co-curricular and Extra-curricular activities:

- Each institution must come up with annual calendar on cultural and sports as well as co-curricular academic activities.
- Different societies and sports bodies must be developed under the leadership of students, who get admitted on these quotas.
- These boards should be entrusted to ensure implementation of the calendar, keeping in view the academic calendar.
- Inter University programmes like “Tarang” and “Eklavya” should have a fixed time routine keeping in view of examination of each University.

Phase-wise details of this segment may be perused in the relevant chapter of “Student Activity”.

Library

- For academic support, College/ Department/ University library must be digitalized.
- Standard text books/reference books of national and international publications must be sorted by the **committee at the level of the Honorable Chancellor** and it should be provided in respective libraries in appropriate numbers at the earliest.
- Journals of National and International repute are expensive and on long-term basis appropriate funding is to be provided for it.

Phase-wise details of this segment may be perused in the relevant chapter of “Library”.

Faculty Improvement Programme**Phase I Components**

- For this regular short term in-service courses (one to two weeks) should be introduced.
- The participation of faculty on rotation basis must be ensured.
- Faculties must participate in such short-term courses /seminar/conference/workshop/summer training courses at least once in a year in the area of their interest on priority basis.
- To encourage such activities as also to improve the documentation, such participations should be recorded in the service book.
- Each university department / college must highlight its activities and academic pursuits through regular publication of Newsletters / Magazines.

Phase II Components

- Short-term innovative programmes for up-dating faculty members with the latest knowledge in relevant subjects should be designed.

- Need-based training programmes as per the levels of Faculty (Assistant Professor / Associate Professor / Professor) should be designed.
- Faculty exchange programmes at National / International levels should be incorporated.

Phase III Components

- Faculty members should be encouraged for research with the provision of Sabbatical Leave so as to enhance their knowledge and expertise in their areas of interest.

Requirement

- ✓ *Apart from these, the State Government should allocate sufficient funds for research and allied academic activities, including lab support /educational tour/ field work/internship etc. For these the government may arrange for earnings from endowments, gifts from alumni and the corporate sector.*

LABORATORY MODERNIZATION

Introduction

The science learning goals of laboratory experiences include enhancing mastery of science subject matter, developing scientific reasoning abilities, increasing understanding of the complexity and ambiguity of empirical work, developing practical skills, increasing understanding of the nature of science. Science lab equipment allows students to interact directly with the data gathered. They get a first hand learning experience by performing various experiments on their own.

The present state of teaching-learning of science subjects in most of the colleges/ University Department Laboratories under state universities are far from the ideal situation.

The Challenges:

The followings are the challenges faced:

- i. In the syllabus maximum weightage is given on the theoretical aspect.
- ii. History of development of the subject, its Philosophical aspects and Ethical issues are usually not included in the curriculum/ syllabus. Only a handful of teachers throw light on these areas.
- iii. The teaching of science subjects are mostly done through ‘chalk-blackboard’ in the classrooms.
- iv. Colleges do not have appropriate infrastructure to implement the modern tools in the teaching-learning of science subjects.
- v. Laboratory training / Practical classes are not done in most of the colleges
- vi. The examination pattern is such that a student can score high marks without having clear concepts or ability to apply the knowledge.

- vii. Lack of desire to change the situation by the college administration/ management, and teachers as well as majority students.
- viii. Inadequate number of teaching and non-teaching staff.
- ix. Insufficient laboratory equipment and limitations of trained support staff

Phase-wise Implementation

Phase I Components

- Unless we concentrate on giving this confidence to our teachers, and help them break the ice, we will not be able to achieve our goal of giving better practical training to our students.
- The First requirement is thus a room that is equipped to be a laboratory where a minimum of 20 students can work. There should be electricity connection points and availability of running water and gas (mainly for chemistry but also required for Physics and Biology experiments). The room should have working tables and almirahs/ Cupboards for keeping apparatus safe. If the college does not have any such space, then for each science subjects it is required to be developed before anything else.
- Important task is to make available
 - Laboratory Room
 - Water supply
 - Electricity
 - Gas supply

Phase II components

- There are many colleges/ University Departments in Bihar and a large number of them do not have proper laboratories. What is assumed to be their laboratory is either an empty room with nothing else or a dumping ground for broken furniture, old records and broken instruments.
- Important task is to make available
 - Equipments
 - Chemicals
 - Consumables
 - Safety measures - Installation of fire safety system
 - Computer & ICT facility etc.

Phase III Components

- In order to run a laboratory session properly the services and involvement of Faculty Members, Demonstrator/Laboratory Assistants, Laboratory bearers, Store keeper, Plumber, Electrician etc. are equally important.

Recommendations

- It is required to have orientation programmes for the teachers / support staff. Therefore, ‘Workshops for Master Trainers’ have to be organized. These master trainers would further train the teachers of the different colleges in their own universities. Research Scholars and Post Graduate students may also be trained to help out in the Laboratory sessions for UG. The respective Dean faculty of Science will coordinate the ‘Teachers’ Orientation Program at his/ her university.
- In the first phase, a list of basic set of practical in Post Graduate Departments and Degree Part I, Part II and Part III, for each of the science subjects (Physics, Chemistry, Botany, Zoology, etc) should be developed covering the topics of the syllabus. Out of these, students will perform at least 80 percent of the experiments. Each University may add/ change 20% of the listed experiments with different experiments.
- Power point presentation of the basic experimental protocol and equipments, in each of the subjects (Physics, Chemistry, Botany, Zoology, etc) should be developed by competent teachers and distributed to all universities.
- Effective Monitoring: Chancellor Secretariat, Rajbhawan may obtain on-line Feedback from students of different colleges and monitor the situation.
- In Second Phase, a few Advanced level practical will be set to further enhance the learning level of advanced learners in colleges.

Chapter 4

Research & Innovation

A Higher Education Institution (HEI) without a ‘research culture’ on its campus fails miserably to fulfil its role. It is expected that all faculty members and research scholars in the HEI/ university have to be actively engaged in research work and contribute significantly towards national development and enriching knowledge; thereby take up human civilization one step forward. “Research and Innovation” carry maximum weightage in the NAAC accreditation scale (250/1000). All universities therefore, must take up the responsibility to promote research through evolving appropriate policies and practices and making adequate resources available. Required infrastructure in terms of space and equipment and support facilities are made available on the campus for undertaking research. The HEI collaborates with other agencies, institutions, research bodies for sharing research facilities and undertaking collaborative research. The University should also encourage research involvement of teachers and scholars and recognize any achievement of teachers/ researchers by awarding some incentives.

Unfortunately, there is no vision about expenses involved in creating modern facilities for promotion of research. Therefore, the provision for research related expenses in the budget is miniscule. And even that amount is not released by on regular basis. There are several funding agencies for promoting Research in Science, Social Science and Humanities. The easy solution would be to ask the Universities to generate its own resources for Research related activities. However, those who are actively engaged in research or, have a little exposure about preparing and award of research projects know that the funding agencies expect that the HEIs should have at least the basic infrastructure for research. It is therefore, important to establish the basic infrastructure for research in the University in order to improve the quality of research. Once we have the basic facilities and some good work is done in our laboratories, the university departments will be able to generate resources for further development on its own.

1.1 The present status of Research Infrastructure:

The present infrastructure for research in all most all universities of Bihar is very poor. There has not been much investment to upgrade and in establishing modern equipments in research laboratories. Therefore, the research laboratories badly need up-gradation and purchase of modern equipments.

1.2 Resource Mobilisation for Research

So, at the initial stage the University desperately needs financial support and hand holding from the State Govt. There should be budgetary provision for strengthening research and innovation in Universities. In order that the university provides support in terms of financial, academic and human resources required the state govt support is crucial at the first phase.

In the second phase the University would encourage its faculty to submit project proposals and approach funding agencies for mobilizing resources for research. The institutional support to its faculty for submitting research projects and securing external funding through flexibility in administrative processes and infrastructure and academic support are crucial. University has to act towards timely administrative decisions to enable institution to excel in research. The faculties are empowered to take up research activities utilizing the existing facilities. The institution will encourages its staff to engage in interdisciplinary and interdepartmental research activities and resource sharing.

1.3 Innovation Ecosystem

The University has to create an ecosystem for innovation including incubation centre and other initiatives for creation and transfer of knowledge. The institution will conduct workshop/seminars on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices. There will be provisions for Awards for innovation won by teachers/research scholars/students, start-ups incubated on-campus.

1.4 Research Publications and Awards

Exploration and reflection are crucial for any teacher to be effective in one's job. Quality research outcome is beneficial for the discipline, society, industry, region and the nation. Sharing of knowledge especially theoretical and practical findings of research through various media enhances quality of teaching and learning. Research acumen in an institution is an evolving feature reflecting various research output with clear records such as - doctoral, post-doctoral, projects, inventions and discoveries, number of patents obtained and number of research publications.

It is important that award be given to teachers/ research scholars for quality publications.

1.5 Seed money

Further seed money be given to new faculty members to initiate research work. This will create a research culture in the campus.

1.6 Consultancy

Activity organized or managed by the faculty for an external agency for which the expertise and the specific knowledge base of the faculty becomes the major input. Many teachers extend consultancy to other organizations informally. The finances generated through consultancy should be proportionately shared by the consultant and the University. University is a resource pool with several persons engaged in academic and research at various levels. Consultancy shows the credibility of the university's academic and research acumen in the outside world. While the university personnel extend their expertise to other agencies the university also generates some revenue along with the research faculty. For this it is necessary that the university has a formalized policy on consultancy with clear specification of revenue sharing between the teacher and the institution. Each University must frame its consultancy policy.

1.7 Collaboration

Through collaboration the HEIs can maintain a closer contact with the work field. It helps keep the academic activities in the HEI in a more realistic perspective and also expand the scope of learning experiences to students. Collaboration can be sought with academic institutions or industry or other agencies of professional and social relevance. The range of activities could include training, student exchange, faculty exchange, research and resource sharing, among others. For making collaborative endeavor impactful it is necessary there is a formal agreement or understanding between the institution and other HEIs or agencies for such activities.

1.8 Extension Activities

Learning activities have a visible element for developing sensitivities towards community issues, gender disparities, social inequity etc. and in inculcating values and commitment to society. It is the responsibility of the University to promote research which percolates down from the laboratories to the field and to the wellbeing of the community. Such activities relevantly sensitize students to the social issues and contexts. Sustainable practices of the institution leading to superior performance results in successful outcomes in terms of generating knowledge useful for the learner as well as the community.

Extension also is the aspect of education which emphasizes community services. These are often integrated with curricula as extended opportunities, intended to help, serve, reflect and learn. The curriculum-extension interface has an educational value, especially in rural India. There should be budgetary provision for extension activities.

All universities must work on formalizing its Research polices including consultancy, collaboration and extension activities.

Phase I Components

- All faculties should be encouraged to apply for funding of research of social/scientific relevance (Minor/Major/Collaborative) projects.
- The faculties must be encouraged for filing of Patent/Copyright through the properly constituted Patent cell of the University.
- There must be provision for some incentive from University to those faculties, who successfully undertake such research endeavors/copyright/consultancy.

Phase II Components

- Necessary funding with seed money should be provided to faculties who are initially unable to acquire adequate funding from agencies.
- This seed money must be audited by a team of subject experts to evaluate the academic outcome of the fund.

Phase III Components

- There must be a Centralized Instrumentation Centre (CIC) along with computational/ Data centre in the State Capital / University headquarters to encourage quality research. This will cater to the needs of faculties/researchers of the entire state / region and also save time, money and energy.
- For the smooth and fruitful running of the centre the technical/expertise manpower must be engaged on a permanent basis along with adequate logistics for maintenance.
- Setting up of such CIC will generate resources through the provision of subsidized services to researchers on payment basis.

Chapter 5

Library Reform

Introduction

Library plays a very critical role in supporting the academic programs and research activities of the institution by imparting knowledge and lifelong learning for the betterment of mankind. Rapid expansions of knowledge and new technology have created a profound impact on national development. Libraries themselves are important indicator of growth and development.

Physical resources i.e. library building, furniture, fittings and other amenities are a crucial aspect of the library system and play a key role in the attainment of the library's intended objectives.

Almost all universities and colleges have own library building, but in colleges the building is not in good condition. There is complete lack of cleanliness and library surroundings seem to be unattended.

- Few libraries have separate toilets for girls, which is urgent need as the number of girls students is increasing year by year.
- Library entrances do not have ramp to assist the disabled users.
- Buildings are not attractive and inviting due to lack of maintenance.
- Libraries are not automated and digitized.
- Electrical wiring is old. There is lack of Proper lighting and charging facilities for electronic equipments.
- Libraries do not have sufficient electrical furnishings for using various technological resources.
- Furniture and fittings of the library include tables, chairs, newspaper stands, computer tables, book racks, book trolleys, doors, windows, etc. are not sufficient.
- A few libraries have Cabinets for filing various types of materials like card catalogues, pamphlets, newspaper clippings etc.
- A few libraries have facilities of computer systems along with printers, scanners, fax and internet.

Phase-wise Implementation

Phase I Components

- We do not need further construction and another physical space as the library needs to get automated and digitized in future but building needs maintenance and painting as to make it attractive and inviting.
- Ramp on Library entrance to assist the disabled users.
- Separate toilets for girls and boys.
- Plantation around library to make the library surrounding green.
- Proper lighting and wiring having charging facility. Special attention for providing lighting has to be given for certain areas of the library. These are:
 - General reading area

- Staff area
- Service desks.
- Conference/Meeting room
- Reading rooms with sufficient chairs and laminated tables. These tables should be large in size and without any drawers.
- Cabinets for filing various type of materials like card catalogues, pamphlets, newspaper clippings.
- Journal subscription for promotion of research in college and university.
- Important equipments should be provided like :
 - Bulletin board
 - Projectors and projection facilities
 - Vacuum cleaner for cleaning
 - Atlas stand
 - Book lifts, Book Trolley, Kick step stool and Step ladder etc.

Phase II Components

- In the recent years, environmental protection and ecological preservation has been the main concern of the whole world. Now–a-days mankind’s consciousness towards “Live green, save green” has been strongly aroused to save the planet. As libraries are a socially responsible institution, they play an important role towards making awareness among the students who are future citizens of the nation.
 - So there must be plantation around library to make the library surrounding green.
 - Trees and plants around the library free the atmosphere from dust as air turns moist and makes the dust to settle.
- Energy conservation is considered as the most important aspect in green energy revolution. Solar panel on the rooftop may also be suggested, which is a green energy, save a lot of natural resource as well as reduce the cost of electricity bills.
- Multitier Stacks: This kind of stacking consists of stacks from the floor to the roof and it has become quite popular in very large libraries as the multitier stack use maximum vertical space.
- During the last few years, growing demands for having new and sophisticated approach to information access has led to the extensive use of computer based systems. Computers are very common these days in every type of organization including the libraries. Along with computer systems printers, scanners and fax facilities are to be provided. Minimum 20 computers should be provided to each library.
- Computers should be provided with INTERNET facility for easy information access. It will help the students to access National Digital Library (NDL), World eBook Library, South Asian Archive, SWAYAM portal, National Knowledge Network (NKN), National Scholarship Portal etc. Library should be cleared of old and outdated books.
- Training, workshop and refresher programmes should be organized on regular interval for librarian and staffs.
- There should be available a digital section in each library to access e-Books, e-Journals etc.
- Induction program in the start of every academic session must be conducted, in which students should be introduced about various aspects of libraries.
- All the libraries should have their website with web based Online Public Access Catalog (OPAC) for easy and convenient browsing of its resources.

Phase III Components

- Manpower:- Apart from physical resource, academic libraries are facing lack of manpower. New appointment for the post of librarian and other library staff should be started.
- Automation: Automation is the complete computerization of library housekeeping activities i.e. acquisition, cataloguing, circulation and serial control activities. It helps in handling large volume of documents and providing timely and effective information services to users.
- The software developed for management of database is called database management system (DBMS) like e-Granthalaya, LIBSYS, KOHA, D SPACE.
- Digitization: Digitization is an electronic process of converging information from a print format to digital format. With the advancement of technology, the libraries should move towards digital resources, which are found to be more helpful for easy access. For the digitization and automation, infrastructure and trained manpower are very important.
- Digitization of PhD Thesis: Digitization of PhD and D.Litt. thesis and uploading the same into the Shodhganga electronic thesis database.

Recommendations

- All Universities should apply to Inflibnet Shodhganga membership by signing Memorandum of Understanding (MoU) as it makes Universities eligible for applying for financial assistance from UGC for digitization and availing anti-plagiarism software URKUND free of cost.
- Universities and its constituent or affiliated colleges should register its Faculty members, students and staffs into the National Digital Library (NDL) as it offers several crores e-Books, e-Journals and many educational multimedia (video/audio) lectures and practice materials for competitive examinations.
- The constituent Colleges should apply for membership with N-LIST an unit of Inflibnet by paying annual fee of Rs 5900 only for colleges under 12 B of UGC act. For affiliated colleges the membership fee is Rs 35,400 only. As N-List offers more than 6000 e-journals and more than 31,35,000 e-Books.
- The digitation and automation of libraries should be started preferably with open source software like KOHA or e-Granthalaya offered by NIC by paying Rs 21,275 only once in a 5 year which includes cloud server cost.
- 2 to 5% of University budget should be spent on modernization, digitization and maintenance of its libraries.
- There should be a library advisory committee in every college and university, comprising principal, one representative from each subjects and library in charge. The committee should recommend suitable budgetary provision and other requirements.
- While placing the order for books, student's choice should also be taken into consideration.
- Library must not be misused as dumping place for substandard publications and local writers, which makes the library overloaded and repulsive.
- Students are job oriented so there should be subscription of magazines also.

Chapter 6

Examination Reforms

Introduction

Examinations in most of the universities of Bihar are not being conducted timely as per the academic session. It is high time the universities adopt the latest University Management Information System (UMIS) with the help of the computers, internet and skilled personnels.

The main objectives of implementing UMIS include:

- To streamline the examination system, timely publication of result and distribution of mark sheets and degrees.
- To ensure transparency and objectivity.
- To adopt NAD system.

Further to streamline the Examination necessary reforms are required:

- The examination calendar for the entire state must be synchronized to have the real advantage of choice-based credit system (CBCS). Only after this the credit transfer of choice can be availed by the students.
- The pattern/framing of question paper for Continuous Internal Assessment (CIA) and End Semester Examination (ESE) must be compatible with the competitive examinations like CSIR-UGC-NET/GATE/UPSC/State Commission/SLET etc.
- At part III degree Honours /M.Sc. level some field-work/ educational tour /skill development module, of at-least three months, must be included in the syllabus in order to extend hands-on, live experiences to students.
- In MA/MSc/M.Com programme, the fourth semester has been devoted to project work/dissertation work/ Internship. It is desirable that students should do internship at industries /other reputed Institutions on Inter- University basis.
- There must be uniformity in End Semester Examination (ESE) question papers across the state. This will definitely ensure uniform level of learning on any topic and will save money, time and energy of the university administration. With this the benefit of Choice based credit transfer will be more beneficial for both the learner and the concerned subject teacher.

Phase-wise Implementation:

Examination reforms measures would be implemented in three phases.

Phase I Components

- Calendar of Examination (dates of Mid-term tests and End-term Examination; Marking system) should be announced by the departments at the time of the beginning of the session.
- After admission, online form should be filled in by the students giving all informations such as Email and Telephone No. etc.
- Students Portal for also Online Registration of Students and all information's should be uploaded on the portal.
- Attendance of students-either Daily or Monthly or before the Mid-term lest be uploaded on the portal.
- Attendance should be uploaded on the portal to students through SMS also. Either Daily or Weekly or Monthly.
- Question papers should be set internally.
- Evaluation should be done internally in a centralized way to ensure timely publication of result.
- Photography/Videography of students in each examination hall for records and further action.
- Question papers should be concept based.
- Evaluated answer books of CIA should be shown to the students. Their grievances, if any, should be redressed.
- Board of Examiners including two subject experts from outside Bihar.
- Results should be published subject wise.

Requirements

- ✓ *Examination halls should be separate in each and every universities and college.*
- ✓ *Computerized system of examination and results.*
- ✓ *Skilled Human resources.*
- ✓ *Provision of finance for maintenance of contingent expenses.*

Phase II Components

- Biometric attendance for students. It should be linked with the University Office (Examination Section).
- Online examination form should be filled up and fee should be deposited online.
- Hall tickets/Admit Cards to be downloaded. (Better if the print out on which photograph is pasted should be certified by the Head of the Department.)
- Bar Coding on the answer books.
- Re-evaluation of answer books of End-Semester Examination.

Requirements

- ✓ *Computerized online system should be expanded.*
- ✓ *Biometric machines should be installed for the Students.*

Phase III Components

- Preparation of Examination Manual.
- Complete automation of Examination system.
- CCTV cameras in the examination hall. Rigorous frisking. Except pen, pencil and scale nothing should be allowed in the examination hall.
- After Examination and Evaluation – The quality of Questions and Answers be checked by Board of Examiners which should be including two subject experts from outside Bihar.
- Adoption of National Academic Depository (NAD) System.

Requirements

- ✓ *CCTV System.*
- ✓ *Equipment for automation.*
- ✓ *Skilled Human Resources.*

Chapter 7

Institutional Social Responsibility & Students Activity, Sports and Culture, Alumni HE Interface

Social Responsibility

Introduction

The consciousness to connect academia with society and the outer world is rising gradually and it is the need of the hour that each stakeholder of society comes together for transformation of society at large. Such activities are conducted only by NSS and NCC wings of institutions and there is a limited involvement of people. In order to make students aware of their social responsibilities, the following steps can be initiated:

- To connect classroom teaching to the community in both rural and urban areas by reaching out to people who are deprived or lagging behind in the march of development;
- To prepare a platform for interaction with the outside world. To bring about orientation in attitude and values among students while imparting basic skills of working with individuals, group and community; and
- To inculcate the spirit of voluntary work among students and teachers through sustained community interactions.

Phase –wise Implementation

Phase I Components

- Formation of units in institutions and organizing training and orientation programmes for students and faculty members by holding class room lectures, Group Discussions, Panel Discussions and Field Visits. Preparing a calendar of activities for the interaction of the institution with the community.

- Making students aware of Skill Development Centres, Make in India, Saubhagya Yojana, Swaccha Bharat Abhiyaan, Ujjwala Yojana , Aayushman Bharat, Pradhanmantri Fasal Beema Yojana, Jan Dhan Yojana and other welfare schemes run by the Govt. of India.
- Identifying nearby villages/localities under Unnat Bharat Abhiyaan and forming groups of NSS volunteers and students who would explore the problems and make people aware about various policies and schemes.
- On the basis of these visits these students will be able to assess the efficacy of the implementation of various policies after conducting survey of ground realities with the help of questionnaires etc.

Phase II Components

- Students will make people realize the importance of literacy, education, health and hygiene, sanitation, women and child care, population education and family welfare and the use of technology which can enable the latter to take advantage of various schemes meant for their welfare.
- Establishing a platform where academia interacts with the local bodies such as Gram Panchayat, Blocs and Municipal corporations.
- Volunteers will do appraisal of economic condition of people living on the margins and suggest remedies. After conducting surveys volunteers will do data analysis of actions meant for bringing desired changes.
- Spreading awareness about environment by conducting plantation drives and cleanliness campaigns, water harvesting and management, etc.

Phase III Components

- Monitoring transformation of small scale business into large scale by sharing ideas of innovation.
- Observing the village/locality as a model of literacy, eco -friendly and sustainable development.
- Evaluation and monitoring of the activities undertaken.
- Conducting seminars/symposiums within and outside the campus with all the above mentioned stakeholders to synchronize various elements together.
- Documentation of activities by writing reports.

Requirements

- ✓ *Transport and other facilities to visit these places and the help of local administration.*
- ✓ *Students should be given compensatory credits so that they don't incur any loss academically and undertake this responsibility seriously.*
- ✓ *Since this task needs involvement of all concerned, an extra unit with an office and logistical support may be established to undertake this responsibility with the help of the NSS.*
- ✓ *Provision of giving award to volunteers for their outstanding contribution and participation.*

Cultural Activities

Introduction

Co-curricular activities are conducted with lukewarm interest. Some more encouragement is needed as more often than not the organizers lack logistical support. There is a disconnect between curricular and co-curricular aspects of education. To attain the goal of holistic development of personality, cultural and other creative activities are essential. Such activities aim at raising the confidence level of students while helping them groom their leadership ability and collective learning.

Phase-wise Implementation

Phase I Components

- Each institution will constitute/revive Cultural Activities Committee (CAC) comprising teachers and student representatives.
- Preparing a calendar of Cultural and co-curricular events before the beginning of the new academic session.
- Various wings and or sub categories of CAC will be formed such as Debating Society, Natya Parishad, Photography Society, Music and Performance Club etc under the supervision of faculty members and student representatives.
- These Committees and wings will hold a talent search event at initial level to identify diverse talents embodied in students and encourage them for participation in various events and their further grooming.
 - *Music- Vocal Music- Classical, Semi-classical and Light Music,*
 - *Instrumental Music- Percussion and Non-percussion,*
 - *Dance- Classical, Folk Dance and Dance Drama*
 - *Literary Events- Debate, Elocution, Quiz*
 - *Visual Arts- Painting, Face Painting, T-Shirt Painting, Mehendi, Rangoli, Poster Making, Photography, Short Film Making.*
 - *Theatre- Stage Play, Street Play, Pantomime, Skit, Mimicry*

Phase II Components

- Organizing performances by inviting artists and experts in lecture and demonstration mode. For example, invite SPIC-MACAY for the orientation of students towards Indian art and culture.
- Giving students opportunity to organize various events, Stage play, and celebration of anniversaries of great artists, leaders and public figures.
- Organizing Annual Cultural Fest every year such as 'Spandan', 'Tarang', 'Jhankar', 'Euphoria' etc as held in Central Universities, NITs and IITs.
- Organizing events at college/university and inter-college/university levels and students participating at zonal level and national level competitions.

Phase III Components

- Establishment of Studio equipped with musical instruments.
- Establishment of an Exhibition Hall for photography, painting and sculpture.
- Inviting artists of national and international repute on the campus.
- University/ College becomes a culturally vibrant unit.

Requirements

- ✓ *Department of Music and Performing Arts be opened in each college/university.*
- ✓ *Auditorium and amphitheatre be established on campuses.*
- ✓ *Monetary support for organizing events and logistical support for participating in them.*
- ✓ *Students should be given credits (academic) and incentives to participate in such events wholeheartedly.*

Sports Activities

Introduction

Annual Sports Meet is held more or less in all institutions once in a year but sports activities are hardly conducted throughout. Regular sports activities must be held in all institutions to attain the goal of physical well being and a healthy body of students and to prepare them to participate at university level, state level and national level competitions.

Phase-wise Implementation

Phase I Components

- Formation of Sports Activities Committee comprising teachers and student representatives.
- Prepare a calendar of events for the entire year before the Annual Sports Meet.
- Encourage students to make teams and organize events by holding meetings with students fortnightly at spaces such as Boys and Girls common Room.
- Following Games can be organized-
 - **Indoor Games-** Badminton, Chess, Table Tennis, Carom etc
 - **Outdoor Games-** Kabaddi, Volley Ball, Basket Ball, Football, Cricket etc
 - **Athletics-** 100m, 200m, 400m, 800m, 1500m Race, Long Jump, high Jump, Javelin Throw, Discuss Throw, Shot Put etc
 - **Swimming, Adventure Sports, Weight Lifting and Wrestling.**

Phase II Components

- Regular practice by sportspersons under proper guidance and coaching.
- Organizing indoor and outdoor events at inter-college/university level.
- Participation of students in zonal and national level competitions.
- Selection of best teams and sportspersons at college/university level for their further grooming .
- Identifying sponsors for organizing college/university level tournaments.

Phase III Components

- Inviting sportspersons of national and international repute to encourage students.
- Encouraging students to participate at state level and national level championships.

Requirements

- ✓ *Building indoor and outdoor sports complex, swimming pool and stadium in each college/university.*
- ✓ *Appointment of PTI in all colleges/universities.*
- ✓ *Financial aid for purchasing equipment, sports wear and maintaining sports complexes.*

Alumni HE Interface

Introduction

In recent years, Alumni Meet is being conducted frequently but there is the need to make it more organized, frequent and productive. Alumni HE interface needs to be strengthened to generate resources, intellectual as well as economic, for the development of the institution while continuing a productive dialogue between the past and the present for a better future. It is also desirable to hold a frequent communication with the alumni so that they feel that their alma mater still values them highly.

Phase-wise Implementation

Phase I Components

- Organizing meeting of local alumni for the formation of a society and discuss issues such as objectives, membership, function and finance
- Developing an online webpage for interaction with former students. Social sites such as Facebook, WhatsApp may also be an aid.
- Registering former students of the institution and making an alumni directory.
- Holding Alumni Meet regularly to seek their valuable opinions, ideas and experience for enriching the institution.
- Organizing extramural lectures by inviting alumni as speakers.

Phase II Components

- Setting up an office for the alumni society for functioning properly.
- Seeking help of Alumni for career counseling and exploring career opportunities.
- Opening a bank account for collecting financial aid from the alumni and proper utilization of that fund.
- Announcement of awards, trophies and scholarships by the names of distinguished alumni/batch.
- Maintaining a feed-back register for recording their comments on improvement of things.

Phase III Components

- Establishment of an alumni society comprising senior teachers and administrators to conduct Meets smoothly
- Alumni society to contribute to the development of playgrounds, swimming pool, laboratories and libraries.
- A culture should be developed to reward and felicitate alumni.

Requirements

- ✓ *Providing space for the alumni society for functioning smoothly in the premises.*
- ✓ *Monetary and logistical support for organizing Alumni Meet on grand level.*

Chapter 8

NATIONAL INSTITUTIONAL RANKING FRAMEWORK (NIRF)

Introduction

In recent years, there has been a strong drive to improve the **teaching-learning-research performance in higher educational institutions (HEIs)** particularly the **quality of research and employability outcomes in the universities**. Whether it is a state University or a Central University or a Centre or a Research Institute, the Government wants the **institutions to become more accountable for their funding**. As part of this accountability process different countries have introduced different assessment exercises. In India too it is mandatory for any HEI to be accredited by the **National Assessment and Accreditation Council (NAAC)**. The NAAC grade and the CGPA is an indicator of the absolute quality of the particular institution whereas the National Institutional Ranking Framework (NIRF) approved and launched by the MHRD, Govt. of India on 29th September 2015 indicates the relative status of the Higher Educational Institution (HEI) in comparison to other HEIs in the country. The performance of the HEI is measured on a suitable scale very similar to NAAC's seven criteria.

The National Institutional Ranking Framework (NIRF) outlines a methodology to rank institutions across the country. A high ranking in NIRF helps the HEI to earn a good reputation and eventually this branding helps the institution to generate internal resources for managing its own affairs. The Ranking helps the HEI in

- Introspecting on regular basis as Ranking is an annual event
- Identifying areas of strength and weaknesses
- Pin pointing deficiencies and find out ways for improvements.

Phase-wise Implementation

Analyzing the Region-wise distribution of HEIs registered for India Ranking 2018, it is observed that HEIs from the Eastern region is the second lowest just above the North-East region, which is the lowest. In Bihar among the state Universities only six (06) are NAAC accredited and only one university the Chanakya National Law University, Patna is accredited with 'A' grade by the NAAC, four have 'B' grade and one University has 'C' grade. Since accreditation is not a mandatory criterion for applying for Ranking, universities and colleges of Bihar, irrespective of the NAAC accreditation, can volunteer for RANKING. However, the NAAC CGPA is an indicator of the quality of any HEIs. Therefore, all universities and colleges need to introspect and work on their weaknesses. It is important to set a time line for preparation well before applying for Ranking which usually starts during the month of September. Most of the universities as well as colleges of Bihar need to pay particular attention to the following areas:

- i. Faculty-Students ratio
- ii. Infrastructure for ICT based Teaching- Learning
- iii. Up-gradation of Laboratories
- iv. Quality and Number of Research Publications
- v. Research Facilities, Research Projects and their outcome
- vi. Innovations and Patents (IPR)
- vii. Representation of Women in Leadership positions
- viii. Facilities for Persons with Disability
- ix. Students from other states and countries
- x. Industry – Academia partnership to increase employability

To strengthen their claim for a good ranking and for good outcome on related areas, the Universities need:

- to develop adequate infrastructure,
- to work towards capacity building through appointment of faculty and support staff
- to introduce exchange programme for researchers

In this regard the state universities need hand holding in the initial years from the State Government in the form of financial support for infrastructure development. The support of the Government is imperative since it is important to do adequate preparation in all parameters before applying.

Timeline for RANKING of Universities of Bihar:

Road map of Ranking is represented in Table.1. Aryabhattya Knowledge University (AKU), Patna though not NAAC accredited, has a world class Nano Research laboratory. Therefore, AKU along with Patna University and Chanakya Law University may volunteer for Ranking in the first phase i.e. for Ranking 2021. These universities need to do their preparation and can apply in Sept. 2020 for Ranking 2021. Other Universities may do the preparation work and apply in Sept 2021 for Ranking 2022.

Timeline for RANKING of Colleges of Bihar:

Among the colleges Patna Women's College having very good infrastructure and having a high NAAC CGPA of 3.58/4 is a competent candidate. A. N. College, Pataliputra University, Patna having NAAC CGPA of 3.27/4 and Gaya College, Gaya having NAAC CGPA of 3.23/4 also fulfil the parameters to a large extent. Hence, these three colleges being competent candidates can apply in Sept. 2019 for Ranking 2020. Other NAAC accredited 'A' grade colleges of Bihar along with premier colleges namely Patna Science College and Patna College may apply in the second phase i.e. in Sept 2020 for Ranking 2021. Rest of the colleges may be directed to do the preparation and apply later.

S.No.	Name of the University	Year of Estd.	Nature	NAAC CGPA	NAAC GRADE	Validity	Remarks for RANKING
1	Aryabhatta Knowledge University, Patna	2008	Technology				PHASE- 1
2	Bhupendra Narayan Mandal University, Madhepura	1992	General				
3	Bihar Agricultural University, Bhagalpur	2009	Agriculture				PHASE- 1
4	B. R. Ambedkar Bihar University, Muzaffarpur	1952	General	2.27	B	13-09-2020	PHASE- 2
5	Chanakya National Law University, Patna	2006	Legal	3.15	A	16-03-2021	PHASE- 1
6	Jai Prakash University, Chhapra	1990	General				
7	Kameshwar Singh Darbhanga Sanskrit University, Darbhanga	1961	Sanskrit	2.7	B	16-03-2021	PHASE- 2
8	Lalit Narayan Mithila University, Darbhanga	1972	General	2.46	B	24-06-2020	PHASE- 2
9	Magadh University, Bodhgaya	1962	General	1.76	C	13-09-2020	
10	Maulana Mazharul Haque Arabic and Persian University, Patna	2004	Arabic, Persian				
11	Nalanda Open University, Patna	1995	Distance Education				
12	Patna University, Patna	1917	General	Applied			PHASE- 1
13	Tilka Manjhi Bhagalpur University, Bhagalpur	1960	General	2.5	B	10-07-2021	PHASE- 2
14	Veer Kunwar Singh University, Arrah	1994	General				
15	Bihar Animal Sciences University, Patna	2016	Vetenary				PHASE- 2
16	Patliputra University, Patna	2018	General				
17	Purnea University, Patna	2018	General				
18	Munger University, Patna	2018	General				

Chapter –9

Budget for Achieving Target, Patna University

Blueprint of Higher Education, Budget for Achieving Target, Patna University					
S.No.	Head	Estimated Exp. (Year wise)			Total 3 years
		Year 1	Year 2	Year 3	
		2020	2021	2022	
		Lakh(Rs.)	Lakh (Rs.)	Lakh (Rs.)	
1	Preparation for NAAC	200	20	20	240
2	Digitations & Automation	1040	210	210	1460
3	Academic Reform	26200	12310	12310	50820
4	Research & Innovation	12850	1900	1900	16650
5	Examination Reform	1420	235	235	1890
6	Library Management	205	40	40	285
7	Students Activities & Institutional Social Responsibility	11310	1410	1410	14130
8	Preparation for NIRF	100	100	100	300
Grand Total		53325	16225	16225	85775

(Rupees Eight Hundred Fifty Seven Crore Seventy Five Lakh Only)

Blueprint of Higher Education, Budget for Achieving Target, Patna University						Lakh (Rs.)
S.No.	Head	Sub Head	Estimated Exp.(Year wise)			Total for 3 years
			2020	2021	2022	
			Lakh (Rs.)	Lakh (Rs.)	Lakh (Rs.)	
1	Preparation for NAAC					
			1200			1200
2	Digitations & Automation					
		UMIS	350	60	60	2660
		Hardware Server, Computer systems, UPS, Networking etc	300	50	50	
		Other Software	50	50	50	
		Infrastructure (Civil)	150			
		Infrastructure (Electrical)	100			
		Furniture & Furnishing	40			
		Recurring, Maintenance	50	50	50	
		& Misc.				
			2240	210	210	

S.No.	Head	Sub Head	Estimated Exp.(Year wise)			Total for 3 years
			2020	2021	2022	
			Lakh (Rs.)	Lakh (Rs.)	Lakh (Rs.)	
3	Academic Reform					
		Smart Classrooms	100	10	10	51120
		Capacity Building & In-service Training of Teachers Exchange Programme	500	200	200	
		Laptop/ Tablet to Teachers	500	100	100	
		Infrastructure (Classroom , Laboratory, Seminar Hall, Computer Lab, Language Lab)	10000	2500	2500	
		Academic Exchange Programme	100	100	100	
		Fieldwork & Internship	100	100	100	
		HR Requirements - Teacher & Non Teacher Appointment	3000	3000	3000	
		Equipments for Labs	10000	5000	5000	
		Chemicals for Practical Classes	500	500	500	
		Consumables for Practical Classes	200	200	200	
		Academic Audit	100	100	100	
		Creation of New Departments	1200	600	600	
			26300	12410	12410	

S.No.	Head	Sub Head	Estimated Exp.(Year wise)			Total for 3 years
			2020	2021	2022	
			Lakh (Rs.)	Lakh (Rs.)	Lakh (Rs.)	
4	Research & Innovation					
		Research Equipments	10000	500	500	16900
		Establishment of Data Centre	1000	500	500	
		Establishment of Innovation Cell	100	100	100	
		Conference/Seminar /Workshop	1000	100	100	
		Seed money to teachers for promoting research culture	200	25	25	
		Research Journal Subscription	100	100	100	
		Software	100	50	50	
		Consumables	100	100	100	
		IPR	100	100	100	
		Research Fellowship	350	350	350	
			13050	1925	1925	

S.No.	Head	Sub Head	Estimated Exp.(Year wise)			Total for 3 years
			2020	2021	2022	
			Lakh (Rs.)	Lakh (Rs.)	Lakh (Rs.)	
5	Examination & Evaluation					
		Equipments	100	10	10	1890
		Software	20	5	5	
		Examination Halls	1000	100	100	
		Furniture & Furnishing	200	20	20	
		Security	100	100	100	
			1420	235	235	
6	Library Management					
		Library Automation	50	20	20	285
		Website	5	5	5	
		Equipments for e-Library: Server, Computers, UPS, Networking etc	100	10	10	
		Furniture & Furnishing	50	5	5	
			205	40	40	

S.No.	Head	Sub Head	Estimated Exp.(Year wise)			Total for 3 years
			2020	2021	2022	
			Lakh (Rs.)	Lakh (Rs.)	Lakh (Rs.)	
7	Students Activities & Institutional Social Responsibility					
		Infrastructure Development : Sports Ground, Auditorium, Indoor Stadium, Training Centers, Game Courts, Swimming Pool	10000	1000	1000	14130
		Sports Equipments	1000	100	100	
		Training & Coach's' Remuneration	100	100	100	
		Activities	50	50	50	
		Dress Materials	10	10	10	
		Visits	50	50	50	
		Activities related to Institutional Social Responsibility	100	100	100	
			11310	1410	1410	
8	NIRF					
						300
		Preparation	100	100	100	
		Fee	0	0	0	
			100	100	100	

Chapter – 10

Templates for preparing Budget for Achieving Target

Budget Summary :

Blueprint of Higher Education, Budget for Achieving Target, Patna University					
S.No.	Head	Estimated Exp. (Year wise)			Total 3 years
		Year 1	Year 2	Year 3	
		2020	2021	2022	
		Lakh(Rs.)	Lakh (Rs.)	Lakh (Rs.)	
1	Preparation for NAAC				
2	Digitations & Automation				
3	Academic Reform				
4	Research & Innovation				
5	Examination Reform				
6	Library Management				
7	Students Activities & Institutional Social Responsibility				
8	Preparation for NIRF				
Grand Total					