

## **A Review of Secondary and Higher Secondary Education in India**

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### **Abstract**

It is evidenced that country which has a large number of the educated and skilled labour force has a higher potential to lead others in economic development. So, it can be said that the education increases the productivity of the population in general and of the labour force in particular, leading to increase in individual earnings or wages and as a result, contributing to economic growth. Secondary and higher secondary educated population as a labour force are trainable and adjusted as the requirements of the world-wide market. Secondary education now is the single largest provider of working people in all spheres of national productivity. This paper highlights the growth of secondary and higher secondary education of the country and examines the current problems and challenges related to secondary educational system in India. It has been found that the total number of students enrolled in and gross enrolment ratio of secondary education and higher secondary education reflect increasing trends over the period. It is found that there has been an improvement in gender parity, particularly at concerned education level shown by GPI. Although, the progress has been made in the secondary and higher secondary sector of education, the rate of progress does not correspond with the pace of requirement.

**Keywords:** *Secondary Education, Higher Secondary Education, Gross Enrolment Ratio, Gender Parity Index*

## **1. Introduction**

India has made considerable success in certain areas like self-sufficiency in food, scientifically and technologically trained manpower and so on. It is possible because of our education system, which despite various issues, has functioned as a powerful instrument of socio-economic transformation and development. Education is one of the constituents of the capability dimension of inclusive growth to ensure equal access to economic opportunities (Ali, Ifzal & Son Hyun H. 2007)<sup>1</sup>. Various studies based on endogenous growth theory support the significant and positive role of education for growth. It has been observed that educational attainment establishes a positive correlation with the levels and growth rates of real per capita income (Lucas, 1988<sup>2</sup>; Romer, 1986<sup>3</sup>, 1990<sup>4</sup>; Barro, 1991<sup>5</sup>). Knowledge Commission (2005)<sup>6</sup> also recognised that investment in human capital through quality education is an essential tool for inclusive development of the Indian economy.

In developing countries, the importance of secondary education has been growing for several reasons. At what extent developing countries are achieving universalisation of elementary education, would increase the demand for secondary education. Another reason for the demand for secondary education might be on account of the extending demand for skilled labour force in the global economy. It is because the secondary and higher secondary educated population as a labour force are trainable and adjusted as the requirements of the worldwide market. Moreover, secondary education develops formal reasoning, problem-solving skills and critical thinking as well as its occupationally relevant content in adolescence people. Secondary education includes the student of age group of 15-18 years. These are transition and adolescence years which are the most crucial years of the student life. Students' physical shape undergoes a fast change during this period and there are various sort of emotional transformation and mood swings. This is the stage where students have to shift from education to the world of work, and equips the students by sharpening their skills and talents to make this transition quite smooth. Girls have to experience relatively more difficulties in this transition because of traditional beliefs and attitudes, social bias, prejudice and taboos prescribed for females in the society. For several years, it has been argued that secondary education needs to be expanded both as a response to increased social demand and as a feeder cadre for higher education, giving little emphasis to its other important functions. Investment in secondary education yields considerable social and economic returns, making it crucial for national development (World Bank, 1993<sup>7</sup>; Tilak, 2001<sup>8</sup>; Lewin and Caillods, 2001<sup>9</sup>; Duraisamy, 2002<sup>10</sup>). Secondary education has relatively more significant effect on the redistribution of income, growth and reducing poverty than primary education (Tilak, 1989<sup>11</sup>,

2005<sup>12</sup>). In spite of this, secondary and higher secondary education continues to be the most neglected segment of school education in many developing countries, including India. A large proportion of 14-18 years olds can at least read simple texts. Their mathematical abilities are underperformed and do not show improvement with age. At this age, perhaps pen-paper assessments like Programme for International Student Assessment. (PISA) will help to assess higher level abilities. Increasing number of students, lack of infrastructure, shortage of teachers and loss of credibility and quality have created a complete crisis (ASER 2017)<sup>13</sup>.

New Education Policy (2020) anticipated that 10+2 structure in school education will be modified with a new pedagogical and curricular restructuring of 5+3+3+4 covering age group of 3-18 years individual. (GOI 2020)<sup>14</sup>. Secondary education raises the skilled and knowledgeable nation with access not only to the country but also to the world level (Lewin and Caillods, 2001)<sup>15</sup>. For raising economic growth, it does not solely rely on primary education. It has been observed that the initial expansion of, and government investment in secondary education paid rich dividends in East Asia (World Bank, 1993<sup>16</sup>; Tilak, 2001<sup>17</sup>). Thus, secondary education also plays a vital role in economic growth. Investment in secondary education also yields appreciable social and private returns, offering adolescence population to acquire attitudes and skills that enable them to possess job-oriented skills, and contributed fully in the society. (Lewin and Caillods, 2001<sup>18</sup>; Duraisamy, 2002<sup>19</sup>). Therefore, secondary education provides a skilled workforce for economic growth and develop strong work ethos in society. Secondary Education Commission (1952-53)<sup>20</sup> directed that secondary school prepares the people to match the demand of the country in four-folds, which are democratic citizenship, vocational efficiency, personality development and leadership qualities. There have been reflections of the social and economic benefits of secondary schooling in previous literature. Secondary and senior secondary education anticipate a vital connection to the entire system of education that constructed the inter connectivity to the higher education system by supplying the required input. Indeed, elementary education and secondary education is considered as ‘successive phases of a continuing process’ and must be available to all children. All over the world, this perspective has been increasingly considered that education is a process that starts from childhood to adulthood. (UNESCO, 2000)<sup>21</sup>. However, the importance attached to and resources available for secondary education to a certain extent depends upon whether the countries and regions have attained universal or near-universal elementary enrolment. Secondary education is a link between elementary

education on the one hand, and tertiary and higher education on the other. It is evident that improved enrolment at elementary stage has led to increased access to secondary school and which in turn has influenced the demands for tertiary and higher education. The International Covenant on Economic, Social and Cultural Rights (1966)<sup>22</sup>, Article 5, 13 and 14, states that “Secondary education in its different structure, including technical and vocational secondary education, shall be made generally available and accessible to everyone by suitable, appropriate means”. It appears that now, secondary education is attaining the pure public good nature of education. Various studies have shown that improvements in health, minimisation of gender inequality and better living conditions are directly associated with secondary education and investments in secondary education have a high marginal rate of return. In viewing of these benefits, the country needs to promote universalisation of secondary and senior secondary education with adequate good quality. NSS 75<sup>th</sup> survey (2019)<sup>23</sup> estimated that net attendance ratio (NAR) for male student is 57.9 per cent, while that of female is 57.3 per cent and overall 57.6 per cent at secondary education and at higher secondary education level, NAR for male and female is 43.9 per cent and 42.7 per cent respectively and for person 43.4 per cent for the same period.

## 2. Review of literature

Tilak (2005)<sup>24</sup> analysed the influence of secondary and higher education in the development process in the country. He found the secondary education increases the earnings of the individuals and playing a very significant role in the economic development of the country. He further admitted the post-elementary education makes a substantial role in reducing the poverty level. He mainly concluded that importance of education particularly post-elementary school is significantly recognised and comprehensive long-term policies for the progress of education, including secondary and higher education, for development of the economy, are critically required in the country. Kingdon (2007)<sup>25</sup> reviewed the progress of school education in India and estimated that secondary school participation and learning achievements in secondary schooling are very low, indicated poor-quality schooling and lack of proper school infrastructure facilities. Rani Geetha P. (2007)<sup>26</sup> examined the evolution of secondary education and discovered a quantitative rise in enrolment, indicating that only 39 per cent of eligible age-group children were enrolled in secondary education in 2003-04. She also attempted to uncover factors that contribute to low student performance, such as students' poor socioeconomic status, educational costs, school locations, the remoteness of rural schools, and inadequate physical infrastructure, among others. Biswal (2011)<sup>27</sup>

estimated the network of educational institutions which were enlarged remarkably during the past six decades. He found that the growth rate of secondary level institutions during 1950-51 to 2007-08 has remained much unsatisfactory compared to that of the middle level of school. He has concluded that making secondary education in India an inclusive one is a huge challenge. Bhavesh Jha (2014)<sup>28</sup> found that female enrolment in secondary and above class is declining in India and emphasises that education may improve women decision making ability and influence the positive change in the country. He also argued that education as a tool to enhance economic progress and would help in achieving other millennium development goals within the target year. Charu and Parasad (2018)<sup>29</sup> found that despite the fact that there is significant growth in number of institutions, teachers, and enrolments over the years, the number of secondary schools available per lakh population is still quite low which indicates that the goal of achieving universalization of secondary education in India is still far away. In attainment of secondary education, huge disparities exist within states at different levels ranging from rural to urban, male–female as compared to elementary educational attainment levels. States which have performed poor despite development in the secondary education sector constitute West Bengal, Rajasthan, Assam, and Chhattisgarh, thereby implying misallocation or inefficient use of resources. States like Bihar, Odisha, Madhya Pradesh, and Karnataka fall in the poorest category with low performance level and low development in secondary education. These states seriously need to look into quality and infrastructural issues at the secondary level of education. Kaleem and Jawed (2020)<sup>30</sup> analysed the trends and pattern of educational attainment among the social groups in rural and urban areas and observed that urban population have larger proportion in terms of attainment of secondary and senior secondary than their rural counterparts over the periods. Population with secondary and senior secondary level of education have been increasing in the country. General population are educationally the most advantage groups as compare to STs, SC, and OBCs with respect to the attainment of secondary and senior secondary level of education in both regions.

### **3. Objectives of the Study**

1. To examine the growth experience of the secondary and higher secondary education in India.
2. To assess the critical issues and challenges in secondary as well as higher secondary education system.

### **4. Methodology and Sources of Data**

The study is based on the secondary data and have been collected from selected issues of educational statistics published by Department of School Education and Literacy, Ministry of Education, Government of India and also from different reports and issues related to education. The study covers the period from 2012-13 to 2019-20. The data used for examining the growth experience of the secondary and higher secondary education system in India is time-series in nature. The study is intended to examine the growth of secondary and higher secondary education with respect to enrolment, institution and infrastructure facilities by using relevant statistics viz. compound annual growth rate (CAGR), average and ratios. Participation of student can measured in terms of gross enrolment ratio for each level of education separately. Gross attendance ratio (For each class-group) defined as the ratio of the number of the pupils in the class-group to the number of persons in the corresponding official age-group. Therefore, for the class group IX-X and XI-XII, the ratio (in percentage terms), corresponding to official age-group of 14-15 and 16-17 were taken respectively. The methodology used to analyse the annual growth experience is based on compound annual growth rate (CAGR). The compound annual growth rate (CAGR) is used to calculate the growth over a period of time. The CAGR is a number that represents a steady level of growth from the initial value to an ending value as it determines the average annual growth rate for time series data. Formula and Calculation of the Compound Annual Growth Rate (CAGR) as:

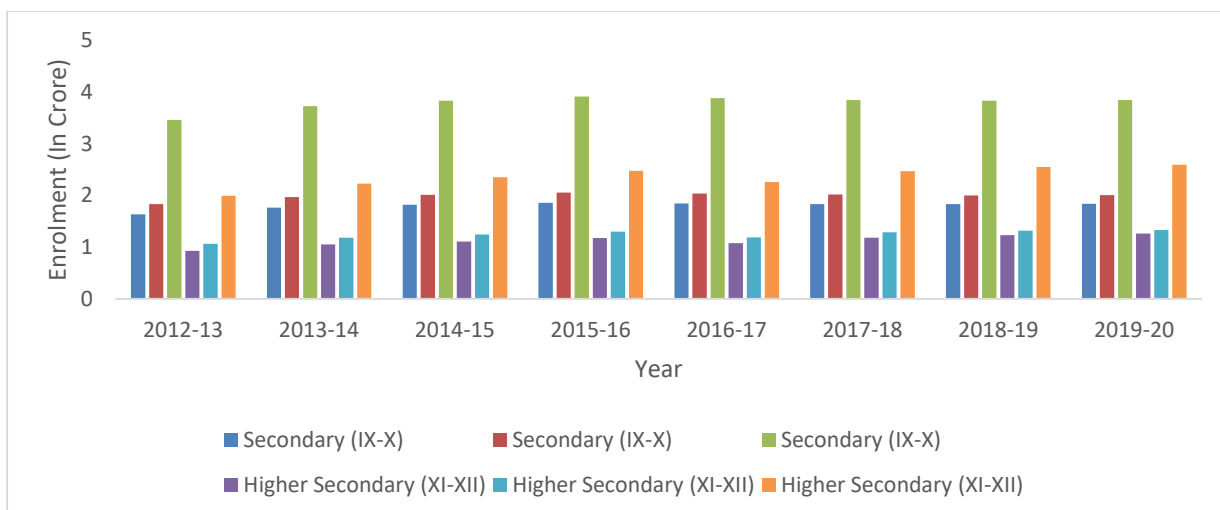
$$\text{CAGR} = \left( \frac{X_2}{X_1} \right)^{1/n} - 1 \times 100$$

Where: X<sub>2</sub>=Ending value, X<sub>1</sub>=Beginning value, n=Number of years

## 5. Result and Discussion

Expansion of education is becoming increasingly important in the contemporary world. In the Indian context, both the 11<sup>th</sup> and 12<sup>th</sup> Five-Year Plans have given high priority to accessibility, equal opportunities, and improved quality of education to all the concerned across the country and society. In this regards, the centrally sponsored scheme Rashtriya Madhyamik Shiksha Abhiyan (RMSA, National Secondary Education Programme) was launched in March 2009 with the aims for making secondary education of good quality available, accessible, and affordable to all persons in the age group of 14–15 years.

### Figure 1: Growth of Enrolment of Secondary and Higher Secondary Education in India



**Source:** Department of School Education and Literacy<sup>31</sup>, Ministry of Education, GOI.

Figure 1 shows that at the level of secondary education, the total number of the enrolled student was 3.46 crore in 2012-13 comprising of female students 1.6 crore, and male students 1.83 crore. Till 2019-20, the total number of student enrolled at the secondary level of education was increased to 3.84 crore comprising of female students, and male students of 1.83 crore and 2.0 crore respectively. The compound annual growth rate of enrolment of secondary education was 2.00 per cent while of the female students were 2.0 per cent, and the male students have recorded 1 per cent annual growth from 2012-13 to 2019-20, during this period growth rate of female students were higher as compared to male students.

The Figure 1 also depicts that 1.99 crore children enrolled in higher secondary education in India in 2012-13, comprising 92 lakh female students, and 1.06 crore male students. The total number of student at higher secondary education gradually increased to 2.59 crore, including female students 1.26 crore and male students 1.33 crore in 2019-20. The compound annual growth rate for the male students at this level registered only 03 per cent annual growth rate while female students accounted 05 per cent annual growth rate during the period and the total number of student accounted around 04 per cent annual growth rate. At the higher secondary level, it can also be noted that female students participated more than their male counterparts during the said period. Figure 1 shows that improvement in enrolment of both boys and girls was more pronounced at higher secondary level of education than secondary education. We have found that even today universalisation of secondary education goal remains untouched, there has been very encouraging progress in secondary and higher secondary schooling enrolment in recent times.

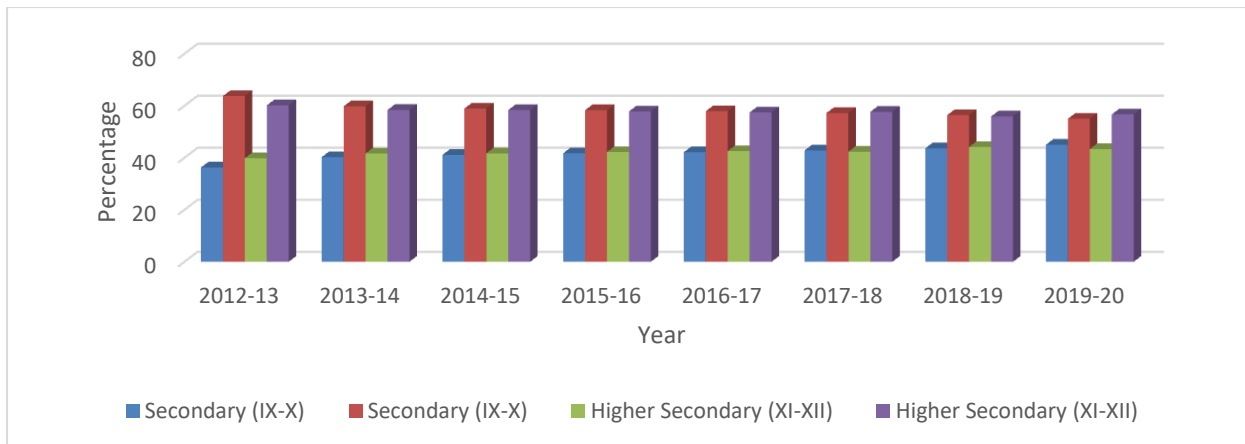
**Table 1: Number of Teachers at Secondary and Higher Secondary Education in India**

Years	Secondary (IX-X)			Higher Secondary (XI-XII)		
	Female	Male	Total	Female	Male	Total
2012-13	284560	500025	784585	149201	225395	374596
2013-14	477000	708918	1185918	204083	286150	490233
2014-15	529340	759122	1288462	237201	332192	569393
2015-16	559505	781516	1341021	264148	361933	626081
2016-17	571150	785075	1356225	273929	369629	643558
2017-18	577560	771699	1349259	292004	397801	689805
2018-19	493887	638489	1132376	276081	349460	625541
2019-20	520820	636445	1157265	284647	372221	656868
<b>CAGR (Percent)</b>	9.0	3.5	5.7	9.7	7.4	8.4

*Source:* Department of School Education and Literacy, Ministry of Education, GOI.

The total number of male and female teachers in secondary and senior secondary schools have not been increasing as much as needed during the period. From the table 1 it may be seen that the total number of teachers engaged in teaching in secondary school has increased from 7.84 lakh in 2012-13 to 11.57 lakh in 2019-20, and there were 2.84 lakh female teachers in 2012-13 which has gone up to 5.20 lakh 2019-20. On the other, there were 5.0 lakh male teacher in 2012-13 which has gone upto 6.3 lakh in 2019-20. Table also shows that male and female teachers were also increased at senior secondary education and the total number of teachers is 6.56 lakh in 2019-20 and it was only 3.74 lakh in 2012-13 at the higher secondary education. As far as CAGR is concerned, the annual growth rate of the teachers is more in senior secondary education (8.4 per cent) as compared to secondary education (5.7 per cent). The growth of female teachers is more than their counterparts at both levels of schooling during the said period. At both levels of education, the number of teachers has increased over the period 2012-13 to 2019-20.

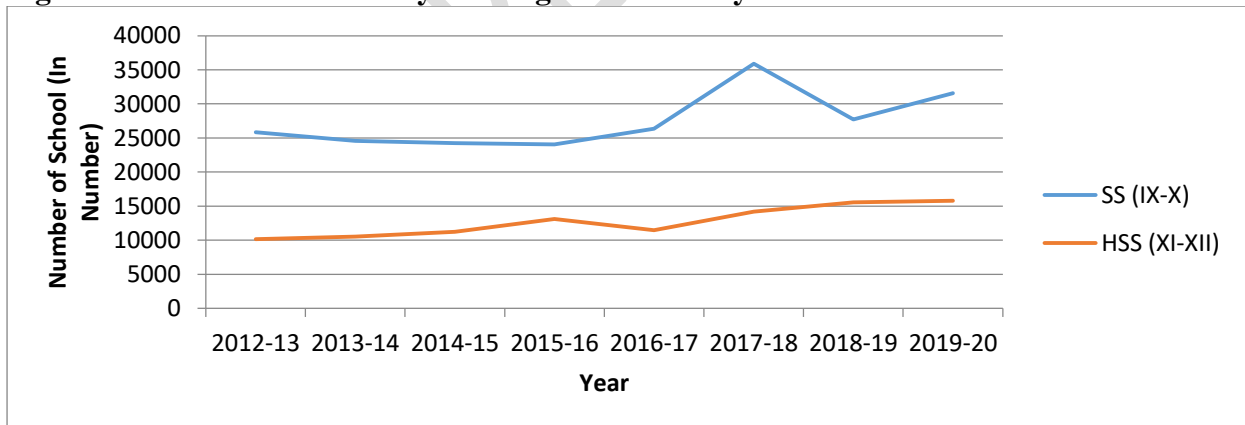
**Figure 2: Percentage of Teachers Gender Wise at Secondary and Higher Secondary Education in India**



Source: Figure 1.

As it can be seen from figure 2, participation of female teachers teaching in secondary and higher secondary education is less than that of male counterparts over the periods, however, a smaller increase in share of female teachers has been observed during the period. The percentage of male teachers teaching only in secondary education (55 per cent in 2019-20 from 63.7 per cent in 2012-13) and higher secondary education (56.66 per cent in 2019-20 from 60.17 per cent in 2012-13) has reduced. This reduction in share has been compensated mainly through increase in percentage of female teachers teaching in secondary and higher secondary education.

Figure 3: Growth of Secondary and Higher Secondary Schools in India

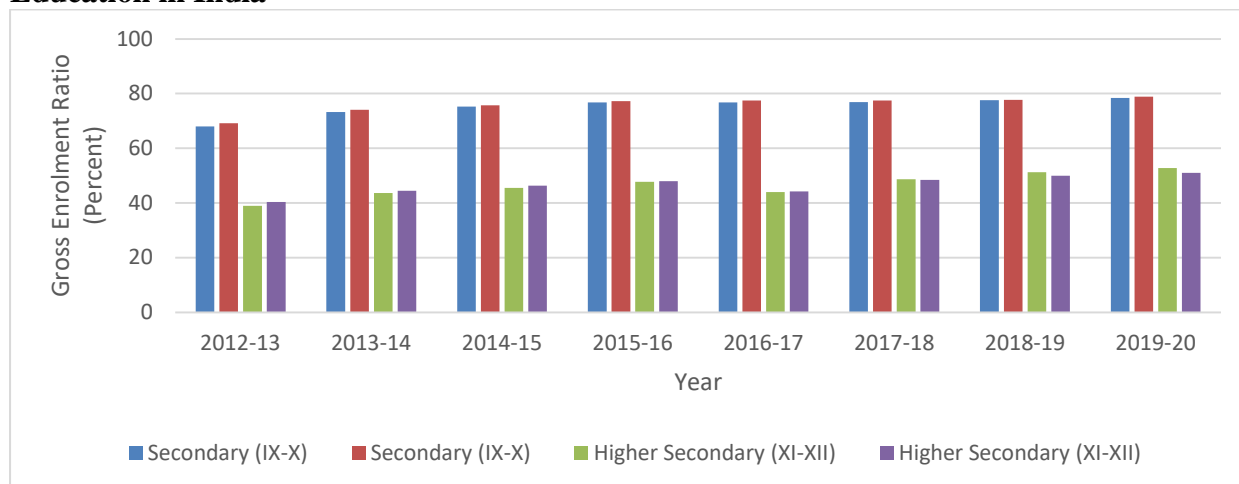


Source: Figure 1.

Figure 3 shows growth of the secondary and higher secondary school which impart only concerned level of education in India. As we may see in figure 3, there were 25829 secondary schools and 10166 higher secondary schools in India till the year 2012-13. Government of India established both secondary and higher secondary schools from time to time as number of children in education is expected to continue to increase. In 2019-20, number of secondary schools were reached to 31551 thousands, and 15816 thousands senior

secondary school was existing. CAGR estimated for secondary school is 2.9 per cent and 6.5 per cent for higher secondary school over the period.

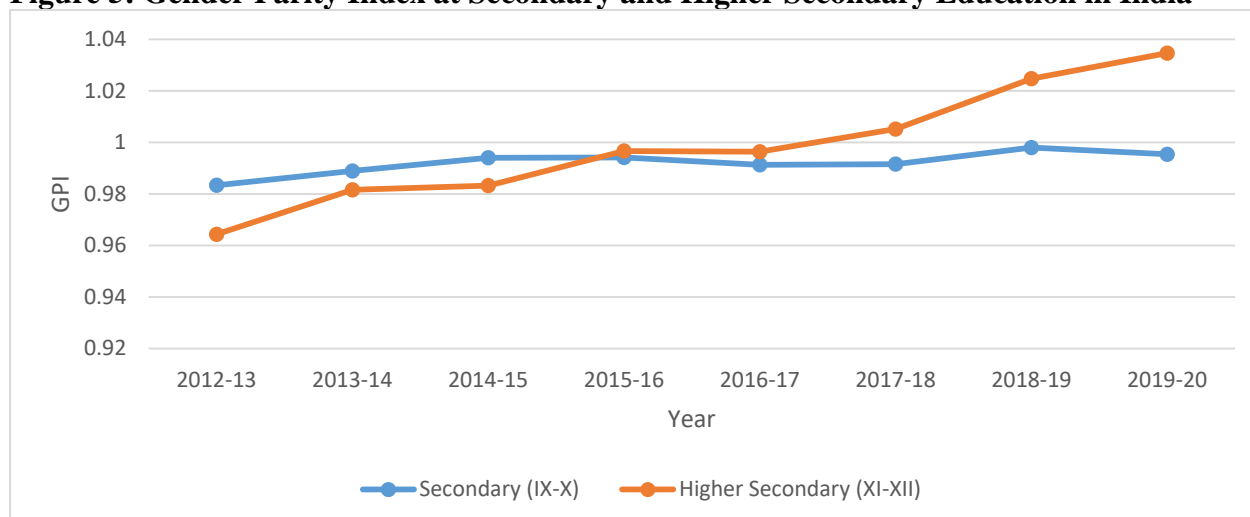
**Figure 4: Gross Enrolment Ratio (GER) by Gender at Secondary and Senior Secondary Education in India**



**Source:** Figure 1. Author's estimation.

The GER compares the enrolment in a specific level of education to the population of the age group which is officially considered for that level of education. Figure 4 shows the progress of gross enrolment ratio at secondary education and higher secondary education in respect of boys and girls during 2012-13 to 2019-20 and figure shows the gross enrolment ratio for the girls was 67.97 per cent and that of boys was 69.12 per cent in 2012-13, while in 2019-20, the gross enrolment ratio of the same level of education of girls and boys are 78.46 and 78.83 per cent respectively and almost tended to equal. GER for both boys and girls has been gradually increased over the period. Figure also highlights the gross enrolment ratio at senior secondary education, in 2012-13 GER for girls and boys was accounted 38.95 per cent and 40.39 percent respectively and it has reached to 57.75 per cent for girls and 50.99 per cent for boys in 2019-20. It has been observed that improvement in GER at higher secondary education.

**Figure 5: Gender Parity Index at Secondary and Higher Secondary Education in India**



**Source:** Figure 1. Author's estimation.

Gender Parity Index (GPI) estimates the representation of female education in line with representation of girls in population of corresponding age group. GPI value 1 or more indicates that the GPI is favourable to the girls, while GPI less than 1 indicates relatively under representation of girls in that concerned level of education. During 2012-13 to 2019-20, it has been found that there is an improvement in gender parity in secondary and senior secondary education as shown by GPI in figure 5. Improvement of GPI has been more pronounced at the higher secondary education. In 2012-13, GPI at secondary education was 0.98 percentage points and 0.96 percentage points at higher secondary level, and it was improved by 0.10 percentage point at secondary education till the year 2015-16. GPI for higher secondary level of education has crossed the limit 1 since 2017-18. At present, for both the levels of education, the enrolment is favourable to girls. Such progress may be constructive towards bridging the gender gap in enrolment and retention in both the level of education.

**Table 2: Pupil-Teacher Ratio (PTR) at Secondary and Higher Secondary Education in India**

Year	Pupil-Teacher Ratio	
	Secondary (IX-X)	Higher Secondary (XI-XII)
2012-13	29.7	39.2
2013-14	25.5	40.3
2014-15	26.3	38.4
2015-16	26.6	37
2016-17	26.3	33
2017-18	24.5	33.2
2018-19	21	29.6
2019-20	18.5	26.1

**Source:** Figure 1.

Pupil-Teacher ratio measures availability of adequate teacher for teaching student at concerned level of education and figure shows the PTR for secondary and higher secondary level of education during 2012-13 to 2019-20. PTR for secondary level has reached 18.5 in 2019-20, which was 29.7 in 2012-13. Considerable improvement can be observed in PTR for higher secondary education which has improved to 26.1 in 2019-20 from 39.2 in 2012-13. PTR at both concerned level of education has improved substantially during the period. A reduction in PTR reflects that one teacher has to teach less number of student, resulting improvement in quality of teaching.

### **5.1 Issues related to Secondary and Higher Secondary Education**

Secondary and higher secondary education is a crucial phase, and this stage is full of challenges which need to be diagnosed and resolved. For achieving the mission of quality schooling for all, optimisation of talents and potentialities, secondary education has to be reconceptualised afresh as education of the adolescents in transition, as education for nurturing multiple intelligence and capabilities (CABE, 2005)<sup>32</sup>. Secondary education now is the single largest provider of working people in all spheres of national productivity. Various Commissions pointed out the defects in secondary education from time to time. It has been generally felt that secondary education in India gives more emphasis on academics and fails to enable students to handle the problems of day-to-day life efficiently, it does not prepare them for pursuing higher education adequately. Most of the children, who are enrolled are unable to complete secondary education, and for these multiple factors are responsible for students dropping out of secondary and higher secondary schools. The majority of children enrolled are unable to complete secondary education, and students drop out of secondary and upper secondary schools as a result of a variety of circumstances. As a result, it appears that low secondary school enrolment rates are due in part to a scarcity of neighbouring secondary schools. Parents' perceptions of the futility of educating females, as many households adhere to traditional gender roles and do not value daughters' participation in the labour market, is a demand-side factor that is likely to impede increasing secondary school participation. Girls in India drop out at a higher rate than their male counterparts. Conservatism and safety concerns may also play a role in girls enrolling at far-flung secondary institutions. The dropout rates are much even higher for educationally backward states and districts. Similarly, students belonging to the socially disadvantaged/backwards groups like scheduled castes and scheduled tribes have higher dropout rates with respect to the general population. Regional differences also have a significant impact on dropout rate for example children living in

remote areas/urban slums are a higher probability of dropping out from the same. Failure to complete secondary school is not only responsible for the negative outcome for the individual but also widens the prevalent social and economic inequalities in the country. Recently in Delhi, slum areas where adolescents' dropout not merely due to poverty and financial constraints but also because of the schools did not cater appropriately to their special educational needs forcing them to drop out. (Sunita Chugh, 2011)<sup>33</sup>. Most of the schools in the country, particularly government schools, do not have adequate infrastructure. There are no proper classrooms, furniture, laboratories, libraries, playgrounds, urinals, safe drinking water and other related amenities etc. which cause them to face a lot of inconveniences. Girl students particularly face the problem of safe and hygienic urinals, and it may be one of the causes of low female student enrolment at this stage. This deprived the students of the real benefit of learning. As a consequence, due to the lack of proper facilities, students' physical and mental growth might be hampered. In many of the secondary and senior secondary school, the number of students is found to be quite high, as compared to the availability of teachers. In such a situation, teacher-pupil relationship and personal contact are lacking. As the teacher has to teach a large class, he can't bring any improvement in methods of teaching. There are problems of inadequate infrastructure in many schools and buildings are not sufficient; class sizes in such schools grow quite large. In short, there are various problems that have been found viz; financial constraints, lacking carrier guidance, the structure of the curriculum, and so on.

## **6. Conclusion**

This paper has tried to build a picture of secondary education in India. It has been observed that the total number of students enrolled and gross enrolment ratio of secondary education and higher secondary education reflect increasing trends over the period. It is found that there has been an improvement in gender parity, particularly at concerned education level shown by GPI. Although, the progress has been made in the secondary and higher secondary sector of education, the rate of progress does not correspond with the pace of requirement. Despite expansion of schools, enrolments, and teachers for secondary and higher secondary school education, the number of secondary schools available per lakh population is still quite low which indicates that the goal of achieving universalization of secondary education in India is still faraway. It has been challenging to reform secondary education in India from a system of few to mass. On the whole, it is quite clear that mere quantitative expansion in secondary level of education is not enough unless quality improvement is also taken care of

simultaneously. Because economic incentives for obtaining secondary and higher secondary education are high, demand for secondary and higher secondary education is likely to be strong, implying that factors such as a limited supply of secondary schools, household credit constraints, and gender roles conservatism are preventing greater participation. Regional, gender, and social disparities in access and participation in secondary education system continue to be a major concern. As a result of a shift in educational ideology, the teaching-learning process should become more interactive and student-centered. Stakeholders see education as something that promotes a child's entire growth, not just in appearance but in reality. As a consequence, effective teaching methods and the usage of appropriate infrastructural facilities are required, which may have a favourable impact on student achievements. It has been noted that not just low-income families, but also middle-income families, are having difficulty affording private school education. As a result, the government should make policy judgments on the fees imposed by private schools. Increased investment in pre-reform activities, improved political will, strategic thinking and management ensuring continuity in change at the school level, and an increased budgetary allocation seem to be the necessary conditions for undertaking an inclusive quality secondary and higher secondary education process in the country. We conclude that there are several positive sides to India's secondary and higher secondary educational development. Its Gender parity index has come close to one, enrolments have risen encouragingly and quality of teaching is being improved in recent times.

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