

A LIGHT ON IMPORTANCE OF ROLE OF RESEARCH IN NATION BUILDING: A REVIEW

RAHUL GUPTA

Associate Professor, Dept. of Computer Science,
Jai Minesh Adivasi University , Kota
rg12kota@gmail.com

Abstract—In 21 century every country effectively looks and move forward to empower itself on world platform. There are various aspects on which a nation can look to build itself like economical, technological, defence, etc. Our country INDIA, has effectively grown on world platform and promises to be a developed country soon. But to move forward so quickly toward becoming a world power brings lots of challenges, especially when the nation build itself in various aspects which will help to become a super power. The country promises to develop on all aspects economic, social, technical, agricultural, educational, defence, etc. for which it requires resources, knowledge and technology. If the country like ours depends on other nations for its requirements then the dream of becomes superpower will be an illusion, so to fulfil this we as a nation need rigorous and effective research to strengthen all the required aspects ourselves and become self-dependent. Effective research in area of agriculture, defence, education, medical, technology, will not only allow us to be self-dependent, fulfil our requirement but will also make the country a global leader. The article discusses the challenges in building nation like INDIA and also throws light on how effective research could help to overcome these challenges and fulfil the dream of being a developed country and a global superpower.

Index Terms—Arogya Setu, Research, COVID -19, DRDO, MOOC, PHFI

1. INTRODUCTION

Our nation like INDIA which is the largest democracy in the world, has 28 states and 8 union territories [1]. Every state and union territory have its own historical, demographic, technological, cultural and socioeconomic aspects, thus when a nation like INDIA wants to build itself on world platform as a developed superpower it has to be self-dependent on all above mentioned aspects. To be self-dependent we need to strengthen not only our economical, defence, technological, agricultural, infrastructure, trade foreign policies and resources but also need to educate the people of various culture, states and religion to acquire knowledge and skills to utilize them optimally. This requires lot of efficient and rigorous research work in these above mentioned areas which provide new ways to acquire knowledge and technology so that our nation can become self-dependent, developed global super power.

This article is divided into various sections. Section 2 discusses research and its importance. Section 3 discusses potential to build nation like INDIA as superpower and challenges associated with it. Section 4 discusses the role of Research in overcoming the challenges of building nation like INDIA as global super power. Section 5 will conclude the article.

2. RESEARCH AND ITS IMPORTANCE

The word Research is been derived from French word “recherché” [2] which means go about seeking. Redman and Mory[3] defined Research as “systematized effort to gain new knowledge”. D. Slesinger and M. Stephenson[4] in the Encyclopaedia of Social Sciences define research as “the manipulation of things, concepts or symbols for the purpose of generalising to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art.”

According to C R Kothari [5] “research is an original contribution to the existing stock of knowledge making for its advancement. It is the pursuit of truth with the help of study, observation, comparison and experiment”.

In general word research refers to “search for knowledge”. One can also define it as scientific and systematic search to gain information on specific topic. The main objective of research is to search for the hidden truth which has not been discovered yet. A good research is always important for society as it provides more facts, more viewpoints, larger frame of understanding, one or more solutions to the given problem. It increases public awareness by providing means to understand various issues. It provides means to find, gauge and seize opportunities. It also provides researchers the joy of facing challenges in solving the problem, doing something intellectual and creative, serving the society and of course getting respect in society.

3. BUILDING NATION LIKE INDIA INTO A SUPERPOWER

INDIA is the world largest democracy and is strongly building its position on world’s economic platform. In 2010 INDIA was at 9th position in world’s economic ranking and now it is on 5th position [6]. INDIA has become three trillion economy [7] by 2019 and is heading to become 5 trillion economy in coming 5 years. Recently INDIA’s health minister Dr. Harsh Vardhan has also become the chairman of World Health Organisation Executive Board on 22 May 2020 which is also an indicator of its position on world platform. Our country has fourth [8] most powerful military and Air force of the world. INDIA also has fourth largest Railway network [9] of the world. INDIA is also building its Information and Technology system to become one of the best technological countries in the world. The world has already seen the capabilities of Indian Scientists in space and defence departments. INDIA is strongly and steadily heading to become a developed nation on world platform. Some Challenges which

our country is facing are: Water Scarcity, poverty, unemployment, basic sanitization, agricultural issues, fake news and rumours, border disturbances, pollution, women safety, poor education, healthcare and latest being corona virus. Effective and quality research work is going in INDIA which is providing the innovations so that above mentioned challenges could be quickly overcome as discussed in next section.

4. ROLE OF RESEARCH IN BUILDING NATION INDIA

To build status of a nation from developing to developed is a tough challenge specially for nation like INDIA which has large number of states and union territories. Every state and union territory have its historical, demographic, technological, cultural and socioeconomic aspects. The purpose of good quality research is to innovate new ways in every sector like agriculture, health, education, defence, technology, aeronautics, infrastructure etc. which could provide us optimum resources and knowledge to use them efficiently leading towards building a strong self-dependent nation. Few areas where high quality research work plays important role to overcome the challenges in building nation like INDIA a developed and superpower nation are:

- 4.1 **Research in Power Sector [10]:** With generation of 1561 terawatt-hour India has become the third largest producer and consumer of electricity in the world. After independence INDIA heavily relied on coal for its electricity requirement but good quality research work has made power sector of our nation most diversified in the world. Now there are various sources of power generation ranging from conventional sources like coal, hydro, nuclear, oil, natural gas to non-conventional power sources like wind, solar, agriculture and domestic waste. Research work is going on to make renewable energy as the major power source.
- 4.2 **Research in Agriculture:** High quality research work in agriculture INDIA has made quality achievements in agricultural products in past decades. Introduction of high yield seed varieties, increased use of fertilizers and improved water management systems has enhanced productivity and made the nation nearly self-dependent for its food requirements. The research work also allowed the use of technology for better agricultural productivity like use of drone for surveillance of farmlands, use of mobile app for obtaining real time data and knowledge about new techniques of farming like cultivation through modern greenhouses, new precision techniques for moisture levels, pest stress, soil conditions, and micro-climates, Farm automation through smart farming techniques, introduction of AI etc.
- 4.3 **Research in Defence [11] [12]:** Department of Research and Development Organisation (DRDO), has done significantly well in area of defence by providing the country with various missiles like Brahmos, Agni, Akash, Prithvi etc. DRDO has also launched Indian Ballistic Missile Defence Programme like Prithvi Air Defence, Ashwin Air Defence which are capable of detecting and destroying enemy's missile. Research work is going on by DRDO to provide fifth and sixth generation fighter aircraft with HAL Tejas and HAL Marut as recent development.
- 4.4 **Research in Health [13][14][15]:** Public health research has gained lot of importance in national health policy of INDIA as the nation looks to address the burden of diseases and its non-uniform distribution. INDIA has developed various programmes like pulse polio to eradicate polio, national Leprosy eradication Programme, National tobacco control programme, National AIDS control programme etc. Public Health foundation of INDIA(PFHI) is doing quality research work to eradicate infectious diseases, nutritional deficiencies, unsafe pregnancies and the challenge of escalating epidemics. Latest threat developed is corona virus leading to COVID-19 disease has highlighted the importance of research work to develop vaccine to neutralize the virus. PFHI has taken lot of steps like use of hydroxychloroquine, use of PPE Kits, social media engagement for awareness on COVID-19 disease. Along with PHFI, DRDO is also doing research to encounter COVID-19. Samparc, Kavasam, suraksha Kavach, are some software made by DRDO to encounter COVID-19. Aarogya Setu app developed by NIC INDIA is another important COVID-19 tracking mobile app software.
- 4.5 **Research in Education:** A lot of Research work is conducted in universities which encourage young researchers to find new technologies which help in building nation. Universities are running PhD programmes to encourage new researchers. New researches done by students and Professors of universities [16] of INDIA like quad copter cameras in Drone, MoocKIT for MOOC (Massive Open Online Course) management, Arsenic purification in Ganga and Bhramaputra etc. has shown that there are lot of eminent researchers available in INDIA. The Value education-based researches help in building moral and ethical value among people of the nation which plays vital role in nation building.
- 4.6 **Research in Nuclear Energy:** INDIA conducted its second nuclear test on POKHRAN on 11 –May -1998 to become a nuclear power under the supervision of Dr. A.P.J Abdul Kalam and Dr. R Chidambaram. DRDO, Department of Atomic Energy, Bhabha Atomic Research Centre, Atomic Minerals Directorate for Exploration Research were all involved in smooth conduction of Pokhran nuclear test. This test provided INDIA the status of nuclear power in world. Department of Atomic Energy has done significant research in area of nuclear energy that INDIA is not only developing nuclear weapons but is efficiently using its nuclear resources to generate electricity to meet its energy requirements.

5. CONCLUSION

Importance of high quality and efficient research work will always remain in society as research provides new knowledge, ways innovations, technologies to overcome existing problems and challenges prevailing in society. Every nation that wants to build itself on world platform has to overcome various challenges which are possible with help of high-quality research work. This article discussed what is research, its importance, the potential of nation like INDIA to build as a developed superpower nation. The article throws light on importance of research in building nation especially like INDIA by discussing few areas where efficient research work has been done. We hope that good research work will always continue to play an important role in building any nation by educating the people to utilize the available resources efficiently.

REFERENCES

- [1] Wikipedia States and Union Territories of INDIA, https://en.wikipedia.org/wiki/States_and_union_territories_of_India
- [2] Wikipedia Research, <https://en.wikipedia.org/wiki/Research>
- [3] L.V. Redman and A.V.H. Mory, The Romance of Research , 1923, p.10
- [4] The Encyclopaedia of Social Sciences, Vol. IX, MacMillan, 1930
- [5] C. R. Kothari, Research Methodology Methods and Techniques, [https://www.academia.edu/33779875/C.R. Kothari_Research_Methodology_Methods_and_Techniques](https://www.academia.edu/33779875/C.R._Kothari_Research_Methodology_Methods_and_Techniques)
- [6] IMF World Economic Outlook, Oct 2019.
- [7] The Economic Times, <https://m.economictimes.com/news/economy/policy/india-took-only-five-years-to-move-from-usd-2-to-usd-3-trillion-economy/articleshow/72437926.cms>
- [8] 2020 Military Ranking strength, <https://www.globalfirepower.com/countries-listing.asp>
- [9] Wikipedia List of Countries by Railway Network size, https://en.wikipedia.org/wiki/List_of_countries_by_rail_transport_network_size
- [10] Power sector Analysis Report, <https://www.equitymaster.com/research-it/sector-info/power/Power-Sector-Analysis-Report.asp>
- [11] Wikipedia, Guided Missiles of INDIA, https://en.wikipedia.org/wiki/Guided_missiles_of_India
- [12] Defense Research and Development Organisation, <https://drdo.gov.in>
- [13] Wikipedia, Public Health Foundation of INDIA, https://en.wikipedia.org/wiki/Public_Health_Foundation_of_India
- [14] Public Health Foundation of INDIA, <https://phfi.org/covid19/public-health-communication/>
- [15] DRDO Developed Technologies to counter COVID-19, <https://drdo.gov.in/drdo-developed-counter-covid-19-technologies>
- [16] Amazing Projects and Research Ideas from top universities, <https://www.digit.in/features/science-and-technology/5-amazing-projects-and-research-ideas-from-indian-universities-31358.html>
- [17] Wikipedia Pokhran-II, <https://en.wikipedia.org/wiki/Pokhran-II>