

Enhancing Quality Assurance Management and Benchmarking Strategies in Indian Universities (EQUAM-BI) Project

Integration report Policy indications

Introduction of Benchmarking Concept

The concept of benchmarking in higher education has been drawing the attention of all the interested stakeholders in the education sector during the last few decades. It has been considered as an effective method in the higher education quality assurance and has become a very powerful tool through which organizations can learn from the experiences and innovations of others which are practiced in the sector. Since, quality improvement has been one of the most important features of higher education institutions; it is of equal importance to understand the role of benchmarking as a means to continually improving and staying competitive. Universities around the world embrace the concept of benchmarking and develop transformational methods and practices for the improvement of their organizations.

Learning from others has remained an ideal approach for developing the new QA systems and processes. Many countries share common concerns about the performance of their higher education systems and would like to learn how well their systems are performing in comparison to other higher education systems.

With introduction of benchmarking approach, institutions identify the processes, innovations and best practices of each other and, with due respect to context, replicate the process and apply enhanced management decision-making which results in individual and mutual benefits. Benchmarking has resulted in quite a few crucial outcomes that ranged from discovering concepts and practices of collaborative benchmarking and selection of fit-for-purpose indicators for benchmarking to the fundamental realization that benchmarking is not always about matching the best in others but surpassing our own excellence continuously through quality improvements. (*Source: Institutional Excellence Forum*)

Creating benchmarks through best practices is not a new notion in higher education. Recently, benchmarking has become the main agenda of higher education and considered as a

crucial element for growth and development of nations. The concept of benchmarking in Indian higher education is less noticed and practiced compared to European and other developed countries. The European benchmarking approaches have been developed since the mid 1990s in different ways. Normally these exercises adopt a mixture of quantitative, qualitative and process-oriented approaches.

European Union (EU) has been one of the pioneers in the process of benchmarking quality in higher education. Some of the notable quality assurance agencies from EU include the European Network of Quality Agencies (ENQA), Centre for Higher Education Development (CHE), and European Centre for Strategic Management of Universities (ESMU) which created a European Benchmarking programme. These quality assurance agencies have been instrumental in measuring and promoting good practices in university management using quantitative and qualitative indicators and standardizing the policies and procedures.

Introduction to NAAC

The National Assessment and Accreditation Council (NAAC) of India has been established with the responsibility of Assessment and Accreditation of higher educational institutions in India. Since its inception, NAAC has been continuously engaged in restructuring and designing its methodology and assessment process as per the requirements of the changing phenomenon in HE based on its own field experience, gained knowledge from international collaborations with QAAs. (*NAAC Website, 2019*)

NAAC is one of the leading quality assurance agencies having mandate of assuring quality of third largest higher education system in the world with about 900 Universities and 40,000 Colleges. The NAAC has rich experience of Assessment and Accreditation of about 12,542 Colleges and 600 Universities as on 9th September 2019. As one of the founder agencies of Asia-Pacific Quality Network (APQN) and The International Network for Quality Assurance Agencies in Higher Education (INQAAHE), the NAAC has played pro-active role in international quality assurance scenario.

India being among largest sender countries of internationally mobile students and also one of the major receiving countries of students especially from South Asia, quality assurance of higher education and internationalisation is an important concern for NAAC. The agency also has rich experience of hosting international events including joint activities with UNESCO, COL besides hosting annual conference of APQN in 2011 and INQAAHE biennial conference in 2000 and Global Summit-2016 and Global Yoga Accreditation Summit-2019 at UNO Headquarters in USA.

Rationale

NAAC with the vision of making 'quality the defining element of higher education in India' (NAAC, Vision) collaborated with the EU consortium with the intent and aspiration for cooperation among quality assurance networks and agencies to foster trust beyond borders in

higher education quality, dissolve boundaries and develop strategies and resources for next generation quality assurance (APQN, Global Media Release).

The Project brings together European partner Higher Education Institutions (HEIs) and quality agencies, with an already-proven successful track record in supporting QA/QE in different international contexts, with a series of ('volunteering') Indian universities who are keen to be involved in addressing the country's identified needs for quality improvement in HE.

Based on a comparative exploration of current activities and planned objectives, against international best practice, this Project will provide a 'benchmarking toolkit' and a programme of capacity building / dissemination will provide guidance for Indian universities on how best to improve / enhance their governance and management of 'quality'.

NAAC has continuously strived to improve its methodology for assessment and accreditation, taking into cognisance changing trends in higher education, the rapidly transforming global scenario, feedback from the stakeholders and lessons learnt from experiences. Currently, NAAC is in the process of a complete overhaul and reform of its processes through implementing benchmarking exercise as a part of its Revised Accreditation Framework (RAF).

Introduction to Benchmark Driven, Data Based Assessment process of NAAC

Recently, NAAC has revised its methodology by executing data based benchmark driven accreditation as a main aspect in its process. The rationale behind the revision is to bring in new innovations and best practices, introduction of benchmarking concept, in accreditation process to address the challenges in the Indian higher Education such as increase in number of HEIs, enrolment capacity, transformations and changing trends in global higher education market., etc has been a reason for initiation of revised accreditation process to maintain better quality education standards in the country.

The revised accreditation framework marks a paradigm shift which has introduced several concepts in quality assurance such as Quality benchmarking, Data Validation and Verification (DVV), Student Satisfaction Survey (SSS), Innovation Ecosystem, Alumni Engagement, Institutional Values and Distinctiveness in the accreditation process. These concepts and procedures have to be understood by the stakeholders. NAAC also needs to design a strategy to take the revised accreditation framework ahead by reaching out to the stakeholders, who are having apprehensions about new form of accreditation, which is data driven. (*J Patil et al, INQAAHE 2019*)

Revised Accreditation Framework (RAF) of NAAC

The revised accreditation framework launched in July 2017 is Information and Communications technology (ICT) enabled, objective, transparent, scalable and robust.

Key features of Revised Accreditation process of NAAC:

➤ Quality Indicator Framework (QIF)

The Quality Indicator framework of revised accreditation framework is considered as a right direction step taken by NAAC to boost benchmarking as a quality improvement tool. This tool has emerged as an effective tool that addressed various challenges of the Indian HE with quality indicators as a base for benchmarking-led quality improvement process in Indian higher education. The components of QIF consist of 7 key indicators, 34 key indicators which are the main basis of accreditation process of NAAC.

As an outcome, since its implementation NAAC has accredited about 1367 institutions including 66 universities and 1301 colleges as on October 2019 (*Source: NAAC Statistical Unit, 2019*)

➤ Introduction of Qualitative and Quantitative metrics

The present methodology seems to be a unique combination of factors in the quality assurance system covering both peer judgement and quantitative data driven assessment. The framework commonly referred as quality indicator framework (QIF) of NAAC comprises of system generated scores for quantitative metrics (Q_nM) with a proportion of 70% and qualitative metrics (Q_lM) with 30 % weightage for peer judgement.

Table 1: QIF Statistics

Type of HEIs	Universities	Autonomous Colleges	Affiliated Colleges
Criteria	7	7	7
Key Indicators	34	34	32
Qualitative Metrics (Q _l M)	38	38	41
Quantitative Metrics (Q _n M)	99	98	80
Total Metrics (Q _l M + Q _n M)	137	136	121

(*Source: www.naac.gov.in*)

➤ Quality Benchmarks

Benchmarks for each metrics are designed taking the consideration of academic experts' views and field testing. The benchmarks of QIF are designed on 5 point scale from 0-4 (very low very high) scale and these benchmarks are tested using pilot study. A pilot study was conducted to test the QIF involving about 100 HEIs across the country to calibrate QIF benchmarks. Based on the analysis of pilot tests further, fine-tuning of benchmarks is done.

➤ QIF for special HEIs

NAAC has embarked on mission to address different categories of institutions by designing separate methodology and benchmarks to special category of HEIs through developing separate quantitative and qualitative metrics for variety of specialised HEIs such as Yoga, Law, Sanskrit, Open and Distance Learning (ODL), Teacher Education, Health Sciences etc.

➤ **Improvement of data management practices in HEIs**

Data management is an essential component in determining the quality and standards in assessment process of NAAC. The entire process is relatively dependent on the data provided by the institution for a period of 5 years. The institutions which apply for assessment need to provide supportive evidence based data for each metric which is verified by the NAAC and DVV team. Based on the verified data the score is generated by the software after verification and validation of the data (Quantitative metrics).

➤ **Pre-qualifier for visit**

Introduction of pre qualifier concept which is new in the system, where institution has to secure at least 30% in the quantitative metrics to qualify for peer team visit (PTV) which is considered as a cut off score.

➤ **Third party data validation**

In this process data submitted by HEIs is being scrutinised, verified and validated by the third party evaluators commonly referred as Data Verification and Validation (DVV) partners. This is fully system orchestrated process where HEI, NAAC Co-ordinator and DVV partner exchange data and clarifications.

➤ **Student Satisfaction Survey (SSS)**

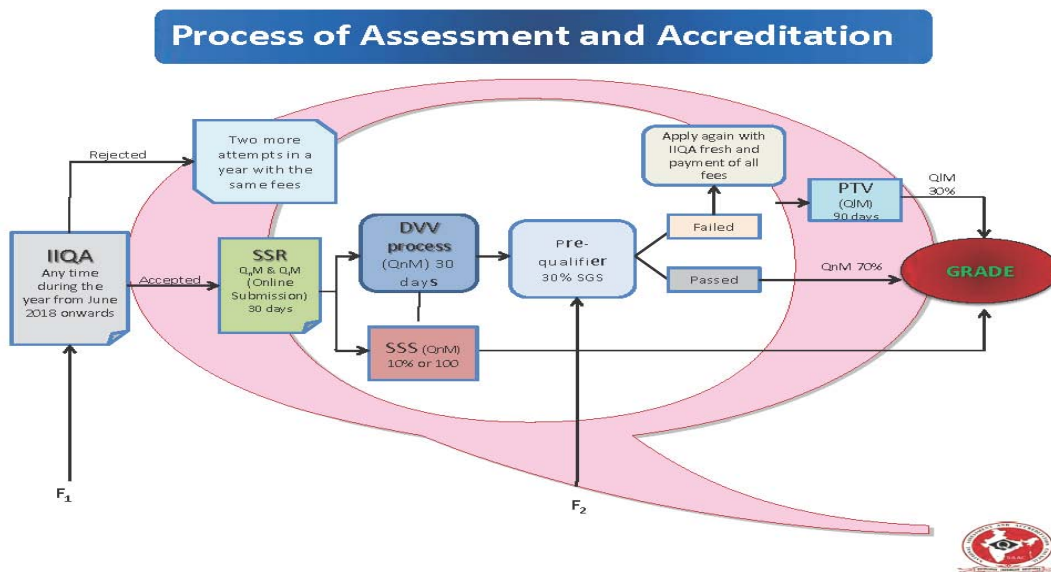
Introduction of SSS blending with accreditation process is aimed to capture the student satisfaction about the teaching, learning and evaluation process which will help to upgrade the quality of higher education. The institution is supposed to send a list of total student strength, with details of their student identity (ID) number, enrolment number of student in degree programme with email id and mobile number. The NAAC will send an online link of this 'Student survey' to the email address/mobile number of the student and the student will have to fill the survey before a stipulated date. Analysis of the student survey will be done using customised software which will aggregate the responses and generate the score.

➤ **100 % ICT based Process**

The entire process of Assessment methodology is ICT based evaluation from preliminary stage of application called IIQA till the result declaration. The stages involved in the process are IIQA, SSR, DVV, Pre-qualifier and PTV. The final outcome is a

combination of System Generated Scores (SGS), SSS and Peer team score from peer team visit on Qualitative evaluation of the institute.

Chart 1: Process chart of Revised Accreditation Framework of NAAC



➤ **NAAC-Internal Quality Assurance Cell (IQAC)**

NAAC has mandated that every accredited institution should establish an Internal Quality Assurance Cell (IQAC) as a post-accreditation quality sustenance measure in pursuance of its action plan for performance evaluation, assessment & accreditation, quality up-gradation of institutions of higher education. Since quality enhancement is a continuous process, the IQAC will become a part of the institution's system & work towards realisation of the goals of quality enhancement & sustenance. The prime task of the IQAC is to develop a system for conscious, consistent & catalytic improvement in the overall performance of institutions.

Recently, NAAC has revised the Guidelines for the Creation of the IQAC and Submission of Annual Quality Assurance Report (AQAR) in Accredited Institutions. As per the revised Guidelines for Creation of the IQAC institutions need to submit the AQAR online through in NAAC website. The software has been developed by NAAC and available to submit AQAR. The new format of AQAR is based on RAF and could be used as large database for nationwide benchmarking studies using data submitted by all HEIs annually.

➤ **Optional metrics**

Besides this, NAAC also introduced optional metrics - the provision to opt out some of the metrics which may not be applicable to institutes for various reasons and essential metrics, provision to HEIs i.e., mandatory and necessary to attend the essential metrics. This helps accommodating diversity of HEIs.

Results of RAF indicate that, NAAC and India is ready to usher in a new era of digital accreditation with quality indicators as a base for benchmarking-led quality improvement process. NAAC wished to Integrate RAF work with European benchmarking project on selected European and Indian Universities on **“Enhancing Quality Assurance Management and Benchmarking strategies in Indian Universities”** (EQUAM-BI). This project was sanctioned by European Commission to NAAC and University of Barcelona (UB) with partners from Europe and India.

EQUAM-BI

Benchmarking, as viewed in the context of the project, is not a “race against others” but it is “tempered” learning. Its main goal is not to outdo other institutions in rankings but to better the prognosis of areas of deficit and improve upon the specific interventions that help institutions optimize their performance potential.

The project worked closely with other national and European initiatives that work in support of higher education capacity building across developing countries such as India and quality assurance schemes, each complementing the other to achieve the common goal of strengthening of Indian institutions. The project also encouraged institutions and agencies to improve information collection and analysis. It will be a nodal point for the management of information and communication of information pertaining to benchmarking. This central role assists the project participants in updating instruments of benchmarking methodologies, such as surveys and publishes studies and reports on a periodic basis.

The project coordinated by the University of Barcelona with the Indian coordination of the NAAC, aims at coordinating efforts in developing an understanding of the concepts and introducing a culture of benchmarking in India as a mean of encouraging institutional reform and as a tool for measuring how effectively universities are governed. The aimed to set a cluster of quantitative and qualitative indicators as a means of identifying targets for achievement to benchmark progress that may lead to improvements in quality of education, research, innovation, and internationalization in Indian universities in general and comparing best practices with European Universities. It is noted that the considerable amount of data collection and analysis through IQAC of University would be required under this project.

Expected impact in short and long term at individual, institutional and/or HE system level

The project is designed to address the most significant and overarching of these challenges - inconsistent or inadequate Quality Assurance management to properly support the governance and decision making required for institutional advancement and enhancement.

A benchmarking tool may be developed in order to contribute to improvements in governance and leadership management, to accelerate institutional reform and to support policy makers and university leaders in taking strategic decisions, monitor progress, and use data to develop policies that encourage the use of good governance practices. The project will also encourage leaders to professionalize higher education management, establish networks of academic leaders, share best-practices and develop strong partnership with EU partners.

The project also discusses the creation of HE community for improved regional cooperation between universities and governments of both India and EU.

1. Develop an understanding of the concepts and practices of benchmarking in order to accelerate quality improvement of higher education in India.
2. Use benchmarking as a modern tool that contribute to improvements in governance and leadership management in Indian universities.
3. Build the capacity of partner universities for benchmarking.
4. Establish networks of academic leaders as a unique decision-makers' forum to promote the modernization of higher education management, support future leaders and encourage the professionalization of higher education management at all levels.

NAAC as a coordinator of Indian side

Enhancing Quality Assurance Management and Benchmarking Strategies in Indian Universities (EQUAM-BI) is a prestigious Erasmus+ project co-ordinated by the University of Barcelona (UB) and ANECA, Spain and NAAC, India, awarded to consortium of 14 Institutions from India & Europe.

The project on higher education benchmarking will focus on quality improvement strategies through benchmarking among select Universities from Europe and India. NAAC is co-ordinating Partner from India for this International project.

- NAAC has successfully organized Kick of Meeting (KOM) for launch of “Enhancing Quality Assurance Management and Benchmarking Strategies in Indian Universities” (EQUAM-BI) project held on 6th-7th December, 2017. Over 30 delegates (from Europe and India) of about 6 countries were attended this meeting.
- Under the guidance of NAAC, the second phase of the project comprises of a comprehensive survey to review the current status of quality management processes and practices of Universities/ Higher Education Institutions across India, which was led by Symbiosis International University (Deemed University), Pune, which has prepared the survey document (questionnaire covering the critical dimensions).

EQUAM-BI Project-Consortium Composition

European Partners

1. Co-ordinator/Grant Holder/University of Barcelona – UB- Spain
2. National Agency for Quality Assurance and Accreditation of Spain–ANECA-Spain
3. KTH Royal Institute of Technology - KTH –Sweden
4. The Sapienza University of Rome - UNIROMA1–Italy
5. The University of Montpellier- UM-France
6. University of Nicosia UN–Cyprus

Indian Partners

1. National Assessment and Accreditation Council – NAAC (Indian Co-ordinator)
2. Jadavpur University –JU
3. Symbiosis International University – SIU
4. Indian Institute Of Technology Madras – IITM
5. University of Mysore - UOM
6. Shivaji University, Kolhapur – SUK
7. Asian Institute of Gaming and Animation- Edulink Private Limited – EDULINK
8. Mangalore University – MU

EQUAM-BI Project: Expected Outcome

The exercise of collaborative benchmarking would involve reviewing the existing parameters for their appropriate and sustained adoption. This would entail long-lasting investments in capacity building in India towards maximizing returns on academic partnerships with European institutions in strategic areas. This proposed partnership between Indian and European Institutes of Higher Education would involve and facilitate the following outcomes:

- I. Partnering with leading EU institutions and organizations to nurture a sustainable benchmarking culture.
- II. Creating capacity for improving quality of teaching-learning, research and innovation, academic leadership.
- III. Collection of relevant data to enable the study and updating of benchmarking methodologies.
- IV. Creating frameworks for ensuring successful and sustainable partnerships with institutions of higher education in Europe to promote internationalization.

Expected Policy Initiatives of Benchmarking tool under the purview of Indian Higher Education System

- The benchmarking approach will function as a tool to enhance the performance of developing Indian higher education system. It will provide governments with evidence and data to strengthen policy making, and it addresses the strong demand for the comparative assessment of higher education systems within the country.
- The benchmarking project will identify the data gaps and drive out the better data collection methods with experiences gained from European partners with international

comparable standards to create a common method regarding the higher education system performance. And it can be basis for creation of a platform of online Data information portal of national data and institutions can update the performance of management systems.

- Through with each repeated benchmarking exercise builds evidence based valuable framework development for policy initiatives to stimulate the higher education systems.
- The project draws an adaptable approach to suit the emerging HE policies and strategies which may be link with inter-governmental organisations. (*OECD , 2017*)
- The benchmarking approach supports the evidence based decision making policies in institutional governance and Quality Management aspects with reference to research, innovations and internationalisation strategies.
- Through learn and share of best practices and experiences, the partner agencies enhance their capacities.
- The project maps the various benchmarking strategies followed and practiced with partner and other groups.
- The project provides an opportunity to update benchmarking strategies for Indian Universities to align with the ongoing European Union policy initiatives related to the Quality Management aspects and benchmarking strategies.
- The benchmarking project raises the standards of higher education importance for the developing Indian economy and society.

It is becoming essential to understand and appreciate the significance of Quality Assurance Management (QAM) and Data Management (DM) from an end-to-end perspective in both academic and administrative environments. The higher education administration is bound to adopt QAM and DM systems and practices to ensure accurate and timely reporting to both internal and external stakeholders. In India, with the advent of various initiatives like NAAC's data-based accreditation framework, National Institutional Ranking Framework (NIRF), All India Survey on Higher Education (AISHE) survey etc., the need for robust QAM and DM practices within the HEIs' has taken precedence. Indian HEIs need to transcend from being “driven and controlled” by regulatory intervention, to a state where the HEIs are “self-driven and steered”. The transcendence of HEIs requires a high degree of inter-connectedness with their counterparts of national and international repute which will facilitate benchmarking through peer learning.

Given that NAAC has already implemented a framework of accreditation based on data driven benchmarking, the outcomes of EQUAM-BI project can be very useful in multiple ways. It will not only help fine-tuning the benchmarking tool of NAAC, but also play very important role in spreading and replicating the tools and practices to internalise a quality culture among a large number of diverse types of universities and colleges in India. This ensures the sustainability of work done through the project for a long time through institutionalised structures both at national and institutional levels.

In this background, two studies were undertaken to get an ‘as is’ situation of Quality Assurance Management Practices and Data Management Practices prevalent in HEIs in India. The details of these two studies are discussed in the following sections.

Report on the Survey

Quality Assurance Management: Processes and Practices of Higher Education in India

Symbiosis International (Deemed University), one of the Indian Partner Universities of this project, was assigned the responsibility of conducting a survey on '**Quality Assurance Management Processes and Practices of Higher Education Institutes in India**'. This survey was intended to collect relevant data to enable the study of the current status of Quality Assurance Management (QAM) processes and practices of Higher Education Institutions in India.

The objective of this survey was to assess the status of Quality Assurance Management processes and practices across the different types of HEIs in India. The study was conducted based on primary survey of HEIs and has also drawn information from secondary sources. For this Primary data was collected through a survey instrument and secondary data from the websites of regulatory bodies like the University Grants Commission (UGC) and Ministry of Human Resource Development (MHRD)-(All India Survey of Higher Education).

The Survey Instrument (questionnaire) has drawn significantly, the structure and questions, from UNESCO (2017) survey instrument, OECD Questionnaire, Academic Ranking of World Universities GRUP Questionnaire and Outcome Metrics and Performance Indicators (OMPI) document of Symbiosis International (Deemed University).

A questionnaire was designed to capture both quantitative and qualitative information on:

1. Profile of the HEI.
2. Organization of the quality assurance management (QAM) functions in the HEI to assess the Quality culture of the organization and the top management's commitment to this function.
3. Administration of the QAM in the HEI to ensure sustained efforts to collect and collate data and monitor compliance with statutory bodies.
4. Processes and Procedures of QAM in the following focus areas of HEIs.
 - a. Teaching
 - b. Student Learning
 - c. Research
 - d. Innovation
 - e. Internationalization

The draft questionnaire was shared with all partner universities from India and Europe, NAAC, ANECA for their suggestions and inputs. The questionnaire was sent to 141 HEIs

through online mode with the support of NAAC during the period July 2018 to November 2018 and 29 HEIs responses were received.

The 29 HEI participated in the survey, represented 15 states in India. Eight (8) HEI are from the state of Karnataka, followed by Tamil Nadu with four (4) HEIs, Telangana with three (3) HEIs, Gujarat and Odisha with two (2) HEIs each. All the 10 other states had only one (1) HEI each participating in the survey.

The responses from 29 respondents were analysed both qualitatively and quantitatively.

The quantitative analysis of the QAM data comprises two broad sections.

Section I comprises the descriptive analysis of the respondents' data in four segments namely; (a) General Data of HEIs, (b) Organization of QAM function, (c) Administration of QAM and (d) Processes and Practices of QAM. Section II comprises results of the comparative analysis of QAM from among the different types of HEIs.

➤ Section I :Descriptive analysis of responses on various segments

Section I (a): General Data of HEIs:

The general data comprises of geographical distribution (state/province) of the sample, type (state, central, deemed etc.), nature (funding), and age since inception, highest-level degree offered, size of the students' body, size of the faculty body, and main orientation regarding teaching and research.

Section I (b): Organization of QAM function

This section analyses the data about the organization of the QAM function in the HEIs to assess the quality culture of the organization and the top management's commitment to this function. It contains analysis relating to importance of QAM in the overall institutional policy of the HEI, drivers of QAM in the HEIs, age of the QAM department, QAM policy statement, QAM handbook, people and structures involved in QAM and QAM focused activities.

Section I (c): Administration of QAM at HEIs

This section presents the analysis of data relating to the administration of QAM at the HEIs to ensure sustained efforts to collect and collate data and monitor compliance with statutory and accrediting bodies. The questions about administration of QAM comprise of mode of QAM data collection, mode of storage and retrieval of QAM data, data collection frequency, and data about the QAM initiatives of the HEIs.

Section I (d): QAM Processes and Practices

This section comprises of the analysis of the data relating to the processes and practices of QAM in the following focus areas of HEIs which are - teaching, learning, research, innovation and internationalization

➤ Section II: Comparative analysis of QAM from among the different types of HEIs

Some important observations from this comparative study are highlighted below:

- i. Two-thirds of the sample HEIs was funded by private funding from corporate houses or trusts.
- ii. Out of the eleven (11) D.Litt/D.Sc/LLD granting HEIs, majority of them are State Universities (64%) while out of the eighteen (18) HEIs granting PhD/Doctorate Level/Fellowship Programme, 50% are Deemed Universities.
- iii. Need to comply with Regulatory Bodies, need to monitor and review the progress against the pre-set standards, need to establish systems and processes for excellence in HEI are stated to be the top three priorities across all the types of HEIs sample.
- iv. The analysis clearly indicates that all the four different types of HEI respondents have dedicated committees, people and structures in place for QAM initiatives and have unanimously acknowledged the importance of the top management involvement in the QAM initiatives.
- v. Regarding mode of data collection, out of the 29 HEIs of the study, only two state Universities and two Deemed Universities had fully automated processes. Of the remaining, two state universities still collected data manually and all others had partially automated processes for collection of data.
- vi. Size of the students' body vs. Faculty FTE
- vii. The analysis brings us to the understanding that Indian HEIs have identified compliance with regulatory bodies and accreditation agencies as high priority drivers for QAM, irrespective of their orientation - research-only, teaching-research or any other. Monitoring and reviewing the QAM activities against pre-set standards is another critical driver across all orientations of HEIs.
- viii. An interesting observation emerges highlighting that younger the HEIs, earlier is the establishment of QAM department. It appears that establishment of QAM departments has been a relatively recent phenomenon. This could be attributed to the thrust for quality consciousness by the regulatory bodies and accreditation agencies.
- ix. A majority of the HEI respondents in the sample has acknowledged the Quality Policy statement as a strategic document. Statutory compliance to regulatory bodies and accreditation agencies have been the top drivers for the creation of a quality policy document. HEIs that are in the process of developing their institutional QAM policy document are also highly driven by compliance, systems and processes centric factors.
- x. We understand that the varying degrees of automation from being 'manual to fully automated' can be related the periodicity of QAM data collection. Full automation of data collection can enable HEIs to shift from being adhoc to being more regular and stream-lined for QAM data collection.

- xi. QAM data collection is more centralized (over 72% of all the HEIs) than decentralized at all the given frequencies of data collection. Centralization can enable ease of access to timely reporting and dissemination of information to both external and internal stakeholders.
- xii. The responses bring out the high level of interconnectedness between having a well-articulated QAM structure and processes with the level of compliance required for regulatory, accreditation purposes and participation in rankings.
- xiii. The responses compare the QA measures adopted by the different types of Universities towards enhancement of teaching. It is interesting to note that the responses have brought out that there is no discernable difference between the different types of Universities. All of them have claimed to have processes or tools to measure the following: (i) offer inter disciplinary programmes, (ii) undertake periodic curriculum review, (iii) offer choice based credits, (iv) adopt outcome based education, (v) maintain quality of faculty members, (vi) maintain a healthy student-teacher ratio, (vii) track and recognize faculty achievement, (viii) adopt innovative teaching pedagogy, (ix) identify and sustain best practices and (x) collaborate with the industry extensively.
- xiv. Almost all Universities have claimed to have tools /processes to measure student progression for higher studies/ research. Regarding the workload of students too, there is no consistency in measuring workload. Invariably it is measured in terms of credits or courses the definition of which again varies from University to University.

Regarding MOOC, while about 65 % of the Universities have claimed to facilitate blended learning methods, its effectiveness needs further validation since the infrastructure required for the same is not uniformly available.

Regarding Student satisfaction survey, while almost all Universities have reported conducting the survey, the comprehensiveness and regularity vary widely.

- xv. While all Universities have claimed to be monitoring students' learning, consciously linking evaluation to outcomes is still in a nascent stage. Further, in many Universities, the proportion of continuous and formative assessment is small as compared to the summative assessment which might compromise the rigour of academic delivery.
- xvi. While all Universities have reported to have tools /processes to measure the quality of staff performance, the rigour and the comprehensiveness vary. Also, the action taken on the findings of the assessment may not be adequately rewarding for high performers or adequately penalizing for the consistent poor performers.
- xvii. Support systems like Internal Complaints Cell, Anti-ragging committee, grievances redressal cell, that have been mandated by the regulatory bodies are present in all Universities. Other support systems like Academic/career advising, support for special learners, scholarships, health care, placement, hostel accommodation facilities etc. are

established by more universities in varying degrees of effectiveness to gain competitive advantage. Establishment of incubation centres for start-ups are reported by only 50% of the state Universities, 75 % of Deemed Universities and 100% of the Central Universities and Institutes of National Importance.

- xviii. The responses bring out that only 12 out of 29 Universities have tools to measure graduate tracer studies. A majority of the Universities have reported to be conducting employer surveys, inviting industry professionals in the curriculum development and review process. However, there could be varying degrees in institutionalizing the same. Universities are becoming increasingly aware of the benefits of a multi-pronged alumni engagement with the realization that a more mature and engaged relationship with the industry and alumni will have a direct bearing on the graduate employability.
- xix. It is important to note that many HEIs in India have been predominantly teaching institutes until about a decade ago with the focus on research gaining importance. The tools available to monitor/measure the quality of research undertaken at the University will therefore be at different levels of maturity though the structures may be present. In this background, Universities are evolving methods to incentivize quality research.
- xx. To create a conducive environment to promote a research and innovation culture, Universities are creating an eco-system by establishing think-tanks, collaboration with national and international centres of excellence in areas of futuristic relevance, entrepreneurial development centre and consulting centres for protection of Intellectual Property. However, this is at a nascent stage in most universities.
- xxi. The numbers of international students admitted in the Universities are below the permitted percentage. Universities are establishing international offices to attract international students, promote student and faculty mobility, engage in joint curriculum development and research etc. Such offices for internationalization are of varying maturity levels, though all Universities may have the structure in place.

Qualitative Analysis

The qualitative responses regarding the Quality Assurance Management as a function, focuses on the three broad areas – the objectives, the key drivers and the processes collection and collation of data adopted.

➤ The objectives of QAM

The purpose of establishing this department/cell ranged from ‘regulatory compliance’ on one end to ‘creating and sustaining a quality culture’ at the other. The first one being a reaction to the external environment and the second being an internal calling. Between these two extremes and tending towards either of the ends, were other reasons that justified the need for the QAM function. Some objectives were at the operational level tending towards compliance that include: collecting data, conducting regular meetings, undertaking audits for identifying deviations, initiating corrective actions and generating reports. In the middle of the spectrum, some of the objectives highlighted the need for continuous improvement in curricular, co-curricular and

extra- curricular activities etc. Universities identified that “Action-oriented QAM plans” should permeate through all departments and processes to ensure standardization.

➤ **Drivers of QAM**

The respondents acknowledged that the Quality of higher education has a direct bearing on the graduates’ intellectual competence to become valuable resources and contribute to nation-building in “Educational, Social, Technological, Environmental and Economic Magnificence” (ESTEEM). Some universities have also identified indicators and devised metrics to periodically review and benchmark their practices to stay relevant to the dynamic regional, national and international environments. One of the drivers of QAM that was highlighted is that it facilitates the realization of the vision and mission of the University. Some Universities have seen QAM initiatives as a means to promote good governance and create an environment of quality consciousness.

➤ **Process of collection and collation of data**

Majority of the HEIs in the sample had partially automated the data collection primarily for assimilating information about the academic and research functioning of their departments, conduct feedbacks, and monitor project progress. E-portals, Google forms, e-Mails are some of the popular means of data collection. HEIs stated that they collected data on a periodical (monthly, quarterly, half-yearly and annually) as well as need-based (whenever required). The IQAC department collects data periodically for reviewing the process quality against the set metrics and prepares an annual calendar which is shared through the MIS portal at some HEIs. Public relations officer and information officer facilitate timely collection of data.

While many Universities have answered in the affirmative regarding the teaching – learning processes adopted by them, it is relevant at this juncture to also highlight some challenges that the researchers believe are important to be mindful of.

Table 2: Quality indicators

Quality indicators	Observations
Offer inter disciplinary programmes	The rigid structure of development and delivery of academic programmes, does not allow many Universities to offer truly inter-disciplinary programmes. This is more likely to be in letter than spirit.
Undertake periodic curriculum review	Most Universities have rules regarding the frequency of curriculum review ranging from three years to five years. Deemed Universities however, may have the flexibility of reviewing and revising the curriculum as frequently as annually.
Offer Choice Based credits	Only a few Universities in India offer a Choice Based credit system that allows a student to create a programme of his/her own choice (subject to the framework of the University’s rules). Invariably,

	this is seen as offering a few additional elective courses from which a student can choose a few courses.
Adopt outcome based education	This is a recent development in the HEI of India barring technical education which is a little more experienced in this direction. For all others, this is a learning phase.
Maintain quality of faculty members	Among the first hundred universities ranked by NIRF (2018), the percentage of PhD faculty to the total number of faculty in the top ten universities was 63.38% while that of the last ten was 47%.
Maintain a healthy student-teacher ratio	According to AISHE report 2017-18, the Pupil Teacher Ratio (PTR) in Universities and Colleges is 30 if regular mode enrolment is considered whereas PTR for Universities and its Constituent Units is 20 for regular mode. The faculty vacancies in HEIs in India are much talked about and is estimated to be 40% in state and 35% in central universities respectively.
Track and recognize faculty achievement	In Central and State Universities this is bound by the regulations and not much can be done beyond this boundary. However, in private and deemed Universities, there is a little more scope for such recognition and reward.
Adopt innovative teaching pedagogy	Faculty members are increasingly adopting new methods. However, the effectiveness will be assessed if Outcome Based Education (OBE) is adopted and implemented in spirit.
Identify and sustain best practices	All Universities attempt to identify and sustain best practices. This is also captured by NAAC. The question is about defining best practices which can vary widely depending on the nature, age, purpose and location of the University.
Collaborate with the industry extensively	In most universities, the extent of interface is confined to a few guest lectures and internships. However, some Universities engage with the industry in multiple ways that include the selection of students, curriculum review, evaluation of assignments, experiential learning and placements. However, very few universities engage with the industry to consult or solve their problems. This type and level of engagement will also expose faculty members to the problems and requirements of the industry and help build transferable skills in students accordingly.

Conclusion

The study brought out the current status of Quality Assurance Management processes and practices across the different types of HEIs in India and lent itself for comparison among them.

The study acknowledges the role of regulation and accreditation agencies towards establishing standards for quality enhancement in HEIs, reiterates the need for establishing QAM structures that promote a quality culture across HEIs and reinforce the earlier studies that underpin the significance of quality assurance as a driver of sustained growth. This study

can be extended to assess the effectiveness of the QAM structures from an 'input-process-output' perspective.

Report on the survey

Data Management Practices of HEIs in India

In India, with the advent of various initiatives like NAAC's data-based accreditation framework, NIRF, AISHE survey etc., the need for robust data management practices within the HEIs' has taken precedence. This survey is the second phase of the project 'EQUAM-BI' (Enhancing Quality Assurance Management & Benchmarking Strategies in Indian Universities) a prestigious Erasmus+ project. The project coordinators are University of Barcelona (UB) and ANECA, Spain and NAAC, India. The Survey is broadly structured to understand the type of data collected, persons responsible for data collection, the mode and purpose of collection, and the IT infrastructure that facilitates the process and reliability of data.

Primary data was collected through a survey instrument and secondary data from the websites of regulatory bodies like the UGC and MHRD (All India Survey of Higher Education). In the subsequent paragraphs the survey instrument development and sample selection method are explained.

The study was conducted based on primary survey of HEIs and has also drawn information from secondary sources. This study has drawn inputs from several relevant information sources like websites of NAAC, NIRF, AISHE, HE Commission UK and IQAC Symbiosis International (Deemed University).

The questionnaire sought both quantitative and qualitative information on: Profile of the HEI, Extent of Information Technology (IT) enablement for the administration of different processes like Student Life Cycle Management, Human Resources, Finance, Purchase and Maintenance, Research, Community Outreach to measure the extent to which the outcomes (performance) have matched expectations and the data security measures and systems in place for addressing the continuous data requirement etc

The draft questionnaire was shared with all partner universities from India and Europe, NAAC, ANECA for their suggestions and inputs. The questionnaire comprised both quantitative and qualitative questions segmented into two broad sections. Section A captured the Profile of the respondents and section B captured the Data Management processes and practices including qualitative questions.

Section A: Profile of the Respondents:

The first section on profile sought details regarding; Name, Email address, Type of HEI, Total number of Registered Students, Full-time Faculty Members and Non-Teaching Staff/Employees.

Table 3: Profile of the respondents

Type of HEI	Number of HEIs participated	Type of HEI (%)	Registered Students (%)	Full-Time Faculty Members (%)	Non-Teaching Staff (%)
Central University	3	10.0	9.7	22.6	11.3
State University	15	52.0	66.5	45.9	51.4
State Private University	2	7.0	1.5	0.5	1.0
Deemed-to-be University	7	24.0	19.5	28.9	32.9
Institutes of National Importance	2	7.0	2.8	2.1	3.4
Total	29	100.0	100.0	100.0	100.0

Section B: Data Management

- 19 HEIs had (> 75% - 100%) IT enablement for overall administration while 7 HEIs had (> 50% - 75%), 2 HEIs had greater than (25% - 50%) and only one HEI had up to 25% IT enablement.
- The analysis about the level of data management shows that 29 responses -15 institutions collect, 7 institutions store, 4 retrieve and 3 respondents share data centrally at the University level only. While 16 respondents collect, 8 store, one retrieve and 4 share data de-centrally at the Faculty/Department level only.
- High to very high degree of reliability is reported with respect to data collection for all the parameters on Teaching/Learning, Research, Internationalization, Facilities, Procedures and Outcomes. (Note: 10-9 is highly reliable & 2-1 Highly Unreliable)
- The respondents have reported that data collection for all the parameters are useful to extremely useful for the Quality Assurance processes. (Note:10-9 is extremely useful& 2-1 Not at all useful)
- A majority of the respondents (90%) have reported that they strongly agreed on the data collection processes and practices at their HEI are completely trustworthy. (Note: 10-9 is strongly agree& 2-1 Strongly Disagree)

6. Around 80% of the respondents are strongly satisfied on the data collection instruments that are suitable to measure the extent to which outcomes matched the expectations. (Note: 10-9 is Strongly Satisfied & 2-1 Strongly Dissatisfied)
7. Higher percentage of respondents reported the existence of written policies for information security, data management and data collection procedures while 59% reported for policies for privacy and only 55% of the respondents reported the existence of written policies relating to data collection.
8. Almost all the respondents stated that they strong agree on a 5-point scale that they have an adequate data management support structures in the form of; Data Management processes (collect, store, retrieve and share), a dedicated centre, people and hierarchies, access and authorization policies and process for Continuity Planning and Data Recovery (over 90% of the respondents).
9. The analysis of the responses relating to the ownership status of IT infrastructure revealed that above 90% of the respondents have fully-owned Computer hardware platforms and Operating system platforms, 83% fully-owned Networking, Telecommunication platforms and Databases etc., It is interesting to find 8 respondents had part-outsourced model their ERP systems, 5 respondents have part-outsourced their system integration and networking platforms and databases were partly outsourced by four respondents.
10. All the respondents have stated that they strongly agree or agree on parameters that satisfy the purpose of data management such as creating a data repository, standardization of processes, accessibility of data etc.,
11. 9 respondents have stated that they spend > 4 - 6% of their total expenditure on IT infrastructure and processes. Only two respondents stated that they IT infrastructure spending ranged from > 10% (34% and 20% respectively).
12. 83% of the respondents have stated they are strongly satisfied with the IT infrastructure provided for data management, while 14% of the respondents gave neutral response and only one respondent expressed dissatisfaction.

Qualitative Analysis

13. The Questionnaire sought inputs from the respondents regarding any practice or system that their HEI has developed to address the continuous data requirement for internal and external Quality. Most of the Universities responded that they have templates in Excel sheet, Custom made software, online portals developed in house for data collection, storage. Some have online learning management systems and system for financial management and one university have installed ERP system.

Dedicated IT portals through the pre-defined services indicators pre- embedded into the IT portals have been installed. This ensures quality check, relevance of the data to match the requirements of statutory, regulatory bodies and report generation. Few Universities have an IQAC department or a statistical cell for regular and timely reporting to regulatory and statutory bodies, one of the universities has established a NAAC Directorate and engaged faculty members to coordinate with departments for collection and compilation of data and are in the process of developing an android app. It is worth mentioning that the respondents have mentioned the importance of collecting data in an accurate and timely fashion as one of the priorities, the data management for majority of the Universities seems to be decentralized and collected through various levels of the University.

14. The challenges faced by universities for data collection required for internal and external reporting revealed a wide and varied response. Some of the challenges were relating to data collection and management whereas others were regarding the appropriateness of certain parameters identified by ranking/ accrediting agencies. They have been classified accordingly in the following paragraphs:

(A) Data Collection & Management

- a. Some Universities have responded that they face challenges regarding collection, monitoring and continuous updating of data, central data collection mechanism, lack of stakeholders' support, submitting timely etc.,
- b. Campuses are located at different locations, untrained staff leading to extensive follow ups and delays in data submission, high number of stakeholders, inadequate funding to support IT infrastructure, changes in policy regulations was also a hindrance.
- c. Universities found some data challenging to provide to authorities like NAAC and NIRF:
 - i. Community outreach where it is difficult to measure the impact and outcomes.
 - ii. No institutional mechanisms exist for capturing the data related to student progression.
 - iii. Information from corporate/private sector is also difficult (details of pay-package, cost to company (CTC), and so on necessarily makes the data incomplete and unreliable)
 - iv. Data related to Research Publications, quantifying publication/citation data on STEM (science, technology, engineering, mathematics) disciplines with quality of research outputs in humanities and social science disciplines, especially when it comes to things like h-indices, listing in SCOPUS/Web of Science is a challenge. The problem is even more acute for research/scholarly publications in Indian languages.

Conclusion

The study brought out the current status of Data Management in their processes and practices across the HEIs in India. Overall, the study brings out the understanding that HEIs have claimed to have adequate data management processes and practices in place and is quite aware of its purpose.

The study acknowledges the need for data management in the processes and practices of the HEIs toward ensuring information flow efficiency for better decision making and reiterates the need for establishing robust information technology systems to augment data flow throughout the HEI's organizational structure and to promote a data-driven culture across HEIs.

This study can be extended to assess the maturity of information technology adoption from an 'input-process-output' towards insights driven decision making perspective to sustain growth and competitiveness

Creating a tool-kit for internally evaluating quality of processes and practices of HEIs in India

The challenges faced by the HEIs have also been outlined at the end of each study. At this juncture, it is important to pause and review the role that India would play in providing workforce for not just the country but also to the world – something that reinforces the role of Indian HEIs in ensuring employable graduates.

A study carried out by PwC (2014) report on Indian Workplace 2022, has projected that India is on the way to becoming the country with the largest and youngest employable population in the world (in 2020, the average age of an Indian will be 29 years). Further, a study by Team Lease Services, observes that a quarter of the world's workforce will be from India. In this context, the Indian higher education sector assumes greater significance even from an international perspective. It is therefore critical that the quality of education imparted by HEIs across the country is enhanced significantly and quality is not confined to a few HEIs such as the Institutes of National Importance.

Concerted efforts are being made by National Assessment and Accreditation Council (NAAC) and National Board of Accreditation (NBA) to address these challenges and improve the quality of higher education. Educational reforms brought out by the regulatory bodies like University Grants Commission (UGC), All India Council of Technical Education (AICTE), Bar Council of India (BCI) and such others have contributed significantly in improving quality of higher education. However, recognizing that there is a need to step up the transformation process, the governance philosophy is shifting from being 'controlled' by the regulatory bodies towards 'providing direction and then assessing'.

Towards this end, the MHRD and the UGC have been evolving policies that recognize the better performers and rewards them with greater autonomy to explore and grow; at the same

time, the poor performers are being monitored closely and guided towards better performance.

As such, both regulatory bodies and accrediting agencies have outlined parameters to ensure quality in the following areas that, together impact the overall quality of HEIs in India. Through the RAF in 2018, Universities in India are evaluated by NAAC on the following seven criteria:

- Curricular Aspects
- Teaching, learning and Evaluation
- Research, Innovation and Extension
- Infrastructure and Learning Resources
- Student Support and Progression
- Governance, Leadership and Management
- Institutional values and Best Practices

NAAC with the vision of making ‘quality the defining element of higher education in India’ has brought in a new spirit into its process of assessment and accreditation aligning with the local, regional and global requirements. The accreditation process has steered towards adoption of ICT to make the process more robust, transparent and scalable and also to make the outcome more objective. The design of the improved process emphasizes a multi-pronged approach and focuses on:

- Simplification of process through ICT.
- Data-driven insights drawn from quantitative metrics and validated at multiple levels (70%).
- Qualitative assessment by peers to review the robustness of processes and practices (30%).
- Comparing and benchmarking with international quality assurance frameworks.

It is evident that these criteria encompass the ‘input’ - ‘process’- ‘output’ parameters. While efforts have been taken to enhance the Quality Assurance Management practices in the country, there is a strong case for shared understanding of issues and exploring common solutions – ‘how are others solving the problems that I have?’ An efficient means of achieving this goal is by peer learning through benchmarking of processes and best practices of other Institutions, particularly the international institutes of repute.

In this direction, the UGC has introduced the ‘Paramarsh’ (meaning consultation or advice) scheme whereby Universities with a high grade in NAAC accreditation mentor new/weak universities and help enhance the overall quality of the mentee institutions. The scheme will be operationalized through the ‘Hub and Spoke’ model – the ‘Hub’ being the highly graded Universities and the ‘Spoke’ being a group of mentee institutions.

This model assumes importance given the sheer variety of objectives with which the Universities are established or the location where they are established. It is important therefore, for each University to have its own Quality charter and a toolkit that will have parameters and indicators to monitor and measure the accomplishment of quality objectives that will facilitate continuous improvement, promote a quality culture, enable benchmarking with renowned Universities.

In addition to some common parameters (teaching, learning and evaluation, for example), a toolkit that will help identify key parameters and indicators that are unique to a University will help in evaluating quality of performance. This will build capabilities in Universities and will further the cause of quality - more as an internal calling and not just a need for compliance with external requirements – be they accreditation or ranking.

To begin with, a tool-kit with a wide range of criteria/parameters for evaluation may be provided along with quality indicators. In addition, it would be very beneficial if the ideal level that one could aspire to achieve based on best practices and benchmarking is also indicated.

This will be a significant contribution of this project to the HEIs in India.

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