



Quality Imperatives and Higher Education

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Abstract

Research as an endeavour contributes to academic development, innovation and futuristic step which is regarded as the backbone of higher education. Higher education is the cutting edge of the society, economy and polity. It is threshold to go into multifarious walks of life by the major stakeholders who include the students and researchers. It provides the vital manpower resources to all the sectors of our economy and polity. Even though the entire educational scenario is an integrated whole comprising of pre-school education, primary education, secondary education, higher education, etc., the role of higher education can hardly be overemphasised. This sector in itself has a number of components such as, general education or liberal education, technical education and professional education, to name a few. Again, the higher education system is imparted through formal institutional set up as well as informal, distance, online, digital or virtual mode either as a part of the formal system or completely independent and supplementary method of web-based technology and techniques. These segments of higher education system complement and supplement one another to serve the cause of progress and development in any given society.

Keywords: *Higher Education, Quality, Research, Skill Development, Innovation, National Policy on Education.*

Higher Education in India

India is a classic example of a complex and composite higher education system that has been at the centre stage of our socio economic, political, scientific and intellectual journey particularly during the post independent era, our country has embarked on a journey of higher education which has catered to the requirements of pedagogy, research, innovation, incubation and extension that is emulated by many of the developing societies. As the second largest country in the world in terms of population and constant resource crunch, it has been an uphill task for the policy makers, educational planners, educational administrators and the decision makers to cater to the needs of the ever changing and exceptionally challenging

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higher education system in the country. It is a proven fact that by the time we achieve arithmetic progression in terms of the number of formal educational institutions, the prospective entrants to our higher education scenario go on multiplying in terms of geometric progression. For instance, on the eve of independence, we had a handful of higher education institutions which could not cater to the academic needs of the population at that point of history. But when we look at India of the present day the gross enrolment ratio (GER)ⁱ in higher education system in 2020 is 25.2 p.c. that speaks volumes about the gaps in the system. With every passing day, the number of prospective students goes on increasing.

While discussing the higher education scenario in India, it is pertinent to talk about the existing higher education institutions in brief. As on June 01, 2021 we have fifty- four centrally funded universities and institutions; 416 state universities; 125 deemed to be universities; 361 private universities; 159 institutes of national importance; 14 open universities; and more than 40,000 colleges in Indiaⁱⁱ. Just by mathematical calculation and extrapolation, our country needs at least three times more all the above-mentioned higher education institutions as on today by imagining that their would-be hundred percent gross enrolment in our higher education institutions. This is a grim situation. The reality is something different. Going by the current rate of investment in higher education system including public expenditure, private participation and contributions by the citizens. The scenario is a remote possibility. However, the country needs to cater to the educational requirements of the ever- increasing prospective student population. Another very significant fact is that India is the home to world's largest pool of young persons, the bulk of whom are directly and indirectly in need of quality higher education. At this juncture, the system of open, distance, outreach higher education with web-based virtual learning management system could be the panacea.

Some of the vital aspects include, among others, teaching -learning, research and extension activities, etc as the parameters of the higher education system. In this brief writeup, let us concentrate on the issue of quality imperative of innovative research in the context of higher education. The term innovation stands for something new in terms of idea or practice. An invention or an introduction of a new process of working or doing something is also an innovative step. Innovation has a few other characteristics including that of originality, creativity, novelty, ground breaking thinking, forward looking attitude, progressive outlook modern and up to date step and out of the box thinking. Research is related to the idea, thinking and implementation of the aforesaid notions. There is a slight deviation from the discussion mentioned. In research, the researcher normally starts with probing some existing ideas, viewpoints, theories or even practices that might have been already studied and analysed by someone else in the past. It is in fact a process of relooking at the issue or problem with an open mind as well as innovative approach.

Quality Research

Research, that aims at quality enhancement, is a journey, never a destination. In the past, there has been meaningful research. In the present juncture, there is the need for quality research. And of course, logically, in future there will be new research initiatives based upon

the available facts and figures; the demand of unforeseen circumstances and requirements; and the necessity of new kind of probe either to find out solutions of some pressing problems or some impending challenges. Depending upon the methodological rigour, available data and information, time frame or time span at the disposal of the researcher, and availability of resources at any given point of time would determine the output and outcome of research in any given field. The most significant implication of innovative research is the fact that such endeavours could result in certain conclusions that might completely alter the existing knowledge and can at times be diametrically opposite to what we have accepted as the truth. Proper research breaks into this belief system that what has been told is the ultimate truth which can never be altered or challenged. However, with every new research initiative, new findings emerge and new knowledge is added to the vast ocean of any domain. Now we can think of some basic issues that can determine the trajectory of innovative research. These include, among others, newness of the topic, issue or idea (of course in relation to any impending challenge or long drawn problem); availability of source materials such as existing literature on similar issues, scope for empirical probe and data collection, methodology and tools, time, infrastructural facilities and of course financial resources; and, accessibility to the resources in relation to a particular research endeavour. In relation to a large scale research work or empirical study such as a survey, at times a pilot study is of help to the researcher. It is particularly beneficial in formulating the detailed research proposal, research problem, designing, selection of tools and techniques as well as finalization of the sample size for the main research activity.

Research involves a number of interacting stages that are integrated to the overall process that is starting from the conceptualization and the complete gamut of activities and culminating in the research output or research report and beyond. In this context, identifying the research problem is one of the vital aspects of any logical and meaningful research. It is essential for knowing the clarity of purpose, contributing factors and forces, problems or challenges and the rationale behind embarking on the research endeavour. Next comes the question of identifying the research gaps or knowledge gaps in relation to the problem at hand. This necessitates review of literature. This step provides us a bird's eye view of the existing literature including books, journals, articles, research papers, reports, newspapers, manuscripts and web-based sources etc. that are related to the research problem at this point, either directly or indirectly. Such review also gives the researcher an idea about what type of research activities have been undertaken or reports published in the field or related topics including the gaps, drawbacks or limitations which need to be taken into account in case of the proposed research work. At this point, the significant issue of plagiarism comes into picture. While there is ample scope to quote the authentic source materials, existing literature and already published research reports with detailed bibliographic notes and references in any research work, borrowing materials or quoting the work of other researchers and authors without proper citations according to the standard formats like latest version of APA or MLA styles, as the case may be, is unethical and it goes against the international standards of research ethics and publication guidelinesⁱⁱⁱ. Here also, the issues of quality research and publication are given primary importance.

Identification of research objectives is the next step which is of vital significance. Finalisation of objectives give a sense of direction and certainty to the research activity. So, research objectives need to be specific, concrete and achievable within the available resources, timeframe and any other limitation that might crop in during the process of research. In this context, the research objectives, be it in the fields of Science, Technology, Humanities or Social Sciences, need to be socially applicable, path breaking and problem-solving indicators which can contribute to relevance and authenticity of the research endeavour. No research work can simply be confined to the four walls of a laboratory or the pages of a research report. The society at large should benefit from the output of research including the immediate beneficiaries and stakeholders for whom the particular research work is directed.

In any kind of research, delineation of the scope of study or the area covered is of vital importance. It resolves the possibility of confusion, overlapping or duplication of research activities. In another sense, scope of study also indicates the limitations within which the process of data collection, use of tools and techniques and finalisation of the research report need to be carried out. Next comes the issue of formulation of hypotheses or research questions or points of reference that become the constant guiding factors in the entire process of research. Some of the disciplines prefer formulation of only one hypothesis or a number of hypotheses depending upon the nature of the research problem. On the other hand, some other subjects of study prefer identifying a few research questions which can facilitate the research activity. Even some other disciplines as well as researchers believe that finalising such indicators might be restrictive in nature. So, they prefer a few points of reference or at times no such indicators for continuing with and completing a particular research. However, for majority of disciplines and subjects of study, either hypotheses or research questions are formulated to guide research activities. There are some threat perceptions which need to be addressed. While formulating hypothesis, null hypothesis and dumb hypothesis should be avoided that could have an inherent negative or misleading implication.

Next comes the issue of research methodology including the tools, techniques and procedures associated with any given research activity. It is needless to mention that quality aspects related to research methodology hold the key to research output and outcome. Some of the factors or elements in the context of methodology include identification of the universe and the sample respondents in case of an empirical study; finalization of the tools and techniques appropriate to any particular research work; review of literature and all the source materials; data collection, compilation, tabulation, codification, use of appropriate statistical methods, data analysis, verification of the hypotheses or finding the answers to research questions; and arriving at the concluding observations etc. Here the researcher should be aware of and also should indicate the limitations of the research endeavour such as time constraint, availability of resource, margin of error, authenticity of data and information collected, unforeseen circumstances contributing to alteration of ground realities, change of facts and figures in relation to the area under study or the sample respondents. For instance, pre-COVID 19 and post-COVID 19 life and livelihood scenarios are diametrically opposed to

each other^{iv}. Data collected during the pre-COVID months can lead to peculiar conclusions while juxtaposed during the post-COVID 19 scenario. On line education during the pre-COVID months was considered to be complementary and supplementary to formal and institutional education system. But in the aftermath of the COVID-19 pandemic, on line education has become the mainstream method of education when around the world educational institutions have been shut down. This is a grave cause of worry. Many of the experts and academicians talk about the quality of education and research. As a result, the notion of the blended mode of education with a logical mixture of online and face to face education is discussed as the alternative.

Coming to the final stage of quality in research activity, there is the culminating point of final report writing. Research report writing involves the stages such as making drafts; correcting or changing inadvertent errors for misrepresentation of facts and information's; use of standard writing practices, style and grammar; use of appropriate tables, graphs, charts etc.; analysis of results and discussions; concluding remarks and suggestions; indications for future research on the basis of inherent limitations; significance, contribution to knowledge, policy prescriptions, etc. depending upon the nature and implications of research work. While preparing the research report, some of the important issues should be kept in mind. The researcher should know how to be logical, precise and to the point in thought and expression. Neglecting the main theme of the research problem and giving undue space and importance to peripheral factors and aspects should be avoided as far as practicable. The research objectives that are specific, measurable, achievable, realistic and time-bound (SMART) should be remembered throughout the process of research.

Innovative research and higher education are intrinsically and symbiotically related to each other. Both complement and enrich development of their worth and significance. Innovative research as well as higher education revolve around the interacting factors like synergy, knowledge, intelligence, and life-long learning (SKILL). In essence, skill combines nature and nurture. While nature stands for intrinsic worth and qualities, nurture is the aggregation of education, training and capacity building. Skill is a combination of acumen, professionalism and perseverance. One alphabet which is common to three terms such as education, skill and wisdom is 'I'. This alphabet 'I' stands for intellect, intuition, intelligence, innovation and integration. Both research and higher education rely on these factors and qualities. In the contemporary world of innovative research and higher education, the so-called compartmentalisation of disciplines or subjects of study into Arts and Humanities, Science, Commerce, Management, Engineering and Technology etc. has become rather outdated. Inter disciplinary, cross disciplinary and multidisciplinary approaches to quality oriented study and research are the requirements of the present-day world where networking, partnership and collaborative efforts are regarded as the contemporary skills.

Such skills are required not only for the individual students and researchers, but also for all the stakeholders in the system including the higher education institutions and research institutes. For example, introduction of courses like artificial intelligence and internet of things for the students and researchers pursuing the so called traditional or general education

is matched by the introduction of liberal arts, soft skill, social sciences and ethics courses for their counterparts in hither to engineering and technology courses as imparted by the professional institutions of higher education and research.

Some of the specific skills associated with innovative research and higher education per say include, among others, critical thinking, problem solving orientation, collaborative attitude, written, verbal and symbolic communication, creativity, ethical values, analytical reasoning, data and information management, logical arrangement and writing, ethical values and norms, and empathy. Research and Development (R&D) in the context of industry and application of knowledge in various walks of life is one area that needs special attention. R&D is highly essential for innovation, incubation and competitive advantage for advancement of research-based knowledge as well as critical problem-solving mechanism.

When we have improved R&D infrastructure coupled with skilled human resources and forward-looking ideas, the result would be more economical and less time-consuming processes, tools and techniques and services that can be of great help not only to the academic and research community but also to the society at large. We are reminded of the innovative concepts such as ‘college without walls’, ‘college without degrees’ and the popular notion of ‘community college’ require innovative research skills based on common sense, experience, traditional and customary best practices, indigenous knowledge, ideas coming out of popular culture and such other out of the box thinking that can supplement the efforts of sophisticated scientific and technological research activities undertaken by the state of the art and modern R&D institutions and established higher education institutions.

The National Education Policy adopted by the Ministry of Education, Government of India on July 29, 2020 (NEP -2020) has specifically dealt with innovative research and higher education in the following manner: first, there will be a National Research Foundation (NRF) by harnessing research activities and potentials across higher education institutions in India. There is a grim reality relating to research which indicates that at present 0.5 p.c. of students enrolled in the higher education institutions in India join doctoral or fellow programme or equivalent level. The NRF would be an autonomous body looking after funding, mentoring and facilitating quality research in the country. There would be incentives for and recognition of outstanding research in cross-disciplinary areas to be provided by the NRF. Second, there will be a few Research Intensive Universities (RIUs) in the country which will be completely dedicated to multidisciplinary and cross disciplinary research. A designated University may be developed as a research-intensive institution which will be the pioneer or model that can be taken as a precursor to such institutions to be set up under the ambit of NEP-2020. Third, there will be promotion of a culture and a climate of research and innovation in the country in the form of provision for doctoral research after Bachelor’s Degree Programme just after four years with the option to exit after one year with a Master’s Degree or continuation of studies and research for a doctoral programme.

Conclusion

Finally, there will be consolidation of the mechanism for research funding and grants across higher education institutions and academic disciplines. It would be based upon the process of quality parameters-based regular evaluation and monitoring of progress. It will also try to harness all types of funding opportunities as available from the government, national and international funding agencies and funds allocated from corporate social responsibility fund by different corporate enterprises. Thus, innovative research and excellence in higher education with renewed emphasis on quality and synergy would go a long way in making India a knowledge driven society dedicated to all round development of our nation and that of the global society.

Endnotes

ⁱ Gross Enrolment Ratio (GER) is a cause of concern for the educational planners as India has world's one of the largest youth populations. It needs a robust plan and road map to educate this vast group of human resource that can contribute immensely to national development.

ⁱⁱSee www.education.gov.in for details

ⁱⁱⁱThe University Grants Commission (UGC), Government of India, New Delhi has prescribed a mandatory Pre-Ph. D. Coursework paper titled Research and Publication Ethics (RPE) that takes care of all such issues. See www.ugc.ac.in for details

^{iv}Covid-19, a variant of Corona virus has affected life and living throughout the world during 2020-21 and the educational system is no exception. The traditional class room teaching has been substituted by online pedagogy. The experts are of the opinion that in the event of actual slowing down of the impact of the pandemic, the educational system can hardly go back to its previous pattern. See <http://www.ibe.unesco.org/en/news/education-post-covid-world-additional-considerations>

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