CHAPTER 2

All-India Policies pertaining to scientific, technical and medical education in India between 1947 and 1974

Any attempt to study women in higher education in the core sciences, engineering and medicine in Calcutta in the period between 1947 and 1974 would remain incomplete without a discussion of the policies adopted by the Union Government in these spheres. As the Constituent Assembly had adopted ‘a cooperative federalism’ signifying increasing cooperation and inter-dependence between the centre and the states without destroying the principle of federalism, a study of the Central policies that influenced state policies with regard to higher education especially in science, technology and medicine becomes imperative.¹

On the one hand, as the Congress ministries were in power both at the centre as well as in the state of West Bengal, during the period of this study, at the face of it, developmental plans in the state seemed to move easier with the government at the centre but the fact that education was in the concurrent list, so the maximum onus for its development lay with the state. Thus, interestingly, more

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often than not, budget allocation for education often fell far below the desired amount.²

2.1 The initial years of policy making

The period starting with the Swadeshi movement (1905-08) in Bengal and the two world wars had already seen a growth in indigenous enterprise and industries. That science was vital to the Indian economy, for making India self-sufficient economically had been the foremost thought in the minds of the Indian nationalists. Thus even before becoming India’s Prime Minister Jawaharlal Nehru had remarked in the 1938 session of the Indian Science Congress that the institutions of science were the ‘temples of modern (secular) India.’ He along with a host of others like Prof. Dr. Meghnad Saha veered to the opinion that the development of science and technology in India had become a sine qua non of progress for the country, to bring it at par with the advanced and industrialized nation of the world.³ Nehru’s ‘temples of modern (secular) India’ consisted not only of steel and power plants, irrigation dams, but also included institutions of higher learning, particularly in the scientific field.

Several institutions of higher learning in science existed in India prior to independence. Noteworthy among these were The Indian Institute of Science,


(IISc.) Bangalore, 1911, the CSIR (Council for Scientific and Industrial Research) established in 1942, the Central Glass and Ceramic Institute 1945, the IACS, the Bengal Engineering College, Sibpur, the Jadavpur University, Kolkata and the Medical College of Kolkata. The bureaucratic structure of the pre-colonial period was retained in most of the institutions but the thrust on the promotion of science, technology, and medical education and research as a sine qua non for development marked a departure from the past.

While acknowledging the importance of science and technology in the growth of the nation, it would be worthwhile to analyze whether the policies, pertaining to scientific, technical and medical education that were formulated in the period between 1947-74, attempted to extend the benefits of science education and careers to women as well. This becomes all the more imperative from the point of view that the Indian Constitution guaranteed equal rights to the Indian woman and the need of the hour was a progressive and rationalist outlook to translate theory into practice.

It may well be argued that the merging of the nineteenth century social reform movements with the nationalist movement for independence brought about a marked shift in the perspective on women's issues. Even long after women's education had been accepted by society, women were not considered fit to be given the opportunity to study science. Perhaps it was thought that household chores such as cooking, raising of children, knitting, writing letters or learning to keep daily accounts was all that was required of them. Sarala and Shanta were
students of Bethune College which was an exclusively girls’ college. No science subject was taught there. Shanta complained, "As long as I was a student, every year the inspector would visit the college and ask 'How many of you want to learn mathematics?' Every year some of us used to raise our hands. But four years passed and nothing happened." Sarala was more determined than Shanta, she wanted to study physics just like her brothers. Bethune College did not offer her the opportunity. In vain she wrote to the Education Directorate. At last one of her father's friends, Mahendralal Sarkar, arranged for her to attend the evening lectures in his Science Association. This anecdote serves in ample measure to highlight the demand that existed among girls for science education even in the colonial period.

The democratic ideology of the nationalist movement and the need to broaden the political base of the nationalist struggle contributed to the acceptance of the principles of equality of rights, status and opportunities for participation in the process of national development. It was the increased political participation of women in the freedom struggle from the 1920s onwards that called for fundamental redefinition of gender roles. But the early women's movement remained predominantly elitist in nature and the ambivalence that existed between the traditions based views recommending a sharp demarcation of the public and private roles of men and women continued to dominate the higher

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4 Santa Devi, Purbasmriti (Memories from the Past), (Calcutta, Papyrus, 1983), p.21
educational policies in India for some time to come in the aftermath of independence.⁵

While reconstruction and expansion of the system of education was one of the challenging tasks with which the government of India was faced immediately after the attainment of independence, steps were taken to reorganize secondary and higher education and promote rapid expansion of scientific and technical education necessary for the development of industry and agriculture. In the sphere of education, the Constitution of India laid down that universal, compulsory and free education must be provided for children up to the age of fourteen within ten years of its promulgation.⁶ Provisions were also to be made to enlarge facilities for the backward sections of the community, such as the Scheduled Castes, Scheduled Tribes and other backward classes. Scholarships provided to them were used as an instrument for equalizing educational opportunity.⁷ Paradoxically, women were taken to be at par with men and were not listed as ‘backward’ as far as the domain of education was concerned.

Although education remained a State subject, professing an aim to coordinate the facilities available to the educational institutions, or maintaining the standards of education at the higher levels, the Constitution, by placing the

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⁶ Humayun Kabir, *Education in New India*, (Great Britain, George Allen and Unwin Ltd., 1956), p.1

⁷ Ibid, pp.2-3
responsibility of university and technical education on the Central Government created a paradoxical situation. The heavy expenses involved in scientific and technical education and the need to avoid any duplication in these fields had made the promotion of higher scientific and technical education also a central responsibility.

Thus the role of the Central Government in education continued to be an inseparable part of the education policies. Moreover the financial resources of almost all the States were inadequate to support their educational programmes. The fact that the Central Government was supposed to be a repository of information for all the states and often functioned as a clearing house for all of them, West Bengal enjoyed a different position in this regard as the State Government was controlled by the same political party which wielded power at the Centre between 1947 and 1974. Needless to say that it also helped the Central Government to extend its functions as an advisory and coordinating agency.

It is true that the top-ranking leaders like Nehru did think in terms of women’s right to equality in education and employment. In fact Nehru the chief architect of India’s planned development, had from the outset expressed his libertarian views with regard to the education of the women in India. He was of the view that a nation could not progress if its women were kept subdued.\(^8\) He was in

\(^8\) Judith Brown, Nehru, A Political Life, (New Delhi: OUP, 2004), pp.190, 230
favour of not only the participation of women in the social and political sphere but in the economic sphere as well, long before women had themselves realized the need to forge themselves together for the ‘feminist movement.’

Indeed the development of science and technology in the post-colonial period became synonymous with Nehru’s vision of science so much so that scholars like David Arnold have gone to the extent of describing science in that period as Nehruvian science.\textsuperscript{9} The initial years after independence became synonymous as the Nehruvian era. Nationalist historians have tended to glorify this period and that of Nehru’s contributions in terms of his policies towards nation building.\textsuperscript{10} He was also the chief architect of India’s science policies where he perceived science not only as an instrument to overcome economic backwardness and promote national progress and prosperity but also harped on its Universalist character, as both rational and progressive.\textsuperscript{11}

The Central Advisory Board of Education (CABE) first established in 1920 and then revived in 1935, comprised the Central Education Minister as its chairman and the State Education Ministers as members along with a number of experts. It was constituted as an advisory body whose deliberations acted as an almost

\begin{itemize}
\item \textsuperscript{10} Bipan Chandra ,Mridula Mukherjee, and Aditya Mukherjee, \textit{India Since Independence},( New Delhi: Penguin Books,2008),p.88
\end{itemize}
binding force on both the Central and State Governments. In the fields of technical and university education, the All-India Council for Technical Education established in 1946 and the University Grants Commission constituted in 1952 apart from disbursing large grants and subsidies acted as a cementing force in the educational structure of India.\textsuperscript{12}

The Planning Commission, another arm of the Union Government was established in 1950 so as to ensure uniformity in educational standards and policies. The Five-Year Plans were formulated after assessing the material, capital and human resources of the country. They became a factor in ensuring uniformity in aims, objectives and standards of education throughout the country.\textsuperscript{13} Thus in keeping with the true democratic spirit of the Indian Constitution, policies were framed at the Centre ensuring an improvement in the standards of living of its people and achieving an all-round economic growth and prosperity. But from hindsight it can now be said that while there were attempts to uplift the condition of the backward sections of society, no such thought was spared to provide for special privileges for the Indian woman, to help them overcome the social and institutional constraints which for centuries had limited their access to education, especially higher education.

To understand the dynamics of change and development in the perspective of the growth of science and technology in India on an all-India level and its impact

\textsuperscript{12} Humayun Kabir, Education in New India, (Great Britain, George Allen and Unwin Ltd., 1956,) p.5

\textsuperscript{13} Ibid p.6
on the higher educational aspirations of women in the post-colonial period, an evaluation of the University Education Commission, popularly known as the Radhakrishnan Commission of 1948, the Scientific Man-Power Committee of 1948, the Five-Year Plans commencing from 1951, the Durgabai Commission of 1958, the Scientific Policy Resolution of 1958, the Report on the Differentiation of Curricula among girls in 1961, also known as the Hansa Mehta Committee Report, the Kothari Commission also known as the Secondary Education Commission of 1964, the National Policy on Education of 1968, Report on the Status of Women commonly referred to as the Towards Equality report of 1974, would be required. These constituted landmark policies from the point of view of women’s higher educational aspirations. Some steps with regard to the advancement of scientific and medical education had already been implemented just prior to independence during the colonial period. Among these were the establishment of the All India Council of Technology and Engineering of 1946 and the recommendations of the Bhore Committee in the same year that charted the future course of development in the technical and medical fields respectively and have not lost their efficacy even today.

The educational policies of the time were also shaped largely by the erudite thinking of the education ministers of the time. Maulana Abul Kalam Azad, the first Union minister for education strove to provide a ‘national education’, whereby education that was provided earlier under the colonial system would be
reformed and would occupy an important place in our system, no less significant than what is generally ordained for food and clothing.\textsuperscript{14}

The first important document in the post-independence period as regards education was the University Education Commission of December 1948-August 1949, better known as the Radhakrishnan Committee Report. In keeping with the democratic ideals of the Constitution, the Commission engaged itself to remove barriers in education of scheduled castes and backward communities.\textsuperscript{15} While acknowledging the role of education as a great instrument of social emancipation and a leveller in society, the Commission devoted itself to the needs of women’s education.\textsuperscript{16}

\textbf{2.2 Situating women in the Central policies between 1947-1974}

While admitting that women were by no means inferior to men in terms of ability, the Commission, however, harped on the fact that some fields of work were peculiarly appropriate to women and that they would be better prepared for home and family life.\textsuperscript{17} It was also felt that women’s and men’s education should have many elements in common, but should not in general be identical in

\begin{itemize}
\item \textsuperscript{14} Speeches of Maulana Azad, 1947-1958, (New Delhi: Publications Division, 1959) p.8
\item \textsuperscript{15} Report of the University Education Commission, December 1948- August 1949, Vol. 1, Simla, Government, Delhi, 1949, p.36
\item \textsuperscript{16} Humayun Kabir, Education in New India, (Great Britain, George Allen and Unwin Ltd., 1956), p.2
\item \textsuperscript{17} Ibid, p.394
\end{itemize}
all respects.\textsuperscript{18} Thus while arguing for equality of opportunity in education and employment for the Indian woman, the Victorian paradigm of women as a ‘home maker’ was not lost sight of by the policy framers. In fact the greatest profession of women it was argued ‘is, and probably will continue to be, that of home maker.’\textsuperscript{19} Thus despite harping on the need for equal opportunities for both men and women, in tone and temperament the Commission manifested a continuity of the colonial policies in the realm of higher education of women in India.

Given this mindset, it was but a logical conclusion that barring Chapter XII of the University Commission Report, although there was a detailed discussion followed by a justification of the need to raise the standards in the universities on a higher plane so as to accelerate national development, there was no separate mention of how women could also be a part of it.

In sync with the national policy of industrialisation of the country, the Commission recommended the setting up of professional colleges, agricultural, medical and engineering to produce the requisite number of graduates and set up throughout the country technical schools to supply the large number of

\textsuperscript{18} Humayun Kabir, Education in New India, Great Britain, (George Allen and Unwin Ltd., 1956), p.402

\textsuperscript{19} Ibid, p.395
technicians needed for the purpose. Growth in science and technology was also felt to be necessary to realize the democratic principles of justice and freedom.\textsuperscript{20}

As far as higher education, that is education in the Universities was concerned, the importance of post-graduate training and research was stressed upon by the Commission. Consequently, the establishment of Research Fellowships in the main branches of knowledge was encouraged by the Commission.\textsuperscript{21} Great emphasis was also laid on scientific research in the country.\textsuperscript{22} It was argued on the basis of the Scientific Man-Power Committee which was appointed in 1948 that the number of scientific personnel in the country was far less than the requirements of scientific man-power.\textsuperscript{23} The Committee further concluded that if all the available training facilities at the universities were fully utilized, the annual turn-out would only be 30-35\% of the total requirements of the country. There was thus a wide gap between the probable requirements and the anticipated output, and the committee rightly remarked that the gap was both qualitative and quantitative. It was believed that this deficiency could be addressed only if the existing facilities for post-graduate training and research at the universities

\textsuperscript{20} Report of the University Education Commission, December 1948- August 1949, Vol. 1, Simla, Government, Delhi, 1949, p.45

\textsuperscript{21} Ibid, p.151

\textsuperscript{22} Ibid p.155

\textsuperscript{23} Report of the University Education Commission, December 1948- August 1949, Vol. 1, Simla, Government, Delhi, 1949, p.155
were greatly extended and new departments of research were added to those universities where they did not exist at that time.\textsuperscript{24}

As per the recommendations of the Scientific Man-Power Committee Report of 1948, a large number of post-graduate and research scholarships and free places at the universities were to be created and the salaries of teachers were to be upgraded.\textsuperscript{25} This was essential in order to attract the best students to the teaching profession in order to maintain the quality of university education. This was a recurrent issue in the West Bengal Assembly proceedings where from time to time opposition party members harped on the need to raise the salaries of college and university teachers in order to provide for quality in higher education.

The shortage of science teachers in the colleges and universities was sought to be addressed by the Scientific Man-Power Committee by offering commensurate salaries to the first-class scientist-teachers, relaxing their retirement age limits, relieving them of routine administrative duties, and giving them increased grants to extend their research facilities.\textsuperscript{26}

The nationalist objective of utilizing scientific research to aid agriculture, engineering, industry, medicine entailed the setting up of several new scientific Laboratories and Institutes, besides the existing ones such as the Indian

\textsuperscript{24} Report of the University Education Commission, December 1948- August 1949, Vol. 1, Simla, Government, Delhi, 1949, p.156

\textsuperscript{25} Ibid, p.158

\textsuperscript{26} Proceedings of the West Bengal Legislative Assembly Proceedings, p.159
Agricultural Research Institute, Indian Veterinary Research Institute, the Indian Forest Research Institute, and the Geological, Zoological and Anthropological Surveys. As scientific research in these laboratories entailed a lot of individual research, it was imperative that the university research departments, dealing with the fundamental sciences were strengthened.\textsuperscript{27}

While justifying the case for research at the university level, the Scientific Man-Power Committee findings were put into good use as regards resource allocation for research. As per the estimates of the above committee, in order to implement their development plans for higher scientific education and research, it was suggested that (excluding medical, agricultural, engineering and technological), the Central Government should provide an additional capital grant of 494.735 lakhs and a maintenance grant of 60.0806 lakhs per annum, over and above what had already been provided by the central and provincial governments. This was a very reasonable demand when compared to what the United Kingdom did for her higher scientific training. The Council of the Royal Society in September 1946, recommended to their Government that the average pre-war maintenance (recurring) grants for fundamental sciences which stood at 3.66 lakhs pounds (£366,000) a year should be increased to 10 lakhs pounds (£1,000,000) a year. The British Government, realizing the value of fundamental research at the universities, trebled their pre-war recurring grants in 1946-47

and increased their expenditure to about 135 lakhs per annum on five fundamental sciences alone in the universities, besides giving them capital grants by about 85 lakhs of rupees.²⁸

The Union and State governments in India, however, often failed to give adequate financial support to the universities with the result that the quality of students were often compromised and a large number of students were admitted to the universities. The squeezing of funds and Maulana Azad’s disappointment over the Planning Commission’s suggestion that the education ministry should revise its plan and scale down its proposals for fund allocation was expressed on several occasions. He finally had to reconcile himself to the reduction in expenditure in higher education on the ground that planning must be based on the economic resources of the community. The national income had to be increased and the problems of unemployment and underemployment solved first.²⁹ Nehru’s temples of modern (secular) India’ consisted not only of steel and power plants, irrigation dams but included institutions of higher learning, particularly in the scientific field.

Thus during the First Plan itself, high-powered national laboratories and institutes were set up by the Council of Scientific and Industrial Research for conducting fundamental and applied research in each of the following areas:

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physics, chemistry, fuel, glass and ceramics, food technology, drugs, electrochemistry, roads, leather and building. In 1948 the Atomic Energy Commission was set up, laying the foundations of the creditable advances India was to make in the sphere of nuclear science and related areas. This was in addition to the unprecedented increase in the educational opportunities in science and technology in the universities and institutes. National expenditure on scientific research and development kept growing rapidly with each Plan.\(^\text{30}\)

The problems of creating a nation-wide system of Basic and Secondary education were yet another area of concern of the education ministry at that time considering that literacy figures in India were as low as 15\% at that time.\(^\text{31}\)

But as regards the development of technical education, the Education Commission and the Education Ministry seemed to be in consensus over resource allocation. The Interim report of the Sarkar Committee was endorsed by the All-India Council for Technical Education at its first meeting held in April/May 1946. They endorsed the opinion that to meet India’s post-war needs for high grade Engineers, Technologists, there should be four Regional Higher Technical Institutions in the East, West, South and North, which were to be established on the lines of the Massachusetts Institute of Technology. The Government had accepted the establishment of two of such institutions, one in the East near


Calcutta and the other in the West near Bombay, during the first quinquennium from 1947.32

2.3 The First Three Five-Year Plans

It was during the First-Plan period that the University Grants Commission was established in 1956. The Commission helped universities in improving facilities for teaching at the post-graduate level and made a beginning for the betterment of residential and other facilities for students. However, it was in the field of technical education, that a striking progress was perhaps made.33 Thus the need to provide facilities of the 'highest type'34 to the technical institutions such as the Indian Institute of Technology Kharagpur, was also not lost sight of by Maulana Azad. The Education Minister agreed completely with the Prime Minister in his views that it was absolutely necessary to develop India’s economic and material resources in order to improve the standard of life of the people– a concern hitherto deliberately omitted or unexpressed in the colonial period. The transformation of the Eastern Institute near Calcutta into the dream institution of the Indian Institute of Technology at Kharagpur in 1951 was also made possible to a large extent by 'the generous help received from the Government of West Bengal who gave to the Institute, a plot of 1200 acres, free of cost and a fine


34 Ibid,p.159
building.\footnote{Speeches of Maulana Azad, 1947-1958, (New Delhi: Publications Division), p.351} To further boost the technical education of the country, on the recommendation of the All India Council for Technical Education, a scheme for the strengthening and improvement of fourteen engineering and technological institutions situated in different parts of the country had been sanctioned by the Union ministry of education and was already in its third year of operation by 1951.\footnote{Ibid}

Thus as early as 1951, the Indian Government was aware of the need to expand technical education in the country, to provide post-graduate and research facilities in the reputed institutes to outstanding under-graduates, but while attempts were made to develop the facilities of technical education in the country and put India on a firm footing as far as science and technology were concerned, there was, however, no policy to promote exclusively women’s education and participation in these fields.

At the fifth annual meeting of the Central Advisory Board of Education in 1952, the education minister expressed his satisfaction with the progress achieved in the last five years in the field of technical education in the country. On the recommendations of the All India Council for Technical Education and the Scientific Manpower Committee, large grants were made over to the universities and other technical institutions in different parts of the country, along with the Indian Institute of Science, Bangalore. As a result of the funding, the Institute
was in a position to undertake post-graduate teaching and research in many of the fundamental branches of science and technology.\textsuperscript{37}

Aid and cooperation from international organizations had also been forthcoming. Under the Colombo Plan in 1952, an offer of six mobile cinema vans had been received that would be useful in expanding programmes of audio-visual and social education.\textsuperscript{38} The UNESCO Technical Assistance Programme, had lent the services of several distinguished technical experts offering nine scholarships and fellowships for the students. Equipment worth over $100,000 was also granted. The Fulbright and allied schemes had also helped several teachers to receive training abroad or participate in study tours.\textsuperscript{39}

The Ministry of Education, in consultation with the Planning Commission, with a view to reconstructing the education system of the new nation aimed at the development of improved methods and techniques in the fields of primary, basic, secondary and teachers’ education through the organisation of community projects. But while the provisions for the expansion of facilities for the education of students belonging to the Scheduled Castes, Scheduled Tribes and Backward classes were also made, there was hardly any provision for female education,


\textsuperscript{38} Minutes of the Syndicate, Part I, No.3, Jan. 18\textsuperscript{th}, 1951, p.296

\textsuperscript{39} Minutes of the Syndicate, Part IV, No.43, Feb. 9\textsuperscript{th}, 1963, p.716
especially their higher education— an area where the government maintained a studied silence.\textsuperscript{40}

The University Education Commission had recommended closer liaison between engineering and technical colleges and universities. It was of the opinion that since engineering was largely a product of discoveries in basic sciences, it was expected that an engineering college would flourish best in a place where there was an atmosphere of higher study and research in science.\textsuperscript{41} But posterity would prove that in India, there was no proper telescoping of industrial growth and research taking place in the scientific institutions.\textsuperscript{42}

In the field of higher education, such as university education, Humayun Kabir as the Education Minister felt that the primary need of the country was consolidation and improvement of existing facilities. Problems of over-crowding and preoccupation with mainly theoretical subjects and the lack of opportunities in the rural areas were to be regarded as the primary reasons behind the appointment of the Indian University Education Commission in 1948 under the Chairmanship of Professor Sarvepalli Radhakrishnan.\textsuperscript{43}

\textsuperscript{40} Speeches of Maulana Azad,1947-1958, (New Delhi: Publications Division, 1959),pp.206,209


\textsuperscript{43} Humayun Kabir , Education in New India,( Great Britain, George Allen and Unwin Ltd., 1956), p.14
Even before the commencement of the Planning period in 1951, Maulana Azad, India’s first education minister envisaged fullest cooperation between the Centre and the states in order to solve the educational problem. Education was no doubt a provincial subject, but in his opinion this distinction could be maintained only when the educational targets would be achieved. Till then, the Central Government should share the responsibility with the Provincial Governments.44

This perception of the education minister speaks volumes of the importance of education in the scheme of things at the national level in the post-partition period. The official stand was that the First Plan accepted the pattern of specific purpose grants for assistance to States.

The Ministry of Education approved a certain number of schemes in every sector of education and fixed the rates of grant-in-aid payable on them. Rates of grant-in-aid varied from scheme to scheme and were different for recurring and non-recurring costs. The total number of schemes was also fairly large and separate accounts were maintained for each.45

Yet when the Planning Commission was set up and the first draft of the First Plan made, education was almost completely ignored. Subsequently when the importance of education as a key to success in every sphere of planning was realized, a member for Education was added to the Planning Commission. In the


final draft of the First Plan, some provisions for education was made but it was
totally inadequate to the needs. Thus it was not that at the level of policy
making, there was unanimity between the Education Ministry and the Planning
Commission as regards the implementation of the policies and resource
allocation. The Ministry of Education tried to increase allocation for education but
this could not be done as the State governments had already committed all their
resources and could not provide the necessary funds for additional educational
activities.46

One of the main difficulties which was felt during the First Five-Year Plan was a
certain lack of coordination between the Central and the State plans. These were
discussed separately without being integrated into one overall national plan. The
result was that when the Centre initiated certain proposals of development, the
States were often unable to implement them fully because the States resources
had already been allotted to their own specific schemes. This lack of coordination
was aggravated because of the demand that the states should find matching
funds in order to earn the Central quota. As the State resources were earmarked
for their own programmes, only the more prosperous States secured a much
greater proportion of central assistance, while under-developed states were
unable to take full advantage of the schemes. The difference between developed
and undeveloped States was thus further amplified. National well-being required

that there should be a balanced development for the entire country without any marked disparity between different regions.⁴⁷

As far as women’s education was concerned, during the year 1955-56, in the last year of the First Plan, a greater emphasis was placed on the subject. Consequently, there was an increase in the numbers of various types of institutions for women as well as scholars. Special emphasis was given to the development of non-government institutions in this field, apart from what was being done through State enterprise.⁴⁸

Consultations with the State Governments were held from the very outset of the Second Plan, 1956-61, so as not to repeat the mistakes of the First Plan. Accordingly a series of discussions with the Planning Commission and the State Governments were initiated by the Central Ministry of Education. Finally, a conference of Education Secretaries was held in October-November 1954 which recommended the establishment of three new Engineering Colleges in such States which lacked Engineering colleges altogether, establishment of three more Higher Technological Institutions, one each in the West, South and the North, conversion of the existing degree course into three-year degree course, improvement of the salary scales of University teachers in accordance with the recommendations of the University Education Commission, the awarding of merit


scholarships for higher studies and of course, the increase of scholarships for study overseas.

Interestingly at this stage there was a proposal to exempt the scheduled caste and scheduled tribes from payment of tuition fees at all stages of education but such ideas were never the subject of consideration with regard to the women students particularly from the backward areas.49 These physical targets enunciated by the Ministry of Education were accepted in the Plan Frame published by the Planning Commission, but when it came to implementation, the Commission suggested that the programme should be revised and the expenditure cut down drastically because of a fund crunch.50

At the start of the Second Five-Year Plan, issues of reorganisation of territories and the integration of their administration were the problems faced by the State Governments at that time. Thus not much attention was paid to education that was necessary to carry out the Plan effectively. In addition there was also a drastic reduction in the programme of construction of educational buildings not only because of shortage of funds but also because of the shortage of cement and steel. Despite these initial difficulties the Central budget for education had considerably increased from Rs.2 crores to 30 crores within a span of a decade.51

49 Ministry of Education, A.I.Sec.1952, Nos. 29-57, File No. 28-99/52


In the second Five Year Plan, the programme for the development of technical education had been further strengthened. It was in the field of technical education that there had been a remarkable expansion both in quality and quantity. As against a total provision of Rs. 23 crores in the first Five Year Plan, the Second Plan provided an amount of almost 50 crores, that was just double the amount granted in the previous plan. In place of five institutions offering post-graduate and advanced courses in 1947, 15 such institutions in the country had been set up by 1956.\(^{52}\) With a view to increasing the annual output of engineering graduates and diploma-holders, three new higher technological institutes on the lines of the Kharagpur Institute, new Engineering Colleges and Polytechnics were sought to be set up. Additional provision was recommended for the setting up of 18 Engineering colleges and 62 Polytechnics by the Engineering Personnel Committee.\(^{53}\)

The committee had also recommended that training capacity in the existing institutions should be increased by 20% at the degree level and by 25% at the diploma level. The need for teachers of the right calibre and students in the educational institutions was also recognized. Steps were also suggested to recruit and retain teachers and students of the requisite ability by providing conditions


\(^{53}\) Ibid, p.396
to retain their services and by increasing the pool of scholarships to students pursuing technical courses.\textsuperscript{54}

Thus while the development strategy in independent India in the 1950s depended heavily on planning, the first two Five Year Plans referred to the problems of women’s education and sought to link higher professional education and occupations. The Report of the Committee on the Education of Women, 1959, made extensive recommendations which contributed to a more focused attention on higher professional education in the subsequent plans. \textsuperscript{55} But that the disparities between men and women continued in the sphere of education can be easily discerned if we take into account the differences in curricula between men and women which persisted.

Apart from the socio-economic constraints that circumscribe women’s access to higher education in science and their career growth, failures in policies and programmes to address the question were evident in the first two Five-Year Plans. They emphasized the development of a socialist pattern of society and the growth of basic education. Although there was a rapid expansion of women’s education, it cannot be attributed to any concerted efforts made by the state to increase access, but rather to other socio-economic causes which were the result


of the partition of India.\textsuperscript{56} These were amply substantiated by the Report of the Committee on the Status of Women, 1974.\textsuperscript{57}

\textbf{2.4 The National Committee on Women’s Education, May 1958-Jan. 1959, popularly known as Durgabai Commission}

The Education Panel of the Planning Commission, in July 1957, recommended that a

Suitable Committee should be appointed to go into the various aspects of the question relating to the nature of education for girls at the elementary, secondary and adult stages and to examine whether the present system was helping them to lead a happier and more useful life.

The National Committee on Women’s Education was accordingly set up by the Government of India in the Ministry of Education under Government of India in the Ministry of Education under Government Resolution No. F.34-12/57-B.5 of 19 May, 1958. Under the Chairmanship of Durgabai Deshmukh the committee consisted of predominantly female members; no doubt, this committee was the first of its kind in India’s history. Dr. Phulreenu Guha, Vice-Chairman, West Bengal


State Social Welfare Board, agreed to associate herself with its work and function as a member.\(^{58}\)

The Chairman and the members toured as many states as possible, held interviews with teachers and parents, educationists, administrators, social workers i.e., all the stakeholders in education with a view to facilitating the welfare and education of women in general and of the State concerned in particular.

As a result of these extensive tours, the Chairperson and the members, were able to cull a good deal of information as first hand evidence that ultimately helped them in formulating the recommendations. \(^{59}\) A questionnaire was drawn up consisting of ten sections and 204 questions, dealing with the education of girls at the primary and secondary levels and the problems that impede the progress of girls’ education, problems of wastage, stagnation and co-education. Issues like Adult and social education, the role of voluntary organizations, the supply of women teachers also featured in the queries that the committee had looked into.

The fundamental right of a woman as an individual and her right to education was reiterated. Her position as an individual with the same status, dignity and


\(^{59}\) Ibid,p.2,
importance in society as a man was made a criterion in shaping the educational requirements of the woman – a point not considered before was now harped upon by the committee.

The issue of higher education of girl students was not taken up by this committee and its rather conservative mind-set was reflected in its framing of the curriculum for girls as well. In this, the committee members often towed the general sentiments and opinions of the public, State Governments, heads of training institutions, secondary schools, education officials and voluntary organizations. So far as primary education was concerned, the general opinion was that there should be an identical curriculum for boys and girls. But in the middle stage, the prevailing opinion in the country was not unanimous. The State Governments, secondary schools, training institutions and educational officials favoured a difference in the curriculum of boys and girls. The committee after thorough consideration concluded that at the middle stage in some respects a difference in the curriculum, the syllabi, and even the contents would have to be made. The differentiation was justified on the ground that the nature of duties and responsibilities were different for boys and girls in their adult lives and that most girls would not continue their education beyond this stage.60

The Committee’s observations on secondary stage of education, however, proposed different curricula for girls from that of boys. The justification of this

was that the education of girls often did not continue beyond the primary stage and that they would in any case have to be prepared for domestic duties and responsibilities that would sooner or later devolve on them. The Committee, however, drew attention to the fact that the textbooks and other reading material that were used by the students in their school life were dominated by a boy’s approach and an urban viewpoint. There was a complete neglect of the needs and problems of a woman. The Committee strongly recommended that this imbalance in our education should be corrected.  

Marking a break with the colonial mould, the Committee, however, made it very clear that a suggestion for a difference in the curriculum between boys and girls did not imply a lowering of academic standards, particularly standards of instruction and evaluation; nor did it attempt to infuse ‘feelings of exclusiveness’ between girls and boys. It was not the intentions of the committee members to confine women to purely domestic chores. Interestingly, as a continuation of the colonial mind-set, at the official level of the State Educational Departments, the educational institutions such as the secondary schools and even the general public veered to the opinion that some of the subjects taught to boys were not related to the aptitudes, interests and needs of girls and therefore there should be a provision for a larger number of subjects that were more suitable for girls.

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62 Ibid, p. 86
As before, the emphasis was more on home science and home craft, including sick nursing, nutrition, dietics and food preservation, sewing and tailoring, cottage industries, music, dancing and painting. Preference was also vouched for vocational education of girls. It was thus in line with the conservative mentality of the pre-independence period that the Durgabai Deshmukh Committee formulated its ultimate recommendations. It did take into perspective the need for socio-economic freedom of the Indian woman, her potential to contribute to the national development, but was drafted the report in a very limited sense. Thus, vocational instruction at the middle level was encouraged instead of core science subjects. This was justified on the grounds that most girl students dropped out at the middle stage and that training in the vocational courses prepared them as would be efficient home-makers, good mothers and successful wives.  

Thus higher educational opportunities for women did not find a place in the recommendations of the Committee.

Education for women as the Durgabai Committee understood catered to a very limited sense. It merely touched the tip of the iceberg, when it proposed recommendations for the primary education of women in the rural and urban areas and for the removal of literacy. This engagement was understandable as these were the challenges which the newly independent country had to grapple

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63 Ibid
with. It further noted that in the first ten years of independence, the country had not made significant progress as regards women’s education. There was a wide disparity between the education of men and women and that for every 100 boys at schools, there were only 36 girls.

This gap had to be bridged and problems of non-allocation of special funds for the development of the education of women, both in the Central and State budgets and Plans allocation of funds had to be addressed. In criticizing both the Second and Third Five-Year Plans, it was pointed out that these had widened the disparity between the number of boys and girls and accounted for the very slow progress in rural areas.\(^{64}\)

This was significantly also the first time that the Committee recommended that the education of women must be treated as a special problem for some years to come. In this sense it may be regarded as a precursor to the Report on the Status of Women in India, which was published sixteen years later in 1974. Despite the good deal of wastage and stagnation at primary and secondary stages, a number of measures were suggested to develop the education of girls at these stages.\(^{65}\) The establishment of a National Council as well as State Councils for the education of girls and women was also advocated.\(^{66}\) It was also


\(^{65}\) Ibid pp.184-185

\(^{66}\) Ibid,p.193
suggested that for the remaining period of the Second Five Year Plan and during the Third Plan, there should be a special programme for the development of the education of girls and women.\textsuperscript{67}

The Third Plan 1961-1966, for education revealed the existing disparity between the education of boys and girls and men and women at all levels and stages of education and it was accepted by all responsible bodies concerned with education. The acceptance of this fact augured well for women’s education in future as the Central Advisory Board of Education (CABE), which was then the supreme policy recommending body of the Ministry of Education, proposed special measures to reduce the gender inequalities and create equality of opportunity within the community. Among the measures suggested was a substantial increase in enrolment at the middle, secondary and higher stages of education not only to reduce the disparity but also to meet women personnel requirements. A special programme with a specific allocation was proposed to be included in the Plan. A programme complementary to the normal programme would include only such measures as would overcome their peculiar difficulties due to socio-economic reasons.

Interestingly, the policy makers accepted the fact that such factors inhibited women to pursue higher education and even acted as a deterrent among the urban women for almost two decades after independence. The proposal was to

increase the number of women teachers with a view to encouraging the parents to send their girls to schools and colleges in the rural as well as urban areas.\textsuperscript{68}

But no significant results were expected from the Third Plan as the Ministry of Education had not made any budgetary provisions for this scheme for 1961-62.\textsuperscript{69}

With regard to college education for girls it was suggested that the University Grants Commission should come up with necessary grants to colleges, including training colleges and would arrange for the construction of hostels for girls. Vocational education through the polytechnics was encouraged for girls and such courses were to be made co-educational so that besides the household chores, women would be encouraged to take up some suitable vocation, on a part-time basis.\textsuperscript{70} The idea of women engaging themselves in full-time professions in the core sciences or technical education was absent in this initial attempt to spread education among women.

Thus the Third Plan merely emphasized on the primary and secondary education for women. While it advocated grants of merit based scholarships to girls pursuing university education on the one hand, it also encouraged the development of a few selected institutions especially devoted to the education of

\textsuperscript{68} The Statesman, Calcutta, March 27\textsuperscript{th}, 1961,p.6

\textsuperscript{69} Ibid

women in some cases.\textsuperscript{71} These notwithstanding, there was no discussion on the promotion of higher education for girls. It may be said that the questionnaire that was formulated and the feedback that was received pointed to the same concern for the primary and secondary levels of education, wastage and stagnation of women in these levels, the curricula of girls education and debates centering round them, and vocational education for women.

The allocation for education from public funds during the first three plans showed that as the planning period progressed, the allocation of funds for higher education (university education) increased compared to elementary and secondary education.\textsuperscript{72}

In the meantime with the gradual increase in the marriageable age for girls an inevitable setting had been created for the establishment of vocational colleges catering to the education of girls; home science became the most popular and desirable vocation. But women reflected a change in mentality by demanding for technical training at the completion of high school standards.

Woman wanted to be welders, turners, machinists, sanitary inspectors, civil engineers, and even draughtsmen. On an all-India basis three polytechnics for women were established during the Third Five Year Plan period. This partly was

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an answer to the demand for diversification of course after secondary education, at least as far as girls were concerned.\textsuperscript{73} The West Bengal Directorate of National Employment Service show a gradual increase of women workers in services relating to production processes. Women were preferred for their skill in light engineering units, in the printing presses, salesmanship, nursing, as telephone operators’ and receptionists.\textsuperscript{74}

The emphasis on science and technology continued unabated during the Third Plan period. The Governing body of the Council and Scientific Research approved a suggestion to designate all scientific officers irrespective of differences in salary scales as scientists in order to provide for equal status among them.\textsuperscript{75} There was also a keen desire among the policy makers to raise scientific research in the country above the level of personal prejudices and group rivalries among leading Indian scientists.\textsuperscript{76}

Not only did the Union Education minister M.C.Chagla endorse the opinion that in order to promote scientific research in the country, a conducive environment free of prejudices was required, the Prime Minister at that time, Lal Bahadur Shastri too suggested the formation of a National Academy of Scientists for the purpose. In the annual address at the Science Congress in January 1965, the role of the

\textsuperscript{73} The Statesman, Calcutta, Oct.25\textsuperscript{th}, 1962, p.6
\textsuperscript{74} The Statesman, Calcutta, June 10\textsuperscript{th}, 1963, p.10
\textsuperscript{75} The Statesman, Calcutta, April 18\textsuperscript{th}, 1964, p.9
\textsuperscript{76} The Statesman, Calcutta, June 20\textsuperscript{th} 1964, p.1
State as a conscious agent for promoting scientific research was emphasized by Humayun Kabir. As China was spending in one year what India spent towards science in five years, he suggested that at least 1% of the national income might be earmarked for aiding scientific research.\(^{77}\)

In the remaining two years of the Third Plan period, the Union Education Ministry approved Rs.7crore programme for improvement of science education at the secondary stage.\(^{78}\) The period of the Third Plan experienced an excess of supply of engineering personnel in relation to the number of job opportunities that could be provided. In contrast scientific posts remained vacant as not many students looked forward to a career in scientific research when compared to the technical stream.\(^{79}\) The Jagadish Bose National Talent Science Talent Search (JBNSTS) was one initiative that tried to ensure that the cream of the student fraternity took up science to man the vastly expanding industries.

### 2.5 The Hansa Mehta Committee Report 1961

The Committee on the Differentiation of Curricula for Boys and Girls, 1961 was appointed by the National Council for Women’s Education in consultation with the Ministry of Education in 1961 under the Chairmanship of Hansa Mehta to examine the present curricula of school education and to determine the extent to

\(^{77}\) The Statesman, Calcutta, January 1, 1965, p. 14

\(^{78}\) Ibid, July 9\(^{th}\), 1964, p. 9

\(^{79}\) Ibid, Aug. 10\(^{th}\), 1964, p. 5
which they could take care of the individual and social needs of women in the prevailing circumstances of the country.

The tone of the recommendations of the Committee was conservative as it suggested necessary reforms without at the same time causing an upheaval in the general pattern of education. In view of the demand for trained women personnel at the development projects under social services, it was proposed that in addition to Fine Arts and Home Science, at secondary stage, the need for providing additional diversified courses of a pre-vocational nature would have to be considered. It further recommended that a review of the content of courses under the group ‘Fine Arts’ and Home Science’ would be required; in order to suggest such modifications as were necessary to enable women to take up some gainful employment. Finally, it also drew the attention to an examination of the types of suitable occupations for which training could be given in the polytechnic and junior technical schools that were being set up for girls.

It advocated that at the primary stage of education there should not be any differentiation in the curricula for boys and girls and the proportion of women working as primary teachers should be increased. At the middle school stage no differentiation should be made in the curriculum on the basis of sex. This common course should also include a core curriculum of home science. All middle schools should provide for the teaching of a craft which was most suited to local conditions, and whenever possible, for the teaching of more than one craft. Universities were to review periodically the provisions they had made for
the courses designed to meet the special needs of girls and take necessary action to remove the deficiencies.

Provision of vocational courses at the secondary and higher stages of education was far from adequate. Immediate steps were to be taken to extend this provision to the largest extent possible both for boys and girls.\textsuperscript{80} In continuation of the conservative approach of the Durgabai Commission of 1958, the possibilities of employing women on a larger scale on a part-time basis in as many vocations as possible were to be explored, since a large percentage of married women were in a position to undertake employment on a part-time basis only. Ironically, two decades after India’s attainment of independence no bold efforts promoting higher education among women as well as their full-time occupations were made through these government policies.

In the Third Year of the Third Plan period, there was a cut in the Union budget for education by over 25\% on account of an emergency during 1963-64 that followed the Indo-China war, no new universities were set up in this period. This was also replicated in the states but the progress of primary and secondary education was not affected in that period.\textsuperscript{81}

But the demand for higher education was increasing rapidly. There was an estimated increase of 10\% in the college admissions and a 20\% per year


\textsuperscript{81} The Statesman, Dec. 24\textsuperscript{th}, 1962, p.1
increase in the technical courses such as engineering, agriculture and medicine. Admissions to science courses were increasing at the rate of 15% a year. There was also the lure of foreign jobs and degrees at a time of widespread unemployment.

The Government was thus committed to the expansion of technical and science education so as to increase the chances of employment among the youth. General education was discouraged and the UGC was understood to be against double shifts in colleges.\textsuperscript{82}

\textbf{2.6 The National Policy on Education (1964-66)}

The National Policy on Education (better known as the Kothari Commission Report) called for a comprehensive programme to promote scientific temper in education, develop research potential and excellence as well as collaboration between institutions. It aimed at women’s education as a means of social transformation and not merely as an intrinsic value or right. The policy focused on the need to rapidly expand science and technical education in the country. While advancing India’s scientific capacity, the document did not examine the need for including various marginalized groups in the process. This disjuncture between the various goals of education meant that the goal of realizing excellence in science and technology was not seen as concomitant with the

\textsuperscript{82} The Statesman, Calcutta, May 25\textsuperscript{th}, 1963, p.7
constitutional goals of equality as the marginalized groups were excluded and not made partners in the exercise.\textsuperscript{83}

The National Policy of Education, 1968—In the post-independence period, a major concern of the Government of India and of the States was to give increasing attention to education as a vital factor to national progress and security. While emphasis was put on the education of girls, on grounds of social justice and because it was believed that it would accelerate social transformation, the commission did not elaborate on the specific curriculum that was to be designed for girl students to bring them at par with the boys. Similarly while it emphasized the need for science education and research to promote the growth of the national economy, it did not address the disparity that existed in the enrolment patterns of girls and boys in higher education in the core sciences, engineering and medical education, although the need to establish universities as higher centres of learning and research was realised.\textsuperscript{84}

**The Fourth Five Year Plan—1969-1974**

During the period of the Fourth Five Year Plan, there was expansion of education at all levels. Enrolment in education especially university education rose from 0.74 million to 1.69 million. The admission capacity at the degree level in engineering and technological institutions also doubled from 13,824 to 25,000 at


\begin{flushleft}\textsuperscript{84} National Policy on Education 1968, [www.ncert.nic.in/oth-anoun/npe86.pdf](http://www.ncert.nic.in/oth-anoun/npe86.pdf), pp.40-44\end{flushleft}
the degree level. Provisions were made for science education to meet the rising
demand at the university level. Post-graduate education and research,
scholarships and stipends especially for the backward sections of the community
were also encouraged but there were no separate provisions for women.

Elementary education for girls was given more emphasis than university education, despite the rising demand for science education at the university level. This was attested in the Calcutta University News edition which highlighted the fact that in the last two decades after independence, women students were getting more interested in science subjects than in Arts. This trend had been brought to light in a study undertaken by the CSIR. The number of post-graduate women scientists in the country was estimated to be about 6000. This figure was about one-tenth of all of India’s post graduate scientists. During the 40s the proportion of women among fresh post-graduate scientists was about one in thirty, it had increased to one in eight by 1963. Although the proportion of women receiving Master’s Degree in Science was lower than in Arts, the former was rapidly increasing.\textsuperscript{85} There was also considerable expansion of facilities for engineering education both at the degree and diploma levels. Expansion schemes were undertaken in respect of Jadavpur University under the Fourth Plan.\textsuperscript{86} To meet the shortage of teachers, equipment and technical assistance,

\textsuperscript{85} University News, Chronicle of Higher Education, Vol.1, November to December 1963, No.5, New Delhi, p.8

\textsuperscript{86} University News, , Chronicle of Higher Education, Vol.7, No.5, April 1969, New Delhi, p.7
new medical colleges were also proposed to be set up. The major limitation of this plan, however, lay in the fact that it failed to coordinate between the institutions and industry.

2.7 Towards Equality 1974

That the education of women must be treated as a special problem for some years to come was advocated by the Committee. It was the first report of its kind that saw a severe indictment of the first twenty-five years of independent India’s achievements to ensure Indian women’s rights to equality, justice, freedom and dignity as promised to them by the Constitution. It was a report solely on women and ‘status’ of roughly half the population of India. The Chairperson Dr Phulrune Guha pointed out that the nation had completed a quarter century of its existence. Reviews had been undertaken on the condition and status of scheduled castes, tribes and backward classes, but never of women. The proposal was the constitution of a Commission of enquiry to look into all aspects of what had been happening to women in all these years.

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90 Ibid, p.xxv
The Committee also advocated that the Planning Commission should set up some suitable and permanent machinery to evaluate the requirements of the woman-power needed for implementation of the Plan programmes. The Chairman and the members were also keen to address the issue of wastage in medical education of women. It recommended that a suitable high-power committee should be constituted by the Government of India at an early date to examine the problem in a comprehensive and authoritative manner. The Committee’s Report showed that since 1911, the condition of Indian women had worsened in a variety of conventional indices. Gender disparities had widened in employment, health, education, and political participation. In doing so questions of women’s education, employment and security came under the scanner. It also became the launching pad for a new energetic women’s movement with a self-conscious gender identity.

Thus it may be said in all fairness that the educational policies at the all-India level in the post-independence period were marked by an over-arching desire to spear-head India’s progress through the advancement of science and technology. Secondly it was true to the democratic spirit of the Constitution in that it granted equality to every citizen of India irrespective of caste, sex, place of birth, and religion. But it was also anachronistic in nature as it failed to change the basic structure of rigid role differentiation between the sexes in a patriarchal

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91 Nirmala Banerjee, Samita Sen and Nandita Dhawan, eds. Readings in Gender Studies, Mapping the Field, Gender Relations in Contemporary India, School of Women’s Studies, Jadavpur University, 2011, p.13
society. It continued at times unwittingly the very colonial practice limiting the educational choices and career aspirations of a majority of Indian women, though a certain section of them by dint of their ascribed status and merit were beginning to carve out a niche for themselves within the folds of the patriarchal, competitive society and making the very best use of the Constitution’s democratic provision of the right to equality.