

11. ENRICHING RESEARCH IN ACADEMIC INSTITUTIONS

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Abstract:

The role of research in academic institutions has been emphasized. A new model has been proposed for absorption into the academic world. Au-Kalanidhi models proposed here has been tested in three universities and hence the robustness of the model works out to be a time tested model. As research plays important role in the quality of institution, it is proposed for setting up an Accreditation council to evaluate standards of research institutions across the globe. Preparatory work on the International Accreditation Council of Research has also been enumerated.

Introduction

The quality of institutions has been dependent on the research activities being carried out in an institution. Various research conducted by academic agencies have proved the point that the quality of B.Tech program is better in an institution where the institution offers M.Tech program. The quality of B.Tech and M.Tech are better where the institution is offering Ph.D program. Accordingly research has been emphasized and a new model is also proposed to ensure increased amount of research activity in the institutions. To have a measure we need a tool to identify the progress in research in the institutions. Culmination of this effort is the birth of a new agency known as 'International Council of Accreditation for Research'. Such an effort is the first of its kind in the Accreditation efforts across the globe.

Research in Academic Institutions

With the present number of technical institutions, India is rolling out approximately

4,00,000 Engineers per annum. How ever in order to meet the global demand and the local demand we need to increase the number by ten times.

Attempts were made to invite private participation in the promotion of technical education in the country. All India Council for Technical Education (AICTE) being the apex body to regulate technical education has given permission to start large number of technical institutions. As usual, because of the private participation, more private technical institutions blossomed in the southern part of the country. Some of them were declared as universities by the Central Government. Some of them in the private sector could not flourish because of the short foresight that resulted in generation of wealth instead of promoting quality education and research. Such institutions have no vision for growth.

Due to sudden expansion in the number of technical institutions in the private sector, there

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has been a huge attrition of faculty from Grade-I institutions.

Due to the heavy drop in the faculty strength, research work progress has been severely hampered in Grade-I institutions. The faculties with research experience who have joined the Grade-II institutions (private sector) were paid substantially well but not have the right environment to promote research.

Private institutions are paying heavily. Salary structure for the qualified faculty is an inverted cone. While top class institutions pay moderately, newly started private institutions pay treble the salary.

The scarcity for faculty will be much more than what we foresee today and in the near future. In the next ten to twelve years the demand for more engineering institutions and for quality faculty will increase many folds.

Any methodology that we develop should focus on meeting the teaching needs of these institutions and research support for these institutions and also high class research faculty for Grade I and Grade II institutions. Our aim has been to bring out quality teachers and researchers for meeting the ever increasing demand.

Research Funding from the Governmental Agencies

AICTE, UGC, DST, DBT and such other funding agencies have increased the research funding to both the central and state supported Science and Technology institutions, to promote research in a big way and offer more fellowships to attract research scientists and engineers to take up research. Through this we expect 25,000 fellowships to meet the needs initially. In subsequent years there shall be an increase in the fellowships by 25% every year. The fellowship may be Rs.10,000/- p.m. Annual research funding for research per scholar may be Rs.5,00,000. For Grade-I institutions this grant has been liberally increased many fold. At this rate Govt. of India will be earmarking

Rs.20 billion only for the above scheme. This will yield quality research and high quality research papers in the coming years.

This grand support for research funding has been limited to Govt. funded Grade I institutions. Off-late private professional institutions (Grade II) have realized the importance of research and started looking for qualified teachers to promote research and thereby improve the quality of education offered at the under-graduate and graduate level. They are willing to attract students and staff from outside the country. Many institutions have developed Hostels for international students. In this direction Common wealth Science and Technology Academy For Research (C-STAR) established as a nonprofit organization has embarked a scheme to attract qualified faculty to come and help these institutions in promoting research.

Organizations engaged in research in the International arena can safely look for research scholars to do research from India. They can also look for the institutions that can provide platform for doing research. There are a large number of institutions with good library infrastructure available in India. As on date around fifty technical institutions with good research environment are partners to this academy viz. Commonwealth Science & Technology Academy for Research (C-STAR) in achieving the desired objectives.

Accreditation of Research

Accreditation of research involves creating a platform for research, creating channels for funding research and creating channels for inviting researchers from international community to do quality research. Normally many Engineers with post graduate degree qualification do not attempt to go for research. Graduate Engineers who pass out of even the Grade-II institutions would like to associate themselves with good institutions and hence proceed for their Master's degree programme and this incidentally promote their job

opportunities too. Beyond Masters' very few students embark on research. Those who proceed for research do not stay in teaching.

It is a fact that Professional institutions with Masters' programme are able to roll out better quality undergraduate students. Institutions with PhD programme do roll out better Masters' and better under graduate students. With the ground reality of scarcity for qualified teachers to teach in professional institutions and to do research and research guidance, in order to achieve higher quality in institutions, there is a strong need for a new model of academic system to meet these two requirements. A new model (AU – Kalanidhi Model) has been developed and was implemented at Anna University for promoting research in both Grade I and Grade II institutions. This model was successfully and effectively implemented in Anna University, Punjab Technical University, National Institute of Technology, Warrangal and two more Grade II universities where we were able to see the expected result with regard to research.

AU-Kalanidhi Model

In India the University system has a three tier faculty system viz. Professor, Reader and Lecturer.

Lecturer appointments were kept in abeyance. Salary component of these vacancies were utilized for paying fellowships to the Research / Teaching Associates. Advertisements were made and M.Tech/M.E Graduates were selected and appointed for a period of Four years with a Fellowship of Rs.8000/- in the first year with an increment of Rs.500/- per annum. A regular Lecturer was paid Rs.12000/- p.m and was handling three courses. Teaching/Research Associate was expected to teach two courses and carry out research during the fellowship period.

We were able to attract talented youngsters for the above scheme. They were informed that the period of fellowship is treated as equivalent

to that of a Lecturer for the purpose of appointment as Reader in the University. When they look for appointment as Reader in the University they are subjected to the normal appointment procedures by the University. However their scholastic ability for teaching and research are well known to the university and this information facilitate in their selection as Reader

Once in every Six months, they were expected to publish research articles in high impact number Journal. No progress in research will result in termination of the agreement. We were able to get quality research papers of high impact numbers. No. of PhD produced in the university has increased considerably. The university could choose the best out of the scholars for further appointment. We were able to produce qualified teaching personnel with best university teaching experience to other institutions in the private sector. This scheme had many advantages but also had one limitation i.e. Limited Research funding to carry out experimental research. Here we were able to mobilize the industry support. Annually ten to twelve industries signed agreement for collaborative research. Thus the funding received thro' this agreement has been effectively utilized for offering fellowships and for promoting research.

Since many universities are willing to implement this model there are many research fellowships available in India and this is a boon for International Students. International scholars can look for research opportunities in Indian institutions which is a paradise on earth embedded with rich cultural values and heritage. Ultimately our aim is to produce quality research scholars with values in life which we can get in India.

In 2001-2002 number of publications for the University was 309 (International) and 354 (National). After the introduction of this new research model, in 2005-2006 the number has increased to 574 and 481 respectively. This is

purely because of the recruitment of 300 Teaching/Research associates under the proposed model.

Examination And Evaluation Of Research

Examination is a quality control mechanism. Particularly for research scholars it is important to realize that examination system is an essential component in evaluating the progress of research. The present examination in Research consists of two parts. The first part is evaluation of the candidates' fundamental knowledge in the chosen field that would allow him to proceed with the chosen area of research and the second part is nesting thesis on the findings and submitting to the degree awarding institution. In India the first part is being done at post-graduate level. The syllabus content for the particular candidate will have to be decided by the Research committee constituted and approved by the university where the candidate is actually doing research. The Research Committee may decide to identify existing courses from the Post-graduate courses of the University or they may prescribe new courses whose content are at the post-graduate level of the university.

The second part deals with the actual research proposed to be carried-out by the candidate doing actual research. Preparing a synopsis for the proposed research and get it approved by the Research committee and then carry out the research under the strict guidance of the research committee, the findings of the research work will have to be submitted in the form of Doctoral Thesis. Across the Asian countries this procedure may vary from University to University and Country to Country.

Researchers from the Asian Countries will have plenty of opportunities to participate in the ongoing activities in research both on a short term basis as well as long-term basis. In this big adventure C-STAR has a major role to play in connecting both ends in order to promote research. Two important components in research are financial support and funding and

library infra-structure. Many engineering institutions are fully geared to support funding for research. They also have state-of-art libraries including on-line libraries. All these institutions have broad band internet connectivity.

International Accreditation Council For Research

C-STAR being a non-profit organization is willing to join the efforts in establishing a *Research Council* to monitor and uphold the standard of Research in colleges and universities across the Asian countries. It is the need of the hour that likeminded academic non-profit organizations come forward to promote a research council that takes care of quality in research. C-STAR is looking for organizations in the Asian countries to come forward to jointly establish such a Research council in order to promote Research in professional institutions. We wish to have the honor of taking major support from WIETE. Establishment of the council involves signing of the Accord for the establishment of the council by the participating agencies from different countries and drafting guidelines for accreditation of the Research Standards of various institutions in the Asian Region. Without having accreditation it is difficult to compare the quality of research in the academic system. Without such research council in place it will be difficult to induce a spirit of competition for high quality research. This council will facilitate the mobility of scholars. Probably we may initiate this accreditation council for Research for Asian region and probably this can expand to other countries across the globe later.

Conclusion

The widely prevalent phenomenon across the academic world is the qualified academic teachers and quality research. In order to achieve both, an experimented model has been illustrated with facts on the merits and suggestion for establishing an Accreditation Council to monitor, accredit and uphold the

high quality research which will result in the development of Intelligence, Inventions and Innovations i.e. 3i's. In other words, establishment of such a council would promote quality professional institutions and quality applied research resulting in reduction of the

gap between the institution where the invention and innovations blossom and industry where the inventions and innovations are converted into products useful to mankind.

