



PROCEEDINGS

OF

NAAC SPONSORED NATIONAL SEMINAR

on

**“Emerging trends in Quality Education: the Role of IQAC in Governance,
Leadership and Management”**

24th & 25th JULY 2019

Organized by

Internal Quality Assurance Cell (IQAC)

SAS.S.N.D. P. Yogam College, Konni

Pathanamthitta, Kerala - 533 002.



Edited by

Dr.Kishorkumar.B.S

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Dr. Bijupushpan (Principal)
SAS SNDP Yogam College, Konni

Edited by:

Dr. Kishorkumar. B.S

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FOREWORD

The establishment of Internal Quality Assurance Cell (IQACs) in HEIs as soon as they are first accredited is the gesture that brought about a discernible change, a culture for quality even in the rural and remote colleges, which is a welcome sign, thanks to NAAC. Today colleges are functioning toward specific objectives, Vision and Mission they have set for themselves in order to provide quality education and quality training through quality administration. The IQACs are serving as change agents in fulfilling this task in planning, executing, monitoring, reviewing, restructuring the Academic, Administrative, Extension, Research and Outreach activities, adopting best and innovative practices and a host of other learners centered, student beneficiary measures in HEIs.

It is heartening to note that the Internal Quality Assurance Cell of our College is organizing a National Seminar on “Emerging trends in Quality Education: the Role of IQAC in Governance, Leadership and Management”. We look forward to achieving academic and administrative performance of the institution and to promote measures for institutional functioning towards quality enhancement through internalization of quality culture and institutionalization of best practices.

The programme is being conducted with financial assistance from NAAC, Bengaluru. I am glad that the IQAC is also bringing out proceedings of the Seminar that include invited talks of the resource persons and a few contributions of the participants. My sincere thanks and appreciations are due to the Coordinator and the members of IQAC for taking great efforts in organizing this programme and making it a grand success.

My warm and best wishes for a refreshing, unlearning and relearning experience to all stakeholders.

Dr. Bijupushpan.
(Principal)

PREFACE

Education is considered as an investment in human beings in terms of development of human resources, skills, motivation, knowledge and the like. Evaluation in the context of education therefore helps to build an educational programme, assess its achievements and improve upon its effectiveness. It serves as an in-built monitor within the programme to review the progress in learning from time to time. In this sense, evaluation is a continuous process and a periodic exercise. In these modern times, wherein the concept of education itself is facing a paradigm shift, there are many issues that pose challenges to the existing evaluation system. Some of the issues include - weaker relationship between learning outcomes and assessment, lack of transparency in assessment system, most systems are still based on marks, lesser stress on formative assessment, rare use of classroom assessment techniques, students hardly receive feedback to improve their learning, etc

To address these issues and to bring out effective changes in the present evaluation system, the IQAC of our college has organized a National Seminar on 'Emerging Trends in Quality education: the role of IQAC in Governance, Leadership and Management" on 24th & 25th July 2019 inviting resource persons from reputed institutions in the country. All the sessions were quiet interesting and effective and the resource persons focused on the qualitative methods and reforms in the student evaluation process, taking into consideration the guidelines of NAAC. Around 70 delegates, including 26 delegates from other institutions participated in the Seminar and actively took part in the deliberations.

I take this opportunity to wholeheartedly thank our patron Sri. Vellappally Natesan (Manager SNDP Yogam Colleges, Sri. C P Sudarsanan, Education Secretary, Education Officer Dr. R. Raveendran, Education Officer, Sri. Anil Kumar D Management Representative, Biju Pushpan (Principal) Chairman, for their constant motivation and encouragement, towards the successful conduct of the seminar.

I record my sincere gratitude to the resource persons of all the sessions for accepting our invitation, contributing greatly and making the seminar quiet informative and productive. I thank the core members of IQAC, without whose help, support and cooperation this seminar would not have been a grand success.

I immensely thank the National Assessment and Accreditation Council, Bengaluru for providing financial assistance for conducting this seminar. Finally, I profusely thank all the delegates for their active participation throughout the seminar and this has greatly contributed to the success of the seminar.

Dr. Kishorkuamr,B,S
Coordinator-IQAC & Convener.

MESSAGE FROM THE PRINCIPAL

Dr. Bijupushpan (Principal)



Dear friends,

“Quality ratings reflect our philosophy that is not only engrained in the DNA of our community, but also in the cultural build up of our entire institution”

A great institution is a sum of smaller thoughtful actions; IQAC at colleges can provide the leadership for creating such an ambience. Days are not far when the entire community of higher education institutions, thank IQAC for its leadership, governance and management in creating quality. Nicknamed ‘the college watchdog’, IQAC would soon be the stallion in our campuses.

The national seminar on “Emerging trends in quality education” to be held at our college organised by IQAC and sponsored by NAAC is an opportunity to listen to and interact with a number of academic quality leaders on the topic. I wish all participants ‘great learning experience’.

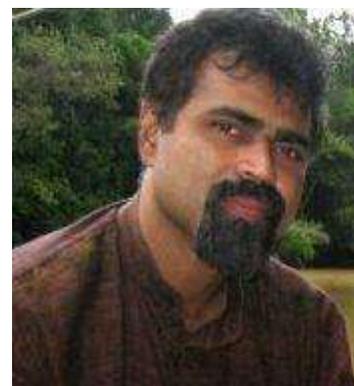
Konni
23.07.2019

BIJU PUSHPAN

MESSAGE FROM THE PRO VICE CHANCELLOR

Dr.C.T. Aravindakumar

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Mahatma Gandhi University, Kottayam 686560, Kerala, India
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I am very glad to note that SAS SNDP Yogam College Konni is arranging a National Seminar on "Emerging Trends in Quality Education: The Role of IQAC in Governance, Leadership and Management". The topic of the seminar is one of the important duties of any academic institutions. Since the inception of the National Assessment and Accreditation Council (NAAC), there has been a paradigm shift in the way one look at the academic parameters of institutions of higher learning in our country. Quality Education is the prime sustainable development goal of UN, based on the high importance of education, and technological and pedagogical changes in teaching-learning process. The magnitude of the number of students admitted to higher education institutions in India makes this process very challenging. The quality improvement is a collective process which involve the genuine efforts of teachers, students, employees administrators, parents, policy makers etc. At the same time, the role of teachers in this process is paramount. The academics, in general, need to fully realise the evolving trends in higher education which should be reflected in designing curriculum and updating a pragmatic, effective and methodologically impactful learning process. All these processes must impart competencies and skills to our students. In this context, IQAC has a key role in evolving various mechanisms to improve quality and to implement them effectively in any institutions. Therefore, the choice of the topic by the organisers demands a special appreciation. I whole heartedly support the idea and wish all the success for the seminar and for all the future endeavors of the college in the direction of quality education.

T.C.Aravindakumar
Pro Vice-Chancellor
Mahatma Gandhi University

CONVENOR'S MESSAGE



It gives me great pleasure to testify to the fact that the IQAC of this College is organizing a National Seminar on **“Emerging Trends in Quality Education: the Role of IQAC in Governance, Leadership and Management”** on 24th & 25th July 2019, Sponsored by NAAC. I am glad to be present and lead the Seminar as convenor as well as Coordinator of IQAC. IQAC acting as a nodal agency of an Institution for Quality related activities. IQAC plays a pivotal role for quality sustenance and Quality enhancement in HEIs. One of the important functions of IQAC is organization of Workshops / Seminars on quality related themes and promotion of quality circles. It provides the sound basis for decision making, better internal communication and act as a change agent in the institution. The basic theme of the seminar is to create awareness on the benchmarks required to improve quality standards in Higher Education Institution (HEIs). In the current scenario of education system, the rapid advancement in Education Technology brought up a perceptible change in conventional Teaching, Learning and Evaluation Methodology to raise the understanding levels of students. The quality of Institution could be ascertained by integrating with Administrative functions, Pedagogic caliber of the Teachers and the Academic excellence of the students as well. The participant may get an awareness and motivation on the expected outcome of Govt. policy on HEIs. More appropriately, he/she may get an opportunity to explore and strengthen on the benchmarks set up for quality standards in HEIs and the steps needed to implement the same for quality sustenance and quality enhancement at their respective institutions, thereby fulfill the goals and aspirations of NAAC for Institutional Quality. The financial support for the seminar has been provided by NAAC, Bangalore. We acknowledge them. I must profusely thank our beloved Principal for his constant motivation, the Resource Persons for their swift acceptance, the organizing committee for their extensive cooperation and coordination and finally the participants for their active participation and excellent presentations.

Dr. Kishorkuamr, B.S.
Coordinator-IQAC & Convener.

THEME / OBJECTIVE OF THE SEMINAR

ABOUT THE COLLEGE

SAS SNDP Yogam College is the first college in Konni, Kerala, India started by the Sree Narayana Dharma Paripalana Yogam (SNDP), in 1995, resolved to establish a college at Konni in Memorial obeisance to the great philosopher and social reformer, Sahodaran Ayyappan, an ardent disciple of Sree Narayana Guru to provide better, higher educational facilities mainly for the backward classes of the region. The college began to function in July 1995 with affiliation to the MG University with three courses at the undergraduate level. The college was elevated to the status of a Post Graduate Institution in 2001 with the introduction of M.Sc. course Computer Science. The college started functioning in rented premises in Konni and later moved to own premises at Attachackal. The college finally shifted base to permanent structures at Cherimukku, Konni.

Theme/Objective of the Seminar

Higher education is a dynamic, continually evolving concept that keeps adapting to the most up-to-date changes. Higher education is the backbone of any society. It is the quality of higher education that decides the quality of human resources in a country. Higher education is critical to India's aspirations of emerging as a major player in the global knowledge economy. The global competitiveness of Indian industry and its employment generation potential is clearly dependent on availability of required skills and trained personnel. The proposed national seminar on "Emerging trends in Quality Education: the Role of IQAC in Governance, Leadership and Management" discussed, deliberated and showcased various activities, for the development and application of quality benchmarks / parameters for various academic and administrative activities for improving the quality culture in the institution. The world we live in is rapidly changing with knowledge explosion and technology impact. The challenges of Higher Education Institutions (HEI) hence focus on enhancing the quality benchmarks by keeping pace with global scenario, creating new frontiers of learning, preparing the students to be socially responsible citizens and developing new innovative methods for change management. In keeping with the objectives of Higher education, the thrust of institutions is to enhance and ensure quality in all aspects and making learning as student centric.

In the current scenario of education system, the rapid advancement in education technology brought up a perceptible change in conventional teaching, learning and evaluation methodology to raise the understanding levels of students. In the Indian context, the undergraduate courses are designed in such a way that every student with all extent should acquaint themselves with the overall development along with their academic performance viz., in the aspects of personality development, communication skills, facing interviews etc., to grab the employment opportunities and, to climb up the ladder of higher progression that would

ultimately fulfill the stakeholders' dreams. In this context the participants from academic institutions, universities and industry may get an opportunity to explore and strengthen on new dimensions of setting up quality standards in HEIs and the steps needed to implement the same for quality sustenance and quality enhancement at their respective institutions, thereby fulfill the goals and aspirations of Institutional quality.

To address these issues and identify innovative and effective strategies for bringing out conscious, consistent and catalytic action to improve the academic and administrative performance of the institution , IQAC organized this two day national seminar with the financial assistance from NAAC Bangaluru. The seminar comprises four brainstorming sessions on the following themes:

SUB-THEMES

- Preparation for NAAC Audit.
- The new dimensions of quality standards in HEIs and the specific role of IQACs
- Quality Education through Value Education
- Identification of new strategies for enhancing quality for both teaching and evaluation
- Setting up of suitable mechanism to monitor the quality enhancement of faculty members and students.
- Internal and external audit- parameters formats –experts- effective usage of outcome.
- Infusion of ICT in Teaching , Learning and Evaluation Methodology
- Faculty and administrative initiatives in the development of quality research and extension through academic and industry collaborations
- Objectives of NAAC in the Assessment and Accreditation of Higher Education Institutions
- Governance and Leadership through MIS
- Strategies to overcome deficiencies and improve quality standards in HEIs
- Importance of student initiated extension activities and study projects
- Bridging between industry and academia.

PROGRAMME SCHEDULE OF

National Seminar on “Emerging trends in Quality Education: the Role of IQAC in Governance, Leadership and Management”

Sponsored by

National Accreditation and Assessment Council (NAAC) and SAS SNDP Yogam College, Konni
24th and 25th July 2019, at SAS SNDP Yogam College, Konni, Pathanamthitta

Schedule for 24th July 2019 WEDNESDAY

9.30AM - 9.40AM: Welcome, lighting of the lamp, prayer

9.40AM - 9.50AM: Welcome address by **Dr. Kishorkuamr.BS**, IQAC Coordinator

9.50AM - 10:00AM: Overview of the conference, by **Dr.Bijupushapn**, Principal.

10:00AM - 10:20AM: Address by Chief Guest, Prof(**Dr**). **T.C.Aravindakumar**, Pro. Vice-Chancellor, MG University, Kottayam.

10:20 -10:25 AM: Felicitation by Prof.Praveenkumar.V.S, Member syndicate.M.G.University,Kottayam

10:25-10-30 AM : Felicitation by **Sri. Anil Kumar D.** (Management Representative)

10:30AM - 11:00AM: BREAK - tea and refreshments

11:00AM – 1: 00 AM: Talk by **Dr. K.Murukan** “*Research and Development ?*”

1.00PM - 1.15PM: Contributed paper presentations

1:15 – 2.15PM LUNCH

2:15PM - 3.00PM: Talk by **Dr. R.Raveendran** “Funding agencies in India and Abroad”

3.15PM - 3.30PM: Contributed paper presentations

3.30PM - 4:00PM: BREAK - tea and refreshments

4:00PM - 4:30PM: Contributed paper presentations

Schedule for the 25th July 2019 THURSDAY

9.30AM – 9.40AM: Welcome, lighting of the lamp, prayer

9.40AM - 10.40AM: “Quality Assurance in Accreditation” Talk by Dr.Gabriel Simon Thuttil, Prof. Department of Commerce, University of Kerala.

10:40AM - 11:10AM: BREAK – tea and refreshments

11.10AM - 12:00PM: Talk by **Prof(Dr).Sudeer Muhammed**, “Teaching Learning and Evaluation”.

12:00AM - 1:15PM: Contributed paper presentations

1:15PM - 2:15PM: LUNCH

2:15PM - 3.45PM: Contributed paper presentations & vote of thanks

3.45PM: Tea and refreshments

ORGANIZING COMMITTEE

Patron

Sri. Vellappally Natesan (Manager SNDP Yogam Colleges)

Chairman

Dr. Biju Pushpan (Principal)

Education Secretary

Sri. C. P. Sudarsanan

Education Officer

Dr. K .Raveendran (Principal(Rtd) &UGC Emiritus Professor
Research Officer – SN Trusts, Kollam)

Management Representative

Sri. Anil Kumar .D

Organizing Secretary/Convener

Dr. Kishore Kumar (IQAC Coordinator)
Associate Prof. of Physical Education

Co-convener

Dr. Nisharaj S (IQAC Member)
Assistant Prof. of Biotechnology

Organizing Members

Prof. Praveen Kumar V S(Member Syndicate MG University)
Dr. Rejimol D (Associate Prof. of Mathematics)
Prof. Sathyanarayanan S (Associate Prof. of English)
Prof. Krishnakumari K (Associate Prof. of Statistics)
Prof. Simi M (Associate Prof. of Computer Applications)
Dr. Ajith P S(Associate Prof. Commerce)
Prof. Sangitakumari (Associate Prof. of Business Administration)
Prof. Ajoy Bhasker (Assistant Prof. PG Dept. of Commerce)
Mrs.Bindu K L (Jr. Superintendent)
Mr. Rajiv Kumar K (Head Accountant)
Mrs. Jayakala S (Tech. Asst. in Computer Science)
Mr. Anith Kumar G(Office Staff)
Mr. Mohanan (PTA Vice-President)

INAGURAL SESSION

A national seminar titled “Emerging trends in Quality Education: the Role of IQAC in Governance, Leadership and Management” was held at SAS SNDP Yogam College, Konni, campus on 24 th -25th July, 2019. Over 82 higher-education experts from all over the state participated in the event that was sponsored by the National Assessment and Accreditation Council (NAAC). They discussed and showcased various strategies and success stories that can enable institutions of higher learning to develop a road map on quality enhancement focused on sustainable development and needs of the planet.

The inaugural session was held on the 24th of July, 2019. The programme started with the invocation. Dr. Kishorkumar.B.S, Head, Department of Physical Education, and IQAC Coordinator SAS SNDP Yogam College, Konni and Convener Organizing Committee of the Seminar, welcomed the dignitaries on the dais and the galaxy of the scholars from different parts of the state and highlighted about the seven themes of the seminar along with the total number of participants, different technical sessions. He also briefed about the modus operandi of the two days seminar. The seminar was inaugurated by Prof.(Dr)T.C.Aravindakumar, Pro.Vice Chancellor M.G University, Kottayam. He highlighted several successful innovations in sustainable development that have been evolved and implemented at MG University during his tenure as IQAC coordinator in the University. He also said that : “In higher education, it is important to focus on sustainable models that consider the delicate balance between the environment, society and economy. Students need to be educated on technologies that protect the environment. For example, the problem of global warming can be overcome through the use of solar photovoltaic, solar thermal and wind energies. These are sufficient to meet all our energy needs. Planting more trees may be good to consume carbon dioxide. But what happens to the trees after their lifetime? If they are burnt as firewood, the trapped carbon is back into the atmosphere. Even if the wood is buried, microbial action sets in and carbon dioxide is released into the atmosphere. Therefore, new technologies in preserving carbon in the wood are necessary. Also, there are reports of scientists combining carbon dioxide of atmosphere with silicate on the earth's surface to make cement rocks. If this technology is developed, it will be a breakthrough.” This was followed by the speech, of Dr.Bijupushpan, Principal, SAS SNDP Yogam College, Konni, said: “While ancient India promoted learning for life and sustainability, modern education is merely an employment guarantee scheme. The challenge before educators is to face the innovative disruptions and technological infiltration which wean students away from sustainable development needed for a meaningful life” After this there was a comprehensive talk by Prof.Praveenkumar.V.S. Member Syndicate. He wished the seminar a great success and was of the opinion that teacher is the backbone of the society, institutional programmes like research and development should focus on the local needs of the society. It was followed by the comprehensive talk of R. Anilkumar, Management Representative. The session ended with the vote of thanks delivered by Dr. Binu.V.

KEYNOTE ADDRESS

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Principal, Members of the faculty of SAS SNDP Yogam college, Konni, Fellow guests, Ladies and Gentlemen,

Thank you for inviting me to this seminar on “Emerging trends in Quality Education: the Role of IQAC in Governance, Leadership and Management”. The fact that we have such distinguished speakers, and a distinguished Panel and audience, is testimony to the importance you place on quality assurance within higher education.

I have chaired the IQAC of MG University for more than four years, and the development of the higher education sector is very dear to my heart. Now, I am the Pro Vice Chancellor of M. G. University and I know the year ahead of me will be a challenging and important one, because maintaining and enhancing quality is such a vital issue.

One reason for introducing the IQAC and quality audits is to safeguard the future of college. The young people who attend our higher education institutions are entrusting us with three years of a prime period of their lives, in the expectation of receiving a quality educational experience. In so doing, our students and their families will often expend considerable financial resources. The Administration provides even greater resources of public funding to our institutions. Public accountability is therefore a common and primary rationale for audit regimes across the globe. The IQAC will therefore not only work towards assuring that our degrees continue to stand comparison with those of high quality overseas institutions, it will also take the opportunity to work in partnership with our institutions further to facilitate development within their roles and missions, and to help enhance their offerings.

The IQAC will work with institutions to ensure that our audits can help them take forward the higher education agenda in the coming years. The IQAC will promote quality enhancement by identifying and facilitating the sharing of good practice in learning and teaching. One key aspect of the IQAC methodology will be a partnership approach. The Council wants to make sure institutions and staff do benefit from the IQAC's work. We will encourage institutions to be reflective and self-evaluative, as well as forward-looking. Quality audit in itself will provide opportunities for enhancement of the institutional management of quality in learning and teaching. We will support learning from one-another, and work to inform and encourage continuous improvement in the management of the quality of higher education. We can always do better. That should be our common goal with the institutions.

Quality is often described as the totality of features and characteristics of a service that bear on its ability to satisfy stated or implied needs. Quality in higher education is a multidimensional concept, which should embrace all its functions and activities: teaching and academic

programmers, research and scholarship, staffing, students, buildings, faculties, equipment, services the community and the academic environment. It should take the form of internal self-evaluation and external review, conducted openly by independent specialists, if possible with international expertise, which are vital for enhancing quality. Quality also requires that higher education should be characterized by its international dimension: exchange of knowledge, interactive networking, mobility of teachers and students, and international research projects, while taking into account the national cultural values and circumstances. For any higher education institution in India, there are several aspects of reputation which are important. It is built upon the competitive elements of quality, reliability, delivery, history and price, of which quality has become strategically the most important.

- Once a higher education institution acquires a poor reputation for quality, it takes a very long time to change it.
- Higher education reputations, good or bad, can quickly become national reputations.
- The management of the competitive weapons, such as quality, can be learned like any other skill, and used to turn round a poor reputation, in time.

Quality is often used to signify “excellence” of a product or service. In some manufacturing companies the word may be used to indicate that a piece of material or equipment conforms to certain physical dimensional characteristics often set down in the form of a particularly tight specification. If we are to define quality in a way that is useful in its management, then must recognize the need to include in the assessment of quality the true requirements of the “customer” – the needs and expectations.

A lot of emphasis will be given to institutions' role and mission when the IQAC conduct its audits. A "Fitness-for-purpose" approach will be adopted - institutions will be invited to set out clearly their visions and objectives, intended student learning outcomes, and the indicators that are used for measuring their achievements. The IQAC will not attempt an across-the-board approach - we are aware, and wish to encourage, each institution to develop their own respective role, vision and mission, and strategies.

To sum up, external quality assurance depends a lot on what element of what higher education is for – research, employment, personal development or societal advancement – is more dominant at any given time. It is contingent upon national context, but there are international trends that can be observed. The expectations of stakeholders are rising all the time, but we see ever greater stratification of quality and challenges remain.

I am sure that this seminar will present interesting analyses of quality issues and be very relevant to HEI. IQAC Coordinators from different colleges are present today to learn more about your views, which the IQAC will be delighted to know. And more importantly, I look forward to your actual engagement with the IQAC, of your institutions, in the coming months.

Thank you

INVITED TALK – I

Criterion III NAAC: - Research, Innovations and Extension

Dr. K.Murugan

Research officer, RUSA

Dept. of Higher Education, Govt. of Kerala

The Revised Assessment and Accreditation Framework is launched in July 2017. It represents an explicit Paradigm Shift making it ICT enabled, objective, transparent, scalable and robust. The Shift is:

- from qualitative peer judgment to data based quantitative indicator evaluation with increased objectivity and transparency
- towards extensive use of ICT confirming scalability and robustness
- in terms of simplification of the process drastic reduction in number of questions, size of the report, visit days, and so on
- in terms of boosting benchmarking as quality improvement tool. This has been attempted through comparison of NAAC indicators with other international QA frameworks
- introducing Pre-qualifier for peer team visit, as 30% of system generated score
- introducing **System Generated Scores** (SGS) with combination of online evaluation (about 70%) and peer judgement (about 30%)
- in introducing the element of **third party validation** of data
- in providing appropriate differences in the metrics, weightages and benchmarks to universities, autonomous colleges and affiliated/constituent colleges
- in revising several metrics to bring in enhanced participation of students and alumni in the assessment process

Research, Innovations and Extension

This Criterion seeks information on the policies, practices and outcomes of the institution, with reference to research, innovations and extension. It deals with the facilities provided and efforts made by the institution to promote a 'research culture'. The institution has the responsibility to enable faculty to undertake research projects useful to the society. Serving the community through extension, which is a social responsibility and a core value to be demonstrated by institutions, is also a major aspect of this Criterion.

The focus of Criterion III is captured in the following Key Indicators:

KEY INDICATORS

- 3.1 Promotion of Research and Facilities
- 3.2 Resource Mobilization for Research
- 3.3 Innovation Ecosystem
- 3.4 Research Publications and Awards
- 3.5 *Consultancy
- 3.6 Extension Activities
- 3.7 Collaboration

3.1 Promotion of Research and Facilities

The promotion of research is a significant responsibility of the HEIs particularly for Universities without which a 'research culture' on campus cannot be realised. The HEIs have to be actively engaged in this through evolving appropriate policies and practices, making adequate resources available, encouraging active research involvement of teachers and scholars in research as well as recognizing any achievement of teachers through research. It also includes responsiveness and administrative supportiveness (procedural flexibility) in the institution in utilizing the supports and resources available at the Government agencies and/or other agencies. Required infrastructure in terms of space and equipment and support facilities are made available on the campus for undertaking research. The institution collaborates with other agencies, institutions, research bodies for sharing research facilities and undertaking collaborative research.

3.2 Resource Mobilisation for Research

The institution provides support in terms of financial, academic and human resources required and timely administrative decisions to enable 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 for any institution to excel in research. The faculties are empowered to take up research activities utilizing the existing facilities. The institution encourages its staff to engage in interdisciplinary and interdepartmental research activities and resource sharing.

3.3 Innovation Ecosystem

The Institution has created an ecosystem for innovation including incubation centre and other initiatives for creation and transfer of knowledge. The institution conducts workshop/seminars on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices. Awards for innovation won by institution/teachers/research scholars/students, start-ups incubated on-campus are explicitly commended by the institution.

3.4 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.

3.5 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. The finances generated through consultancy are fairly utilized by the institution. The faculty taking up consultancy is properly rewarded. University is a resource pool with several persons engaged in research at various levels. Consultancy shows the credibility of the university's 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. This may not be a formalized aspect of a college.

3.5 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. Affiliation and interaction with groups or individuals who have an interest in the activities of the institution and the ability to influence the actions, decisions, policies, practices or goals of the organization leads to mutual benefit to both the parties. The processes and strategies inherent in 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.

3.6 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.

| | | | | |
|--|--|-----|-----|-----|
| 3. Research, Innovations and Extension | 3.1 Promotion of Research and Facilities | 20 | 20 | NA |
| | 3.2 Resource Mobilization for Research | 20 | 10 | 10 |
| | 3.3 Innovation Ecosystem | 30 | 20 | 10 |
| | 3.4 Research Publications and Awards | 100 | 20 | 20 |
| | 3.5 Consultancy | 20 | 10 | NA |
| | 3.6 Extension Activities | 40 | 50 | 60 |
| | 3.7 Collaboration | 20 | 20 | 20 |
| | Total | 250 | 150 | 120 |

Criterion III - Research, Innovations and Extension (250) Key Indicator - 3.1 Promotion of Research and Facilities (20)

| Metric No. | | Weightage | | | | | | | | | | | | |
|---------------------------|--|-----------|--|--|--|--|--|--------------|--|--|--|--|--|----------|
| 3.1.1 Q _n M | <p><i>The institution has a well defined policy for promotion of research and the same is uploaded on the institutional website</i></p> <p style="text-align: right;"><i>(Yes /No)</i></p> <p>Documents: Minutes of the Governing Council/ Syndicate/Board of Management related to research promotion policy and its adoption</p> <p>File Description (Upload)</p> <ul style="list-style-type: none"> Any additional information Minutes of the Governing Council/ Syndicate/Board of Management related to research promotion policy adoption URL of Policy document on promotion of research uploaded on website | 1 | | | | | | | | | | | | |
| 3.1.2 Q _n M | <p><i>The institution provides seed money to its teachers for research (average per year) (INR in Lakhs)</i></p> <p>3.1.2.1: The amount of seed money provided by institution to its faculty year wise during the last five years(INR in lakhs)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>INR in lakhs</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Data Requirement for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> Name of the teacher getting seed money The amount of seed money Year of receiving grant Duration of the grant | Year | | | | | | INR in lakhs | | | | | | 4 |
| Year | | | | | | | | | | | | | | |
| INR in lakhs | | | | | | | | | | | | | | |

| | | |
|--|--|--|
| | <p>Formula:</p> $\frac{\text{The amount of seed money provided by institution to its faculty in the last 5 years}}{5}$ <p>File Description (Upload)</p> <ul style="list-style-type: none"> Any additional information Minutes of the relevant bodies of the University Budget and expenditure statements signed by the Finance Officer indicating seed money provided and utilized List of teachers receiving grant and details of grant received (Data Template) | |
|--|--|--|

| | | | | | | | | | | | | | | |
|---|--|-------------|--|--|--|--|--|---------------------------|--|--|--|--|--|-----------------|
| <p>3.1.3 Q_nM</p> | <p><i>Number of teachers awarded international fellowship for advanced studies/ research during the last five years</i></p> <p>3.1.3.1: The number of teachers awarded international fellowship for advanced studies / research year wise during the last five years</p> <table border="1" data-bbox="464 533 1074 667"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number of teachers</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Name of the teacher awarded international fellowship • Name of the award • Year of Award • Awarding Agency <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Any additional information • e-copies of the award letters of the teachers • List of teachers and their international fellowship details (Data Templates) | Year | | | | | | Number of teachers | | | | | | <p>3</p> |
| Year | | | | | | | | | | | | | | |
| Number of teachers | | | | | | | | | | | | | | |
| <p>3.1.4 Q_nM</p> | <p><i>Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other research fellows in the university enrolled during the last five years</i></p> <p>3.1.4.1: The Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other research fellows in the university enrolled year wise during the last five years</p> <table border="1" data-bbox="464 1301 994 1395"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Name of Research fellow | Year | | | | | | Number | | | | | | <p>4</p> |
| Year | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | |
| | <ul style="list-style-type: none"> • Year of enrolment • Duration of fellowship • Type of the fellowship • Granting agency <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Any additional information • List of research fellows and their fellowship details (Data Template) | | | | | | | | | | | | | |

| | | |
|--|---|-----------------|
| <p>3.1.5</p> <p>Q_nM</p> | <p><i>University has the following facilities</i></p> <ol style="list-style-type: none"> 1. Central Instrumentation Centre 2. Animal House/Green House / Museum 3. Central Fabrication facility 4. Media laboratory/Business Lab/Studios 5. Research/Statistical Databases <p>Options:</p> <ol style="list-style-type: none"> A. Any four facilities exist B. Three of the facilities exist C. Two of the facilities exist D. One of the facilities exists E. None of the facilities exist <p style="text-align: right;">} Opt one</p> <p>Data Requirements: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Name of the facility • Year of establishment • Videos/pictures <p>File Description</p> <ul style="list-style-type: none"> • Paste link of videos and geotagged photographs • Upload the list of facilities provided by the university and their year of establishment (Data Template) • Upload any additional information | <p>3</p> |
| <p>3.1.6</p> <p>Q_nM</p> | <p><i>Percentage of departments with UGC-SAP, CAS, DST-FIST, DBT, ICSSR and other similar recognitions by government agency (current year data)</i></p> <p>3.1.6.1: The Number of departments with UGC-SAP, CAS, DST-FIST , DBT, ICSSR and other similar recognitions by government agency</p> <p>Data Requirements: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Name of the Department • Name of the Scheme • Name of the funding agency • Year of Award • Funds provided • Duration of award <p>Formula:</p> | <p>5</p> |
| | <p style="text-align: center;">Number of departments with UGC – SAP, CAS, DST – FIST, DBT, ICSSR and other similar recognitions</p> <hr style="width: 50%; margin: auto;"/> <p style="text-align: center;">Total number of departments offering academic programmes</p> <p style="text-align: right;">X100</p> <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Any additional information • e-version of departmental recognition award letters • List of departments and award details (Data Template) | |

Key Indicator - 3.2 Resource Mobilization for Research (20)

| Metric No. | | Weightage | | | | | | | | | | | | |
|-------------------------------|---|-----------|--|--|--|--|--|--------------|--|--|--|--|--|---|
| 3.2.1 Q _a M | <p><i>Grants for research projects sponsored by the non-government sources such as industry, corporate houses, international bodies, endowments, Chairs in the institution during the last five years (INR in Lakhs)</i></p> <p>3.2.1.1: Total Grants for research projects sponsored by the non-government sources such as industry, corporate houses, international bodies, endowments, Chairs in the institution year wise during the last five years (INR in Lakhs)</p> <table border="1" data-bbox="464 734 1078 837"> <thead> <tr> <th data-bbox="464 734 600 779">Year</th> <th data-bbox="600 734 687 779"></th> <th data-bbox="687 734 775 779"></th> <th data-bbox="775 734 863 779"></th> <th data-bbox="863 734 951 779"></th> <th data-bbox="951 734 1078 779"></th> </tr> </thead> <tbody> <tr> <td data-bbox="464 779 600 837">INR in Lakhs</td> <td data-bbox="600 779 687 837"></td> <td data-bbox="687 779 775 837"></td> <td data-bbox="775 779 863 837"></td> <td data-bbox="863 779 951 837"></td> <td data-bbox="951 779 1078 837"></td> </tr> </tbody> </table> <p>Data requirement for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Name of the Project/ Endowments, Chairs • Name of the Principal Investigator • Department of Principal Investigator • Year of Award • Funds provided • Duration of the project • Name of the Project/ Endowments, Chairs <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Any additional information • e-copies of the grant award letters for research projects sponsored by non-government • List of project and grant details (Data Template) | Year | | | | | | INR in Lakhs | | | | | | 3 |
| Year | | | | | | | | | | | | | | |
| INR in Lakhs | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|--|-------------|--|--|--|--|--|---------------------|--|--|--|--|--|------------------|
| <p>3.2.2 Q_nM</p> | <p>Grants for research projects sponsored by the government sources during the last five years (INR in Lakhs)</p> <p>3.2.2.1: Total Grants for research projects sponsored by the government sources year wise during the last five years (INR in Lakhs)</p> <table border="1" data-bbox="469 472 1059 577"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>INR in Lakhs</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data requirement for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Name of the Project • Name of the Principal Investigator • Department of Principal Investigator • Year of Award • Funds provided • Duration of the project • Funding Agency • Total amount of funds received <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Any additional information • e-copies of the grant award letters for research projects sponsored by government • List of project and grant details (Data Template) | Year | | | | | | INR in Lakhs | | | | | | <p>12</p> |
| Year | | | | | | | | | | | | | | |
| INR in Lakhs | | | | | | | | | | | | | | |
| <p>3.2.3 Q_nM</p> | <p>Number of research projects per teacher funded by government and non-government agencies during the last five years</p> <p>3.2.3.1: Number of research projects funded by government and non-government agencies during the last five years 3.2.3.2 : Number of full time teachers worked in the institution during the last 5 years</p> <table border="1" data-bbox="469 1335 986 1424"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data requirement for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Name of Principal Investigator • Duration of project • Name of the research project • Amount / Fund received • Name of funding agency • Year of sanction • Department of recipient <p>Formula:</p> $\frac{\text{Total number of research projects funded by government and non – government agencies during the last five years}}{\text{Average number of full time teachers during the last five years}}$ | Year | | | | | | Number | | | | | | <p>5</p> |
| Year | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | |

| | | |
|--|--|--|
| | File Description (Upload) <ul style="list-style-type: none"> • List of research projects and funding details (Data Template) • Any additional information • Supporting document from Funding Agency • Paste Link for the funding agency website | |
|--|--|--|

Key Indicator - 3.3 Innovation Ecosystem (30)

| Metric No. | | Weightage | | | | | | | | | | | | |
|---------------------------|--|-----------|--|--|--|--|--|--------|--|--|--|--|--|---|
| 3.3.1 Q _n M | <p><i>Institution has created an eco system for innovations including Incubation centre and other initiatives for creation and transfer of knowledge</i></p> <p>Describe available incubation centre and evidence of its usage (activity) within a maximum of 500 words</p> <p>File description</p> <ul style="list-style-type: none"> • Upload any additional information • Paste link for additional information | 6 | | | | | | | | | | | | |
| 3.3.2 Q _n M | <p><i>Number of workshops/seminars conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices during the last five years</i></p> <p>3.3.2.1: Total number of workshops/seminars conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices year wise during the last five years</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Name of the workshops / seminars • Number of Participants • Date (From -to) • Link to the activity report on the website <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Report of the event • Any additional information • List of workshops/seminars during last 5 years (Data Template) | Year | | | | | | Number | | | | | | 7 |
| Year | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | |
| 3.3.3 Q _n M | <p><i>Number of awards for innovation won by institution/teachers/research scholars/students during the last five years</i></p> <p>3.3.3.1: Total number of awards for innovation won by institution/teachers/research scholars/students year wise during the last five years</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | Year | | | | | | 7 | | | | | | |
| Year | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|-----------------------|---|---------------|--|--|--|--|--|---------------|--|--|--|--|--|
| | <table border="1"> <tr> <td>Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> Name of the Awardee Name of the Awarding Agency with contact details Year of Award <p>File Description (Upload)</p> <ul style="list-style-type: none"> e- copies of award letters Any additional information List of innovation and award details (Data Template) | Number | | | | | | | | | | | |
| Number | | | | | | | | | | | | | |
| 3.3.4 | <i>Number of start-ups incubated on campus during the last five years</i> | 10 | | | | | | | | | | | |
| Q_nM | <p>3.3.4.1: Total number of start-ups incubated on campus year wise during the last five years</p> <table border="1"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> Name of the start ups Nature of start up Year of commencement Contact information of the promoters <p>File Description (Upload)</p> <ul style="list-style-type: none"> Any additional information e- sanction order of the University for the start ups on campus Contact details of the promoters for information List of startups details like name of startup, nature, year of commencement etc (Data Template) | Year | | | | | | Number | | | | | |
| Year | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | |

Key Indicators - 3.4 Research Publications and Awards (100)

| Metric No. | | Weightage |
|-----------------------|---|-----------|
| 3.4.1 | <i>The institution has a stated Code of Ethics to check malpractices and plagiarism in Research (Yes /No)</i> | 1 |
| Q_nM | <p>File Description (Upload)</p> <ul style="list-style-type: none"> Institutional data in prescribed format Any additional information | |
| 3.4.2 | <i>The institution provides incentives to teachers who receive state, national and international recognition/awards (Yes /No)</i> | 1 |
| Q_nM | Data Requirements: (As per Data Template in 2.4.4 of Section B) | |

| | | | | | | | | | | | | | | |
|------------------------|--|-------------|--|--|--|--|--|---------------|--|--|--|--|--|--|
| | <ul style="list-style-type: none"> Name of the Awardee with contact details Name of the Awarding Agency Year of Award Incentive details <p>File Description (Upload)</p> <ul style="list-style-type: none"> e- copies of the letters of awards Any additional information List of Awardees and Award details (Data Template) | | | | | | | | | | | | | |
| 3.4.3 | <i>Number of Patents published/awarded during the last five years</i> | 19 | | | | | | | | | | | | |
| Q_a-M | <p>3.4.3.1: Total number of Patents published/awarded year wise during the last five years</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> Name of the Patent published/awarded Patent Number Year of Award <p>File Description (Upload)</p> <ul style="list-style-type: none"> Any additional information List of patents and year it was awarded (Data Template) | Year | | | | | | Number | | | | | | |
| Year | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | |
| 3.4.4 | <i>Number of Ph.D's awarded per teacher during the last five years</i> | 19 | | | | | | | | | | | | |
| Q_a-M | <p>3.4.4.1: How many Ph.D's are awarded within last 5 years 3.4.4.2 : Number of teachers recognized as guides during the last five years</p> <p>Data Requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> Name of the PhD scholar Name of the Department Name of the guide/s Year of registration of the scholar Year of award of PhD <p>Formula:</p> $\frac{\text{Number of Ph.D degrees awarded during the last five years}}{\text{Number of Teachers as a recognised guides during the last five years}}$ <p>File Description (Upload)</p> <ul style="list-style-type: none"> URL to the research page on HEI web site List of PhD scholars and their details like name of the guide , title of thesis, year of award etc (Data Template) Any additional information | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|-------------|--|--|--|--|--|---------------|--|--|--|--|--|------------------|
| <p>3.4.5 Q_nM</p> | <p><i>Number of research papers per teacher in the Journals notified on UGC website during the last five years</i></p> <p>3.4.5.1: Number of research papers in the Journals notified on UGC website during the last five years</p> <table border="1" data-bbox="480 488 1015 577"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirements: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Title of paper • Name of the author/s • Department of the teacher • Name of journal • Year of publication • ISBN/ISSN number <p>Formula:</p> $\frac{\text{Number of publications in UGC notified journals during the last five years}}{\text{Average number of full time teachers during the last five years}}$ <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Any additional information • List of research papers by title, author, department, name and year of publication (Data Template) | Year | | | | | | Number | | | | | | <p>20</p> |
| Year | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | |
| <p>3.4.6 Q_nM</p> | <p><i>Number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings per teacher during the last five years</i></p> <p>3.4.6.1: Total number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings year wise during the last five years</p> <table border="1" data-bbox="480 1375 1015 1464"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Name of the teacher: Title of the paper • Title of the book published: Name of the author/s: Title of the proceedings of the conference • Name of the publisher: National / International • National / international : ISBN/ISSN number of the proceeding • Year of publication: <p>Formula:</p> | Year | | | | | | Number | | | | | | <p>15</p> |
| Year | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | |

| | | |
|---------------------------|--|----|
| | $\frac{\text{Total number of books and chapters in edited volumes, books published, and papers in national/international conference proceedings during last five years}}{\text{Average number of full time teachers during the last five years}}$ <p>File Description (Upload)</p> <ul style="list-style-type: none"> Any additional information List books and chapters in edited volumes / books published (Data Template) | |
| 3.4.7 Q _n M | <p><i>Bibliometrics of the publications during the last five years based on average Citation index in Scopus/ Web of Science or PubMed/ Indian Citation Index</i></p> <p>Data Requirements for last five years:</p> <ul style="list-style-type: none"> Title of the paper Name of the author Title of the journal Year of publication Citation Index <p>Formula:</p> $\frac{0.45 \times \text{Total number of Citation in SCOPUS in five years} + 0.45 \times \text{Total number of Citation in Web of Science in five years} + 0.1 \times \text{Total number of Citation in Indian Citation Index in five years}}{0.45 \times \text{Total number of Publication in SCOPUS in five years} + 0.45 \times \text{Total number of Publication in Web of Science in five years} + 0.1 \times \text{Total number of Publication in Indian Citation Index in five year}}$ <p>File Description (Upload)</p> <ul style="list-style-type: none"> Any additional information Bibliometrics of the publications during the last five years <p><i>* The Data obtained from infolibnet will be used for the purpose of calculation of scores.</i></p> | 13 |
| 3.4.8 Q _n M | <p><i>Bibliometrics of the publications during the last five years based on Scopus/ Web of Science – h-index of the Institution</i></p> <p>Data Requirements for last five years:</p> <ul style="list-style-type: none"> Title of the paper Name of the author Title of the journal Year of publication H index <p>Formula:</p> | 12 |

| | |
|--|--|
| $\frac{h - \text{Index of Scopus} + h - \text{index of Web of Science}}{2}$ <p>in last five years</p> | |
| <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Bibliometrics of publications based on Scopus/ Web of Science - h-index of the Institution • Any additional information <p>* The Data obtained from infibnet will be used for the purpose of calculation of scores.</p> | |

Key Indicators - 3.5 Consultancy (20)

| Metric No. | | Weightage | | | | | | | | | | | | |
|---------------------------|--|-----------|--|--|--|--|--|--------------|--|--|--|--|--|----|
| 3.5.1 Q _n M | <p><i>Institution has a policy on consultancy including revenue sharing between the institution and the individual</i></p> <p style="text-align: right;"><i>(Yes /No)</i></p> <p>File Description</p> <ul style="list-style-type: none"> • Upload minutes of the Governing Council/ Syndicate/Board of Management related to consultancy policy • Upload soft copy of the Consultancy Policy • Upload any additional information • Paste URL of the consultancy policy document | 1 | | | | | | | | | | | | |
| 3.5.2 Q _n M | <p><i>Revenue generated from consultancy during the last five years (INR in Lakhs)</i></p> <p>3.5.2.1. Total amount generated from consultancy year wise during the last five years (INR in lakhs)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Year</th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">INR in lakhs</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Data Requirement for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Names of the consultants • Name of consultancy project • Consulting/Sponsoring agency with contact details • Revenue generated (amount in rupees) • Total revenue generated in rupees <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Audited statements of accounts indicating the revenue generated through consultancy • Any additional information • List of consultants and revenue generated by them (Data Template) | Year | | | | | | INR in lakhs | | | | | | 12 |
| Year | | | | | | | | | | | | | | |
| INR in lakhs | | | | | | | | | | | | | | |
| 3.5.3 Q _n M | <p><i>Revenue generated from corporate training by the institution during the last five years (INR in Lakhs)</i></p> | 7 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---------------------|---|-------------|--|--|--|--|--|---------------------|--|--|--|--|--|--|
| | <p>3.5.3.1: Total amount generated from corporate training by the institution year wise during the last five years (INR in lakhs)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">INR in lakhs</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirement for last five years:(As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Names of the teacher-consultants • Title of the corporate training Programme • Agency seeking training with contact details • Revenue generated ((INR in lakhs)) • Number of trainees • Total revenue generated in rupees <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Audited statements of account indicating the revenue generated through training • Any additional information • List of teacher consultants and revenue generated by them (Data Template) | Year | | | | | | INR in lakhs | | | | | | |
| Year | | | | | | | | | | | | | | |
| INR in lakhs | | | | | | | | | | | | | | |

Key Indicators - 3.6 Extension Activities (40)

| Metric No. | Weightage | | | | | | | | | | | | |
|---|--|-------------|--|--|--|--|--|---------------|--|--|--|--|--|
| <p>3.6.1 Q₁M</p> | <p><i>Extension activities in the neighbourhood community in terms of impact and sensitising students to social issues and holistic development during the last five years</i></p> <p>Describe the impact of extension activities in sensitising students to social issues and holistic development within a maximum of 500 words</p> <p>File description</p> <ul style="list-style-type: none"> • Paste link for additional information • Upload any additional information | | | | | | | | | | | | |
| <p>3.6.2 Q_nM</p> | <p><i>Number of awards and recognition received for extension activities from Government /recognised bodies during the last five years</i></p> <p>3.6.2.1: Total number of awards and recognition received for extension activities from Government /recognised bodies year wise during the last five years</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirement for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Name of the activity • Name of the Award/ recognition | Year | | | | | | Number | | | | | |
| Year | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|----------------------------|---|-------------|--|--|--|--|--|---------------|--|--|--|--|--|----|
| | <ul style="list-style-type: none"> Name of the Awarding government/ recognised bodies Year of the Award <p>File Description (Upload)</p> <ul style="list-style-type: none"> Any additional information Number of awards for extension activities in last 5 year (Data Template) e-copy of the award letters | | | | | | | | | | | | | |
| 3.6.3 Q _n -M | <p><i>Number of extension and outreach Programmes conducted in collaboration with industry, community and Non- Government Organisations through NSS/NCC/Red cross/YRC etc., during the last five years</i></p> <p>3.6.3.1: Number of extension and outreach Programmes conducted in collaboration with industry, community and Non-Government Organisations through NSS/NCC/Red cross/YRC etc., year wise during the last five years</p> <table border="1"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirement for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> Name and number of the extension and outreach Programmes Name of the collaborating agency: Non- government, industry, community with contact details <p>File description (Upload)</p> <ul style="list-style-type: none"> Reports of the event organized Any additional information Number of extension and outreach Programmes conducted with industry, community etc for the last five years (Data Template) | Year | | | | | | Number | | | | | | 10 |
| Year | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | |
| 3.6.4 Q _n -M | <p><i>Average percentage of students participating in extension activities with Government Organisations, Non-Government Organisations and Programmes such as Swachh Bharat, Aids Awareness, Gender Issue, etc. during the last five years</i></p> <p>3.6.4.1: Total number of students participating in extension activities with Government Organisations, Non-Government Organisations and Programmes such as Swachh Bharat, Aids Awareness, Gender Issue, etc. year wise during the last five years</p> <table border="1"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirement for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> Name of the activity Name of the scheme Year of the activity Number of teachers participating in such activities Number of students participating in such activities | Year | | | | | | Number | | | | | | 10 |
| Year | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | |

| | | |
|--|--|--|
| | <p>Formula:</p> $\text{Percentage per year} = \frac{\text{Total Number of students participating in such activities}}{\text{Number of students}} \times 100$ $\text{Average percentage} = \frac{\sum \text{Percentage per year}}{5}$ <p>File description (Upload)</p> <ul style="list-style-type: none"> • Report of the event • Any additional information • Average percentage of students participating in extension activities with Govt. or NGO etc (Data Template) | |
|--|--|--|

Key Indicator - 3.7 Collaboration (20)

| Metric No. | Weightage | | | | | | | | | | | | |
|---|-----------------|--|--|--|--|--|---------------|--|--|--|--|--|-----------------|
| <p>3.7.1</p> <p>Q_nM</p> <p><i>Number of Collaborative activities for research, faculty exchange, student exchange per year</i></p> <p>3.7.1.1: Total number of Collaborative activities for research, faculty exchange, student exchange year wise during the last five years</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Title of the collaborative activity • Name of the collaborating agency with contact details • Source of financial support • Year of collaboration • Duration • Nature of the activity <p>Formula</p> $\frac{\text{Total Number of such activities during the last five years}}{5}$ <p>File Description (Upload)</p> <ul style="list-style-type: none"> • Copies of collaboration • Any additional information • Number of Collaborative activities for research, faculty etc (Data Template) | Year | | | | | | Number | | | | | | <p>5</p> |
| Year | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | |
| <p>3.7.2</p> <p>Q_nM</p> <p><i>Number of linkages with institutions/industries for internship, on-the-job training, project work, sharing of research facilities etc. during the last five years</i></p> | <p>5</p> | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|------------------------------------|---|-------------|--|--|--|--|--|---------------|--|--|--|--|--|------------------|
| | <p>3.7.2.1: Number of linkages for faculty exchange, student exchange, internship, field trip, on-the-job training, research, etc year-wise during the last five years</p> <table border="1" data-bbox="499 477 1035 566"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Title of the linkage • Name of the partnering institution/ industry /research lab with contact details • Year of commencement • Duration(From-to) • Nature of linkage <p>File Description (Upload)</p> <ul style="list-style-type: none"> • e-copies of linkage related Document • Any additional information • Details of linkages with institutions/industries for internship (Data Template) | Year | | | | | | Number | | | | | | |
| Year | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | |
| <p>3.7.3 QnM</p> | <p><i>Number of functional MoUs with institutions of national, international importance, other universities, industries, corporate houses etc. during the last five years (only functional MoUs with ongoing activities to be considered)</i></p> <p>3.7.3.1: Number of functional MoUs with institutions of national, international importance, other universities, industries, corporate houses etc. year wise during the last five years</p> <table border="1" data-bbox="499 1256 1035 1346"> <tr> <td>Year</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Data Requirements for last five years: (As per Data Template in Section B)</p> <ul style="list-style-type: none"> • Organisation with which MoU is signed • Name of the institution/ industry/ corporate house • Year of signing MoU • Duration • List the actual activities under each MoU • Number of students/teachers participated under MoUs <p>File Description (Upload)</p> <ul style="list-style-type: none"> • e-copies of the MoUs with institution/ industry/ corporate house • Any additional information • Details of functional MoUs with institutions of national, international importance, other universities etc. during the last five years (Data Template) | Year | | | | | | Number | | | | | | <p>10</p> |
| Year | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | |

Information Regarding Various Research Funding Agencies

| Agency | Website | Scheme | Eligibility |
|--|---|---|--|
| Department of Science and Technology (DST) | http://www.dst.gov.in/ | Woman Scientist scheme (WOS-A) | for unemployed women scientists |
| | | Woman Scientist scheme (WOS-B) | For unemployed women scientists whose age limit is below 57 years |
| | | Cognitive Science Research Initiative | Scientists/academicians should have a research background in Cognitive Science and hold a regular position |
| | | Nano Mission | For research in the field of Nano science and technology, online application |
| Department of Biotechnology (DBT) | http://www.dbtindia.nic.in/ | Tata Innovation Fellowship | Age less than 60 years. Employment at a research institute. |
| | | Project grant | PhD, regular appointment in a research institute |
| | | Small Business Innovation Research Initiative (SBIRI) | Public-Private Partnership Programme of DBT supports research initiatives of Indian Biotech Industry solely or in collaboration with academic partners. Operated through BIRAC |
| | | BioCare Research Grant opportunity (RGO) | PhD (age limit 55 years) Women Scientists who are employed or unemployed or are desirous of coming back after a break. |
| | | Pre-proposals on Plant Microbe Interactions (DBT) | Scientists working in Indian research institutes/universities |

| | | | |
|---|---|-------------------------|--|
| Ministry of New and Renewable Energy (MNRE) | http://www.mnre.gov.in/schemes/r-d/rd-formats/ | | |
| Humboldt Foundation (Germany) | http://www.dwih.in/node/53 | | |
| DAAD (Indo-German) | http://www.daaddelhi.org/en/14498/index.html | | |
| Indo-French Centre for the Promotion of Advanced Research (IFCPAR) | http://www.cefipra.org/ | | |
| Council of Scientific and Industrial Research (CSIR) | http://www.csir.res.in/ | CSIR research Grant | PhD, regular appointment in a research institute |
| Department of Atomic Energy (DAE) | http://dae.nic.in/ | | |
| Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers | http://chemicals.nic.in/ | | |
| Indian Council of Agricultural Research (ICAR) | http://www.icar.org.in/ | | |
| Indian Council of Medical Research (ICMR) | http://www.icmr.nic.in/ | AD-HOC RESEARCH SCHEMES | PhD, regular appointment in a research institute |
| European Union | http://ec.europa.eu/research/iscp/index.cfm?pg=india | | |
| Department of Electronics and Information Technology | http://meltv.gov.in/ | | |
| Indian National Science Academy (INSA) | http://www.insaindia.org/ | | |
| Indian Space Research Organisation (ISRO) | http://www.isro.gov.in/ | | |
| Ministry of Defence | http://www.mod.nic.in/ | | |

Proceedings of NAAC Sponsored National Seminar

| | | | |
|--|---|--|--|
| Reserve Bank of India (RBI) | https://www.rbi.org.in/Scripts/ExternalResearchSchemes.aspx#mainsection | | |
| All India Council for Technical Education (AICTE) | http://www.aicte-india.org/ | | |
| The Associated Chambers of Commerce of India (ASSOCHAM) | http://www.assocham.org/ | | |
| Federation of Indian Chambers of Commerce and Industry (FICCI/CII) | http://ficci.in/index.asp | | |

INVITED TALK – II

FUNDING AGENCIES IN INDIA & ABROAD

Dr. R. Raveendran

UGC- Emeritus Professor

Principal (Rtd), S.N. College, Sivagiri, Varkala

Thiruvananthapuram

A **Funding Agency** is any external organization, public or private, which undertakes a contractual agreement with the University, Colleges or research institutes to sponsor result oriented research or an entrepreneurial activity. These funding **agencies** often dictate how their **funds** may be used, what results are expected, and what kind of reports are required.

Research funding

Research funding is a term generally covering any funding for scientific research

It is used for research, in fields of technology or social science. Research funding can be split into commercial and non-commercial. Research and development departments of a corporation normally provides commercial research funding. Whereas, non-commercial research funding is obtained from charities, research councils, or government agencies. Organizations that require such funding normally have to go through competitive selections. Only those that have the most potential would be chosen. Funding is vital in ensuring the sustainability of certain projects.

Most research funding comes from two major sources, corporations (through research and development departments) and government (primarily carried out through universities and specialized government agencies; often known as *research councils*). Some small amounts of scientific research are carried out (or funded) by charitable foundations, especially in relation to developing cures for diseases such as cancer, malaria and AIDS etc.

In this talk a detailed description of various funding agencies in India and abroad and their conditions to extend financial support for research to Universities and Colleges will be discussed.

INVITED TALK - III

NAAC ASSESSMENT AND ACCREDITATION R AF- QUALITY DIMENSIONS - A SYSTEMS APPROACH

Prof. G Simon Thattil,
Director IQAC , University of Kerala

Quality is a complex phenomenon in terms of what it means and how it can be assessed and measured. Quality of a product is often judged in terms of the value it imparts or the utility it conveys or the outcome it creates. Quality of services is also ascertained in terms of the value and usefulness it imparts to the user. Higher education is often seen and assessed in terms of quality education which come from three key processes viz: teaching, learning and evaluation, the outcome from these processes are manifested in terms of Graduates and Post graduates created and the competencies, resourcefulness as well as skills of the output created. . A quick look in to how several great institutions of the world have imparted Quality teaching, learning and evaluation practices would reveal a simple fact that it is through the development of good systems that guides action and monitors outcomes. Everybody knows what they need to do in terms of the processes they are involved in as they are part of building up outcomes as planned.

A system is just a well-knit relationship between Inputs, processes and the desired Outputs. Carefully acquire inputs, process them with care, objectivity and sustainability, the desired output is achieved.

HEIs of excellence have created systems for teaching, learning and evaluation. The approach is well planned and continuously reviewed in terms of the output it creates.

Teaching as a system has several integral parts

- Curriculum design
- Delivery methodology
- Desired skills
- Competency building and
- Empowerment

Each component is carefully considered in terms of why it is relevant and how it is to deliver and therea process takes birth and outcomes in the form of competent students and skilled manpower ready to take off is the result. Learning and good evaluation systems are similar to this

We need to evolve a mechanism through which these processes need to transform learners into future leaders and builders. No matter who the teacher or student is, if he/she has passed through such a systems approach in becoming the input and in involving in the process then outcome is bound to occur.

Why is quality important?

.To create outcomes and outputs that are acceptable to the end users and the society at large

.Outcome of Teaching Learning

.Outcome of Research, IP

.Output in terms of employability, career growth

NAAC envisages having systems in place where processes are guided to desired outcomes -----

-----System-----Process -----Quality Outcome

- Product is judged in terms of its acceptance and usefulness for the target.
- Right input .Right processes
- Standardization .Quality control
- Output grades

There has been a shift in the NAAC assessment and accreditation process, the shift is based on the following:

- qualitative peer judgement to data based quantitative indicator evaluation with increased objectivity and transparency
- extensive use of ICT confirming scalability and robustness
- drastic reduction in number of questions, size of the report, visit days, and so on
- Introducing pre-qualifier for peer team visit, as 30% of system generated score.
- Introducing System Generated Scores (SGS)
- online evaluation(about 70%) and
- peerjudgement (about 30%)
- introducing the element of third party validation of data

The Paper examines how a systems approach to learning, teaching and evaluation would help HEIs to impart quality and to be best known by their outgoing products.

INVITED TALK – IV

NAAC: A FINE TUNED COMPREHENSIVE ACCREDITATION SYSTEM TARGETING THE YOUTH WORK FORCE OF EMERGING INDIA

Dr. Sudheer Mohammed M M

Associate Professor, Govt. Arts College, Coimbatore

Though National Assessment and Accreditation Council (NAAC), came into action in 1994 as an autonomous institution of the University Grants Commission (UGC) with its Head Quarter in Bengaluru, progressively evolved during these years and carved a niche for itself to stand tall among all the Accreditation agencies elsewhere in the world. The revised accreditation framework is being adopted from July 2017 and same is more robust, objective oriented, transparent and scalable, catering to the diversity of our country as well as making an alarm to embrace technology in all its capacities as ICT enabled Higher Education Institutions (HEI) readying to host foreign learners.

The Main Objectives of NAAC

- Assess and Accredite institutions of higher learning
- Stimulate the academic environment and quality of teaching and research in accredited institutions
- Generate awareness of quality in education
- To embed self-assessment in the quality culture of the institution
- Share information on successful quality strategies
- Encourage innovations, self-evaluation and accountability in higher education
- Help institutions to achieve self-actualization on institutional strengths and weaknesses
- Focus on improvement of quality
- Promote necessary changes, innovations

The revised accreditation framework mandates a revamped Higher Education scenario in India which can properly manage and harvest the potential of demographically rich young India at least for a couple of decades. The scientifically planned, methodically categorized and statistically validated revised accreditation framework is an absolute system through the arm of a functional Internal Quality Assurance Cell (IQAC) in Higher Education Institutions. The IQAC of HEIs are entitled to catalyze the transfer of policy change, shift in focal area if required, introduction of new technology, maintenance of ethical values and culture, holding the value of diversity in Indian democracy etc.

Taking cognizance of the diversity in the kinds of institutions HEIs have been grouped under three categories namely, Universities, Autonomous Colleges and Affiliated/Constituent Colleges. The assessment process will be carried out in three stages comprising three main components, viz., Self-study Report (SSR), Student Satisfaction Survey and the Peer Team Report. The SSR has a total of 137 Metrics for Universities 136 for Autonomous Colleges and 121 for Affiliated/Constituent Colleges covering the seven Criteria described earlier. The SSR has two kinds of Metrics: one, those requiring quantifiable facts and figures as data which have

been indicated as 'quantitative metrics' (Q"M); and two, those metrics requiring descriptive responses and are accordingly named 'qualitative metrics' (QIM).

The customized Quality Assurance (QA) process of NAAC is routed within a value framework which is suitable and appropriate to the National context. The accreditation framework of NAAC is thus based on five core values such as i.) Contributing to National Development, ii.) Fostering Global Competencies among Students, iii.) Inculcating a Value System among Students, iv.) Promoting the Use of Technology and v.) Quest for Excellence. Under this umbrella seven criteria are churned to represent the core functions and activities of a HEI. In the revised framework not only the academic and administrative aspects of institutional functioning but also the emerging issues have been addressed. The seven Criteria selected as basis for assessment of HEIs are:

1. Curricular Aspects
2. Teaching-Learning and Evaluation
3. Research, Innovations and Extension
4. Infrastructure and Learning Resources
5. Student Support and Progression
6. Governance, Leadership and Management
7. Institutional Values and Best Practices

The NAAC continues with its focus on quality culture of the institution in terms of Quality Initiatives, Quality Sustenance and Quality Enhancement, as reflected in its vision, organization, operations and the processes.

Criterion II: - Teaching Learning and Evaluation

As per NAAC manual (2018) criterion II pertains to the efforts of an institution to serve students of different backgrounds and abilities, through effective teaching-learning experiences. Interactive instructional techniques that engage students in higher order 'thinking' and investigation, through the use of interviews, focused group discussions, debates, projects, presentations, experiments, practicum, internship and application of ICT resources are important considerations. It also probes into the adequacy, competence as well as the continuous professional development of the faculty who handle the programmes of study.

The focus of Criterion II is captured in the following Key Indicators:

KEY INDICATORS

- 2.1 Student Enrolment and Profile
- 2.2 Catering to Student Diversity
- 2.3 Teaching-Learning Process
- 2.4 Teacher Profile and Quality
- 2.5 Evaluation Process and Reforms
- 2.6 Student Performance and Learning Outcomes
- 2.7 Student Satisfaction Survey

2.1 Student Enrolment and Profile

As an attempt to endorse the constitutional provision of rites of different sections of the students NAAC promotes adherences to a transparent, well-administered mechanism,

complying with all the norms of the concerned regulatory/governing agencies including state and central governments. Apart from the compliance to the various regulations the institution put forth its efforts in ensuring equity and wide access having representation of student community from different geographical areas and socio-economic, cultural and educational backgrounds. These will be reflected in the student profile.

2.2 Catering to Student Diversity

The HEIs are expected to satisfy the needs of the students from diverse backgrounds including backward community as well as from different locales. They would make special efforts to bring in students from special categories, reach out to their special learning needs by initial assessment of their learning levels, in addition to understand possible variations over years and how and what is done to deal with such students. While in uni-gender institutions explicit efforts are to be made to sensitise students about the other gender; and the like.

2.3 Teaching-Learning Process

The HEIs are encouraged to follow teaching-learning modalities rendering to be relevant for the learner group. The learner-centered education through appropriate methodologies such as participative learning, experiential learning and collaborative learning modes, facilitate effective learning. Teachers are advised to provide a variety of learning experiences, including individual and collaborative learning. Interactive and participatory approaches, if employed, create a feeling of responsibility in learners and makes learning a process of construction of knowledge. Of late, digital resources for learning have become available and this makes learning more individualized, creative and dynamic. Quality of learning provided in the institution depends largely on teacher readiness to draw upon such recently available technology supports and also the initiative to develop such learning resources to enrich teaching-learning; on teacher's familiarity with Learning Management Systems (LMSs), other e-resources available and how to meaningfully incorporate them in one's scheme of teaching-learning.

2.4 Teacher Profile and Quality

Ensuring the quality of teacher in terms of their qualification, teacher characteristics, adequacy of recruitment procedures, faculty availability, professional development and recognition of teaching abilities better delivery of the concept and content expected. By introducing reward systems teachers are urged to take initiative to learn and keep abreast with the latest developments, to innovate, continuously seek improvement in their work and strive for individual and institutional excellence.

2.5 Evaluation Process and Reforms

This Key Indicator looks at issues related to assessment of teaching, learning and evaluative processes and reforms, to increase the efficiency and effectiveness of the system. One of the purposes of evaluation is to provide development-inducing feedback. The qualitative dimension of evaluation is in its use for enhancing the competence of students. Innovative evaluation process is to gauge the knowledge and skills acquired at various levels of the programmes.

These specifications are stated as Programme Specific Outcomes (PSO) and Course Outcomes (CO). The quality of assessment process in a HEI depends on how well the examination system actually tests the PSOs and COs, quality of questions, extent of transparency in the system, extent of development inducing feedback system, regularity in the conduct of examinations and declaration of results as well as the regulatory mechanisms for prompt action on possible errors.

2.6 Student Performance and Learning Outcomes

The real test of the extent to which teaching learning has been effective in a HEI is reflected in the student performance in the examinations. Student performance is seen as the realization of learning outcomes which are specifications of what a student should be capable of doing on successful completion of a course and/or a programme.

2.7 Student Satisfaction Survey

All the efforts of teachers and the institution to make learning a meaningful process can be considered impactful only to the extent students perceive it to be meaningful. Their satisfaction level is decided by the kinds of experiences they undergo, the extent of the “comfort” feeling as well as intellectual stimulation the learning situations provide. Their feedback significantly showcases the actual quality of teaching learning process enabling identification of the strengths of teaching as well as the possible improvements. Student satisfaction, thus, is a direct indicator of the effectiveness of teaching learning in the institution. It may be impractical to capture this aspect from every student; however, every HEI can resort to a sample survey on a formalized basis to capture this significant feature. This is the reason the revised assessment framework of NAAC adopts survey of student satisfaction.

Conclusion

In tune with NAAC’s conviction that quality concerns are institutional, Quality Assessment can better be done through self-evaluation by HEIs. The self-evaluation process and the subsequent preparation of the Self Study Report (SSR) to be submitted to NAAC involves the participation of all the stakeholders – management, faculty members, administrative staff, students, parents, employers, community and alumni. While the participation of internal stakeholders i.e. management, staff and students provide credibility and ownership to the activity and could lead to newer initiatives, interaction with the external stakeholders facilitate the development process of the institution and their educational services. Overall, the QA is expected to serve as a catalyst for institutional self-improvement, promote innovation and strengthen the urge to excel. To conclude the philosophy of NAAC is ameliorative and enabling rather than punitive or judgmental, so that all constituencies of institutions of higher learning are empowered to maximize their resources, opportunities and capabilities.

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OPPORTUNITIES AND CHALLENGES IN REVISED ACCREDITATION STRUCTURE IN HIGHER EDUCATION

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Abstract

Now it is high time to initiate the process of accreditation and assessment in many of the colleges throughout the country which are still far away from the functioning of NAAC. NAAC processes vital quality parameters which can head any higher education institute to the path of success irrespective of its background and geographical location. In revised accreditation structure (RAS), the main focus has been placed to enhance the redeeming feature of the accreditation process and make them more robust, objective, transparent and ICT enabled. The revised A and A framework includes any new concepts like Institutional Information for Quality Assessment (IIQA) and Self Study Report (SSR), Data Validation and Verification (DVV) and Pre-qualifier score and the grading pattern - Introduction of the Grade Qualifiers etc. Hence this revised structure has put forward many new opportunities and challenges in the academician. This paper is an attempt to incorporate some opportunities and challenges in the direction of quality improvement and sustenance in higher education.

Keywords

Higher education, ICT, Assessment and accreditation, opportunities, challenges

Introduction

NAAC primarily focuses on periodic assessment and accreditation of the higher education institutions in the country that volunteer for the process, through an internationally accepted methodology. The NAAC methodology for the Assessment and Accreditation is very much similar to the followed by Quality Assurance (QA) agencies across the world and consists of self assessment by the institution and external peer assessment by NAAC. The competition in the world of higher education is increasing with such a rapid field that NAAC has to develop newer methodologies for Quality Assurance, as a result of which in the recent past, NAAC has brought a new and revised accreditation framework for the higher education institutions. The NAAC functions through its General Council (GC) and Executive committee (EC) comprising educational administrators, policy makers and senior academicians from a cross section of higher education system. The vision of NAAC to make quality the defining element of higher education in India through a combination of self and external quality evaluation, promotion and sustenance initiatives. The revised process is an outcome of the feedback received by NAAC over a long period through various Consultative Meetings, Expert Group Meetings, which comprised of eminent academicians representing the University and College sectors. The revised process is being adopted from July 2017. The main focus of the revision process has been to enhance the redeeming features of the accreditation process and make them more robust, objective, transparent and scalable as well as make it ICT enabled. It also has reduced duration of accreditation process.

Revised methodology

As per the recent notifications of NAAC addressed to all the universities have issued strict notification to all the affiliated institutions which have not faced NAAC so far. The institutions busy in enjoying deep sleep awakened all of a sudden and preparing themselves for NAAC. NAAC have accepted the proposals of accreditation from all those institutions which have submitted their Self Study Report (SSR) till the end of March 2017. Those institutions which are going to be accredited by NAAC, they have to follow the revised A&A framework which has been launched in July 2017. It represents an explicit paradigm shift making it ICT enabled, transparent, scalable and robust.

Modification in A & A framework:

From qualitative peer judgment to data based quantitative indicator evaluation with increased objectivity and transparency

1. Toward extensive use of ICT confirming scalability and robustness.
2. In terms of simplification of the process drastic reduction in number of questions, size of the report, visit days etc.
3. In terms of boosting bench marking as quality improvement tool.
4. Introducing pre-qualifier for peer team visit, as 30% of system generated score.
5. Introducing System Generated Scores (SGS) with combination of online evaluation (about 70%) and peer judgment (about 30%).
6. In introducing the element of third party validation of data.
7. In providing appropriate differences in the metrics, weightages and benchmarks to universities, autonomous colleges and affiliated/constituent colleges.
8. In revising several metrics to bring in enhanced participation of students and alumni in the assessment process.

Procedure:

- **Institutional Information for Quality Assessment (IIQA) and Self Study Report (SSR)**

In the earlier process, the institution had the liberty to send the AQAR to NAAC throughout the year. But now, as per revised A&A Framework, two specific windows shall be open to submit their IIQA. The first window will be from May- June and the second window will be from November – December. On acceptance of the IIQA, institutions can submit their data / information online in the formats provided ad Manuals for Self Study Report (SSR). In the revised A&A, there would be no requirement for submission of hard copies of SSR.

- **Data Validation and Verification (DVV) and Pre-Qualifier Score**

At the second level, information submitted in the SSR will be subjected to an online assessment mechanism with Data Validation and Verification (DVV) process after an online evaluation generating a pre-qualifier score. Institutions securing 30% on the quantitative metrics will qualify for onsite peer review/ assessment.

As per the new A&A format, one of the important stakeholder i.e, students are given significant importance by evaluating their online response to the questionnaire which would be generated by NAAC. The Student Satisfaction Survey (SSR) plays a vital role in determining

Quantitative Matrix (QnM). The SSR evaluation by DVV together with SS shall determine the total Quantitative Matrix (QnM) of the institution. The third and final level of A&A includes two sub process viz. Onsite assessments by visiting peer teams and generation of results by the NAAC.

1. An onsite assessment of the qualitative components of the SSR by a visiting team resulting in generation of a qualitative report of the institution identifying the strengths, weakness, opportunities and challenges (SWOC) and assigning scores as per the performance on each of the qualitative metric.
2. On completion of onsite evaluation NAAC will combine the scores assigned by the teams, the pre-qualifier scores and the SSS to arrive at overall Criterion wise Grade Point Average (CrGPA). In the revised A&A framework, the number of days and experts for onsite visit may vary from 2-3 days with 2-5 expert reviewers visiting the institution depending on the size and scope of academic offerings at the HEIs. There will be no pre-disclose the details of the visiting teams and HEIs will not be responsible for Logistics for the visiting teams now. NAAC will make necessary logistics.
3. The final outcome will be placed for approval of executive council of NAAC before declaring the accreditation status and the institutional grade.

- **Grading system**

The revised framework will be more ICT intensive and outcome based. The current grading pattern of NAAC (A+ +, A+, A, B+ +, B+, B, C,D) would be continued for accreditation.

- **Opportunities and challenges in Higher education institution**

In the revised A&A, the HEIs may face the following opportunities and challenges

- *Healthy Academic Competition among the HEIs:*

As per the earlier format of A&A, the peer team was deciding the evaluation of HEIs completely during its onsite visit; hence there have been scope of partiality from institution to institution. But the revised A&A, there seems to be least chances of occurrence of such malpractices. On this background, HEIs have wide scope in extending and enhancing their quality in the form of academic competition among the institutions.

- *Making Revised A&A ICT Enabled:*

Wide use of ICT in Teaching and Learning as per revised A&A made the work of Teaching and Learning more robust, objective and transparent. Now it has become responsibility of every HEI to enrich and well-equipped with the latest technological components of ICT to undergo the successive cycle of A&A.

- *Importance of Student Satisfaction Survey (SSS):*

Students in HEIs are its main stakeholder. As per revised A&A, NAAC shall randomly select students for the survey to be responded online to the questionnaire of the NAAC/ On this background, it is the responsibility of HEI to execute and exhibit the transparency of academic and extra-curricular activities in the institution. Now the problem before HEI is whether the random selection of students by NAAC involves the group of regular students in the institution? It is the serious matter since the score of SSS will affect overall CrGPA.

- *Control on Deterioration in Quality of Education:*

Nowadays, the mushrooming of private institutions has become a matter of concern among the society since the quality of education therein is certainly doubtful as these commercialized private institutions are highly profit oriented. These institutions do not bother about the undergoing the process of A&A. On the contrary, the HEIs undergoing A&A shall definitely concern about the quality of education and therefore this will control on deterioration in quality of education.

As we discussed above, the revised process adopted recently, wherein the main focus of the revision process has been to enhance the redeeming features of the accreditation process and make them more robust, objective, transparent and scalable as well as ICT enabled. Walking hand in hand with the latest technology, the entire revision of A&A is technology enabled and user friendly too. This paper will focus on some of the challenges and opportunities on the revised A&A. I hope that the present discussion in this paper enables us to prepare a road map of growth and development of higher education which will assure integration and modernity of new knowledge era to focus on quality of education.

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ACADEMIC AND ADMINISTRATIVE AUDIT FOR QUALITY SUSTENANCE IN HIGHER EDUCATION INSTITUTIONS

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Abstract

Higher Education, in India, is one among the top three areas of development undergoing a tremendous change. The country is becoming a global hub for educational activities and a feeder for all kinds of international man-power requirement. There is a growing demand for, and also concern to, provide quality education with standard curriculum and globally acceptable system of education. Providing quality education at affordable cost to all is central to the economic and social development of India. The academic, administrative, curricular and extra-curricular activities carried out by the faculty of the higher education needs to be assessed by internal committee as well as by external academicians and peers as their appreciations and valuable suggestions boost the confidence of the faculty. However, the quality of higher education is continuously deteriorating. To achieve the intended goal higher education institutions require a great sense of accountability, outstanding faculty, and high quality teaching and research. During the two decades, Universities, colleges and institutions in India have taken serious note of these emerging needs and demands and trying to update the curriculum, design new Programs and offer better educational services while maintaining high quality. The NAAC (National Assessment and Accreditation Council) of India has evolved certain benchmarks for ascertaining and ensuring quality at different levels of Higher Education and for its continued sustenance.

By establishing Internal Quality Assurance Cells (IQAC) and conducting External Quality Assurance checks, its possible to go for a Total Quality Management in an Academic Institution. An academic audit is an integral part of the dynamics of higher education and its regulation in many countries that aspire to achieve excellence and international standing. The National Assessment and Accreditation Council (NAAC) expect the Institutions to undertake continuous Academic and Administrative Audits by external peers, after every Assessment and Accreditation. This is an important step to evaluate independently as to how well the improvement processes are taking place and what more needs to be done. The studies analyze the purpose of external academic and administrative audit in HEI.

KEY WORDS: Academic Audit, Administrative Audit, Benchmarks, NAAC, Quality....

Introduction

The National Assessment and Accreditation Council (NAAC) has evolved certain benchmarks for ascertaining and ensuring the quality at different levels of Higher Education. Internal Quality Assurance Cells (IQACs) are established in almost all Higher Educational Institutions (HEI) to identify the benchmarks required for achieving the quality. Thus, IQAC plays an

important role in improving the quality of academic and administrative activities of the Institution. The academic, administrative, curricular and extra-curricular activities carried out by the faculty of the college/university needs to be assessed by internal committee as well as by external academicians and peers as their appreciations and valuable suggestions boost the confidence of the faculty. The IQAC of the college/university has to carry out the stringent quality assessment with the help of an external peer review committee. Hence, the Academic and Administrative Audit Committee (AAAC) is constituted and assigned the task of assessing the performance of academic and administrative units of the college/university and give valuable suggestions required to achieve remarkable academic standards in the competitive educational environment. Audit is an independent and systematic external evaluation.

An audit focuses on the procedures that the institution uses to maintain and develop the quality of its operations. It assesses whether the quality system of a higher education institution is fit for purpose and functioning and whether it complies with the agreed criteria. In order to assess performance for the college the audit needs to focus on the strategic management process, evaluating how the quality management of the college plays its role in improving the quality of higher education. The purpose of the audit visit is to verify and supplement the observations made of the HEI's quality system based on the audit material. The goal is to make the visit an interactive event that supports the development of the institution's operations. In addition to conducting interviews during the visit, the audit team examines any other material it may have requested from the institution. In this context, the committee needs to review the institutional mission, institutional policies, strategies and operational procedures as well as institutional resources and organization. The quality culture of the institution has to be the focus and its role in management of teaching and learning, research and provision of extension services. The emphasis on the exercise of institutional leadership in quality enhancement programs and improving professional activities are other aspects of consideration. Audits focus on the quality system that HEIs develop for themselves based on their own needs and goals. To evaluate the quality system, the audit focuses on:

1. The quality policy of the higher education institution
2. Strategic and operations management
3. Development of the quality system
4. Quality management of the higher education institution's basic duties:
5. Degree education (including first-, second- and third-cycle education)
6. Research, development and innovation activities, as well as artistic activities
7. The societal impact and regional development work (incl. social responsibility, continuing education, Open University of applied sciences education, as well as paid-services education)
8. Optional audit target
9. Samples of degree education: degree programmes
10. The quality system as a whole.

The audit evaluates how well the quality system meets strategic and operations management needs, as well as the quality management of the HEI's basic duties and the extent to which it is

comprehensive and effective. In addition, the audit focuses on the institution's quality policy and the development of the quality system, as well as on how effective and dynamic an entity the system forms.

Academic and Administrative Audit

An educational institution is known by its activities achievements, infrastructure, location and professional prospects. Besides, one of the most important assets of an institution that attracts students is, whether it is accredited or not. Accreditation is a benchmark of an institution. It requires auditing of all academic and non-academic supporting units for efficiency and for standards.

Academic Audit: - Academic audit can be understood as a scientific and systematic method of reviewing the quality of academic process in the institution. It is related with the quality assurance and enhancing the quality of academic activities in HEIs.

Administrative Audit: - Administrative Audit is the process of checking analytical regulator continuously aspects of financial and administrative activities, and evaluation of goals and plans, policies and procedures, organizational structure and methods of measurement and evaluation of performance and methods of financial control and management.

Major objectives of AAA:

1. To understand the existing system and assess the strengths and weaknesses of the Departments and Administrative Units and to suggest the methods for improvement and for overcoming the weaknesses.
2. To identify the bottlenecks in the existing administrative mechanisms and to identify the opportunities for academic reforms, administrative reforms and examination reforms etc.
3. To evaluate the optimum utilization of financial and other resources.
4. To suggest the methods for continuous improvement of quality keeping in mind criteria and reports by NAAC and other bodies.

The few important areas identified for the academic and administrative audit include:

Academic Strength of the Faculty

The proficiency of teaching is influenced by the strength of the faculty. If the teacher is overburdened with work, it adversely affects his proficiency. If the teacher is assigned the work contrary to his expertise, he will prove to be a round peg in a square hole. Many heads put together will find out a better solution to a problem. The outcome of team of sincere workers is needed to create a conducive and congenial atmosphere in the institution.

Professionalism

The performance of faculty in any institution and particularly in Higher Educational Institutions (HEIs) is greatly associated with their great skills and ability. Professionalism demands high standard that we expect from a person who is well trained in a particular job. He should be a man of special skill and high level of education.

Competition

Higher Educational Institutions (HEIs) in the present time are assessed at the global level. For the first time in 2015 two of our Higher Educational Institutions (HEIs) are included among 200 institutions of the world. In this global scenario educational environment is seized by

increased competition. Academic and Administrative audit must worry about the quality of HEIs in this competitive world.

Ethical Behaviors of the Administration

Moral principles control and influence our behavior. The behavior of the Administration should not be hypercritical; they should act as friend, philosopher and guide. Ethical behavior is connected with beliefs and principles about what is right and wrong. These principles will establish cordial relations to make a right move to justify the work of Academic Audit.

Supporting Staff

Administration is a cooperative venture, because it involves activities that are done in order to plan, organize and run an institution. Apart from academic expertise we need supporting staff to facilitate the execution of the planned activities and for smooth functioning of the institution.

Well Equipped State of Art Infrastructure to Conduct Teaching and Research

Good teaching emanates from research. Teacher's love for research and their experience in research are vital for the growth of an institution. Most advanced or modern techniques are used for carrying out research work. Well equipped laboratories and state of the art infrastructure is a must. The academic and administrative audit will provide guidance, for further improvement in the existing system of any institution.

Facilities for Students

Higher Educational Institutions (HEIs) must provide facilities to the students. For example, library facilities, internet, incentives, scholarships, guidance etc. are the most wanted needs of the students. Research work can't be carried out if such facilities are not provided to them at the door steps. "Academic audit is the procedure of verifying and confirming the performance of academic practices and procedures against planned standard procedures." It evaluates the performance of the centre of learning. Academic audit appreciates their achievements and gives suggestions for further improvement. Its main focus is on the improvement of quality of Teaching, research, administration and curricular and co-curricular activities. An institute comes into being through the process of organizing. And then comes its administration. Administration is a job of many minds and many heads, all combined into one. It is more or less a cooperative undertaking. The head of the institution is the leader who builds an infrastructure of trust and respect. For uplifting the quality of higher education,

Principles of Academic Audit

The Academic and administrative Audit openly advocates the following principles as foundations of good educational practice.

Define quality in terms of outcomes

Learning outcomes should pertain to what is or will become important for the institution's students. Learning, not teaching per se, is what ultimately matters.

Focus on process

Departments/institutes should analyze how teachers teach, how students learn, and how to best approach learning assessment. Departments/institutes should study their discipline's literature and collect data on what works well and what doesn't. Experimentation with active learning

should be encouraged. Faculty should be encouraged to share and adopt their colleague's successful teaching innovations.

Work Collaboratively

Teamwork and consensus lead to total faculty ownership of and responsibility for all aspects of the curriculum and make everyone accountable for the success of students. Dialogue and collaboration should be encouraged over territoriality.

Base Decisions on Evidence

Departments/institutes should collect data to find out what students need. Data should be analyzed and findings incorporated in the design of curricula, learning processes, and assessment methods.

Strive for Coherence

Courses should build upon one another to provide necessary breadth and depth. Assessment should be aligned with learning objectives.

Learn from Best Practice

Faculty should seek out good practices in comparable departments and institutions and adapt the best to their own circumstances. Faculty should share best practices and help "raise the bar" for their department.

Make Continuous Improvement a Priority

Departments should continually and consciously strive to improve teaching and learning.

Purpose of the Academic and Administrative Audit

The purpose of the Academic and Administrative Audit is to evaluate the performance of the college/university departments and the centers and appreciate their achievements and give suggestions for further improvement of the quality of teaching, research, administration, and curricular and extra-curricular activities. The after visiting the departments and interacting with the HODs teaching and non-teaching faculties, students, alumni and parents and validating the data the committee would give valuable suggestions on the following points.

1. Availability of teaching and non-teaching faculty.
2. Infrastructural facilities available for carrying out academic and administrative activities.
3. Efforts taken for curricular development.
4. Teacher quality.
5. Teaching methods adopted and use of ICT in teaching, learning process.
6. Feedback mechanism used for assessing the performance of teachers by students and for curricular development.
7. Faculty development programmes implemented by the department.
8. Strengths, Weaknesses. Opportunities and Challenges of the department.
9. Research facilities and research output in the form of publications and patents.
10. Computer, internet and library facilities available.
11. Mentoring system, introduction of Remedial classes, Bridge courses, guidance for NET/SET and competitive examinations.
12. Skill development and personality development programmes.

13. Generation of funds and optimum utilization.
14. Evaluation methods adopted for internal and external examinations.
15. Future plans of the department.

Methodology:

The departments and administrative sections are expected to submit the necessary information in the Format provided by the IQAC of the college. The information provided should include all the aspects as per NAAC criteria. The information should also include the achievements, curricular, co-curricular activities and extra-curricular activities carried out, participation of students in various activities and their achievements and participation of teachers in national and international conferences, seminars and workshops. The funds generated by the faculty and the department, the purpose and the names of the funding agencies and duration of the project should be indicated. Individual faculty profile indicating their contribution in teaching, research and extension activities and their achievements, awards and prizes received along with supporting data should also be kept ready in the departments, schools and centers. The departments should keep all the data such as Feedback forms collected from students and other stakeholders on curricular developments, infrastructural facilities and performance of teachers for validation of the committee. The information about consultancy services, collaborations with other reputed universities and institutions, placement records, students admitted and their results in final examinations, mentoring system and financial support provided to students etc. should also be kept ready during the visit of AAA committee visit.

Higher Education Institutes Academic and Administrative Audit Process

The process has the following main stages:

1. Identification and notification of a dates for the audit
2. Appointment of Panel members and identification of College Liaison Officer
3. College workshop for writing of Self- Evaluation Document (SED)
4. College submission of the draft SED for comment
5. College submission of a SED, with any relevant supporting documentary evidence
6. Scrutiny of the SED and supporting evidence by the Audit Panel Preliminary Meeting of the Audit Panel
7. Visit by the Audit Panel to the College, normally lasting 2.5 working days
8. College informed of key judgments within 5 days of the end of the Audit
9. Production of a report including recommendations for enhancement
10. Production of a College Action Plan
11. Audit report submitted to the Boards of the Faculties
12. Follow up meeting 12 months after the Audit to monitor and record progress, and monitored annually thereafter if required.

How to promote Academic and Administrative Audit in a College

Pre-Service and In-Service Training

Pre-service training is a requisite for the person who intends to be a teacher. During training he studies different subjects, relevant to the needs of teaching profession. He becomes conversant with educational philosophy, principles of teaching and learning, educational technology and educational administration. He also knows needs of the learner which help him to be a good teacher. In-service training, seminars workshops and other orientation programmes help him to know the changing needs of the learner and the society.

Academic and Non-Academic Activities

Well planned academic and non-academic activities are necessary for time management and efficient use of college time.

Teachers' Competence

It is the competencies of the teacher through which he manipulates knowledge. A competent teacher is an effective teacher. Non-academic activities are complimentary to determine the standard with regard to its academic programme. For managing non-academic activities successfully proper provision of budget is necessary, without which the quality of teaching and research work will be adversely affected.

Active-Learning Methodology

This methodology lays more stress on active involvement of learner in the process of learning.

Teacher as Motivator and Facilitator

Motivation is present at the root of all human activities. It is called the potent factor in learning. The best teacher is the best motivator.

Administrative Support

Teachers need governments who are supportive of education systems. The following points are very important for ensuring the quality of leadership in teaching learning institutions to enhance and sustain the quality of education:

Teacher's Involvement in Decision Making

The teachers have regular interaction with the students, they teach. They know the ground realities and the problems of the students. Any administrative decision may prove contrary to the interest of the students if teachers are not involved in decision making. Because teachers know well the needs of the students.

Better Service Conditions and Salary Structure

Service conditions and security must be governed by certain rules and norms. It can be ensured by maintaining their service record. There should be no compromise on quality. The service, should not be at the mercy of the management. Better salary structure can help teachers to do their utmost to justify their love for the profession. There may be so many compelling needs or situations like domestic violence that force a person to make compromise with low salary structure. There are instances that management takes undue advantage of someone's compulsion. Such frustrated person will only give away frustration. This is an issue of crucial importance that also needs legal protection.

Job Security and Promotion

Job security and promotion are the motivational factors for a teacher who is dedicated and devoted to his work. How can he feel safe or contented if the sword of Damocles is hanging

above his head? Everybody in this world wants growth and progress. If in spite of his hard work and sincerity he feels insecure then how can he prove his worth?

Promoting Research Work

All development that has taken place since the beginning of civilization, is the result of man's thinking new thoughts and working over them. Research work is vital for the growth of an institution. Good teaching is the outcome of research work. Education itself is a dynamic subject ever changing, ever growing and ever developing. It is always in the process of change and modification. Every emerging system has to meet the growing needs and aspirations of a dynamic society. To cope up with the needs of emerging society research work must be promoted.

Regular Monitoring of Activities

All activities including teaching need constant monitoring for positive results. Activities are the practical measures. It provides a situation in which something is happening. We do activities for interest or pleasure or in order to achieve a particular aim. So these must be monitored regularly for the growth and maintenance of the system of education.

Seminars/Workshops

Seminars and workshops contribute a lot for the professional growth of teachers. They help to create favourable educational atmosphere. In seminar a small group of students and teachers discuss or study a particular topic. In workshop a group of people share their knowledge and experience and after a period of discussion they follow some practical work on a particular subject. UGC sanctions grants to colleges of education for the purpose of organizing seminars, conferences, workshops etc. Higher Educational Institutions (HEIs) also get grants from various agencies like ICSSR or universities for organizing such programmes. They also create awareness about latest development in the field of education.

Benefits of AAA

- a) Ensure heightened level of clarity and focus in institutional functioning towards quality enhancement.
- b) Ensure internalization of the quality culture.
- b) Ensure enhancement and coordination among various activities of the institution and institutionalize all good practices.
- c) Provide a sound basis for decision-making to improve institutional functioning.
- d) Act as a dynamic system for quality changes in HEIs.

Conclusions

In present day's technological society, large number of trained scientists and technologists are required. The Academic and Administrative Audit focuses on the process by which an institution monitors its own academic standards and acts to assure and enhance the quality of its teaching and support for student learning. Accreditation is a process of assuring an acceptable institutional quality and it is a tool for improving educational standards. The National Assessment and Accreditation Council (NAAC) is an organization that assesses and accredits institutions of higher education in India. The qualities of HEIs depend on its efficiency, coordination effective implementation of its academic and administrative plans. To

facilitate awareness among Colleges in the State about processes and systems that can ensure quality enhancement and realization of goals set in higher education. Education that crosses national borders, mobility, competition as well as the commercialization and internationalization of education are reasons why a country's trust in the level and quality of its own national higher education is no longer sufficient in itself. Recognition is one time process, where as accreditation is a time bound and recurring process. There may be institutional accreditation or specialized program accreditation. Accreditation may be voluntary or compulsory. The Higher Education Institutions (HEI) shall submit the Annual Quality Assurance Report (AQAR) regularly to NAAC. The IQACs may create its exclusive window on its institutional website and regularly upload/ report on its activities, as well as for hosting the AQAR. The challenge is to demonstrate quality in an understandable and reliable way, to the outside world as well.

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INTERNET OF THINGS: ROLE IN HIGHER EDUCATION

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Abstract

In the present era, technology plays a vital role in life of every person. The emergence of Internet of Things(IoT) through the advancement of technology made human life better and more easier. Advent of Internet of Things made several objects or things to communicate with each other with the help of sensors, softwares or actuators without human intervention. The leading role of IoT has its impact in higher education sector also. In the modern era, the learners and educators are walking away from the traditional methods to a system using the modern equipments facilitating the application of IoT. This paper gives an overview about the internet of things, its architecture and various applications. It also accents the issues and future improvements of IoT in higher education area. This paper is done prior to our research work which helps to spot out the latest technologies used in higher education.

Introduction

The concept of IoT began in late '90s. During the course of time advent of IoT has influenced a lot in different aspects of human life. The boom of Internet has changed the world a lot. This effect reflected in education sector also. Introduction of IoT has made a dramatic change in the education sector. Fast growing IoT creates anxiety and excitement around the world[1]. Learning outcomes has enhanced with the support of IoT. Gradually with the introduction IoT, change will be reflected in all institutions and finally in universities. An estimated rise of over 285% will be noted in the number of devices connected from the year 2015 which was 13.4 billion in number to 38.5 billion in 2020. [2]

In this paper, we discuss the definition of internet of things, components and also various applications. This paper also focuses the use of IoT devices in higher education sector, its advantages and impact of IoT in education sector. This paper is divided to several sections, section2 states the definition of IoT, its components, section 3 lists the various applications, section 4 discusses the IoT in Education, its advantages and challenges.

Definitions

The internet of Things joins two terms 'internet' and 'things', and it means interconnection or networking of Things that can collect data, process and transform it to a form that is required without human intervention. Things here we mean can be any objects, buildings, vehicles or any objects embedded with software, sensors or actuators.

International Telecommunications Union defined IoT as 'a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual)

things based on existing and evolving interoperable information and communication technologies(ICT).[9]

IEEE defined ‘Internet of Things’ in a special report issued in March 2014 as “ A network of items-each embedded with sensors-which are connected to the internet.”[10]

IoT Components

Three IoT components are- Hardware- which consist of sensors, actuators and embedded communication hardware, Middleware-on demand storage and computing tool for data analytics, and finally Presentation- a new visualization and interpretation tool which has an open door from different platforms and easy open arms for different applications[3].

Sensors are devices that collect the data and transform it to useful information. Actuators are devices that make responses based on the information generated. The data collected from the sensors and actuators is to be analyzed, processed and stored in on demand storage. Later this data can be transformed to a cloud-based or physical based system where data from different platforms can be combined.

Application of IoT

In today’s technological world Internet of Things has many applications. Some of the applications are listed below:

- Smart city
- Smart home
- Smart Classroom
- Health Care
- Agriculture
- Transportation
- Irrigation
- Waste Management
- Ground Water Management
- Energy Management
- Infrastructure Management

IoT in Education

Advantages

Use of IoT technology helps the faculties and students in teaching-learning process. Students feel comfy and are more interested in involving technology in their academics. It helps the slow learners. [4]

Smart Class Room

1. Smart Attendance Tracking System

Using IoT in managing attendance is time and effort sparing. Accordingly, a study proposes a potent attendance system named Smart Classroom Roll Caller System(SCRCS) which takes the attendance of each student after each interval accurately and timely. SCRCS system is to be

installed in every classroom and an RFID tag is attached to each student's ID card. The system reads the tag and marks the student's attendance in the beginning of any class. This displays the total number of students present and all the identity cards in multiple slots through a LED display board. A record of the attendance is kept for the administrative use.[5]

2. Real-time Feedback System for Lecture Quality

Quality of lecture is depended on the feedback given by the students. A system was proposed to monitor and observe the students' reaction on the lecture given by the teacher. This helps the teacher's to improve the quality of lecturing.[6]

3. Wireless Door-lock System

The sensors attached to this system restricts the entries through a verification as such avoids unwanted visitors. This alerts the concerned authority also.

4. Smart Note Maker

IoT enabled devices helps the students to prepare their digital notes. The device which looks like a pen highlights the text which is to be copied from any textbook. The text is then transferred to notepad or webpage in digital form at a rate 30 times faster than normal note making speed.[7]

5. Useful for Physically Challenged Students

With the advancement of technology, IoT enabled devices helps the physically disabled students to communicate with other students. The technology enables deaf students to use the gloves with sensors embedded. The sensors captures the signals analyze it and convert it to speech and text.

Challenges

There are also certain difficulties facing. They are reliability of connections, security, privacy, network bandwidth, availability of equipments, cost of set-up devices.[8]

Conclusion IoT and Higher education

Higher education and research are being re-calibrated by collaborating the advanced technologies such as Internet of Things, Artificial Intelligence and Machine Learning. Advanced technologies such as Internet of Things helps to avoid the geographic barrier across the world as the students can discuss about the same topic with the students across the world. They also can share the learning materials across the world. IoT can bring a new face in the higher education institutions and research.

IoT serve as a great opportunity in the field of higher education institutions which helps to amass data and deploy the data to increase learning experiences.

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UTILIZATION OF MOOC PLATFORM IN HIGHER EDUCATION: AN OVERVIEW

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ABSTRACT

Under the ‘Digital India’ initiative of the government of India, one of the major areas is Massive Open Online courses (MOOC). Ministry of Human Resource Development, Government of India has started a major initiative called ‘Study Webs of Active Learning for Young Aspiring Minds’ (SWAYAM), to provide an integrated platform and portal for online courses, covering all higher education, High School and skill sector courses. The journey of SWAYAM started from 2003 with the initiation of the NPTEL (National Programme on Technology Enhanced Learning), a joint programme of IITs and IISc. This was the first major attempt in E-learning in the country through online Web and Video courses in Engineering, Science and humanities streams. The paper provides an insight into the structure of Massive Open Online Courses with special attention to SWAYAM, its advantages and disadvantages.

Key words – MOOC, SWAYAM, NPTEL, E-learning

INTRODUCTION

Today we can see tremendous developments in information and communication technology which lead to computers with reduced size, prize and enhanced speed and storage capacity. These improved ICT facilities can address the problem of teacher shortages and can provide access to educational facilities to learners located in remote areas of the country. These ICT developments are the main reason for the large scale creation and usage of online educational contents through which higher education systems were virtualized.

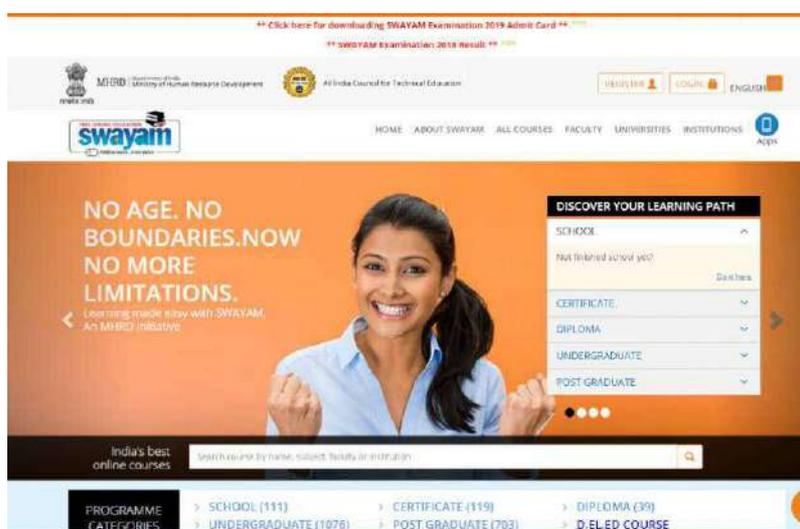


A Massive Open Online Course (MOOC) is an online course aimed at massive participation and open access through internet. It provides many interactive courses with user forums and immediate feedback to quizzes and assignments. It is a recent development in distance education. NPTEL, UGC and many other institutions have developed e-content in different disciplines at different levels. MOOC has changed the higher education structure world all over by providing learning opportunity to anyone, anytime, anywhere having internet access

Ministry of Human Resource Development (MHRD), Government of India has started a major initiative called ‘Study Webs of Active Learning for Young Aspiring Minds’ (SWAYAM), to provide an integrated platform for online courses, covering all higher education, High School and skill sector courses.

In India, there is shortage of qualified faculty and infrastructure facilities in the higher education sector. MOOCs seem to be a viable solution for these issues.

FEATURES OF SWAYAM



SWAYAM Main Page (<https://swayam.gov.in/Home>)

SWAYAM is a web and mobile based interactive platform hosting courses from high school to university level. It provides a high quality learning experience using multimedia. The system allows easy access, monitoring and certification. Doubts can be clarified through discussion forums and web conferencing.

The course contents are divided into four sections as described bellow

1. **Section I - e- Tutorial** : It contains audio and video lecture in an organized form, animations, simulations, virtual labs etc.
2. **Section II – e- contents**: PDF, Texts, e-books, documents and interactive simulations wherever required.
3. **Section III _ Web resources** : RELATED Links, Wikipedia development of course, open source content on internet, case studies, research papers and journals, articles etc.
4. **Section IV – Self assessment**: Problems and solutions which could be in the form of multiple choice questions, fill in the blanks, long answer questions, quizzes, assignments and solutions.

All SWAYAM courses are expected to include the following elements

- Syllabus template : It includes course description with learning outcome, faculty description, course content outline, certification, faculty communication etc.

- Course overview
- Course timeline for scheduling learning activities
- Instructions on synchronous and asynchronous engagements

Generally we can say that MOOC is a tool for self learning in an informal environment. Since SWAYAM is expected to address the issue of Gross Enrollment Ratio (GER), due recognition to courses offered through it is essential. To address this requirement the University Grants Commission (UGC) has notified “Credit Framework for Online Learning Courses through SWAYAM” Regulations, 2016 in the Gazette of India on July 19, 2016 [13] wherein credit transfer for online courses under SWAYAM platform of Government of India has been defined. The UGC Regulation requires the Universities/ Institutions to make amendments in their Ordinances, Rules, Regulations etc. to incorporate provisions for credit mobility and recognition for Seamless Integrations of Massive Open Online Courses (MOOCs) offered through the SWAYAM Platform. The present regulation of UGC limits only 20 percent of the courses for a degree level programme. Similar regulation is awaited from AICTE for the technical education.

FUTURE OF MOOC

In spite of the many exciting developments and applications, free online courses still have many limitations – that is MOOCs are far away from being able to replace traditional university degrees. Still they are capable of opening up access to knowledge that was previously the privilege of a small elite group. MOOCs are not for all – they serve a particular segment of students who are seeking learning opportunities from premier brands at no cost and at convenience of time. It is not for students seeking full-time educational credential. However, MOOCs would democratize education, transform lives worldwide and reinvent education.

CONCLUSION

SWAYAM is considered as an instrument for self-actualization providing opportunities for a life-long learning. Through SWAYAM, government has taken an appropriate step to build the India MOOCs around the existing facilities and resources developed under the NMEICT(National Mission in Education through ICT).

Mainstreaming the SWAYAM initiative with the formal education system will go a long way in realizing the dream of the nation in universal access of education. With appropriate planning and implementation, SWAYAM can play a pivotal role in Digital India and Skill India missions of the government of India.

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A REVIEW ON STRATEGIES FOR IMPLEMENTING SOFTWARE LEVEL ENERGY OPTIMIZATION USING GREEN COMPILER

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Abstract

The creation of www and internet was the driving force behind globalization. These two technologies managed to transform the entire planet into a digital village and created new route for scientific research and knowledge. Today's era demands great computational power and high performance and Cloud computing is the solution for this. But due to large amount of power it consumes, it affects the environment negatively. Advances in technology turned the earth into a toxic technotrash. We exist because of our environment .Environment destruction means our destruction. So environmental education should be given a proper space in higher education. So engineers are compelled to find ways of eco-friendly technologies and it is meaningful to have a look at Green Computing and employ its techniques. The goal of Green IT or Green Computing is to reduce environmental impacts of computers by making computers as energy efficient as possible, reducing the amount of hazardous and non-recyclable materials and properly disposing old machines. Energy efficiency in computer system is possible by applying efficient methods at software and hardware level by Green Computing. Software level green computing uses many techniques and use of energy efficient compilers is one among these. A Green Compiler is the best remedy for controlling software level energy consumption. A classic Green Compiler needs sufficient amount of time to compile source codes which lead to poor performance. So in this paper, a Distributed Green Compiler (DGC) is presented which is hardware independent and uses an existing distributed compiler. It applies green strategies and distributes source code of software over a network and adjusts binary code during code transformation at compile time.

Keywords: Cloud Computing, Green Computing, Green Compiler, Distributed Green Compiler (DGC)

Introduction

Today cloud computing has taken the IT world by storm. Cloud computing is a term referred to storing and accessing data over the net. It does not store any data on the hard disk of your personal computer; instead it access from a remote server.

Cloud computing not only improves our business but also helps the world. It refer to using an ICT network to store information and perform some computing tasks. It saves energy, saves money, scalable and efficient in performance. According to NIST, the cloud computing aims at share resources at its maximum. but its ongoing cost and increased power consumptionare its

major drawbacks. The cloud's higher power consumption especially at the data servers leads to emission of harmful gases, accumulation of e-waste, production of carbon foot print thus causing environmental degradation and leads to global warming. Ozone layer depletion, pollutions and soil erosions are some of the consequences of environmental degradation. The natural calamities ruined us recently. To protect environment, we people especially students need a sound environmental education. The Environmental awareness should be given an important place in higher education scenario. That's why it is included nowadays in our universities in the undergraduate level. The concept of green computing supports environmental friendly IT concepts. So we should adopt this concept.

Green computing refer to environmentally sustainable computing. This concept has been a great talking around the globe these days because manufacturing and consumption is becoming an environmental concern. We are in an era where needs and demands are growing by the second of the clock. Protecting our resources and reserving for the future becomes a great issue. Green IT or Green Computing minimizes hazardous impact of IT operations on environment by designing, manufacturing and disposing technology in an environmentally – friendly manner .Green IT basically takes into account economic viability, social responsibility and environmental impacts.

One of the concern addressed by Green Computing is the energy conservation. Energy conservation is considered as the most challenging issue in various electronic devices nowadays. Green IT uses different techniques at hardware or software level .

There are many energy conserving strategies and energy saving strategy for compiler technology is one among these. In computer, software leads the hardware. The compiler, which is basically a software, takes an input and generally produces a completely different looking program, which is now executable, unlike the input. Optimization of compiler technology takes a major role in energy saving activity. A better compilation technology optimizes the application technology as well as helps analyzing the behavior of application programs to minimize the system or processor operation power consumption.

Most often energy aware compiler used by software developer are hardware dependent. A green compiler uses green techniques during compilation to generate an optimized energy conservative executable. The green compiler both consumes energy and maintains performance by distributing code over network at compile time. A classic Green Compiler need sufficient amount of time for compilation which may lead to poor performance.

II. Strategies which makes the compiler Green

a) Cache Skipping

Loops are vital to programming and it also enhances performance. Doing the same things over and over again leads to high energy consumption. The cache skipping technique, the need for unnecessary caches are eliminated and it results in decreased power consumption.

b) Use of register operands

Using operands from memory is costlier than using it from registers. The use of register operands by compilers should be supported because it consume lesser energy .So energy and time can be preserved by using register operands.

c) Clustering of Instructions

An architecture specific compiler can execute a cluster of instructions in one run and from this, time and energy can be saved. Studies reveal this method saves energy from 26% to 47%.

d) Instruction reordering and Memory addressing

Energy consumption can be lowered by rearranging the order of instructions in the program. The method has been proposed using Gray Code and Cold Scheduling which reduces instruction switching from 20% to 30%

e) Optimized energy cost tree.

In the first run of code compilation, all types of parse trees are produced and their cost is evaluated using energy cost database. In the next run, the tree with the least cost is selected for future compilation.

f) Loop Optimization

Different energy efficient methods exist among which Loop Fission is the most efficient one. Loop Fission checks nested loops across dependency graph. For each loop body, dependency graphs can be arranged in which nodes represent statements and edges correspond to data dependency. If the graph does not contain any cycle, compiler will arrange loop for each statement and run them parallel by makes use of interleaved processing.

g) Dynamic power management

In CMOS, power consumption is classified into static and dynamic. When power consumption is dynamic, then the circuit will be in operating state and there will not be any power leakage. Dynamic power management system manages power waste and protects performance and sets the hardware power in 'true time' .

f) Resource hibernation

Hibernation indicates usage of low power mode. Idle resources can be placed in this mode but switching to and from this state causes losing of valuable resources and time. A compiler reshapes program behavior using source level transformation leading to extension of idleness threshold of a resource and be extended to hibernation mode with decreased level of switching.

g) Cloud aware task mapping

Services provided by different clouds are by cloud aware task mapping. Parallel processing is done at host level using cloud services. The limitations are cost of virtual machines, migration cost of virtual machines and delay due to network failure.

f) Eliminate Recursion

Recursive procedures using stack can be executed by compilers taking a lot of space and time. It causes performance reduction as well as extra energy consumption. Using compilers which can convert recursion into iteration may save time and energy in some cases.

III .Green Strategies For Software Development

At design level energy can be conserved by making energy efficient structure of software. The following strategies are used by software developers for making green compilers.

a) Use of Green IDE and Compiler

Energy aware compilers are helping to reduce energy consumption. For example Green Hill compiler for C and C++, ENCC energy aware compiler for C++.

b) Avoiding Recursion and Using Iteration

Because recursion uses stack, longer execution time is needed which leads to higher use of energy

So eliminating recursion and encouraging iteration is a better approach to green compiler.

c) Use of Grid and Cloud Computing

Latest trends in technology are grid computing and cloud computing which use readymade computer resources on demand. By make use of many readymade resources like currency convertor, calculator etc., energy, time and hence cost can be saved.

d) Less Running Time

A method which reduces the running time of an algorithm can be helpful for reducing energy consumption. When algorithmic complexity is found using Big O notation and when it is reduced close to linear time complexity, an effective compiling method is obtained in a green compiler.

e) Use of energy aware data structure

A profound effect can be produced in energy conservation by efficient data structures. For instance, merge sort consumes less energy with array but when compared to linked list ,it consumes more. Using different data structures efficiently, leads to efficient green compiling.

IV .DGC : Distributed Green Compiler

The DGC(Distributed Green Compiler) is a solution for this. The DGC saves the compile time by distributing the source code over a network of physical or virtual machines. It is a hardware independent compiler .Source code is arranged and optimized by using software level green strategies.

DGC(Distributed Green Compiler)

DGC employ Green techniques for software developers spotlights some areas of code, which could not be reshaped by the computer for energy optimization during intermediate code conversion.DGC expresses energy consumption statistics of a program after compilation .

The figure shows a pseudocode for DGC.

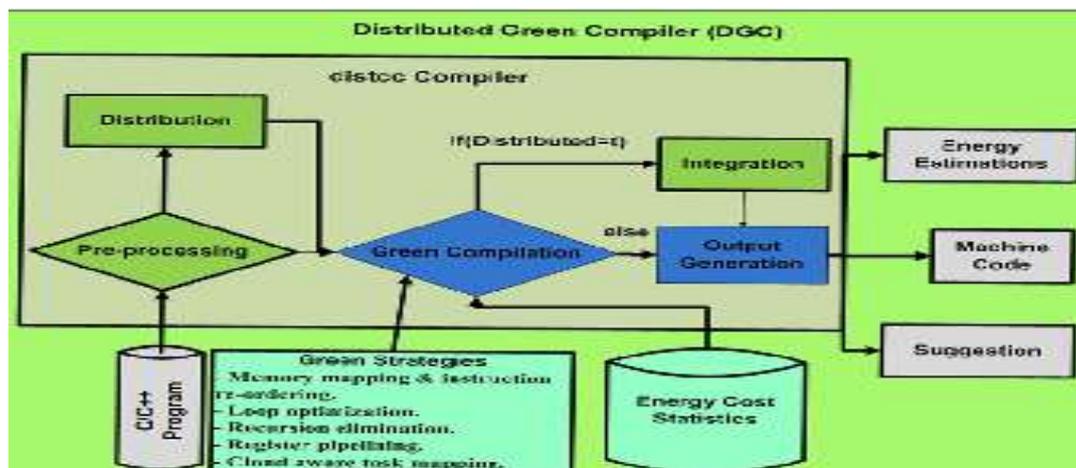
```

Input:
1. A C program.
2. Switches D for distribution.
3. Machine IPs for distribution.
Output:
1. An energy conservative executable.
2. Green suggestion.
3. Energy statistics report of program.
Begin
while(End of file){
  pre-process source code.
  if(D){
    while(End of file){
      Distribute on network.
    }
  }
  while(End of file){
    Loop optimization, Dead code and recursion elimination, Un-optimized block
    identification, Energy statistics calculation
    Other Compilation process for intermediate code generation.
  }
  if(D){while(End of file){
    Integrate.
  }
}
Generate output
End

```

A C program is given as the input. Some parameters are also given such as switch, IP address etc. Switch announces the compiler that the program should be distributed on network and IP address indicates machines available for compilation.

DGC uses distcc, an open source distributed C/C++ compiler which uses a GCC compiler that sends preprocessed source codes over the network and commands machines to compile source code.



The above figure explains the workflow of DGC. The Green Compilation and Output generation modules of distcc are modified to perform energy cost statistics and green strategies. DGC takes source file from C source project and preprocesses the files by attaching header files and libraries. Then the source code is distributed over the network to various slaves, ready for compilation. The first available machine is sent the request first. In first run, source code is elected block by block and green strategies being applied on the selected code.

The features of DGC are:

1. Loop Optimization :

It is the energy conserving process during loop execution. There are many techniques for this but DGC does loop unrolling, through *funroll-all-loops* and *fvariable-expansion-in-unroller* switches of GCC compiler. Both conserve energy using different techniques. *The funroll-all-loops* reduces the frequency of loop iterations whereas *fvariable-expansion-in-unroller* copies local variables during loop unrolling for dependency elimination.

2. Dead code elimination

Dead code elimination limits the size of the program by avoiding unnecessary operations, thus helps in conservation of energy by saving the clock cycles at each run .

3. Software pipelining

This method is used to optimize loops for overlapping iterations. DGC uses Modulo scheduling to execute software pipelining.

4. Elimination of recursion

It is very difficult to avoid recursion. DGC avoids recursion by converting it into iteration. If conversion is that much easy, then it recommends green suggestion by highlighting the specific areas of code .

5. Cloud aware task mapping

For distributed compilation process, DGC uses clusters of virtual machines .It uses hardware and software resources of network to process a compilation problem.

6. Energy cost statistics

DGC maintains energy cost table for every instruction in a database.

Different parse tree of selected code can be produced using energy cost statistics database. For the above concept, a conservation of 40% to 60% energy can be obtained if we adopt green technologies.

V. Conclusion

Environmental education has much to do with sustaining our natural resources and preventing environmental hazards. It also alleviates negative impact of cloud computing. Due to the impact of environmental education, green protocols are pervading into our surroundings nowadays for celebrations and ceremonies. To go green means applying energy saving and applying environmental protection strategies for computing. A green compiler applies green strategies to rearrange source code during intermediate code conversion thereby conserves energy. In this paper, several methods for green compiler are highlighted. By opting DGC, the source code can be distributed over the network of physical or virtual machines. Performance analysis shows that DGC conserve clock cycles by 30% to 40% by applying green techniques. A future study can be done to make green compilers greener and more efficient so that our sustainable aim of environmental education can be fulfilled.

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QUALITY ASSURANCE IN HIGHER EDUCATION

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Abstract

Quality improvement in education system is mainly related to the teaching, evaluation techniques, results and placements of the institution. National Assessment and Accreditation Council (NAAC), formed under the aegis of University Grants Commission (UGC) has implemented new methodology of evaluation of educational institutions in India. The new dimensions of “Quality Measure” as proposed by the NAAC involve continuous process of assessment of HEIs. The stakeholders in Higher Education play a vital role in the assessment process of the institution. Several Governmental bodies like University Grants Commission and National Assessment and Accreditation Council (NAAC) established as an autonomous body with the objectives of assessment of the Higher Education Institutions in the country assesses and accredits HEIs by studying and analyzing various parameters towards the quality measures. The outcome of the assessment is the final Institutional grading conferred to the institutions. UGC and NAAC have played a vital role in streamlining the Quality HEIs. The process has changed the mind set of all stakeholders towards quality and its sustenance and has involved them to contribute for its achievement.

Key words

Quality Assurance, Higher Education, Accreditation, NAAC and UGC

INTRODUCTION

The quality improvement in education system is mainly related to the teaching, evaluation techniques and the results of the institution. It also covers the employability, the percentage of students opting for post-graduate or professional studies, the students involved in research and the laurels brought by them through the co-curricular and extra-curricular activities and also the number of students pursuing their studies abroad. It is true in one sense that the quality of education provided by the institution will have “Quality Measure “by considering all such parameters. In an approach by the National Assessment and Accreditation Council, an autonomous institution formed under the aegis of UGC, the new methodology of evaluation of institution covers many other parameters

Higher education is generally understood to cover teaching, research and extension. Higher education is the source or feeder system in all walks of life and therefore supplies the much-needed human resources in management, planning, design, teaching and research. Scientific and technological advancement and economic growth of a country are as dependent on the higher education system as they are on the working class. Development of indigenous

technology and capabilities in agriculture, food security and other industrial areas are possible because of our worldclass higher education infrastructure. Higher education also provides opportunities for lifelong learning, allowing people to upgrade their knowledge and skills from time to time based on the societal needs.

2. ROLE OF NAAC IN QUALITY ASSURANCE

NAAC is an autonomous institution, established by the UGC in 1994. The primary objective of NAAC is to assess and accredit institutions of higher learning with an objective of helping them to work continuously to improve the quality of education. The aim is to provide universities with the best evidence for informing their focus and models for quality improvement

3. CORE VALUES OF NAAC

The Indian higher education system is in a constant state of change and flux due to the increasing needs of expanding access to higher education, impact of technology on the delivery of education, increasing private participation and the impact of globalization. Taking cognizance of these developments and the role of higher education in society, NAAC has developed five core values: contributing to national development, fostering global competencies among students, inculcating a value system in students, promoting the use of technology and quest for excellence. The detailed explanation of these values from the NAAC (2004) document on Guidelines for Re-Accreditation is presented below.

i) Contributing to national development: Most of the Higher Education Institutions (HEIs) have a remarkable capacity to adapt to change, and at the same time pursue the avowed goals and objectives they have set forth for themselves. Contributing to national development has always been a goal of Indian HEIs, explicitly or implicitly. HEIs have a significant role in building on changes to the advantage of the country and can contribute to national development, for example, by serving the cause of social justice, ensuring equity and increasing access to higher education. The HEIs should respond to the goals of national development in the changing context

ii) Fostering global competencies among students: The developments in the global scenario make it imperative for the NAAC to include in its scope of assessment the development of skills of students in India such that their skills are at par with those of their counterparts abroad. With liberalization and globalization of economic activities, the need to develop human resources of a high caliber and, consequently, the demand for higher education at nationally comparable and internationally acceptable standards has increased. Therefore, the HEIs should prepare students with global competencies to successfully face the changing global scenario. This requires the HEIs to be innovative, creative and entrepreneurial in their approach to skills development among students. This may involve collaborating with

industries, networking with the neighbourhood and fostering a closer relationship between the worlds of work and learning.

iii) Inculcating a value system in students: Although skills development is critical to the success of students in the job market, skills are of no value in the absence of an appropriate value system. HEIs have the responsibility of inculcating a desirable value system in students. In a country like India with cultural pluralities and diversities, it is essential that students imbibe values commensurate with social, cultural, economic and environmental realities at the local, national and universal levels. There can be no dispute about inculcating core universal values like truth and right conduct, as well as the values emphasized in the various policy documents of the country. The values sown in the early stages of education, mostly aimed at cooperation and mutual understanding have to be re-emphasized in HEIs by appropriate campus experiences.

iv) Promoting the use of technology: Most of the significant developments that one can observe today can be attributed to the impact of science and technology. While the advantages of using modern tools in day-to-day life are well recognized, the use of technology in our way of 'learning' and 'administering' leaves much to be desired. The degree of use of technological innovations in educational transactions, both academic and administrative, indicates that our system of education is still uncomfortable with new technology. At a time when our educational institutions are expected to do more with less input, they should make proper use of readily available technological innovations. To keep pace with the developments in other spheres of human endeavor, HEIs have to build on the recent technological developments and enrich the learning experiences they provide to students. The campus community may need to be prepared adequately to make the optimum use of information and communication technologies (ICT). Conscious effort is needed to invest on hardware and to train the faculty suitably to overcome their initial reluctance in using anything new and gadget-oriented. Effective use of ICT in HEIs involves providing ICT literacy to the campus community, using ICT for resource sharing and networking, using ICT-enabled administrative processes, etc.

v) Quest for excellence: While contributing to nation building and development of students, institutions should also demonstrate the drive to develop themselves into centers of excellence. Excellence in all that they do will contribute to the overall development of the system of higher education.

4. QUALITY ASSURANCE BY NAAC

The seven criteria developed by NAAC to measure excellence are in fact the main processes for developing the capabilities of an institution. Establishment of an Internal Quality Assurance Cell (IQAC) in each of the HEIs would help to develop and raise their capabilities as institutions. The seven criteria are: curricular aspects; teaching, learning and evaluation; research, consultancy and extension; infrastructure and learning resources; student support and progression; organization and management; and healthy practices. One of the major outcomes of the IQAC establishment would be the internalization and institutionalization of quality so

that the institution strives to excel in serving its students and other stakeholders. The quest to become a quality institution is in itself a core value that HEIs have to imbibe and demonstrate in their functioning.

5. QUALITY ASSESSEMENT

Quality assurance is the responsibility of everyone in an educational institution, though the top management sets the policies and priorities. Thus, assuring quality should be a continuous and ongoing process. It should not be considered as a one-time activity for accreditation alone. In spite of the importance of EQM and the credibility attached with the impartial and objective system, developing an internal quality assurance mechanism in every educational institution is highly important. It is in fact, this unit within the higher education institution that will prepare the base for external quality monitoring (EQM). Thus, understanding the criteria of quality assurance and adhering to the best practices become highly significant. Across the world quality assurance is done in the following ways:

- Self evaluation;
- Peer review by a panel of experts, usually including at least some external panel members and one or more site visits;
 - Analysis of statistical information and/or use of performance indicators or the best practices benchmarking;
- Surveys of students, graduates, employers, professional bodies;
 - Testing the knowledge, skills and competencies of students

At NAAC, a four-stage process of external quality monitoring/assessment is undertaken covering:

- Identifying pre-determined criteria for assessment;
- Preparation and submission of the self-study report by the unit of assessment;
- On-site visit of the peer team for validation of the report and recommendation of the assessment outcome to NAAC; and
- Final decision by the Executive Committee of NAAC

6. CONCLUSION

The pressure for quality assurance poses a major challenge for higher education as in case of many developing countries including India. With increasing interaction of commerce, trade and education across national borders, needs for measures of the quality of education in a given country or region are growing each year.

NAAC It is an observed fact that in horizontal and vertical growth of the institution the UGC and NAAC has played a very vital role in streamlining the proper development of HEIs. In last two decades the institutions have initiated and constantly deliberating on the issues of quality and its sustenance. The process has changed the mind set of all stakeholders towards quality and its sustenance and has involved them to contribute for its achievement. The research

quarries will help the researchers to plan research studies for finding answers to various educational issues.

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DIGITISATION IN HIGHER EDUCATION HELP TO IMPROVE THE QUALITY OF EDUCATION IN INDIA.

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Introduction

We are running in to the 21st century where technology has no bounds. This is a phase of radical development where technology is taking over every niche and corner. Smartphones, laptops and tablets are familiar terms in today words. During this phase education system is digitalised. Digitisation is the integration of digital technologies into everyday life by the digitisation of everything that can be digitized. Digitisation of education involves various aspects of quality, ranging from organisational issues, technological infrastructure to pedagogical approaches and influences internationalisation by offering online and flexible educational programmes. With the advent of technology and its surging acceptability in society at large, there is a huge scope to take education to the remotest part of the country for enhancing awareness and improving understanding.

Digitisation has changed our education system. But we cannot say that it has diminished the value of our old time Classroom learning. Digitisation of education combined with the aspects of classroom learning and online learning methods. Digitisation in education has proved to be the right method for saving resources. Online examination platforms have restricted the frivolous usage of paper, directly confining the cutting down of trees. This way the digitisation of education in the 21st century proves to be a boon to our society. Traditional education system was based on the concept of knowledge Transfer 'the age old guru shishya parampara which established a clear teacher taught relationship. However ,the digital media and the internet has ushered in a democracy of knowledge where education has become a collaborative, self driven enterprise. Today there are tools available to transform learning from an academic exercise to an engaging experience in imaginative and experiential learning. The present paper thus aims to contribute to the research community by exploring digitisation in higher education. Higher education system in India has undergone rapid expansion. India has one of the by largest higher education system in the world. This paper focuses on how digitisation helps to improve the quality of education system in India.

OBJECTIVES

- To study the impact of digitisation on higher education in India.
- To study how the digitisation helps to improve the quality of education in India.
- To know the various digitisation techniques are used in higher education.

RESEARCH METHODOLOGY

The present study is designed to be a diagnostic and exploratory research. The Study is primarily based on the secondary data. The research for this paper was conducted through

literature review, without any empirical Work being conducted. A large resource of written materials was used ,which include books, magazines, articles, academic journals as well as the websites.

REVIEW OF LITERATURE

The quality of education has been a cornerstone of the development of the country. Education is the basic and primary condition to cultivate knowledge and civilized people for their all round development. So,the major purpose of this research study is to analyse the impact of digitisation in education on quality of higher education.

The main objective of this literature review is to enhance the researcher for knowledge of quality of education improved through digitisation of education. In this study, knowledge will be complemented and supplemented through different theories related to quality education. The literature review from various areas may support in developing the theoretical framework for stepping towards the objectives of the research.

Jinal Jani and Grish Tere (2015)

Digital India programme introduced by government of India is important for the development of digital education. In the countries 'digital India drive is a project initiated by government of India for creation of digital empowerment society across the country. It will help in mobilising the capability of information technology across government departments and helps in delivering the different governments programme and services. Digital India will help in creating jobs, providing high speed internet programmes and services. Digital India will create job for providing high speed internet and digital locker system and so fourth.

Jeyesh M Patel (2017)

There are many web based Tools which can be used in the classroom for digital education like Twitter, Gloyster, Plezi, Diigo, Dropbox and moodle. Teachers and students are interested in web based digital learning but because of lack of knowledge, they are not initiating the same. Web based tools will make the learning teacher centric approaches are making learning boring even for interesting chapters, use of digital technology moves even boring content interesting and joyful. The Concept of child centered approach will be Fulfilled only with the help of digital technology.

Studies have also contributed with diagnoses of the 'digital state' of the higher education institutions and with suggestions on how to proceed with the digitisation of institutions. Such suggestions are most often addressed as top- down initiatives and without discipline specific issues.(Grajek,2016;Norgesuniversitetet 2015).

Furthermore, initiatives on digitisation have primarily been initiated and effectuated by administrators with out including academic staff(Rienties et.at:2013).

This contrasts with internal processes that address the pedagogical use of technology, which again seem to be driven by enthusiasts among academic staff within the development of new strategies plan or efforts to enhance teaching and learning might explain why few higher education institutions report transformation of teaching and learning with the support of technology(Bates& Sangra,2011).

FINDINGS & DISCUSSIONS

Digitisation in education refers to the use of desktop computers, mobile devices, the Internet, software applications and other types of digital technology to teach students of all ages.

Test-taking using a computer, online universities, e-books and edutainment are just a few examples of digitisation in education today.

Components of Digital Education.

Primarily Digital education has 3 components

- The content
- The technology platforms
- The delivery infrastructure

Reforming Education through Digitisation

With the advent of technology and its surging acceptability in society at large, there is a huge scope to take education to the remotest part of the country, for enhancing awareness and improving understanding.

India's education sector is witnessing the increased use of technology such as Cloud Computing, Artificial Intelligence and Virtual Reality in day-to-day practices related to education sector. The Government is also focusing on greater use of technology as it looks to implement largescale reforms such as Revitalising Infrastructure and Systems in Education (RISE) scheme.

While technology-enabled initiatives or platforms in line with Massive Open Online Courses (MOOC) such as Swayam (for teachers' training) have seen use of technologies, the Government is also emphasising on boosting the use of tools such as virtual lab, virtual reality (VR)-enabled classrooms or curated online content for both students and teachers.

Swayam, an online life-long training platform developed with the help of Microsoft, or Diksha, a platform that aids teachers with digital and techbased teaching solutions, are "prominent efforts" in revamping the education infrastructure.

Digitising education has been an imperative keeping in mind the affordability, accessibility, inclusiveness of the large trainable youth population. Technology may be used to reach the diverse population at the remotest corners. MOOC platforms, NPTEL (National Programme on Technology Enhanced Learning) are already in use for promotion of higher technical education.

India's education sector is witnessing the increased use of technology such as Cloud Computing, Artificial Intelligence and Virtual Reality in day-to-day practices related to education sector.

Education system in future

The series of education provisions in the 2016-17 Budget provides an exact picture about the present Government's future plans for education.

The Government is planning to establish a new agency — Higher Education Financing Agency to oversee the infrastructural developments in Higher Education. At the same time, owing to standardisation of training, a new regulatory body's establishment has also been on the agenda. In addition to supporting online courses, the next step of the Government in the direction of digitalisation is the creation of an online register for report cards and degrees.

Concerning State investments, the higher education continues to enjoy priority, but public education, particularly technical training, will also benefit, as the allocation of financial sources makes clear.

Other than the Government, various private organisations are also supporting India's digital initiatives for education. Software major Microsoft, working with Atal Tinkering Labs across 25 schools in the country to empower students and teachers with technology skills, is also pushing for the use of cloud computing for creating an efficient digital lab experience.

Apart from the Rs 1 lakh crore expenditure estimate for RISE spread over four years, the Government has increased the overall expenditure estimate for education by 4 per cent and it grew by more than 11 per cent in 2017-18. Despite a growth in budgetary expenditure allocation, many projects have seen delayed implementation and use of funds. Going forward, analysts said, technology will play a key role to speed up implementation of education reforms. India as a nation is on a growth path in education sector and digitisation is supporting the collective efforts of public and private sector to realise the dream of becoming the education hub of the world. Along with other States of India, educationally backward States are also focusing on improving the education scenario.

Digitising education has been imperative keeping in mind the , accessibility, inclusiveness of the large trainable youth population. Technology may be used to reach the diverse population at the remotest corners.

Universities have launched massive drives towards digitising libraries, records, rules, regulations, certificates, study materials etc and they have become members of National Digital Library, National Academy Depository schemes. Campuses are made smart, digitally enabled , clean, green and conducive. Participative & demonstrative teaching and learning processes have made education in the state interesting, entertaining and creative. Surrounding villages of the university campuses are adopted to transfer the much needed knowledge to each villager to ease out problems faced by them.

Benefits of Digitisation in Education

Benefits to Academic Institutions

Academic institutions can easily manage their activities with the help of digital education.

- Time and money of the institution will be saved.
- They can easily plan to conduct online exam and publish the exam result quickly.
- It makes knowledge to transfer easily and equally from teacher to each and every student with the help of effectives and advanced technology based teaching tools.

- It helps in creating interest among students which will help them in learning many concepts through interactive- audio- visual to teaching contents.
- Advantages over other schools and colleges which cannot provide such integrated feature- based learning and management system.
- Easy communication between institution and parents for student related academic activities.

Benefits to students

As all the study contents will be taught in the classroom through multimedia slides, it creates interest and enthusiasm among the students. Learning will be fun for them. They are able to memorise many concepts through interactive audio- visual teaching contents.

- They can easily view their daily time table, class assignments and events planned in school etc. from home.
- They are able to prepare projects and presentation online.
- They can give online exam and view their results.
- They can easily collect teaching contents of missed lecture online.
- They can access library online.

Benefits to principals

- Easy to manage all the school / college activities.
- In case if the he is on leave, he will be able to access all the school information online and manage the school easily.
- He can view teacher's teaching programmes and student's performance.
- He can assign tasks to others staff members and give remarks for their works.

Techniques used for Digitisation of education

- Online course
Online courses are developed by experts who have unmatched proficiency in their specific field and can give you the experience of real- time learning by designing their own online courses.
- Online exams
Digitisation gave way to the online exam making the examination process convenient for both teachers and students.
- Digital textbooks
E- text books and e-texts, digital textbook provide an interactive interface in which the students have access to multimedia content such as videos, interactive presentations and hyperlinks.
- Animation
This is a captivity approach in which students learn in a better manner. By offering a visual representation of the topic, students grasp the concept in a more understandable manner. Even the toughest topics can be presented simplified way with the help of animation.

Emerging technologies in Higher Education

- **Internet Of Things (IOT)**

Higher education managers are already making serious investments in the Internet of Things. We have a plenty of smart things around as from Smartphone and watches to cars and houses. Future campus are transform in to mini smart cities by installing Smart Informational Kiosks, tracking vehicle and foot traffic to optimize load and using smart electricity grids.

- **Block chain**

The block chain is the modern technology that is used to store and transmit Information in a distributed, secure and effective way. Educational facilities may use block chain to store student data such as personal data and learning performance. The benefit of such technology among others in society.

- **Security**

With the growing implementation of IT technologies and IOT devices, the need to secure the network from cyber threats emerged. Higher education institutions must implement, new tools that enhance cyber security, such as user and entity behavior analytics (UEBA) which detects suspicious activities in typical user behavior.

- **AR/VR**

Other emerging technologies in education are augmented and Virtual Reality. They are already being used in classrooms to create lessons more informative as these technologies can bring animals in to classrooms or move the whole class to the moon. Though VR still has blockers in terms of costs and content, AR is more accessible technology as requires mobile phone only.

- **Big Data**

Ten years ago, it was hand to manage data of tens or even hundreds or thousands of students on paper. Luckily, in the modern world where everything is digitalised, we can use Big Data for better Data Management, analysis, and usage. Big data in education is mostly information about the performance and abilities of each individual students which can improve their learning experience by personalising it.

- **AI and Machine Learning**

Artificial Intelligence and it's base ,machine learning are of the global digital transformation and higher- ed institution are n't left behind these. Such a smart part of campus digital transformation in higher education helps students settle in and feel more like home. As a result, retention rate increases and freshman stress reduces.

- **Chatbots**

The common place of usage of this technology is university customer service to help quickly handle some of the simplex questions that students have and reduce the load of phone lines.

Factors influencing growth of Digital Education:**1. Personalised and adaptive learning**

Learning platforms, software's and digital devices are together creating countless new ways to modify education. This way the academic potential, strengths, weakness, aptitude and learning program of every single student is catered to.

Schools are now providing their students with digital devices like desktop computers, laptops and tablets. These device are aiding them in the teaching process while also helping them understand how students learn and to enhance their learning process.

2. Two- way conversations in the learning

In the traditional classroom seating scenario, students are able to get the individual attention they need due to time constraints. In contrast ,the one to one contract of learning in digital mediums currently studetnts to learn through videos and chat with an expert.

3. Mobile- based learning

Over the past few years, mobile learners has picked up by the populace who had gradually assimilated it in their lives. It has offered to students the flexibility to access educational content seamlessly across multiple digital devices like desktops, laptops, tablets and smart phones.

4.Video- based Learning

Video learning has always appealed to students since it closely mirrors the traditional classroom teaching style. Video lectures allowed students to learn subject syllabi at their own pace and dedicate time spent in class towards interactions. This will continue to be a trend in the future where students will have access to rich and interactive content that will be useful for both formal trading as well as performance enhancement.

5. Open educational Resources.

Open digital education resources have commonly been used in distance learning courses. They consist of freely access media for learning, teaching and research purposes. They are licensed to be revised and disseminated freely by teachers among students. This allows the latter to gain access to an extensive arrive of study material that is otherwise restricted indigenously.

How Quality of Education Improved through Digitisation.

- **Encourages Self Study:** Digitization allows for personalised learning because students can use their choice of digital devices. The academic potential, strengths and weaknesses and learning pace of every student can be catered to. It also opens up communication channels, allowing students to get more attention as well as enabling them to track their coursework progress and identify areas of improvement.
- **Access to Higher Education:** Digitalization opens up higher education to people who wouldn't be able to afford or access it otherwise, such as people living in remote locations. Similarly, digitalization, through online learning makes it possible for students to access their sessions when they want and learn at their own pace.

- **Improves understanding:** Virtual Reality tools and videos can be used to help students use e-learning platforms on multiple mobile devices to interact directly with study material.

Digitization offers fluidity to the Indian education sector by becoming a supplementary arm of the system that is available to all students, according to their individual needs. While the traditional education system has a uniform approach, e-learning and digital education tools can be customized and moulded as per the student's capability, interest and understanding, to better imbibe the nitty-gritty of a subject.

With technological advancements taking place in education globally, there is a crying need for the Indian school system to become more dynamic and adapt and incorporate technology to generate more impactful means of learning. This infusion of technology needs to start at the grass root level, given that the majority of India's population lives in rural and semi-urban areas, as it is only then we can work to eradicate problems like high dropout rates, illiteracy and lack of quality education in our country.

CONCLUSION

Digitisation has no doubt to change our education system. The best part about the digitisation of education in the 21st century is that it is combined with the aspects of both; classroom learning and online learning methods. Digitisation encourages self study among students, helps to access Higher Education and helps to improve understanding of students. Various techniques used for digitisation of education includes online courses, online exams, Digital textbooks, animation etc.

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MACHINE LEARNING APPROACH OF STUDENT EVALUATION SYSTEM IN HIGHER EDUCATION

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Abstract

Machine learning is the branch of computer science. It is more useful in carrier assessment for students in the modern world. Carrier selection is the main problem for every student in the college or university. Every teachers give carrier guidelines to each student but they are not able to asses them. Assessment is very important because it is used to identify student strength and weakness. Some student is expert in arts and other is expert in science. Main aim of the carrier expert system is to identify student interest or to find their area of excellence. This system is designed to measure mathematical problem to develop a machine learning approach for assessing student. Many of the colleges appointed counselors to evaluate student's performance. Student's performance need to be assessed every year. They spend lot of time with their students and concentrated on their behavior, performance, caliber etc. Now, complete student assessment is done in this system so it is more helpful for the student. In this expert system, some questionnaire is prepared, based on the answers given by the students to find out their capabilities.

Keyword : Machine Learning, Student evaluation, Neural network

1. INTRODUCTION

Machine learning is an interdisciplinary area of artificial intelligence in research field. Machine learning is influenced in many subject such as mathematics, computer science, artificial intelligence, statistics, biology, psychology, economics, control theory and philosophy. In general, machine learning is a valuable concept, a system can improve their performance through experience. Machine can learned itself through its experience and automatically produce result. Machine learning produced numerous application, algorithm, theoretical results and learning paradigms. The important application in this field are autonomous vehicles, robot, recognition of hardware, problem detection in pipelines, traffic control system, money exchange system, weather condition detection system, life insurance classification system. In the same way, machine learning is very important in higher education system. It is helpful for teachers and students. Education is moving beyond our tradition system, student looking at the same textbook while a teacher lectures from the front of the room. Today system evolving to use more technology and digital resources, they are also interesting in machine learning. In higher education machine learning support teachers in cases

such as prediction of student performance, testing of students, providing of customized learning, improving of retention, classify students and teachers according to their need.

2. LITERATURE SURVEY

There are many studies in the evaluation of student performance that investigated the way of applying machine learning technique for various higher education purpose. It mainly considered the study of student performance in distance education, to identify high-risk student, as well as to identify features which affect the performance of students.

The study conducted by S.B Kostiantis[1] is one of the important study to apply machine learning technique to find dropout student in distance education. The title of the paper is 'Preventing student Dropout in Distance learning using machine learning techniques'. He discussed most significant role of machine learning techniques, that can be useful in dealing with this problem. The machine learning technique was used in several areas, but in a rare case, to an academic environment. He compared five algorithms and found that Naïve Bayes algorithm was successful in solving this problem.

The study by V.Sai Kuswanth [2] was based on the student career. The major concern of the work is adopted by using machine learning concept. They discussed how to assess the student and how to select best career. The concept of career assessment is to suggest a career for the student which he can settle in a job after he is graduated. Artificial neural network is the one of the best technique in machine learning, that concept is implemented in this project.

S.B Kotsiantis [3] is conducted a study based on machine learning technique for predicting on student learning preferences. They used supervised learning technique in machine learning. In this study, they considered 5 different supervised learning algorithm. That are decision tree, Neural network, Bayesian classification, instance based learning, generic algorithm. Finally, they found out that some combination of algorithm is produce best result.

Haven Agrarval, Hasshil mavani [4] conducted a study in India. They evaluated the student performance based on the prediction using machine learning techniques. In this experiment, they used neural network and Bayesian classification algorithm. They found that, academic performances of the students are primarily dependent on their past performances.

The study by Erkan Er [5] was based up on Kotsiantis as well as other similar studies. They understood in their study that Naïve bayes indeed performed better than any other machine learning algorithm. He also concluded that "Instead of demographic characteristics of students, using initial attendance and homework grades produces better prediction rate at earlier stages."

3. MACHINE LEARNING ALGORITHM SUITABLE FOR STUDENT EVALUATION

Machine learning is the process of learning from examples, as per a set of rules. Learning is performed by using different machine learning technique. It is more useful in higher education section. This techniques helps to assess students performances. There are

many categories of machine learning algorithms available. We should find which one is the best in higher education.

3.1. Decision tree

Decision tree is a well known and popular machine learning tool for classification and prediction. Decision tree are tree structures organized in hierarchical structure that classify instances by sorting them based on the attribute values. Each internal node denotes a test on an attribute, each branch represents an outcome of the test and each leaf node holds a class label. Classification is starting at the root node based on the instances and sorting them based on their attribute values.

Growth of an educational institute can be measured in terms of successful students of the institute. The essential requirement for the improvement in quality education is the analysis related to the prediction of student academic performance in higher education. The decision tree technique is used for the construction of classification model which could predict performance of students. Here some significant factors have been considered while construction the decision tree for classifying students according to their attributes.

3.2 Neural Network

Artificial Neural Network are another method of inductive learning based on computational model of biological neurons. It contains multiple layers and consists of large number of neurons joined together in a pattern of connections.

A common difficulty of ANN is the selection of the size of the hidden layer because underestimated numbers of neurons can lead to poor generalization capabilities. While excessive nodes could make the search for the global optimum more difficult. The weights of the net to be trained are initially set to random values. The input values of an instance is placed on the input units and the output of the net is compared with the desired output for this instance. Then all the weight in the net are adjusted slightly in the direction that would bring the output values closer to the values for the desired output.

3.3 Bayes Network

Bayes Network is a statistical graphical model that represents a set of variables and their conditional dependencies via a directed acyclic graph(DAG). Bayes Network represent the probabilistic relationship between attribute. Any one of the relation is given and predicting the likelihood of several possible known cases. Bayes Networks are directed Acyclic Graphs whose nodes represent variables and edges represent conditional dependencies.

An important property of Bayes Network is that they support the combination of the collaborative and the content-based approach. The collaborative approach may be used to obtain the conditional probability tables and initial belief of a Bayes Network. These belief can then be updated in a content-based manner by the student feedback. This mode of operation

enables the predictive model to overcome the data collection problem of the content-based approach. Which requires large amount of data to be gathered from a single student.

3.4 k- Nearest Neighbour

k- Nearest Neighbour is based on the principle that the instances within a data set will generally exist in close proximity with other instances that have similar properties. If the instance can be determined by observing the class of its nearest neighbours. The kNN locates the k nearest instances in the query instance and determines its class by identifying the single most frequent class label.

4. EVALUATION RESULT

Main aim of the machine learning approach is to evaluate student performance. Assessment has an important role in every higher education institution. Manual work will not produce perfect result. So we to consider a machine learning technique. In this technique, the system predict student performance based on certain parameter. Parameter selection is very important. The advisor conducts certain test to the students. Then results obtained for the students are collected and analysed. Total scores of the test is 10. Based on the test score, system produce different test result. Test result are Excellent, Good, Not so bad, Satisfactory, Average, Not Satisfactory, Not sure. The score and test result are given below.

| Sl.No | Score | Test Result |
|-------|-------|------------------|
| 1 | 10 | Excellent |
| 2 | 9 | Good |
| 3 | 8 | Not so bad |
| 4 | 7 | Satisfactory |
| 5 | 6 | Average |
| 6 | 5 | Not Satisfactory |
| 7 | 4 | Not Sure |

In this system which puts questions to students and analyses their capabilities. But the academic performances are primarily dependent on their past performance. So the system considered this two performance. Machine learning algorithm help to evaluate student performance based on test result and previous performance. Different type of machine learning algorithm are available and select best one.

5.CONCLUSION

In this paper we have proposed an approach which describes basic evaluating system in advanced education frame work. In this paper we describe an expert system which based on the questions, answers and previous performance of the students. This expert system analyses their capabilities whether they are perfect for job which they are going to do in future. Machine learning used combination of algorithm that produce excellent result. {ANN, Naive bayes} and {Decision tree, ANN} is the best combination. This combination help to evaluate student in excellent way. In future we can develop an expert system which analyses certain psychological factors and assess the job suitable for the student.

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THE ROLE OF IQAC AND RIGHT TO EDUCATION

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“Training by which current and expression of will are brought under control and become fruitful is called education”

- Swami Vivekananda

Education is a powerful tool by which economically and socially marginalized adults and children can lift themselves out of destitution and participate fully as citizens.³ Moreover, education as such should not be considered as a privilege but as a human right. According to *Hitopadesha* “Education imparts humility; humility gives stability; stability enables us to secure wealth and wealth enables us to perform *Dharma* which in turn leads to happiness”. This shows the recognition of education and that of its importance from the very beginning of civilization. Education seeks to build up the personality of the pupil by assisting his physical, intellectual, moral and emotional development.⁴

Consequently, the right to education is guaranteed legally for all sections without making any discrimination. The Constitution through 86th Amendment Act 2002, has inserted a new provision through Article 21A to the Constitution of India after Article 21.

As per Article 21A “the State is under a duty to provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine. It is a fact that even before the addition of Article 21A in the Indian Constitution the Supreme Court has made it very clear in many decisions that right to education is a fundamental right considering the provisions of Article 21.⁵

Therefore, the States are entrusted with the important obligation to respect, protect and implement all the measures that would help the deprived classes and weaker sections in the society to get benefitted with the right to education. In addition, it is to be noted that if there occurs any violations or deprivations on the part of the States there exist numerous measures that would make them accountable for such lapses with regard to the right of education.

Furthermore, the Directive principles of State Policy also proclaim equality of educational opportunities for all the citizens irrespective of sex, caste, class or creed. As the vision remained un-fulfilled and New Education Policy of 1986 was introduced. Further, it can be found that Part IV of the National Policy on Education (N.P.E.), 1986 specifically emphasized the importance of education and is addressed to Education for Equality. It has

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³ <http://www.legalservicesindia.com/article/1925/Right-to-Education.html> 08/08/2019:00PM.

⁴ *University of Delhi v. Ran Nath*, (1964) 2 SCR 703).

⁵ *Mohini Jain v. State of Karnataka*, (1992) 3 SCC 666; *Unnikrishnan v. State of A. P.*, (1993) 1 SCC 645.

assured placing special emphasis on the requirement of elimination of discrepancies and disproportions to make equal educational opportunity by focusing to the specific needs of those who have been denied equality so far. Thus, it called for satisfying the specific needs of those who had been so far educationally disadvantaged that is women, schedule castes, scheduled tribes, minorities and the handicapped.⁶

Justice B.N. Kripal made a significant observation about the major objective of education as follows “to lead us from darkness to light, to free us from every kind of domination except that of reason, is the aim of education”⁷. It is a preparation for living in better way in future with an ability to participate successfully in the modern economy and society.⁸ In other words education is the unique and most powerful tool that helps for the progress and upliftment of the society.⁹

Educational institutions plays a major role in building the character of the students. The basic training to develop as good and focused citizens are provided by these educational institutions, which will enable the students to develop their different cognitive abilities in the right manner. Consequently, maintaining better quality in the education system is highly essential, as it is the principal instrument in enabling the child to understand cultural and moral values, which will help the student to emerge out in flying colours in professional training in the future as well as it facilitates him to adjust with the environment quite comfortably.

When it comes about maintaining exceptional quality standards in the scenario of higher education the Internal Quality Assurance Cell (IQAC) plays an important role. IQAC in any educational institution is a significant administrative body that is absolutely responsible for all quality matters. Therefore, it is the most significant responsibility of the IQAC to initiate, plan, develop, implement and supervise various activities and events that are necessary to increase the quality of the education imparted in an institution or college. Therefore, it can be rightly inferred that the establishment of Internal Quality Assurance Cell by accredited institutions is a major step in pushing long-term quality standards.

Consequently, the primary objective of constituting IQAC can be summarized as follows:

1. To develop a system for conscious, consistent and catalytic action to improve the academic and administrative performance of the institution.
2. To promote measures for institutional functioning towards quality enhancement through internalization of quality culture and institutionalization of best practices.¹⁰

As far as the composition of the IQAC is considered it will largely depend on the size and complexity of the institution, and accordingly the representation of teachers may vary. Constituting such a body helps the institutions in effective planning and monitoring the entire activities of the institution. Apart from all these, it is absolutely true that the IQAC provides the

⁶B. P. Singh Sehgal, *Human Rights in India* (2004), p. 114.

⁷*TMA Pai Foundation v. State of Karnataka* (2002) 4 LR 1; 2002 (8) SCALE 1; AIR 2003 SC 355.

⁸*Brown v. Board of Education* 98 L Ed US 347 (1954); 98 L Ed 873; 347 US 483

⁹*Ibid*7;

¹⁰https://www.ugc.ac.in/pdfnews/5172195_Guideline_IQACs.pdf 10/082019 7:20PM

stakeholders or beneficiaries a cross-sectional participation in the quality enhancement activities of the institutions.

When it is taken into account of the benefits of constituting Internal Quality Assurance Cell the IQAC it can be found that it ensures an array of advantages that are as follows:

1. Ensure clarity and focus in institutional functioning towards quality enhancement
2. Ensure internalization of the quality culture
3. Provide a sound basis for decision-making to improve institutional functioning
4. Ensure enhancement and coordination among various activities of the institution and institutionalize all good practices

Along with, the IQAC functions as a dynamic system for quality changes in higher educational institutions, which in result would help them construct a well-organized system of internal communication and documentation procedures.

The IQAC to efficiently support the higher education system is expected to perform many functions such as:

1. Development and application of quality benchmarks
2. Facilitating the creation of a learner-centric environment conducive to quality education and faculty maturation to adopt the required knowledge and technology for participatory teaching and learning process
3. Parameters for various academic and administrative activities of the institution
4. Development and maintenance of institutional database through MIS for the purpose of maintaining or enhancing the institutional quality
5. Collection and analysis of feedback from all stakeholders on quality-related institutional processes and so on.¹¹

It is a fact that quality assurance is a by-product of ongoing efforts to define the objectives of an institution, to have a work plan to achieve them and to specify the checks and balances to evaluate the degree to which each of the tasks is fulfilled. Hence devotion and commitment to improvement rather than mere institutional control is the basis for devising procedures and instruments for assuring quality. Therefore it is right balance between the health and growth of an institution needs to be struck. The IQAC has to ensure that whatever is done in the institution for “education” is done efficiently and effectively with high standards. In order to do this, the IQAC will have to first establish procedures and modalities to collect data and information on various aspects of institutional functioning.

When the role of IQAC is considered with regard to Right to Education, it can be understood that by inserting Article 21A the Government has made it specific that it is the duty of the State to ensure that equal access is provided to all to quality higher education. Further, the teachers and students were able to carry out the academic activities without any restrictions. In other words, the teachers and students are entitled to enjoy the privilege of academic freedom through conducting seminars, group discussions and other motivation classes rather than being restricted in the traditional framework of classroom learning and teaching.

¹¹ Ibid;

Consequently, it can be stated that the inclusion of Article 21A right to education encompasses an array of features such as privileges, entitlements, powers and freedom, which includes the following:

1. right to free and compulsory primary education
2. right to equal access to higher education on the basis of capacity made progressively free
3. right to quality education both in public and private schools
4. right to available and accessible secondary education which includes technical and vocational education and training, made progressively free
5. right to fundamental education for those who have not received or completed primary education
6. freedom of parents to choose schools for their children which are in conformity with their religious and moral convictions
7. academic freedom of teachers and students
8. freedom of individuals and bodies to establish and direct education institutions in conformity with minimum standards established by the state

When it comes to the scenario of higher education, it can be found that it demands profoundly on national economic resources. Therefore, the responsibility of the State is on the higher side as it has to allocate the necessary economic resources. The States obligation to provide it is, therefore, not absolute and immediate but relative and progressive. However, it has to take effective measures to get benefitted with the maximum of its available resources with an objective to achieve gradually the full realisation of the right of education by all suitable means.

However, with regard to the general obligation to provide education, the State is bound to provide the same if it deliberately starved its educational system by resources that it manifestly had available unless it could show that it was allocating them to some even more demanding programmes. Therefore, by holding education as a fundamental right up to the age of 14 years the Court irrespective of determining the priorities, reminding of the solemn endeavour that had to be taken under Article 45¹² of the Indian Constitution within a prescribed time, wherein the time-limit has expired long ago.¹³

To enable realise the right to education, it is highly essential to create awareness among the public. If the individuals are aware of their rights they will definitely get the tendency to claim and get benefitted with them. Along with, it is essential to monitor the implementation of the right to education, the way in which it is being implemented, whether it covers the deprived and weaker section of the society and more. After implementation, it is necessary to maintain appropriate reports on a regular basis including the violations and deprivations occurred if any.

¹²**Article 45:** The State shall endeavour to provide early childhood care and education for all children until they complete the **age of six years**.

¹³. (1993) ISCC 645, 681.

Additionally, it is the responsibility of the authorities to seek appropriate remedies against those who are violating the rules and regulations in connection with the right to education. Along with, it is important to promote, support and campaign for the complete implementation of the provisions mentioned under right to education by holding the State accountable for unnecessary infringements.¹⁴

It is a fact that the right to education has been recognised since the Universal Declaration of Human Rights (UDHR) in 1948. Therefore, it is not a concept which is entirely new and difficult to implement. Article 26 of the Universal Declaration of Human Rights (UDHR) Declaration states that:

“Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory...education shall be directed to the full development of human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among racial or religious groups...

Apart from the UDHR, the concept of right to education has been safeguarded and conserved in a range of international conventions, including

1. The International Covenant on Economic, Social And Cultural Rights (ICESCR, 1966),
2. The Convention on the Elimination Of All Forms Of Discrimination Against Women (CEDAW, 1979)
3. The Convention on the Rights of The Child (CRC, 1989).

Apart from these, Right to Education has also been incorporated into various regional treaties:

1. African Charter on Human and Peoples' Rights (1981) (article 25)
The main human rights instrument of the African Union guarantees the rights to human rights education in the African Charter on Human and Peoples' Rights: " States Parties of the present Charter shall have the duty to promote and ensure through teaching, education and publication, the respect of the rights and freedoms contained in the present Charter and to see to it that these freedoms and rights as well as corresponding obligations and duties are understood..." (Article 25)
2. The Council of Europe has adopted several declarations about the right to human rights education
3. Council of Europe's 1981 Declaration Regarding Intolerance - A Threat to Democracy (Paragraph IV.iii)
4. Council of Europe's 1982 Declaration on the Freedom of Expression and Information (Paragraph 3.b)
5. 1988 Declaration on the Equality of Women and Men of the Committee of Ministers of the Council of Europe (Paragraph 7)

¹⁴<https://www.right-to-education.org/page/understanding-education-right> 10/08/2019 8:30 PM

6. Protocol of San Salvador: Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social, and Cultural Rights (1988) (article13).¹⁵

This Additional Protocol was adopted in 1988 and came into force on the 16th of November 1999. This protocol specifically focuses on the obligation of the State to promote economic, social, and cultural human rights, including the right to education. Additionally, this protocol effectively demonstrates and proves that States may fulfill these obligations through enacting suitable legislations, planning and enforcing effective measures of protection of rights, and to refrain from committing discriminations.

Through considering all the above mentioned treaties, protocols and declarations, it is evident that the nations all over the world are enthusiastic in implementing the right to education. When it is considered in the Indian scenario, it can be found that Right to education has been made as fundamental right, which was earlier considered under the directive principles of State Policy. The important advantage of making it a fundamental right is that both the individuals as well as the society as a whole will be benefitted from it. Moreover, it will act as an important element to maintain peace among all the sects of the society as well as enables sustainable development.

In other words, through maintaining quality in educational scenario will enable the country to achieve progress in all the fields including social and economic development. Education is such a powerful and strong tool which supports the development of the complete potential of everyone. Along with, imparting proper knowledge enables the individuals to lead a life with dignity, patience and tolerance, which ensures well-being for all. Therefore, through implementing the right to education, one gets benefitted with the following:

1. Ensures to enjoy the privilege of an authorisation right
2. Effectively functions as an indispensable means of realising other rights
3. Ensures efficient contribution to the complete development of the personality of human beings
4. Enables to bring the deprived and underprivileged sections from insufficiency to adequacy, and much more.

To sum up, it can be inferred that the right to education ensured by the Constitution of India will be complete only when the appropriate measures are taken by the States to extend it to the real beneficiaries. The teaching-learning process is a continuous one, it does not comes to end at a particular point. Consequently, the wider scenario of education especially the higher education requires effective planning, co-ordination and development. Since enhancement of quality is a continuous process, the IQAC is assigned with a crucial role and it will have to carry out it in an exceptional manner. Therefore, the officials of the Internal Quality Assurance Cell have to chart out their plans in such a way that it will enable them to accomplish the required quality standards and prescribed goals within a short span of time.

¹⁵<https://www.newtactics.org/advancing-childrens-right-education/what-right-education-why-it-important-protect-and-advance> 10/08/2019:10:00PM

EMERGING TRENDS IN TEACHING METHODS

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Introduction

“Our colleges do not hold a place of high esteem, profound scholarship and enlightened research”-Swamy Vivekananda

Morrison opined that teaching is a disciplined social process wherein the teacher influences the behaviour of the less experienced pupil and helps him to develop according to the needs and ideas of the society.

Education in India was severely scrutinized by many committees and hair-splitting seminars were conducted on national and state levels. A heap of suggestions was also formulated. We can categorize these proposals into three (1) in the point of view society: who is the real beneficiary of education, (2) In the point of view of students: who are practicing every change brought by the authorities and (3) In the point of view of teachers: who are imparting training to implement all changes in education. So any reforms without considering the interest of all these stakeholders will be futile. It is from this platform that we have to analyse education reforms.

Teaching is an art as well as Science. As an art, it portrays the imaginative and artistic abilities of a teacher in creating a worthwhile situation in the classroom in which the learners learn and achieve the immediate and goal of education. As a Science, it points to the logical, mechanical and procedural steps to be followed to attain an effective accomplishment of goals. As the management expert of the class, the teacher uses his authority and leadership as twin keys to classroom management. The scientific consideration of teaching has led to the evolution of the concept of teaching technology

The accumulated knowledge that the teacher is required to impart to the student is in a continuous flux, growing exponentially with time. It is in a perpetual stage of becoming. Self-study by the teacher on a continuing basis is therefore, a necessary condition for updating one's intellectual base and keeping pace with advancement not only in the field of one's special interest but in proximate areas as well. Only then a teacher would become highly competent and resourceful. The fact that quality of an educational institution which is largely dependent upon the composition and competence of its teaching faculty hardly needs emphasis. Therefore, it is here that the role of a teacher depends on the way he teaches and methodology he adopts. In the field of education, the proliferation of new and changed courses led to the introduction of varied teaching methods and devices.

There is no dearth of delivery methods in education. The techniques such as collaborative learning, small group learning, brain storming, teacher demonstration, audio-visual methods,

buzz groups, frame shifting, contacting students to share power, role playing, testing computer aided instruction and students as teachers etc are also used. Similarly, seminar paper presentations, symposiums, panel discussions team teaching, workshops etc. are other important components of teaching technology. The pedagogic response has another important feature. The proliferation of methodologies has given rise to expanded teaching devices. Overhead projectors, flip charts, film, photography, TV, magnetic tape, video tapes and computers etc are now a days new methods of delivery.

The most important traditional teaching methods are Lecture method, Case method, Problem method, Seminar method, Discussion method, Tutorial method, Butcher method, Self-assessment method, and Role playing. Modern methods of teaching are teaching through Audio visual programmes, through computers, Project work and Co-operative method of teaching.

Lecture Method

Of all the methods of teaching the first and the foremost is the lecture method. Lecture method means a teaching period occupied wholly or mainly with continuous exposition by the lecturer. Lecture method is a British method. It is described as teacher centered method involving one-way communication procedure.¹⁶ It started as a formal discourse where in a learned person exposes the complexities of a topic or subject to a motivated audience. It is no more than deposit making or banking approach wherein educator's role is to fill the students' mind with deposits of information. However, planning of an effective lecture requires considerable skill, effort and time. The teacher has to take decisions as to how would he introduce the topic. The method by which he would narrate and explain the topic. The type of questions he would ask to get adequate feedback from students. The method by which he would summarize the topic. While all these questions are important, it is the clarity of presentation which is the most appreciated quality of good lecturer.

It is to be noted that education is no longer one-way process of transmission of knowledge. Lecture method is seen as requiring little intellectual effort, reducing student involvement to the taking of notes and virtually no scope for the learner to think. Further, it resists dialogue, treats students as objects, inhibits creativity and dehumanizes the learner. Hence this method is not adequate to promote effective learning. Interaction as a method of teaching has been evolved recently to supplement the traditional lecture. It is in away, modified lectures for that reinforces the lectures through observation, discussions and questions. Buzz sessions can be combined with lectures. Because of the intensive involvement of the students, the content of the lectures becomes more meaningful to the students. It is a two-way communication wherein both the teacher and the students are involved in the learning activities. Discussion elicits higher levels of reflective thinking and creative problem solving. There is also evidence to show that students often prefer to participate in discussions rather than to be passive learners in a lecture. The major models under the interactive method of teaching are tutorials,

¹⁶<http://collections.infocollections.org/ukedu/en/d/Jgtz017e/6.9.1.html>

preceptorials, group discussions and seminars. The success of this method depends upon the teacher who has to put in considerate effort as well as time in planning and organizing the modified lectures.¹⁷

Merits of Lecture Method

1. The teacher can help the student to grasp the basic and essentials of a subject by explanatory lectures.
2. Competent teacher can quicken the of students and make student understand the intricacies of the subject easily.
3. Industrious and intelligent teacher enables the student to get an integrated view of the whole subject and know the latest developments in the field.
4. It may be true that, a systematic and complete view of a subject can be gathered from a standard textbook put an inspiring lecture cannot stand in comparison to the toneless words of a textbook.
5. More efficient lecture can develop the students' skill of analysis, logical reasoning and effective communication.
6. Teacher can cover a lengthy syllabus in a short span of time.
7. A single teacher can teach many students and she can solve individual difficulties and
8. A lecture can bring textbook up-to-date.

However, the merits of lecture method are counter balanced by various defects.

Demerits of Lecture Method

1. All merits of lecture method can be materialized only if the teacher is industrious and efficient in the success of their method depends a lot on the oratory skill of the teacher.
2. Since students are spoon-fed, their power of observation, analysis and logical reasoning which is essential in learning process is not stimulate it at all. This discourages the habit of independent thinking
3. As the students are passive listeners there is no active student participation. So, they do not express themselves and do not get an opportunity to develop themselves.
4. As the students are silent listeners the teacher does not strain to update their knowledge.
5. While imparting lecture there is very chance of the recipients to drift away from the subject.
6. Teacher is not sure whether the students have understood what has been taught in classroom.
7. Some teacher's ordinate teaching to examination. They are bothered about equipping the students with the materials for examination.

¹⁷<https://www.biyanicolleges.org/lecture-method-teaching-method/>

Problem Method

J.H. Landmann introduced the problem method. It is the next stage in the case method evolution. This method improves the mental ability of the student and helps him very much when confronted with a problem. The problem method is a genuine scientific procedure which constitutes a significant problem, induction, tentative hypothesis, deduction and conclusion.

In the problem method, a problem is given to the student and each problem is appended with a bibliography directing the student as to investigate more. By independent thinking, he formulates a solution to the problem. Library being a laboratory of a student of Arts subjects should be fully equipped with books, commentaries and should be supported by renowned journals for detailed study and reference.¹⁸

Merits of Problem Method

1. The method effectively forces the students' attention on the problem under enquiry.
2. It challenges student to find out his own solution and conveys a sense of practicability that has direct reference to future professional activity.
3. In problem method students get training in analysing facts and application of correct principles.
4. By independent thinking and arguments solution of problems acquire intellectual powers and stored energy which help him to solve difficult problem.
- 5.

Demerits of Problem Method

1. The main defect is that it is time consuming and it should not be used alone.
2. It neglects historical development and provides neither the conceptual framework nor socio economic perspective that case method more accurately convey.
3. In practical aspect it is very difficult to deal with successfully.

Seminar Method

This method is more used in post-graduation level. Students and teachers assemble in a seminar hall and then paper is presented by one of the students about a relevant topic. The student just introduces the matter or problem before the group. The printed matter is circulated within the group so that everybody will be aware of the problem. Every student will go through the subject and its merits, demerits, its impact on society and on the existing system and more. In this system, after the presentation of the paper everybody will come forward with their individual questions and opinion. Further, after an elaborate discussion, the host concludes the subject by stating various points which arose at the time of discussion. Conclusions and suggestions drawn shall be reports for further reforms.

¹⁸https://en.wikipedia.org/wiki/Teaching_method

Merits of Seminar Method

1. It is helpful for the student to regard the seminar as both an educational experience and as part of a specific programme of preparation for the examinations.
2. This will improve the mental ability of a student to think all sides of a problem its merits, demerits its impact etc.
3. During seminar the student can develop the nascent skills in oral argument.
4. Debate skill increases.
5. It'll improve the method of presentation which helps the student in his future profession.
6. It is an escape from dry classroom lecture by creating a pleasant atmosphere of discussion.

Draw Backs of Seminar Method

1. The main defect of seminar method is that it is time consuming.
2. Through seminar method all the topics cannot be dealt through this method.
3. This method is money consuming. The materials to be printed and circulated for the arrangements of a seminar and many students cannot afford it.

Discussion Method

Under this method a topic is assigned to a student, he will prepare that topic and present it before the whole students in the classroom. The teacher announces the topic to be prepared long before the class and everybody will be aware of the topic and read relevant materials and have got an overall idea about the topic. After presentation of the paper, discussion under leadership of teacher is done. Teacher can guide the student in a proper way that he can formulate the discussion by covering all points which invariably left by the person who presented it.

The discussion method¹⁹ has been appreciated by most of the thinkers mainly because of the importance given for teacher as a guide. Additionally, a teacher can help a student a lot under this system than just lecturing. Teachers can guide students in proper direction. This method of teaching is being used most widely, because it is so simple and easy to do. However, the main argument against this system is that it is time consuming.

Tutorial Method

This method is based on Gurukula system of education. In this method students are grouped as small groups and throughout the course each group will be instructed under a tutor. The major feature of this system is that this tutor is to be the friend, philosopher and guide of the students till the end of the course. In the Gurukula system of teaching, the teacher tries to solve the individual problems of the student at a level in which will improve the

¹⁹<https://teach.com/what/teachers-know/teaching-methods/>

student's tutoring. There will be sentimental and constant contact between the student and the teacher. This system works only if the student is honest and the tutor is competent. Professor Upendra Baxi has suggested this method at P.G level of education. When we compare seminar method with tutorial method, seminar method is subject oriented while tutorial method is student oriented. But this system has also been criticized as wasteful and impracticable to large classes.

Butcher Method

Under this method, the teacher uses a calendar like material and while delivering the lecture he writes important topics, leading causes on that material every day which will help the student and instructor to recollect what was studied earlier.

Self-Assessment Method

It is a process by which the students grade their own work. This method creates an environment in which students learn to assess their own work and that of their fellow students which may be more valuable for all concerned than the artificial form of assessment by an academic authority. Self-assessment enables the students to determine what good work in any given situation is. In this method students work to learn themselves and will assess and value their own work. So, it enables the student to become effective and a responsible learner. Use of self-assessment is a necessary skill for lifelong learning because the learner develops the ability to evaluate and judge of their own performance rather realistically as well as helps to monitor their own learning effectively.

The main defect of this method is that the student is directed and focussed towards the examination and not towards acquiring knowledge. Students without proper guidance from a teacher cannot credibly involve in determining and discussing material in all areas.

Modern Methods

The advent of computers as well as the advancement of science, technology, telecommunications and the revolution of Information Technology on the one hand and ongoing process of liberalization and globalization on the other side excessive changes are undergoing in the country and the effect of that are obviously visible in almost all walks of life. Consequently, there will be a tremendous impact and change on the outlook of the people as well. Accordingly, it is necessary to implement corresponding changes in the methodology of teaching and teaching styles. This is perhaps the biggest challenge in the new millennium.

Audio-Visual Aids

In the regular classroom lectures slides, exhibits, charts and graphs can be viewed with the help of projector and in this audio and video cassettes plays an important role. The audio-visual aids help the teacher to secure the interest and attention of the students. They motivate the physical and mental activities of the students.

It will save time and make learning more effective, durable and students have clear conception of ideas, information facts and principle. It provides a congenial atmosphere in the class where the pupil and the students work co-operatively. However, this system is not free from some flaws, the major one is that it covers less areas compared to other methods. It cannot be used as a substitute but only as a supplementary method.

Teaching Through Computers

The advancement of technology has brought us many new things including Cyber Space. Now, the World Wide Web (WWW) is a method for organizing information distributed across the internet. The internet is a revolutionary phenomenon. It is a method for connecting a computer system. It has an inherently global reach. It is a new kind of market. It can be even an electronic courthouse in which disputes are decided it can stimulate as well as shape new institutions. The net is also widely used as a medium of instruction for education. The internet can be used to teach and researching can be used to aid your findings.

One can witness how interest in bringing commerce to the doorsteps of the consumer. Ecommerce is one of the tangible benefits of the net. The internet is reaching great masses, and it's changing the lives of us humans and it produces for reaching changes for years to come.

Project Work

Recently project work is identified as a suitable method of imparting education. Project work is teaching/learning methodology which enables the student to learn life itself. Under the teacher's supervision, the students either individually or in groups, plan to investigate a problem in real life. Project work is highly demanding on the time and attention of the teacher. Teachers should help the student at the very outset the project, in setting targets achievable within the constraints of time and resources. Further he can monitor the progress of the project. On completion, the teacher alone or with the help of other faculty members evaluates the project and educates the student in the process of evaluation itself. This method actively involves the student in his learning, deepens his understanding to the subject, gives him the opportunity to think, work independently and develops his communicative skills etc.

Co-Operative Method of Teaching

The success behind this method is going for a holistic approach /interdisciplinary approach to the problem. The problem for the subject will be thoroughly investigated from various angles, that is social, political, historical, economic and more so that all the dimensions of the problem are made known to the students. It is observed that students are better trained through this method.

This method had its deep roots in the American Realism. Holmes and Cardozo, who are the fore runners of Roscoe Pound, had charted a definite course for philosophy oriented to social goodness and social justice. They brilliantly demonstrated the thesis that a subject to be correctly understood should be studied in the context of history, sociology, economics, and psychology as well as overall objective trades, traditions and needs of each society.

From the foregoing analysis of various methods, teaching is not merely a methodology but is a technology. The methods discussed above are having influenced by Anglo American systems. It is submitted that there is no single teaching method, that can help in promoting all the objectives of modern education and the teacher must use not only different techniques within the classroom but also outside it. A suitable mix of teaching methods requiring great creative effort spread over a considerable period is the need of the hour at this critical juncture.

As a result of online learning there is a shift of emphasis from teacher to learner with the latter as customer is catching on in this digital age. Colleges and universities should be able to provide e-courses on the shelves. The teachers will have to put course material on the web, conduct online tests and grade students. The method of delivery should be collaborative, co-operative or teamwork type than competitive, passive and individualists' websites can lead learners to sources of information and virtual classrooms. Teachers and students should be oriented to look at the web as an information provider. However, it is submitted that e-learning cannot replace the traditional methods of teaching.

It is found that one of the inadequacies inter alia, in the existing system of education is uninspiring method of teaching. It is in this context, in India, the University Grants Commission's (UGC, New Delhi) attempt on faculty improvement programmes including the academic staff college exercise for the teachers to have to be appreciated to the compulsory participation in continuing education programmes. In the field of philosophy, it has become imperative even more because of the falling standards of education in the colleges and university departments.

IMPACT OF CLOUD COMPUTING IN HIGHER EDUCATION-A REVIEW

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Abstract

Cloud computing (CC) is an important emerging area that will dominate in the future. Resource utilization with minimum cost is one of the major benefits of cloud computing. Education is a key factor enriches the economic growth of a country. To improve the quality of education definitely, the teaching and learning aspects should be advanced with new technology. The higher education sector has faced a financial crisis to cope with latest technical scenario. For higher education, decisions to adopt cloud computing will be influenced by more than technical and cost considerations. Due to the virtualization resources through the Internet, cloud computing has adopted by different institutions. Cloud computing will enable learning without going to the classrooms. Different academic institutions can link by developing cloud computing infrastructure prototypes. This paper reviews major concepts of cloud computing and how it can be utilized in higher education. It will also meet the growing demand for distance learners. Major challenges involved in cloud computing include security, interoperability, control, performance, integrity, and reliability

Keywords: *Cloud Computing (CC), Higher education, Virtualization, Prototypes*

1. INTRODUCTION

The Higher Education (HE) has an import role in the development of society. The collaboration of different Universities, students, researchers and government essential for the improvement of society. The cloud computing technology is good platform for this. Cloud computing is a method of computing where in enormous adaptable IT-related abilities are given as a service to outside structures by means of internet technologies [1]. Cloud computing space is rapidly growing and offering different aspects. Nowadays many higher education institutions taking advantage of cloud computing benefits including cost savings, scalability, agility, and modernization. Massive Open Online Courses (MOOCs) are cloud-based educational platforms with a promise of transforming higher education. It will definitely improve the quality of Higher Education. Initial transformation requires a massive funding and investment which sometimes difficult for institutions so several cost cutting measures are required for this. Users can access cloud computing resources only using high speed internet connection and no additional hardware needed, because computation takes place in remote server, the user's hardware and software requirements are much lower than they would be

otherwise, reducing both cost and maintenance requirement and improve the quality of education[2].

2.1 CLOUD MODELS

Cloud computing including various service models and deployment models. Service models classified three types: IaaS (Infrastructure as a Service), PaaS (Platform as a Service) and SaaS (Software as a Service). Other known services by cloud such as MBaaS (Mobile Backend as a Service), DaaS (Data as a Service), MaaS (Monitoring as a Service) etc.[3]

2.2 CLOUD SERVICE MODELS FOR EDUCATION

Cloud computing provide different service model architectures. The following summarize definitions and examples.

- i. **Software as a service (SaaS)** – This service model provides the facility to host and manage software applications over the internet along with the necessary infrastructure and maintenances such as security and updates for the software application. Since applications are offered through software on demand, they can be deployed quickly which brings ease use and monetary benefits. Examples includes Google apps, Sales force.com
- ii. **Plat form as a service(PaaS):** This service model supplies the required on-demand environment or platform for developing, testing, deploying and maintaining software applications. Examples are Google App Engine, Windows Azure and Force.com
- iii. **Infrastructure as a service (IaaS) :** This service models rents the basic infrastructure facilities such as virtual machines and servers. It is the most basic service provided by the cloud. The user has control over operating systems and deployed applications. Examples are Amazon Web services, Century Link and Rack space

2.3 CLOUD DEPLOYMENT MODELS

NIST Special publication 800-145 identifies for Cloud computing Deployment models(Mell and Grance,2011):

- **Private cloud**-provides an infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers. It delivers a higher level of security and privacy through both company firewalls and internal hosting to ensure operations and sensitive data are not accessible to third-party providers.
- **Public cloud**-the cloud infrastructure is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organization, or some combination of them. It exists on the premises of the cloud provider.
- **Community cloud**- the cloud infrastructure is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns (e.g., mission,

security requirements, policy, and compliance considerations). It may be owned, managed, and operated by one or more of the organizations in the community, a third party, or some combination of them, and it may exist on or off premises.

- **Hybrid cloud**-the cloud infrastructure is a composition of two or more distinct cloud infrastructures (private, community, or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds)[4].

3. PROMISES OF CLOUD IN HIGHER EDUCATION

Education and teaching field always need to adopt new tools to enrich content delivery, communication and collaboration. Most of the facilities are offered by Information technology. Faculty and students fully leverage benefits using Internet technologies through web browsers

Introducing students to cloud computing to is beneficial to education and gaining necessary skills and useful for institutions and save a lot of resources. RedHat Enterprise Linux and Amazon provide cloud computing as a collection machines with storage functionality and different operating system [5]

3.1 CLOUD SERVICES FOR HIGHER EDUCATION

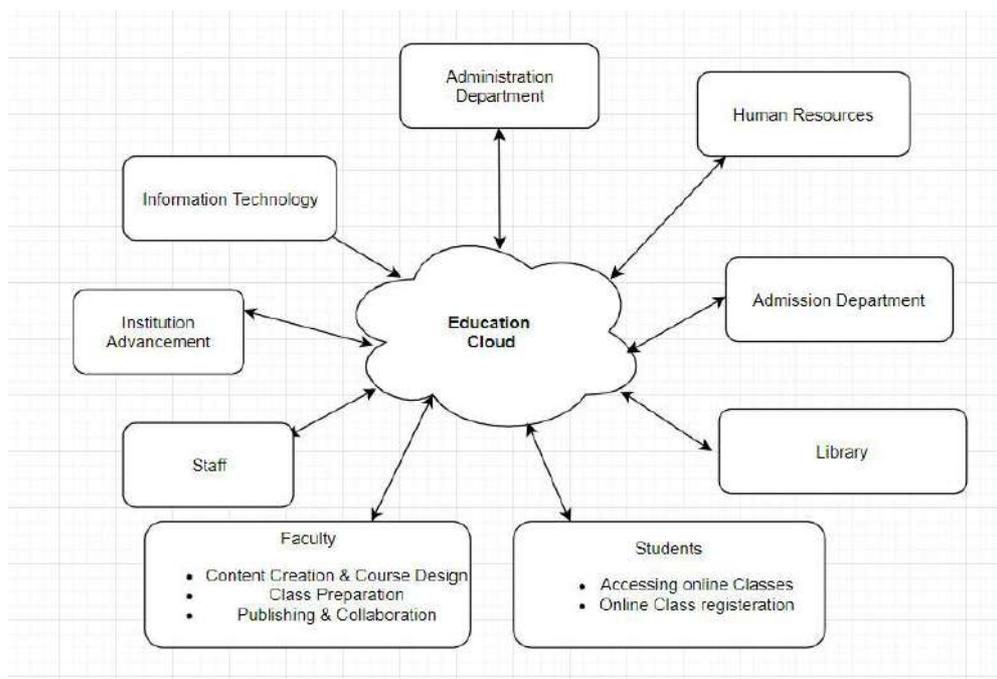


Figure 1

The higher education information management must analyse the distinct features of cloud computing and make careful evaluation of the proper implementation of it. Academic

institutions can create its own private cloud within its infrastructure. Cloud computing technology allows organizing virtual classes and also use other benefits like education system, research tools for students and faculty based on their demand. The Institution can also reduce their expenditure cost for licenced software.

4. BENEFITS AND CHALLENGES

Cloud computing is a technology which higher education can easily adopt. It dramatically lowers the capital investment in hardware and software infrastructure for higher education. Public cloud computing implementation in Universities may be beneficial to small colleges that do not have enough facilities. Cloud servers allow institutions to offer these innovative teaching methods that can be accessed by students from anywhere via tablets, computers or mobile devices Scalable cloud storage offers colleges and universities the ability to quickly expand storage capabilities. Institutions of higher learning are looking for new ways to make their organizations more efficient.[6]

A Comprehensive definition of Cloud computing given by National Institute of Standards and Technology states that “Cloud computing is a mode for enabling ubiquitous, convenient, on- demand network access to a shared pool of configurable computing resources (e.g .networks ,servers,, storage, ,applications and services) that can be rapidly that can be rapidly provisioned and released with minimal management effort or service provider interaction[7].

There are numerous challenges in applying cloud technology in education in a way that would allow for its significant and rapid growth. The biggest challenges for rapid adoption of technology by educational institutions are lack of resources/expertise, security and compliance. As more colleges and universities are placing more workloads in the cloud, the need for expertise has grown. Training of IT and development staff will be critical in helping address this challenge. Cloud computing systems and services are subject to malicious attacks from both insiders and outsiders. Other challenges including the costs of cloud, governance and control and the speed of uploading files.

5. CONCLUSION

Higher education is in a constant state of change and evolution mainly as a result of significant Challenges arising from efforts in adopting new and emerging technologies. Implementing a successful Cloud computing strategy in education takes time and effort but now it becomes a main stream technology. It is recognized huge benefit to higher education including lowering administration and operational costs. Entire world of knowledge can now made available to faculty and students can access information using any device from anywhere. Many higher Education institutions implement cloud based technology because of learning management system and student information system.

Like other technologies, clouds computing also faces certain challenges which need to be understood and overcome in order fully exploit its benefits in higher education.

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APPROACHES TO QUALITY LEARNING AND THE IMPORTANCE OF LEARNING ENVIRONMENT

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Abstract

An analysis about learner satisfaction and learner outcome had been imperialized into the collage of quality learning these days. The newly emerged process of quality learning has rooted more into the educational criteria and made them a strategic move towards the enthusiastic nature of the learner which helped the entire system to donate a quality assurance to the learning process, thus by enriching the people to look into their own self evaluating nature. The contributions done by NAAC overseed with IQAC had an instillating momentum on quality consciousness among the higher educational institutions that are crucial in providing a learner based environment which is suitable for the individual integrity rather than a mere commodification of higher education. Each institution is important as a democratic way of implementation can be seen here from the behalf of NAAC which provides all its quality regimes for these institutions thus helping it to have a deep understanding in its strength, weakness, potentials and limitations in a more effective manner while carrying out its educational mission. Provisional remarking of all these adjoined institutions on the basis of the quality and apportion of good clamant learning environment really worked out to bring a competitive spirit. This competitive spirit playing a vital role in articulation of the best in them to come out and thus by letting the learner to experience proper education rather than the mere gulping of knowledge. Thus by mending a way like this through which NAAC has assured very efficient ways of substantial approaches to Quality learning thus proving the importance of learning environment.

KEYWORDS: Quality, Learning, Environment, NAAC, IQAC, Institution

Introduction

An analysis of learner satisfaction and learner outcome had been imperialized into the collage of quality learning these days. The term quality learning environment encompasses the Higher Education culture and higher education climate. All these were aroused from the basic question “ **Will Higher Education in INDIA ever be ‘World-Class’?**”. The quality of higher education remained the main concern for all the stakeholders in the education system and the poor quality of higher education affects the overall progress of any nation. Progress of a nation is possible only when its citizens are dynamic, enterprising and responsible. Nations progress cant be achieved until, and for this, education is the most important tool to create such type of citizens. Higher education plays a vital role in the overall development and growth of a nation. It actually broadens the cerebral power of the individual and also gives a specialized wider

perspective of the world around. Being an essential survival tool, the core mission of higher education undertake all kind of research to provide service to the community. An Achievement based on this 'learner satisfaction and learner outcome' -based learning precisely over breed to the quality of our Higher Education.

Content

Our nation has very inclusively maintained a tertiary level governing body i.e University Grants Commission, which enforces its standards, advice the government and helps to coordinate between the center and the state. NAAC is an accreditation body, which comes under the University Grants Commission of India. Its an autonomous instituting established by the UGC in 1994. The agenda, that formulated to assess and accredit institutions of higher education with ceratin objectives, thus by helping the institutions to work continuously to improve the quality of education and learning environment. The in-depth analysis of all the features and the college authorities to claim regardful evaluations through a different parameter that make sure the process of assessing is well disciplined. And here NAAC as an assessment council of individual integral qualities and helping the institutions to wage with the necessities. Thus a proper substantial answer to the above question can be thus pointed as NAAC and its quality assurance schemes. A globalized quality in learning has become a cakewalk for the institutions because of the earnest intervention of NAAC. The overall representation of each and every institution under the NAAC's quality based assessment thus waves a regardful owe to enhance a quality learning by enriching learning environments and these been successfully implemented by the entire system of education throughout. Yet a very conditional apprehension of detailed study based on this should be done in a way or another to propagate the individual aspects of the learning or learner- satisfaction based learning. So an assured result can be witnessed on the learner outcome. All these individualistic characters combined together to form an exact order and detailed strategic formula to prove the necessities of proper approaches to quality learning. The IQAcells working on behalf of this produced an enormous amount of suitable work for the up-gradation of the quality matters. The programs that they conduct always ignites the thrive towards the achievement of a good learning environment in almost all institutions. Every time IQAC's along with NAAC improvises ceratin facilities and classifies the institutions on the criteria of the education being imparted. The newly emerged process of quality learning has rooted more into the educational criteria and made them a strategic move towards the enthusiastic nature of the learner which helped the entire system to donate a quality assurance to the learning process, thus by enriching the people to look into their own self-evaluating nature. Whenever quality learning founds to be an integral part, the assessment of NAAC plays a crucial role which altogether enhances the situation for quality learning throughout these Institutions. Apart from all these the findings readily disqualifies the imperfect attributes and articulates a sudden short mounded peculiarities to skepticize the accreditation if though it was already given. By this way, a truly democratic judging and criticizing council been upthrusted and rooted in its enormities. This comprehensive by factual

council providing and ensuring the far most possible way of enacting good learning thus by rooting a deep seed into the higher education platform of India, And also its credibility has been questioned all over the world thus waving a green flag for India to move furthermore. Being the second-largest higher education system in the world, our nation has its own classified entity towards quality learning. And this can even raise our standard to the world's largest and best Higher Education System. The enforcement of all these utilities, in a way, has ensured the completed equity of quality learning and the importance of learning environment.

Criteria used for Assessment:

- (1) Curricular Aspects
- (2) Teaching learning and evaluation
- (3) Research consultancy and extension.
- (4) Infrastructure and Learning resources.
- (5) Student support and progression.
- (6) Organization and management.
- (7) Healthy Practices

The newly formulated initiatives depleted features like adding Quality sustenance and promoting it by sensitizing institutions to concepts such as credit transfer, student mobility, mutual recognition which enables furthermore quality to learning. A group of Networking has enabled among accredited institutions in order to promote and enhance the exchange of best practices through which everything will work as a cluster form. And this cluster combination always works as a perfect hegemonical aptitude towards the quality learning environment. Thus Promoting the concept of cluster combination, lead colleges and a cluster of colleges for quality initiatives. The Formation of Quality circles to follow-up the accreditation outcomes to ensure a more viable atmosphere for basic and suitable education. The State-wise analysis of accreditation results for policy initiatives which are later on marked as a very remarkable feature to the endorsement of qualities in certain aspects. The University Grand Commission, in its 532nd meeting held on 24-05-2018, approved the objectives set for improving the quality in Higher Education Institutions (HEIs). All HEIs shall strive to achieve the following Objectives by 2022:

1. Improve the graduate outcomes for the students, so that at least 50% of them secure access to employment/self-employment or engage themselves in pursuit of higher education.
2. Promote link of the students with the society/industry such that at least 2/3rd of the students engage in socially productive activities during their period of study in the institutions.
3. Train the students in essential professional and soft skills such as teamwork, communication skills, leadership skills, time management skills, etc; inculcate human values and professional ethics, and the spirit of innovation/entrepreneurship and critical thinking among the students and promote avenues for the display of these talents.
4. Ensure that teacher vacancies at any point of time does not exceed 10% of the sanctioned strength, and 100% of the teachers are oriented about the latest and emerging trends in their

respective domains of knowledge, and the pedagogies that translate their knowledge to the students.

5. Every institution shall get NAAC accreditation with a minimum score of 2.5 by 2022.

The following initiatives proposed by UGC shall be undertaken in pursuit of the above objectives:

1. Induction programme for students.
2. Learning outcome-based curriculum framework - revision of curriculum at regular intervals.
3. Use ICT based learning tools for effective teaching-learning process.
4. Soft skills for students.
5. Social and Industry connect for every institution: Every institution shall adopt at least 5 villages for exchange of knowledge and for the overall social/economic betterment of the village communities.
6. Examination Reforms - test the concept, and application; exit examinations.
7. Tracking of the student progress after completion of course.
8. Induction training for all new teachers, and annual refresher training for all teachers - role of the NRCs; and mandatory leadership/management training for all educational administrators.
9. Promoting quality research by faculty and creation of new knowledge.
10. Mentoring of non-accredited institutions, so that every institution can get accreditation by 2022.

Different kind of Learning Outcomes which enabled the students at the end of completing a quality education will be able to appreciate the ideas of self-knowledge and self-reliance, thus by Recognizing the social and emotional problems of students and understand ways of supporting them in different ways to achieve the intact score of victory. The importance of these issues in building a strong institutional culture blends the quality in satisfying a differential element of higher education to achieve a successful ripen fruit.

Conclusion

The contributions done by NAAC overseed with IQAC had an instilling momentum on quality consciousness among the higher educational institutions that are crucial in providing a learner-based environment which is suitable for the individual integrity rather than a mere commodification of higher education. With the help of NAAC, IQAC too substantiate a multidimensional crosswalk over the literary participation in the institution's quality enhancement activities which provides a very potent quotient and clarity enriched with the internalization which institutionalize all the coordination enhancement of various activities that led to the good practices to ensure a contrasting achievement in quality learning and its purpose throughout the Indian nation in almost all the institutions. Each institution is important as a democratic way of implementation can be seen here from the behalf of NAAC which provides all its quality regimes for these institutions thus helping it to have a deep understanding in its strength, weakness, potentials, and limitations in a more effective manner while carrying out its

educational mission. Provisional remarking of all these adjoined institutions on the basis of the quality and apportion of good clamant learning environment really worked out to bring a competitive spirit. This competitive spirit playing a vital role in the articulation of the best in them to come out and thus by letting the learner to experience proper education rather than the mere gulping of knowledge. Thus by mending way like this through which NAAC has assured very efficient ways of substantial approaches to Quality learning thus proving the importance of learning environment.

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A COMPARITIVE STUDY ON FLIPPED CLASSROOM STRTEGY AND JIGSAW TEACHING STRATEGY

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Abstract:

There is increasing pressure for higher education institutions to undergo transformation, with education being seen as needing to adapt in ways that meet the conceptual needs of our time. Two major teaching strategies in this regards are the flipped classroom strategy and jigsaw teaching strategy. The basic principles of a flipped classroom teaching method are to deliver content outside of the class and to move active learning into the classroom. It allows for self-paced learning and enables exploring subjects in a deeper manner. On the other hand, jigsaw is a grouping strategy in which the members of the class are organized into groups then rearranged in new groups to share their learning. This is an excellent method for improving students' teamwork and communication skills. Both these methods have their own advantages and are successfully implemented in the teaching learning process. This paper contributes a comparative study on both these methods by considering the effect of these methods on students' achievement, learning outcome, and self-regulated learning skills.

Keywords: *Teaching Method, Flipped Classroom Strategy, Jigsaw Teaching Strategy*

I. INTRIDUCTION

In recent years, the international educational system has witnessed rapid and sequential changes. Effects of such changes are reflected on to what extent the developed and developing countries are interested in reforming and using new strategies in learning and teaching processes. Consequently, many countries attempted to make structural modifications on teaching methods in order to face the acceleration resulted from the huge changes in knowledge and informational fields. Such challenges require doing a comprehensive review of the educational system in most countries in the world. This leads to find out new approaches to develop and update teaching processes. These approaches focus on the role of learner and make him the center of learning process. They assert that each student can learn and reach the proficiency level, if teaching and learning environments and teaching methods are suitable to his abilities and needs. Two important strategies of such modern methods and strategies are the flipped classroom strategy and jigsaw teaching strategy. Tully [1] pointed out that flipped classroom is one of the teaching and learning patterns and strategies that facilitates student-teacher interaction by using technology tools. Flipped classroom method has the potential to create fundamental changes in the educational context and institutions. According to Aronson et al. the "jigsaw" technique is a cooperative learning strategy based on group dynamics and social interactions [2]. This subset of learning techniques is the most well-studied and most frequently used of the cooperative learning approaches to date [3]. More over jigsaw strategies

have been used in group-based learning environments and involve students cooperating with their peers toward an educational goal.

The rest of paper is organized as follows: Section II provides an overview of the flipped classroom strategy, its benefits and challenges. Section III provides jigsaw teaching strategy, its benefits and barriers for implementing the strategy. Finally, Section IV draws conclusions briefly.

II. FLIPPED CLASSROOM STRATEGY

Flipped learning is the pre-lesson preparation, reflection and questioning that pupils undertake to help inform a teacher's planning [4]. Prior to a lesson a classroom teacher directs pupils towards specific resources (often online media) that they digest and respond to. This information can then be utilized by the teacher to inform the planning of their next classroom session. The effect of this is that pupils attend a subsequent lesson armed with a great deal of knowledge and questions ready to further their understanding and skill.

Flipped learning is also a means of shifting the learning that does not require a teacher presence outside of the classroom; so that class time can be spent developing areas that benefit from having direct teacher liaison [5] e.g. online activities that stimulate comprehension is an example of flipped learning in its simplest form.

The modern incarnation of flipped methodology owes much to the efforts of educationalists in the United States. In 1991 Eric Mazur questioned the value of the time spent with his University students in his lectures and decided to flip the content. At first his concept of 'peer learning' was as simple as instructing them to read the textbook and come prepared to his classes. This has since snowballed into a whole host of media platforms being used to eke out some pre-learning before a classroom session.

Shorman [6] indicated that the flipped classroom method focused on flipping or inverting the teaching and learning processes. That is, in a traditional teaching environment learning of new knowledge occurs in classroom. Then, the student returns to his or her home and completes home assignments. However, implementing flipped classroom method enables students to learn new information ahead of time at home through several technology tools and educational websites prepared and shared by teachers.

Flipped learning is an aid to the education process. Its purpose is to enable the student to attempt the learning process prior to class and for the teacher to support, clear up the uncertainties and stretch pupils during lesson time. There are three primary ways we have been attempting to do this at college:

1. Deliver lesson content to pupils prior to a lesson
2. Improve the quality of differentiation
3. Engage and enthuse our pupils in their learning

For each of these approaches, and they do not need to be mutually exclusive, the use of classroom time to learn is enhanced. This practice can enable us to focus on the higher order skills of analysis, synthesis and evaluation within class time; or as a means of identifying appropriate levels of challenge for different groups of pupils within a class; or simply to

introduce and stimulate initial questions and ideas before starting a topic. All of which can only act to enhance the quality of provision we can offer as teachers and the pupils can receive.

The principle of Flipped Learning links well with Bloom's Taxonomy of Learning. It is possible to remove some of the lower order learnt skills from class time and deliver pre-lesson. This allows for class time to focus on the higher order skills.

Benefits of Flipped Learning includes students in control of their learning and performance, students' questioning improves, greater choice for students – becoming independent in their learning, students support each other, technology used to enhance the experience, more purposeful lessons in school. Also the challenges includes it can take time to encourage a group to work beyond the classroom, important to give clear parameters on certain material/ topics, staff must be organized and engage with the pupils preparation prior to a lesson.

III. JIGSAW TEACHING STRATEGY

In education, jigsaw is a teaching technique invented by social Psychologist Elliot Aronson in 1971. Students of an average sized class (26 to 33 students) are divided into competency groups of four to six students to research. Individual members of each group then break off to work with the “experts” from other groups, researching a part of the material being studied, after which they return to their starting group in the role of instructor for their sub-category.

The jigsaw technique was invented and named in 1971 in Austin, Texas by a graduate Professor named Elliot Aronson. Recent desegregation had forced a racial mix on the students of Austin, and many teachers were unable to cope with the turmoil and hostility of the situation. The researcher decided that inter-school competition was leading students to study too much on the iron and was interfering with the idea of a cooperative classroom. By arranging the students in culturally and racially diverse groups, the researcher and her team of graduate students were able to reduce the divisions between students. The jigsaw classroom is very simple to use. It is a 10 step process as follows.

- 1) Divide students into 5- or 6-person jigsaw groups. The groups should be diverse in terms of gender, ethnicity, race, and ability.
- 2) Appoint one student from each group as the leader. Initially, this person should be the most mature student in the group.
- 3) Divide the day's lesson into 5-6 segments.
- 4) Assign each student to learn one segment. Make sure students have direct access only to their own segment.
- 5) Give students time to read over their segment at least twice and become familiar with it. There is no need for them to memorize it.
- 6) Form temporary “expert groups” by having one student from each jigsaw group join other students assigned to the same segment. Give students in these expert groups time to discuss the main points of their segment and to rehearse the presentations they will make to their jigsaw group.

- 7) Bring the students back into their jigsaw groups.
- 8) Ask each student to present her or his segment to the group. Encourage others in the group to ask questions for clarification.
- 9) Float from group to group, observing the process. If any group is having trouble (e.g., a member is dominating or disruptive), make an appropriate intervention. Eventually, it's best for the group leader to handle this task. Leaders can be trained by whispering an instruction on how to intervene, until the leader gets the hang of it.
- 10) At the end of the session, give a quiz on the material. Students quickly come to realize that these sessions are not just fun and games but really count.

The Jigsaw technique was randomly introduced into some classrooms and not introduced into other classrooms. This allowed for comparisons between students in jigsaw classes and those not in jigsaw classes. Students in the jigsaw classes expressed significantly, more self-confident and liked school better when tested objectively. Behavioral data supported these self-report measures. Students in jigsaw classes were absent less frequently, intermingled more in the cafeteria and in the school yard and performed better in exams.

There are several benefits of jigsaw technique in teaching. Teacher is not the sole provider of knowledge because most of the work is done by the students themselves which makes it an efficient way to learn. Students take ownership in the work and achievement and therefore students are held accountable among their peers. Jigsaw technique is beneficial in teaching because learning revolves around interaction with peers, students are active participants in the learning process and thereby help to build inter-personal and interactive skills among students. The use of this technique also makes teachers find it easy to learn, enjoy working with it, it can be used in conjunction with other teaching strategies and it can be effective even if it is used for just an hour per day.

There can be some obstacles when using the jigsaw technique. One common problem is a dominant student. In order to reduce this problem, each jigsaw group has an appointed leader. Students realize that the group is more effective if each student is allowed to present his or her own material before questions and comments are made. Dominance is eventually reduced because students realize it is not in the best interest of the group. Another problem is a slow student in the group. It is important that each member presents the best possible report to the group, as it is important that individuals with poor study skills do not present inferior reports to their jigsaw group. In order to reduce this problem, the jigsaw technique relies on "expert" groups. Students work with other individuals from other groups working on the same segment of the report. In this "expert" group they are given a chance to discuss their reports and gather suggestions from other students to modify their reports as regulated learning skills; to help the learner to organize the context in a way allowing self-learning capabilities, the current study applied flipped classroom strategy in two phases by transforming numerous Blackboard Mash up tools to learners' home, and practicing class activities in-groups; which helps them to practice self-organized learning skills to increase academic achievement. Accordingly; could be concluded that flipped classroom strategy attains both the individual and interactive cooperative learning and follow the modern educational theories. Flipped classroom strategy

could be very vital for students that have special needs or high absence rate. Flipped classroom strategy like other instructional strategy adequate topics, students, specializations, learning environment and periods more than other; so it is important to apply it in appropriate context. Research on the jigsaw classroom suggests that it has its strongest effect when introduced in elementary school. If there is exposure to the jigsaw classroom at an early age, only an hour per a day is needed to maintain the impact of cooperative learning in later schooling. If jigsaw is first introduced in the later years of schooling, it can often be an uphill battle. Old habits can be hard to break but overtime students participating in the jigsaw classroom in high school can benefit from the cooperative structure.

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THE ROLE OF EDUCATIONAL BRANDING IN HIGHER EDUCATION SECTOR-INDIA

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Abstract:

The education sector in India offers a huge untapped market due to low literacy rate, high concentration in urban areas and growing per capita income in the country. India's aspirations to establish a knowledge society in the wake of increasing liberalisation, privatisation and globalization, is based on the assumption that higher and technical education essentially empowers people with the requisite competitive skills and knowledge. That is why increasing attention has also been given to quality and excellence in higher education. Keeping in mind the scope and growth in the education sector in India, a number of private sector educational institutes/universities have mushroomed across the country. The very energetic edupreneurs are making great efforts to get more and more admissions. Competition in education sector is increasing day by day as the key to success of human is education because of this increasing competition education service providers are adopting different methods to market their institution's services. Branding is a type of marketing in which a company creates its own name, logo, symbol and design that makes different from competitors thus creates a particular place in the minds of customers. Educational branding is also branding in which educational institutions like schools, colleges and universities creates logos, designs, tag lines, symbols to make their institutions recognizable and to attract students and parents to their institutions. This study analyse the effect of education branding in schools and parents attitude towards education branding methods. It also attempts to study on how education branding helps in improving the quality of education in schools.

Keywords: Education branding, Edupreneurs

Introduction

Branding is a management concept. Brand is an identity which makes a firm different from other firms. It explains what the institution is and for what it stands for. A strong brand helps the firm to survive in the market for long period and vice-versa. A brand should be clear and distinct form one another and the people working within the institution should be aware of newly created brand. Education branding is a process whereby different educational institutions creates their own logos, signs, symbols etc and make their institutions attractive for the students. It is a method through which these institutions communicate to customers about the services and the quality of services provided by them. It helps a firm to achieve competitive advantage which is essential for their survival in the market. Creating logos

symbols designs etc. will not offer success in this area the faculty members, the way they are giving lectures, student training programmes, student experiences, educational quality also matters. Institutions should ensure that they provide something different or more valuable than other institutions to survive in the market. Firm should also ensure that they are branding not only for the sake of selling but also ensures quality education. Branding can be done online also. This creates more awareness among the people about the service offered and more and more foreign students get information about the institution. Education branding is different from company branding. In education branding parents, students will not be sure about the final outcome it may depend on the performance of students. Education branding is very common now a days institutions across the world are hurrying up to make a brand and get reputed.

Objectives:

1. To shed light on the concept of branding in higher education institutions.
2. To advance understanding of the advantages and challenges of branding in higher education institutions.
3. To explore the various touch points that help in brand building for the higher education institutions.

Methodology of the Study:

The research paper is an attempt of exploratory research, based on the secondary data sourced from journals, magazines, articles, newspapers and media reports.

Literature Review:

Rosenthal (2003) instructed the need to market higher education was becoming apparent for a number of reasons by 1984. Declining national enrollments put institutions of higher education on notice that they needed to apply a more business-like, formal planning process to respond to both changing market conditions and a new marketing mindset among stakeholders (Lambooy, 2011). The increasing costs of education and the increasing competition among higher education institutions both nationally and internationally force universities to adopt market-oriented strategies in order to differentiate their services from those of the competition in order to attract as many students as possible (Butt & ur Rehman, 2010). Early research into higher education marketing saw it as a product rather than a service. Kotler and Fox (1985) defined education marketing as: ‘...the analysis, planning, implementation and control of carefully formulated programs designed to bring about voluntary exchanges of values with a target market to achieve organizational objectives’ (Clarke, 2009). At the heart of the marketing concept is the philosophy that in order to maximize the chances of financial success in a highly competitive environment that also features well-informed, intelligent consumers, an organization should strive to achieve two key objectives: (1) understand and satisfy the needs of the

consumer, and (2) understand and satisfy the needs of the company (Bristow & Schneider, 2003). Research into higher education marketing evolved throughout the 1990s and recognized it as a service rather than a product. The definition of which was based on the assumption that in order for a higher education institution to market itself successfully, managers would need to examine the decision making process and the means by which potential students searched for information (Clarke, 2009). Moogan (2010) explained marketers should make sure that they provide accurate information in the first instance and that student expectations are not inflated as a consequence. Providing relevant information sources so that students can make the best possible decision for them is crucial (Lambooy, 2011)

Importance of Branding for the Higher Education Institutions

| No. | Importance Item | Source |
|-----|---|------------------------|
| 1. | <ul style="list-style-type: none"> • Because there are different types of HEI's, operating in different working contexts, with different motives, facing serious problems of faculty shortages and in maintaining the quality of education, the growing importance of branding for HEI's become very vital for their growth and / or survival. • A positive perception of a tertiary brand is expected to have an impact on recruitment of students and academic staff, attracting resources and to create goodwill. | (Harsha & Shah, 2011). |
| 2. | <ul style="list-style-type: none"> • The brand itself is particularly important to successfully marketing an academic institution. • Branding institutions in higher education provide the community, and more importantly, prospective students of an institution, an easier way to identify and distinguish them from other schools. Branding also provides students a sense of pride and belonging to an institution. Branding in higher education gives institutions an identity that locates them in the social world. • Promoting an institution's reputation, as well as generating additional revenue for the institution through the sale of trademarked goods. • Branding "makes the consumer's choice process more effective" and this alone could be argued to offer a rationale for brandings' applicability to higher | (Lambooy, 2011). |

| | | |
|-----|--|---|
| | education, ideally consumers choose to have a relationship with a brand if they trust it will deliver specific promises. | |
| 3. | The brand of a university carries with it a promise of a particular level of service bundle of benefits that satisfy customer's needs and student outcomes. | (Clarke, 2009). |
| 4. | HEI branding affords graduates a sense of identification and a way to define themselves, not merely as customers but as life-long organization members of a corporate 'brand community' | (Williams Jr & Omar, 2014a). |
| 5. | Building alliances and partnerships with universities in different parts of the world can also focus institutions more sharply on their brand image, what they stand for, and how they are perceived by all stakeholders not only students | (Hemsley-Brown, Melewar, Nguyen, & Wilson, 2016). |
| 6. | Counteracting declining enrollments, reduced retention, and overall competition; enhancing image and prestige; increasing financial resources; honoring a philanthropic donor; mission alignment; or signifying a merger between institutions | (Williams Jr & Omar, 2014b). |
| 7. | For a university, a favorable brand would enable it to recruit and retain the best and brightest students, faculty, and staff, and build and maintain widespread public, legislative; alumni and donors' support. | (Shaari, Amar, Embong, & Hashim, 2012). |
| 8. | Many university brands also infer promises about a person's job and career prospects on graduation. | (Bennett & Ali-Choudhury, 2009). |
| 9. | Create the correct image of the university, communicate to audiences the performance of the university, communicate to audiences the types of education offered, communicate to all the different audiences the different facets of the university and create a competitive advantage. | (Chapleo, 2011). |
| 10. | People can enrich their image through the image of the brands they buy and use. Therefore, university students, as the most important group of interest are likely to identify their own self with the university they choose and can begin to call themselves "boy / girl of X University". | (Shyle, 2015). |

Challenges for Branding in Higher Education Institutions

1.Branding as a strategy has become more popular as a way of differentiating an institution from its competition, but the complexity of higher education makes branding an even more difficult task than in traditional, commercial contexts

2.Cultural issues are one of the most significant challenges. The nature of marketing means that it permeates most areas of an organization and, therefore, marketing people may run into the strongly held views of other staff and departments; where underpinning marketing philosophies are “theoretically uncomfortable” for many academics. Organizational culture may be a source of competitive advantage, but only when brand values are respectful of that culture and embrace it as part of their brand

3.The changing pace of the external environment was argued to be a challenge, with universities increasingly having to adapt and react to market conditions at a faster pace than they have culturally been equipped to do. However, some felt that this changing environment was forcing a cultural change internally, which has led to more competitive branding strategies being embraced. Overall, cultural resistance to branding, variable internal communication, and associated issues, such as sub branding, were challenges much in evidence from interviews

- One of the problems is that people consider branding only as a name of the institution, a logo or a slogan. In real life it is the management style and a hard work of developing a long term strategy of the institution (Valtere, 2012). Another challenge and one off the controversial issues in education is whether to consider students as partners of academic life (participants in the joint aim) or as clients / customers of the institution, both opinions have been developing during the last decades

- Ng and Forbes (2009) Proposed an “ideological gap” that is “the difference between designing the service towards fulfilling students’ expectations and designing the service towards what the institution believes the students should experience”. Of these gaps, the ideological gap may be the most fundamental issue to resolve in terms of competitive advantage. This gap is exacerbated because the students’ roles and perspectives change as they move from the status of applicant to enrolled student to graduated alumni.

Conclusion

Even though brand is a well-known concept in the business sector, the application of branding in the field of higher education is relatively new. The study recommended to assign a brand marketing executive manager for the university, create a sense of community between the students and employees inside and outside the university, to support the extracurricular activities, seminars, workshops and

conferences, need to be enhanced, famous professional experts, are necessary, the teaching methods and curriculum need improvements, remarkable attention is needed to scientific research, to give the opportunity to students along with the alumni to participate and organize events and participate in the admission and academic process, the need to follow up social media, and the need for a university tour guide.

Education is an experiential service, where students go through a long journey.

The Higher Education Brand Touchpoint Wheel is a strong conceptual model to build a compelling Higher Education Institute brand. Students knowledge base develops overtime from communications such as news stories, media, word of mouth, and experience. In this research study, brand building is estimated by different stages which students contact with the university and every touchpoint is taken into consideration to have a full picture about the components that help to build the brand. By positively and consistently influencing the various critical factors at the pre, during and post-stages, the strength of the higher education institute can be enhanced, thus creating a virtuous cycle of brand strength. Care should be taken to manage the overall influencing touchpoints.

Recommendation

1. The need for effective understanding of the marketplace perceptions and requirements by the university management.
2. Enhance the communication and support relations with institutions both locally and internationally.
3. Develop the inside and outside surrounding environment of the university. Keep attention to the green standards.
4. The need to assign a brand marketing executive manager for the university.

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NEED FOR “GRADUATE PLUS ATTRIBUTES” TO HIGHER EDUCATION

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Graduate who are completing their degree with top grades, fear they would not end up with any placement at all. In our private circles we hear about retrenchment more frequently. However when you ask recruiters about the job market, the standard answer is likely to be that the market is doing well. Why this paradox. How higher education should look at it.

The recruiters complain about the employability of graduates. Yes, the recruiters are right. There are enough work as job tenures are getting shorter, talents are looking for greener pastures and there is serious gap of employability skill gap among fresh graduates. In many industry the skill required are changing fast and employers are letting go of people to replace them with current skills. As a result, the recruiters and organizations are busy backfilling the attrition. Hence the job market will continue to boom for most sectors. The recruiters headache of employable skill shortage remain. The opportunity for the academic quality leaders are plenty.

In top 5 automobile companies recruited close to 60,000 employees in the last one year. Majority of the hiring is for attrition replacement. There is a 50:50 for fresher's from campuses and recycling from the industry experienced. The companies offering high packages for attracting experienced hands from other firms are on a decline. They seek more fresher's but with conditions. Look at the job market profile.

- There are enough jobs
- job tenures are getting shorter.
- Existing employees are looking for greener pastures.
- Skill required are changing fast.
- The employers are letting go of people to replace them with current skills
- Recruiters are busy backfilling the attrition.
- Job market will continue to boom for most sectors in a replacement market.
- The story is similar across sectors.
- There has a job search friction.
- If you think have a skill or a learning mind, there are enough jobs in the field of your choice, weather it is IT, Pharma, BFSI, FMCG, Insurance or Banking.

The opportunity and challenges before institutions of higher learning is to understand the “job Search Friction” the job market faces. Fresh graduates or diplomas their employability is questioned. The recruiters search for core-competencies and current skills-combined is to be recognized what education quality leaders can do to bridge this prominent job gap that exist. All potential job sector are in the middle of a big shift in jobs. The pace of movement of skills is rapid that recruiters and companies are giving up on the concept of skilling up and training of fresher's. More and more of skilling responsibility is falling on individuals and educational institutions which graduates them. Technical education and higher education institutions need

to access how much successful their programme are in gaining placements ?and what skill updation gap exist.

The add on programmes, skill updation training programme, twining regular programmes with industry specific diploma programmes, hiring coaching services are useful. These programmes can help position a fresher's market vis a vis skills.

There exist an extensive decision making pattern among recruiters. The perceived importance of the position market it more indulgent. The era of existing training and placement is over. In extensive selection making the recruiters walks the candidates through the standard selection hierarchy actively. It is characterized by extensive skill matching tests. This is done in order to develop belief in the candidature. They apply elaborate multidimensioned criteria to evaluate the alternatives. The fresher stand a chance if he is skill trained through add –on programmes. The national and international accreditation agencies are duly recognizing the importance of out put based education, extension, skill updation etc in their accreditation protocols. The seminar put forth the importance of “graduates plus attributes” institutions need to put into practice.

IMPORTANCE OF NAAC IN QUALITY ASSURANCE OF HIGHER EDUCATION

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Abstract

Higher education is responsible for the achievement of lifelong learning and education development. In order to achieve the higher education level, universities and colleges played a role in improvement. Higher education is the backbone of any society. It is the quality of higher education that decides the quality of human resource in a country. Higher education as we see today is a complex system facilitating teaching, research, extension and international cooperation and understanding. The core value of NAAC for higher education system in India envisage: national development, fostering global competitiveness, including ethical values promote the use of technology and create an atmosphere and quest for excellence. The NAAC is an established with vision. "To make quality, the defining element of higher education in India through a combination of self and external quality evaluation, promotion and sustenance initiatives." The present research paper deals with what role play to improve quality in higher education in India and what kind of benefits get the NAAC to colleges and universities . The main focus of the study is the role of NAAC in quality assurance in higher education.

Introduction

The National Assessment and Accreditation Council (NAAC) is an autonomous body established by the University Grand Commission (UGC) of India to assess and accredit institution of higher education in the country. It is an outcome of the recommendations of the national policy in Education (1986) and the plan of action advocated the established of an independent national accreditation body. Consequently the NAAC was established in 1994 with it's headquarters at Bangalore . Now as per recent decision, NAAC will function as an autonomous and independent body and will directly to the HRD Ministry.

Quality Movement of Higher Education

The University Grants Commission (UGC) with its statutory powers is expected to maintain quality in Indian higher education institutions. Section 12 of the UGC Act of 1956 requires UGC to be responsible for "the determination and maintenance of standards of teaching, examinations and research in universities". To fulfill this mandate, the UGC has been continuously developing mechanisms to monitor quality in colleges and universities directly and indirectly. In order to improve, it has established national facilities, and Academic Staff Colleges to re-orient teachers and provide refresher courses in subject areas. The UGC also conducts the National Eligibility Test for setting high standards of teaching. Various Committees and commissions on education over the years have emphasized directly or

indirectly the need for improvement and recognition of quality in Indian higher education system. The concept of autonomous colleges as recommended by Kothari Commission (1964-66) has its roots in the concept of quality improvement. Since the adoption of the National Policy on Education (1968) , there has been a tremendous expansion of educational opportunities at all levels, particularly in higher education . With the expansion of educational institutions, came the concern for quality. The constitutional amendment in 1976 brought education to the concurrent list making the central government more responsible for quality improvement.

Reason of Quality Movement in Higher Education

The British Standard Institution defines quality as “the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs” . The following reasons are to provide quality in higher education.

- We are entering a new regime, where competition among educational institutions for students and funds will be highly significant. In order to survive in such a situation, educational institutions need to worry about their quality.
- Students, parents or sponsoring agencies as customers of the educational institutions are now highly conscious of their rights or getting value for their money and time spent.
- As educational institutions, we are always concerned about setting our own standard and maintaining it continuously year after year. In order to maintain the standard, we should consciously make efforts to improve quality of the educational transactions as well as the educational provisions and facilities.
- Every institution is accountable to its stakeholders in terms of the funds (public or private) used on it.
- Our concern for quality as an institution will improve the morale and motivation of the staff in performing their duties and responsibilities.
- Quality institutions have the capacity to attract better stakeholder support, like getting merited students from far and near, increased donations / grants from philanthropists / funding agencies and higher employer interest for easy placement of graduates.

Role of Internal Quality Assurance Cell (IQAC)

For performance evaluation , assessment and accreditation and quality up-gradation of institutions of higher education , the National Assessment and Accreditation Council (NAAC) , Bangalore proposes that every accredited institution should establish and Internal Quality Assurance Cell (IQAC) as a post-accreditation quality sustenance measure . Since quality enhancement is a continuous process, the IQAC will become a part of the institutions system and work towards the realization of the goals of quality enhancement and sustenance. The prime task of IQAC is to develop a system for conscious, consistent and catalytic improvement in the overall performance of institutions.

Role of NAAC for Development of Higher Education

The Indian higher education system is in a constant state of change and flux due to the increasing needs of expanding access to higher education, impact of technology on the delivery of education, increasing private participation and the impact of globalization. Taking cognizance of these developments and the role of higher education in society, NAAC has developed five core values: contributing to national development, fostering global competencies among students, inculcating a value system in students, promoting the use of technology and quest for excellence.

Advantage of NAAC Assessment for the department

There are many benefits of NAAC for the department. The department and faculty can identify weaknesses and opportunities. It's very useful to estimate the academic environment. To fulfill academic aims and objectives of the institution well as to foster departmental excellence. NAAC motivates the faculty for research and curricular activities which can make a contribution in the creation of quality.

Conclusion

The main focus of the study is the role of NAAC in quality assurance in higher education. From this study, it has been found that the college's academic environment and campuses changed drastically since accreditation. Quality makes education more relevant of its social transformative and individual development role.

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IQAC AS A QUALITY SUSTANANCE MEASURE FOR THE HIGHER EDUCATION INSTITUTIONS

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Abstract-Quality education enables people to develop all of their attributes and skills to achieve their potential as human beings and members of society. The right to education is not only the right to access education but also the right to receive an education of good quality. Education must be available and accessible but also acceptable and adaptable. In pursuance of its Action Plan for performance evaluation, assessment and accreditation and quality up-gradation of institutions of higher education, the National Assessment and Accreditation Council (NAAC), Bangalore proposes that every accredited institution should establish an Internal Quality Assurance Cell (IQAC) as a quality sustenance measure. The prime task of the IQAC is to develop a system for conscious, consistent and catalytic improvement in the overall performance of institutions. This paper provides an overview of the importance of setting IQAC in Higher Education Institutions to improve their quality.

Keywords : IQAC, NAAC, HEI, Quality Education

Introduction

Education is at the heart of both personal and community development; its mission is to enable each of us, without exception, to develop all our talents to the full and to realize our creative potential, including responsibility for our own lives and achievement of our personal aims. Quality education is a human right and a public good. Governments and other public authorities should ensure that a quality education service is available freely to all citizens from early childhood into adulthood. Quality education provides the foundation for equity in society. It is one of the most basic public services. It not only enlightens but also empowers citizens and enables them to contribute to the maximum extent possible to the social and economic development of their communities. Since quality enhancement is a continuous process, the IQAC will become a part of the institution's system and work towards realisation of the goals of quality enhancement and sustenance. The prime task of the IQAC is to develop a system for conscious, consistent and catalytic improvement in the overall performance of institutions. For this, during the post-accreditation period, institutions need to channelize its efforts and measures towards promoting the holistic academic excellence including the peer committee recommendations.

IQAC and its functions

The functions of IQAC includes the development and application of quality benchmarks, setting parameters for various academic and administrative activities of the institution. It facilitates the creation of a learner-centric environment conducive to quality education and faculty maturation to adopt the required knowledge and technology for participatory teaching

and learning process. To improve the quality of the HEI, it is essential to collect and analyse the feedback from all stakeholders on quality-related institutional processes. Another major function of IQAC is to disseminate information on various quality parameters to all stakeholders. IQAC should Organize inter and intra institutional workshops, seminars on quality related themes and promotion of quality circles. Also documentation of the various programmes/activities leading to quality improvement is to be done. IQAC should act as a nodal agency of the Institution for coordinating quality-related activities, including adoption and dissemination of best practices. It should perform periodical conduct of Academic and Administrative Audit and its follow-up. It should also Prepare and submit the Annual Quality Assurance Report (AQAR) as per guidelines and parameters of NAAC.

A. Structure of IQAC

As per National Assessment and Accreditation Council (NAAC) guidelines every accredited institution should establish an Internal Quality Assurance Cell (IQAC) as a post-accreditation quality sustenance measure. Maintaining the momentum of quality consciousness is crucial in Colleges. Internal Quality Assurance Cell, in fact, is conceived as a mechanism to build and ensure a quality culture at the institutional level. Every College should have an internal quality assurance system, with appropriate structure and processes, and with enough flexibility to meet the diverse needs of the stakeholders. The internal quality assurance mechanism of the institution may be called “Internal Quality Assurance Cell (IQAC)”. The IQAC is meant for planning, guiding and monitoring Quality Assurance (QA) and Quality Enhancement (QE) activities of the colleges

The IQAC shall be constituted under the chairmanship of Principal. He / She may be assisted by a Coordinator who shall be a senior faculty member. This position may be held as an additional charge by the faculty member concerned, or a new position of a full-time Director/Coordinator may be created and a person is selected and appointed or a senior faculty member is posted by redeployment.

A. Aim of IQAC

- To develop a quality system for conscious, consistent and catalytic programmed action to improve the academic and administrative performance of the College
- To promote measures for institutional functioning towards quality enhancement through internationalization of quality culture and institutionalization of best practices

B. Strategies of IQAC

IQAC shall evolve mechanisms and procedures for

- Ensuring timely, efficient and progressive performance of academic, administrative and financial tasks;
- Relevant and quality academic/ research programmes;
- Equitable access to and affordability of academic programmes for various sections of society;

- Optimization and integration of modern methods of teaching and learning;
- The credibility of assessment and evaluation process;
- Ensuring the adequacy, maintenance and proper allocation of support structure and services;
- Sharing of research findings and networking with other institutions in India and abroad.

C. IQAC Functions

Some of the functions expected of the IQAC are:

- Development and application of quality benchmarks
- Parameters for various academic and administrative activities of the institution;
- Facilitating the creation of a learner-centric environment conducive to quality education and faculty maturation to adopt the required knowledge and technology for participatory teaching and learning process;
- Collection and analysis of feedback from all stakeholders on quality-related institutional processes;
- Dissemination of information on various quality parameters to all stakeholders;
- Organization of inter and intra institutional workshops, seminars on quality related themes and promotion of quality circles;
- Documentation of the various programmes/activities leading to quality improvement;
- Acting as a nodal agency of the Institution for coordinating quality-related activities, including adoption and dissemination of best practices;
- Development and maintenance of institutional database through MIS for the purpose of maintaining /enhancing the institutional quality;
- Periodical conduct of Academic and Administrative Audit and its follow-up
- Preparation and submission of the Annual Quality Assurance Report (AQAR) as per guidelines and parameters of NAAC.

D. Benefits of IQAC

- Ensure clarity and focus in institutional functioning towards quality enhancement;
- Ensure internalization of the quality culture;
- Ensure enhancement and coordination among various activities of the institution and institutionalize all good practices;
- Provide a sound basis for decision-making to improve institutional functioning;
- Act as a dynamic system for quality changes in HEIs;
- Build an organised methodology of documentation and internal communication.

I. COMPOSITION OF IQAC

IQAC may be constituted in every institution under the Chairmanship of the Head of the institution with heads of important academic and administrative units and a few teachers and a few distinguished educationists and representatives of local management and stakeholders.

The composition of the IQAC may be as follows:

1. Chairperson: Head of the Institution
2. Teachers to represent all level (Three to eight)
3. One member from the Management
4. Few Senior administrative officers
5. One nominee each from local society, Students and Alumni
6. One nominee each from Employers /Industrialists/Stakeholders
7. One of the senior teachers as the coordinator/Director of the IQAC

The composition of the IQAC will depend on the size and complexity of the institution, accordingly the representation of teachers may vary. It helps the institutions in planning and monitoring. IQAC also gives stakeholders or beneficiaries a cross-sectional participation in the institution's quality enhancement activities. The guidelines given here are only indicative and will help the institutions for quality sustenance activities. It is necessary for the members of the IQAC to shoulder the responsibilities of generating and promoting awareness in the institution and to devote time for working out the procedural details.

While selecting these members several precautions need to be taken. A few of them are listed below:

- It is advisable to choose persons from various backgrounds who have earned respect for integrity and excellence in their teaching and research. Moreover, they should be aware of the ground realities of the institutional environment. They should be known for their commitment to improving the quality of teaching and learning.

- It is advisable to change the co-ordinator after two to three years to bring new thoughts and activities in the institution.

A. The Role of IQAC Coordinator

The role of the coordinator of the IQAC is crucial in ensuring the effective functioning of all the members. The coordinator of the IQAC may be a senior/competent person with experience and exposure in quality aspects. She/he may be a full-time functionary or, to start with, she/he may be a senior academic /administrator entrusted with the IQAC as an additional responsibility. Secretarial assistance may be facilitated by the administration. It is essential that the coordinator may have sound knowledge about the computer, data management and its various functions such as usage for effective communication.

B. IQAC Operational Features

Devotion and commitment to improvement rather than mere institutional control is the basis for devising procedures and instruments for assuring quality. The right balance between the health and growth of an institution needs to be struck. The IQAC has to ensure that whatever is done in the institution for "education" is done efficiently and effectively with high standards. In order to do this, the IQAC will have to first establish procedures and modalities to collect data and information on various aspects of institutional functioning. The coordinator of the

IQAC will have a major role in implementing these functions. The IQAC may derive major support from the already existing units and mechanisms that contribute to the functions listed above. The operational features and functions discussed so far are broad-based to facilitate institutions towards academic excellence and institutions may adapt them to their specific needs.

C. Preparation of Annual Quality Assurance Report (AQAR)

The Annual Quality Assurance Report (AQAR) must be submitted by the institutions yearly by end of September every year positively. A functional Internal Quality Assurance Cell (IQAC) and timely submission of Annual Quality Assurance Reports (AQARs) are the Minimum Institutional Requirements (MIR) to volunteer for second, third or subsequent cycle's accreditation. During the institutional visit the NAAC peer teams will interact with the IQACs to know the progress, functioning as well as quality sustenance initiatives undertaken by them. The Annual Quality Assurance Report (AQAR) may be the part of the Annual Report. The AQAR shall be approved by the statutory bodies of the HEIs (such as Syndicate, Governing Council/Executive Council/Board of Management) for the follow up action for necessary quality enhancement measures. The IQACs may create its exclusive window tab on its institutional website for keeping the records/files of NAAC, Peer Team Reports, AQAR, and Certificate of Accreditation Outcomes and regularly upload/ report on its activities, as well as for hosting the AQAR.

II. IQAC ROLE AS A QUALITY SUSTENANCE MEASURE FOR THE HIGHER EDUCATION INSTITUTIONS

The establishment of Internal Quality Assurance Cell (IQAC) by accredited institutions is a major step in pushing long-term quality standards. IQAC in any institution is a significant administrative body that is responsible for all quality matters. It is the prime responsibility of IQAC to initiate, plan and supervise various activities that are necessary to increase the quality of the education imparted in an institution or college. The role of IQAC in maintaining quality standards in teaching, learning and evaluation becomes crucial, and the present research is therefore undertaken on a smaller scale to determine the exact status and functioning of IQAC and its outcome.

The IQAC is a significant administrative body in any educational institution. It contributes to maintaining quality standards in teaching, learning and evaluation. It promotes co-curricular and extra-curricular activities in the college. It is a capable body to administer various academic/educational activities. There is coordination among the stakeholders of the institution, but this still needed more attention and concern to increase such coordination.

The IQAC and its coordinator require more autonomy (e.g., academic, financial, and administrative) for better performance. In some institutions/colleges, the IQAC and its coordinator work under pressure of principal and management. The IQAC tries to include everyone in its activities, but sometimes some individuals are excluded from its programmes.

III. CONCLUSION

Ultimately quality assurance is being conducted for the benefit of academic fraternity. While the quality assurance systems being used in several countries vary in methodology and intent, there is a growing international perception that they are not performing the task that the public and its governments expect. There is a need for the public and students to be assured that the standard of degrees is both guaranteed and internationally comparable so that graduates can move easily between countries as their careers develop. Higher education is uniquely placed to develop the measures and metrics that will ensure that this need can be met and should take the initiative to do so rather than rely on externally imposed solutions that will not meet its needs, not be consistent with the purposes of higher education, and probably endanger its sovereignty. The work of the IQAC is the first step towards internalization and institutionalization of quality enhancement initiatives. Its success depends upon the sense of belongingness and participation in all the constituents of the institution. It will not be yet another hierarchical structure or a record-keeping exercise in the institution.

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NEED FOR QUALITY MANAGEMENT AND SUSTENANCE IN HIGHER EDUCATION IN INDIA

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“Education can unlock all doors for a progress, education is not a commodity and should not be treated as one.” (George,web)

The Process of liberalization and globalization has brought radical transformation in Indian education system. In this context the educational institutions have started process of resource planning and restructuring for maintaining the qualitative service to society. The society's expectations of universities and colleges have multiplied. All countries around the world aspire to have world class universities so as to achieve a competitive edge over other countries in the region. The requirements of industry from education have increased. Thus the educational institutes should locate the requirements of achieving quality structure and enhancements in higher education. Amidst huge quantitative expansion in the number of colleges and enrolment of students, monitoring of overall teaching learning system on regular basis is required for evaluation up gradation and sustenance of desired quality standards in each and every college. As quality of higher education is directly linked with the development of country and hence its significant and needs special attentions.

Higher Education in India:

India has the distinction of being the second largest education system in the world next to china. The phenomenal growth in the number of educational institutions as well as students which occurred during the last three decades resulted in deterioration of quality of higher education. The higher education system suffers from lack of capacity as well as from lack of quality. The main worry in case of any fast expansion is depletion in quality, education sector is no exception. There is a certainly a growing demand for higher education but quality should not be compromise with the expansion requirement of higher education. The prospects and development in the higher education sector in India needs a critical examination in rapidly globalizing world.

Higher education system in India has been expanded remarkably after independence. There are 20 universities and 500 colleges at the time of independence, at present there are 519 universities and 25951 colleges in India apart from the general education there is steep rise in professional educational institutes in the form of Engineering colleges, polytechnics, etc. all these higher educational institutions contribute considerably to rapid accumulation of specialized human capital. Globalization has multidimensional impact on higher education. It has increased the need for reforms in higher education with the particular reference to information technology and more emphasis on its research and developmental activities.

Management of quality in education enables the student to keep pace with the challenges offered by life. Quality institutions are those which widely use the most appropriate and best

practices. Quality has to build in to system slowly and steadily. Quality enhancement in higher education is deliberately process of change that leads to the overall improvement of all stakeholders. Quality enhancement is an inclusive concept and a collective enterprise. It involves everyone who teaches, supports and guides the students and managers and administrators of higher education institution. The main focus of the institutes should be on the policies and practices to enhance the quality of students learning. It will also examine all institutions ability to manage the standards of academic awards and the quality of the learning opportunities it provides for its students.

The unplanned growth of higher education coupled with lack of resources affects the quality of education. The rapid growth of higher education over the years has sometimes resulted in dilution of its quality and standard which in turn has affected the quality of man power produced. Quality impact and reference are the important criteria by which society measures university performance. Improving the quality of higher education has therefore, become a primary concern of the countries the world over. In order to compete in the global market it is necessary to bring about qualitative improvement in the system of our higher education.

The GOI initiated a planned development of higher education in the country with the establishment of University Grants Commission (UGC) in 1953. The UGC provides grants under both plan non-plan schemes to the educational institutions. In addition grants are also provided to maintain and improve the standards in the educational institutions through various programmes and schemes introduced during the plan period UGC has made a number of efforts to improve the quality of higher education.

Innovation:

Innovation is a characteristic of communities that brings them in the forefront of technological advancements with economic gain resulting into better quality of life. Innovation is a successful implementation of creative ideas in specific context having impact on economy and society. Innovation inputs included fiscal policy education and innovation environment. Innovation outputs included technological performance such as patents technology transfer and other R&D results. Educational innovation is basic that prepares ground for technology and business innovations.

Quality:

Quality is complex phenomenon based on perception by individual with different perspective on product and services. According to oxford dictionary quality means degree of excellence. The quality of any product can be quantified measured and compared with other product. But it is difficult to measure the quality of education as it is a service. The British Standard Institution defines quality as “totality of features and characteristics of a product or service that bear upon its ability to satisfy the stated or implied needs”. It emphasis that quality of input such as students, faculty member, infrastructure, learning activities, extracurricular activities and the quality of output in terms of student and graduates. In the era of global competitiveness, it is utmost important that Indian products of Universities should be as competent as products of other countries. Unless the quality of our Higher educational institutions is enhance through

innovation and creativity it would difficult for Indian students to compete globally. In order to survive in the competition the Universities and Colleges shall have to focus attentions on quality education.

Assessment of Quality:

Quality gaps are evidently increasing in Higher education both in terms of academic standards and as well as educational facilities. The availability of qualified staff, reference books, research culture, efficient administration system and good students support systems are still wanting in Indian Higher education systems. The UGC undertook many steps and introduce many programs for building a system of accountability and assurance of quality. UGC introduced faculty improvement programme, university leadership programme, academic staff colleges etc for improvement in quality of higher education in India. UGC also formed an autonomous body namely National Assessment and Accreditation Council (NAAC) to rank the quality education imparted by the institutions on easily identifiable scales.

Quality assurance mechanism requires an integrated approach of all the aspects of educational activities of the institution. It include mission and objective of the institution, faculty strengths, input output level of student, infrastructure evaluation, curricular teaching learning process, feedback system, cultural and social activities etc.

Conclusion:

Higher education system in India has been expanded remarkably after independence. The unplanned growth of higher education coupled with lack of resources affects the quality of education. In order to compete in global market it is necessary to bring about qualitative improvement in the system of our higher education. The UGC undertook many steps and introduced many programmes for building a system of accountability and assurance of quality.

Suggestions:

1. A national policy on restructuring of academic courses modern teaching learning methods and curricular design may be adopted to prepare the education system to face the academic challenges of globalization.
2. The teachers should motivate the student for culmination of creativity and innovations among them they need to use innovative teaching method to promote interactive learning and to sustain student interest by power point presentations, creation of web sites, field visit, exhibitions, etc.
3. Quality faculty is important to maintain high standards of university. The faculty should equip themselves with the required knowledge and technical skills to cater the demand of the market.
4. Up gradation of traditional courses and introduction of new courses should done after ascertaining the real need in the society.
5. Industry-institute linkage should be establish and made effective for proper training of the students of the professional courses.

6. Administrators of higher education should create academic culture and climate promoting educational and managerial values and positive attitude. They should promote team approach in the institute for creativity innovation and change.
7. It is necessary to strengthen the core competency of the institute that is teaching–learning, library resources, human resource development, research, community development, etc.
8. For improving the quality of higher education teachers doing research work be given some special incentives and encouragement to develop research activities in the institutions.
9. Attempt must be made to establish vocational institution. The student must be encouraged to take up vocational courses. In addition to placement centers should be set up for the benefits of the students.
10. Financial support should be given to the academic institutions from both the central and state government.
11. Use of information and communication technologies and techniques in classrooms, laboratories and other areas of functions of the institutes. It is helpful for the improvement of quality in higher education.
12. Educational institutes should establish benchmarks and performance standards for planning implementation assessment and continuous improvement.
13. They should introduce academic audit system which is product as well as process oriented and quantitative as well as qualitative.
14. Students should involve in all process relating to quality assurance and enhancement. Student representative could also be included an appropriate institutional bodies including policy committees and departmental committees.

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A REPORT OF NAAC SPONSORED NATIONAL SEMINAR ON “EMERGING TRENDS IN QUALITY EDUCATION: THE ROLE OF IQAC IN GOVERNANCE, LEADERSHIP AND MANAGEMENT”

A national seminar titled “Emerging trends in Quality Education: the Role of IQAC in Governance, Leadership and Management” was held at SAS SNDP Yogam College, Konni, campus on 24 th -25th July, 2019. Over 82 higher-education experts from all over the state participated in the event that was sponsored by the National Assessment and Accreditation Council (NAAC). They discussed and showcased various strategies and success stories that can enable institutions of higher learning to develop a road map on quality enhancement focused on sustainable development and needs of the planet.

The inaugural session was held on 24th of July, 2019. The programme started with the invocation. Dr. Kishorkumar.B.S, Head, Department of Physical Education, and IQAC Coordinator SAS SNDP Yogam College, Konni and Convener Organizing Committee of the Seminar, welcomed the dignitaries on the dais and the galaxy of the scholars from different parts of the state and highlighted about the seven themes of the seminar along with the total number of participants, different technical sessions. He also briefed about the modus operandi of the two days seminar. The seminar was inaugurated by Prof.(Dr)T.C.Aravindakumar, Pro.Vice Chancellor M.G University, Kottayam. He highlighted several successful innovations in sustainable development that have been evolved and implemented at MG University during his tenure as IQAC coordinator in the University. . He also said that : “In higher education, it is important to focus on sustainable models that consider the delicate balance between the environment, society and economy. Students need to be educated on technologies that protect the environment. For example, the problem of global warming can be overcome through the use of solar photovoltaic, solar thermal and wind energies. These are sufficient to meet all our energy needs. Planting more trees may be good to consume carbon dioxide, but what happens to the trees after their lifetime? If they are burnt as firewood, the trapped carbon is back into the atmosphere. Even if the wood is buried, microbial action sets in and carbon dioxide is released into the atmosphere. Therefore, new technologies in preserving carbon in the wood are necessary. Also, there are reports of scientists combining carbon dioxide of atmosphere with silicate on the earth's surface to make cement rocks. If this technology is developed, it will be a breakthrough.” This was followed by the speech, of Dr.Bijupushpan, Principal, SAS SNDP Yogam College, Konni. He said: “While ancient India promoted learning for life and sustainability, modern education is merely an employment guarantee scheme. The challenge before educators is to face the innovative disruptions and technological infiltration which wean students away from sustainable development needed for a meaningful life” After this there was a comprehensive talk by Prof.Praveenkumar.V.S. Member Syndicate. He wished the seminar a great success and was of the opinion that teacher is the backbone of the society, institutional programmes like research and development should focus on the local needs of the society. It was followed by the comprehensive talk delivered by R. Anilkumar, Management Representative. The session ended with the vote of thanks delivered by Dr. Binu.V.

The first technical sessions involved focused presentations (via invited talks) on ‘Research and development’ by Prof(Dr) K.Murukan, Research officer, RUSSA, Kerala State Higher

Education Council and Retd. Principal Govt. Arts College, Thiruvananthapuram; He explained that quality encompasses teaching, research and administration. Quality is built on trust and dialogue, among students, teaching faculty, administrative staff and society as a pre condition for relevance, compatibility and mobility. Creative and qualitative means are to be explored at various levels to enable institution offer qualitative and relevant education. The session was followed by paper presentation. After the lunch break the seminar started with the second technical session “Funding agencies in India and abroad” by Prof.(Dr).R.Raveendran, UGC Emeritus Professor and former Principal Sree Narayana Trust colleges, Kollam; followed by paper presentations. He explained that for improving the quality of teaching and learning the institution should promote continual training in research integrity, and develop initiatives to educate all researchers and students on the importance of research.

The second day of the NAAC sponsored National Seminar on “Emerging trends in Quality Education: the Role of IQAC in Governance, Leadership and Management “on 25th July ,2019 started with the third technical session on “Quality Assurance in the Accreditation process” The speaker was Prof. (Dr) Gabriel Simon Thattil, Professor of Commerce and IQAC Coordinator University of Kerala; He explained to the delegates and the students about the importance and relevance of the IQACs in the colleges as change agents in fulfilling the task in planning, executing, monitoring, reviewing, restructuring the Academic, Administrative, Extension, Research and outreach activities, adopting best and innovative practices and a host of other learners centered, student beneficiary measures in HEIs. He added that In education it is highly difficult to measure the quality. Quality will not improve on its own unless everyone puts an effort towards quality. The second technical session was “Teaching, Learning & Evaluation” by Dr. Sudheer Muhamed, Associate Professor, Govt college Coiambathoor, he explained that while ancient India promoted learning for life and sustainability, modern education is merely an employment guarantee scheme. The challenge before educators is to face the innovative disruptions and technological infiltration which wean students away from sustainable development needed for a meaningful life. Educational institutes need to develop a curriculum which encourages students to use their head(cognitive), hands (skills) and heart (values).

In the Valedictory Session Mr. Sudersanan.C.P was the Chief Guest. The crisp overview of the seminar was presented by Organizing Secretary, Dr.Kishorkumar.B.S, followed by presentation of mementoes, distribution of certificates by the Principal Dr.Bijupushpan and presentation of Report of the seminar by Prof.Krishnakumari.K. The vote of thanks was given by Dr,Rajimol, Associate Professor and Head Department of Mathamatics.. The delegates from different states were highly satisfied with the enriched inputs received from a galaxy of eminent educationists from different areas of expertise in the arena of NAAC accreditation and regulations and research and funding agencies. Various suggestions were given by the resource persons on the Quality Enhancement and Sustenance like more use of technology, more involvement of stakeholders, academic au.dit and many more. Overall, the seminar was a grand success.

MEDIA PROCEEDINGS



SEMINAR RECOMMENDATIONS/SUGGESTIONS/ACTION POINTS

The following are the recommendations that were arrived at after much deliberations at the seminar by the invited experts. The thrust areas that have been identified are Evaluation, Teacher Assessment, Benchmarking Best Practices, setting up of clear Vision and Mission Statements for the institution and preparing the institution for the Reaccreditation Process under the Revised Framework of the NAAC. The discussions led to the following general recommendations:

1. To improve the quality in every aspect of the institution, the IQAC should develop a system for conscious, consistent and catalytic action to improve the academic and administrative performance of the institution and to promote measures for institutional functioning towards quality enhancement through internalization of quality culture and institutionalization of best practices for sustainable development.
2. To create a template for entering the data pertaining to all the activities of the department which can be updated every month and can be accessed through intranet and help in the preparation of the AQAR and other reports.
3. To support the activities of the IQAC, every department can have a faculty representative who liaisons between the IQAC and the department. Their roles and responsibilities include participation in different activities/meetings of the IQAC and giving suggestions, updating the IQAC database, documenting departmental activities and maintaining all the records in the department.
4. To constitute Students' Wing of the IQAC. The responsibilities of the members Include liaison between IQAC and their peers, giving new ideas and suggestions.
5. To organize Faculty Development Programmes on Capacity Building, Motivation and Orientation for newly recruited faculty, Sessions and workshops on Planning, Evaluation and Developmental activities, Leadership training programmes, Internalizing and Institutionalizing the Best practices, Effective Teaching methodologies, Technology up gradation and training programmes for faculty and administrative staff on Effective functioning and keeping abreast with current trends
6. To obtain well conceptualized Feedback from the students and other stake holders for quality enrichment.
7. To cater to the needs of diverse student community, Mentoring system and Remedial coaching to be adopted.
8. To stimulate research activities.

Follow-up actions the institution proposes to undertake

1. A summary of the seminar was presented to the highest academic governing body of the institution, the Staff Council, on 5th August 2019.
2. The institution proposes to form a committee to conduct Periodical Review of the functioning of the various units of the institution and Teaching-learning process.

3. The committee will undertake sustained efforts in the area of student support services, to ensure academic excellence through overall development of the student and to make student life on campus successful.
4. The committee will encourage participatory style of functioning and promoting use of technology and will inspire and stimulate the interest of faculty members and students, to take up more projects, with a greater spread of diverse issues.
6. Setting up of suitable mechanism to monitor the quality enhancement of faculty members and students.

Recommendations

The following are the recommendations that were arrived at after much deliberations at the seminar by the invited experts. The thrust areas that have been identified are Teacher Assessment, Evaluation, Benchmarking Best Practices, Setting up of clear Vision and Mission Statements for the institution and preparing the institution for the Reaccreditation Process under the Revised Framework of the NAAC.

- Preparation for NACC Audit.
- The new dimensions of quality standards in HEIs and the specific role of IQACs in the colleges.
- Quality Education through Value Education.
- Identification of new strategies for enhancing quality for both teaching and evaluation.
- Setting up of suitable mechanism to monitor the quality enhancement of faculty members and students.
- Internal and external audit- parameters formats –experts- effective usage of outcome.
- Infusion of ICT in Teaching , Learning and Evaluation Methodology
- Faculty and administrative initiatives in the development of quality research and extension through academic and industry collaborations.
- Governance and Leadership through MIS.
- Strategies to overcome deficiencies and improve quality standards in HEIs.
- Importance of student initiated extension activities and study projects.
- Bridging between industry and academia.

THEMES OF WORKSHOP

1. Challenges in Quality Higher Education;
2. Equity and Equality in Higher Education; 3. Quality Sustenance and Enhancement through IQAC;
4. Classroom Innovations for Quality Education;
5. Community-Educational Institution Partnership;
6. Continuing Professional Development;
7. Quality Enrichment in Higher Education: Innovation and Best Practices;
8. Quality Technical Education in India; and 9. International Quality Assurance Practices in Higher Education.

PHOTO GALLERY



PHOTO GALLERY

