



A Critical Analysis of the Development of Research in Education in India

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Abstract

This paper deals with the development of research especially research in Education, its progress, trends, quality concerns and Government measures to improve quality. It also highlights the role of various stake holders, UGC, NCTE and Universities. Reports and recommendations of various commissions especially NPE 2020 towards research and development has also been discussed in this paper.

Keywords : Education, Research, Trends, Quality

INTRODUCTION

Education is a process which develops the personality of the individual so that he can fulfill all his possibilities, control his environment and can contribute something to the best of his ability for the progress and welfare of human being. Education is necessary to transform each of us into responsible citizens. In ancient India, it was understood as a process of self realization and raises the Individual consciousness to its highest potential. The Quran started with the verses which shows the importance of Education. In Islam, it says, read in the name of Allah who created you, Islam signify education so much as it made education compulsory for each and every men and women. In the words of Swami Vivekananda, "We want that education by which character is formed, strength of mind

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is increased, the intellect is expanded, and by which one can stand on one's own feet". It is necessary for the development of the nation. The progress and development of a nation and civilization depend upon its education system especially its research. Teachers play most important role in this process. Teacher Education plays a crucial role. Research is the base of higher education and the development of a nation is based on its quality research.

Research is a systematic enquiry for enhancing knowledge by collecting, organizing and analyzing information. In the words of Wernher von Braun (a German philosopher), "Research is what I'm doing when I don't know what I'm doing". It is basically the search for truth/facts. The significant contribution of Research deals with the progress of the nation as well as an individual with commercial, social, and educational advantages. Albert Szent Gyorgyi (Hungarian Biochemist, Nobel Prize – 1937) writes "Research is to see what everybody else has seen and think what nobody has thought". J. W. Best said that, "Research is carefully recorded and reported. Every term is carefully defined, all procedures are described in detail, all limiting factors are recognized, all references are carefully documented and all results are objectively recorded".

HISTORICAL PERSPECTIVE OF RESEARCH

The Ph.D. degree started in Europe where it was granted in the twelfth century, however in the modern form Ph.D. with a research thesis took firm roots in Europe in 1800s century then it was expanded in US and by mid 1900s it became a major producer of the world Ph.D. In India, Ph.D. program started in the end of the nineteenth century – Calcutta University in 1877 granted the first Ph.D. The Universities of Calcutta, Madras, and Bombay gave the early Ph.D.s – these are the earliest universities in the modern format and were established in 1857 by the British. A few other universities were established in the nineteenth century. Now there are about

1000 degree granting universities and most of them award doctoral degree. In almost all universities the pattern of granting degree is same where thesis is submitted and evaluated by two external members followed by viva voce. Original research work and enhancement in the field of knowledge is expected from research work. In India it is largely research based. Ph.D. production work has been increased in all countries and in India it has also increased. OECD data says that in terms of total number of Ph.D. production India stands fifth as per the figure shown in 2013-2014. The Ph.D. number in India compared to US is only 5 percent.

Table : Production of Ph.D.s in India in different fields in recent years as per AISHE Reports

Year → Discipline↓	2011- 12	2012- 13	2013- 14	2014- 15	2015- 16	2016- 17	2017- 18
Humanities	2,994	3,463	3,570	2,759	3,191	3,015	3,727
Social sciences	4,271	4,770	5,403	4,785	4,950	6,462	6,700
Biological sciences	5,659	6,406	5,063	4,253	5,063	5,542	8,212
Engineering and technology	2,081	2,186	2,583	2,597	2,785	3,366	4,907
Other physical sciences	2,678	2,571	2,551	2,533	2,923	3,495	3,924
Others	3,874	4,257	4,695	4,914	5,263	6,921	6,938
Total	21,557	23,653	23,865	21,841	24,175	28,801	34,408

RESEARCH TRENDS

Education is crucial for new trends and ideas. From the thriving

educational research centers producing high-level academic work all the way through to the techniques classroom teachers will employ in their day-to-day work, this profession develops thinking, creativity, problem solving skills. Those who have been trained years ago will fall behind on the latest developments. To make them update and to aware all about the new ideas, it is necessary to know the latest development in the field of education and its trends.

- One such development in the field of education is Social-Emotional Learning SEL which develops the idea of holistic process through which young people acquire 'the knowledge, skills and attitudes' to live emotionally well-developed lives. According to the Collaborative for Academic, Social and Emotional Learning (CASEL), SEL seeks to equip children and young people with five core 'competencies'. These are: Self-Awareness, Self-Management, Social Awareness, Relationship Skills and Responsible Decision-Making.
- Due to the knowledge explosion and technological development many more ideas are being developed for researcher that is like, Adaptive learning : it seeks to use technology to create personalized, data-driven and responsive 'pathways' for each pupil, with automated educational systems in place to monitor student progress.
- Learning theory for the digital age with connectivism as advocated by Siemens to the three major philosophies of learning i.e., behaviourism, cognitivism and constructivism.
- Over the course of a school day, there will always be points at which pupils feel disengaged, unfocused or just too tired to take in information effectively. This is why contemporary educational researchers are thinking hard about how to

create 'moments' of deep focus and psychological absorption, during which pupils are totally immersed in their learning. Integrated learning solutions are now an accepted reality in most schools. They are aiming to provide optimum digital infrastructure requirements while keeping traditional textbooks as the base. Knowledge retention improves drastically when learning involves audio, video, and visuals which is lacking in traditional lectures.

- Short-term attention span has always been an issue in the education sector. Students have struggled a lot to cope with the long, intense text. The learning content has not been very interactive, which reduced learning abilities in students. This is, in fact, a much-discussed area in the digital transformation trends in the field of education. Teachers can also use it as a domain to alert students about some potential issues or use it to easily evaluate if their teaching strategies are working through polls.
- The importance of learning outcomes will be focused more and that is why formative assessment solutions are adopted. Through formative assessments, learning makes an impact as it tests the student's progress together with curriculum delivery and analyzes personal and social competencies. In fact, research has suggested that it can have a remarkable impact on the way students perceive education. Understanding its significance, schools have started giving them choices to opt for the way they like to be seated in a class. The way exams are conducted and evaluated is going to be changed which avoids the hectic traditional styles including exam invigilation, exam centers, and answer sheet evaluation. This innovative technology will make a remarkable difference in the way schools handle student credentials and certificate verification.

- The integral education aspects were science, technology, engineering, and mathematics. But this has become a bit outdated nowadays. However, various industries ask for professionals who disciplined in the areas of creativity and art. The “A” stands for Arts, which includes the creative aspect of learning. Students and teachers get a chance to use the traditional classroom set up where they can utilize the most modern technologies.
- In present era, there are more sites that use AI technology to assess a student's progress. The main advantage of AI is that it provides real-time feedback and continual targeted practice for students. Teachers can analyze where the students stand up to and also they can tailor up better lesson plans.

There are many more emerging ideas are like Ability grouping, Bilingual education, Blended learning, Career counseling, Collaborative learning, Community immersion, Computer literacy, Early childhood education, Flipped classroom, Home schooling, Information literacy, Learning styles, Merit pay for teachers, Multiculturalism, Multiple intelligences, Online education, Outcomes-based education, Parental involvement, Peer counseling, Plagiarism, Sex education, Standardized testing, Technology integration, Virtual classrooms, Whole brain teaching are some issues, ideas or field of research which is required. In the modern time along with the creativity, intelligence, personality, learning theories & styles, achievement motivation, academic performance, study habits, socioeconomic status, adjustment, emotional, spiritual and other type of intelligence & quotients, Team Teaching, Individualized Instruction, Mixed-Age Teaching, Brain-Based Teaching, teacher effectiveness, teaching effectiveness, aspirations, expectation, teacher satisfaction, dissatisfaction, teachers burnout, problem solving, management, administration, finance are some more areas of research in education.

NATIONAL EDUCATION POLICY 2020

The National Education Policy (NEP) 2020 report released by the government recently provides some points. The first noteworthy point is that the NEP provides for a research ecosystem under the stewardship of the National Research Fund (NRF). It aims at providing the required impetus to grow the R&D agenda by way of building a research ecosystem comprising the government, universities, research institutes and industry. According to the NEP, "the NRF will work towards seeding, funding, coordinating, and monitoring research and innovation initiatives." It will also encourage research through merit-based peer evaluation of research projects along with incentives like awards for outstanding work. The proposed National Research Foundation (NRF) will be a research sponsoring agency in addition to existing bodies like DST, MEITY, DBT etc. The collaboration between academia and industry envisioned by the NEP calls for a patent policy structure at the university level to facilitate more patent applications. Such a policy will safeguard interests of all the entities involved, provide for a research environment, and ensure compliance with the national laws and regulations. A larger number of patents with commercial benefits will serve as incentives for continuous and sustained efforts in research. A final aspect to consider is that the NEP emphasizes a multidisciplinary approach in education and the need to nurture a curious and creative mind with a view to develop analytical and critical thinking abilities at an early age. These are the skills essential for framing the right research questions and for bringing about the required and relevant outcomes/solutions. This will prove the long term benefit in the field of research in education in India.

QUALITY OF RESEARCH

In India less number of Ph.D.s produced and Quality of research is a matter of grave concern as fund is not as per requirement,

infrastructure is also not up to the level and many faculty members does it and university grant it as it is required in their appointment, academic promotion. So mindset is also not research oriented in general in our education system. It seems that use of unethical practices is also rising. Part time Ph.D. just for the sake of getting Ph.D. in easy way is also a reason for lowering the standard of PhD.

GOVERNMENT MEASURES

Coordination and determination of standards in higher education is a subject in the union list. The responsibility of higher education is of Central government. It has been discharged by the Department of Education mainly through UGC. Strengthening of Research is also one of the objectives of the Government. So Government of India via Ministry of Education via UGC has taken steps to develop the quality of research in which some are as follow:-

SHODHGANGA

The UGC Notification (Minimum Standards & Procedure for Award of M.Phil. / Ph.D Degree, Regulation, 2009 Amendment made on 2016) dated 5th May 2016 mandates submission of electronic version of theses and dissertations by the researchers in universities with an aim to facilitate open access to Indian theses and dissertations to the academic community world-wide. Online availability of electronic theses through centrally-maintained digital repositories, not only ensure easy access and archiving of Indian doctoral theses but will also help in raising the standard and quality of research. This would overcome serious problem of duplication of research and poor quality resulting from the "poor visibility" and the "unseen" factor in research output. As per the Regulation, the responsibility of hosting, maintaining and making the digital repository of Indian Electronic Theses and Dissertation accessible to all institutions and universities, is assigned to the INFLIBNET Centre. The total number of theses uploaded on Sodhganga till 31.12.2021 is 3,33,333.

SHODH GANGOTRI

Under the initiative called “Shodh Gangotri”, research scholars/ research supervisors in universities are requested to deposit electronic version of approved synopsis submitted by research scholars to the universities for registering themselves for the Ph.D. programme. Now it is expanded to MRPs/PDFs/ Emeritus Fellowship etc. The repository on one hand, would reveal the trends and directions of research being conducted in Indian universities, on the other hand it would avoid duplication of research. Synopsis in “Shodh Gangotri” would later be mapped to full-text theses.

SHODH SHUDDHI

Based on the recommendation of Sub-Committee, National Steering Committee (NSC) of e-ShodhSindhu, The Ministry of Education, Govt. of India has initiated a programme "ShodhShuddhi" which provides access to Plagiarism Detection Software (PDS) to all universities/Institutions in India since Sept 1, 2019. Central Universities

Under this initiative, Original (formerly Urkund) a Web Based Plagiarism Detection Software system is being provided to all users of universities/Intuitions in the country. This initiative was formally launched by Ministry of Education (formerly MHRD) on September 21, 2019.

RESEARCH AND PUBLICATION ETHICS

UGC also decided in 543 th meeting held on 09th August, 2019 to start a two credits compulsory nature course for awareness about publication ethics and publication misconduct entitled, ' Research and Publication Ethics'' for all Ph.D. course work.

CARE

To maintain the standard of the institution of higher education and to improve the quality of research and safeguard publication ethics UGC has established "Consortium for Academic and Research Ethics (CARE) for creation and maintenance of "Reference List of Quality Journals". CARE members include Statutory Councils/Academies/Government bodies.

FUNDING

Funding is still a difficult issue for Indian Education System in general as we could not allocate 6% of GDP recommended by Kothari Commission. Allocated fund generally meant for salary. The income for university comes from mainly government, tuition and other fees. Other income like endowment, commercial etc are almost rare. In higher education this issue become complex and for research it received very little attention from our think tank. University also gets sponsored research project but its number is very small.

CONCLUSIONS AND SUGGESTIONS

India always strives for research, progress and development, however the formal way of research in India needs acceleration, compare to other developed countries we are lacking behind, our investment and allocation of fund to the research work is not sufficient. Quality of research is also not up to the mark. Mindset towards research is also not upto requirement in general. Part time PhD and PhD for the sake of PhD is rising. Industry could not succeed to attract and contribute in the field of research as desired.

There is an urgent need to take the steps to develop educational research and relate it effectively to the formulation of educational

policies and improvement of education, sufficient allocation for research must be made in budget, Infrastructure should be developed as per requirement of the research, scholarship should be provided to all meritorious and needed researcher, genuine and new work with original and scientific temperament must be encouraged. Quality must not be compromised, low standard university must be discouraged for PhD work and Industries must be encouraged to be the part of research projects. Mindset of the researcher should be oriented towards research and number of PhD should also be increased.

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