



**4D International Journal of IT and Commerce**

**ISSN No: -2319-104X**

**@4D Crossconnect.com, Inc, 2012**

**www.4dinternationaljournal.com**

**Vol. 5, Issue1, 2016**

---

## **EDUCATION AND ECONOMIC DEVELOPMENT IN INDIA**

Dr. Satyabrata Mishra

### **Introduction**

Economic development is a process whereby the real per capita income of a country increases over a long period of time. The increase in the quality of human beings by way of education, healthcare, nutrition, etc. helps to increase the physical output. Therefore, human resource development along with physical capital formation plays a useful role in economic development. The human resources can be developed by providing formal education from elementary to the higher level, technical and professional, on the job training, adult education programmes and correspondence or distance education.

Although mass education is an essential input, the quality and level of literacy also matter substantially in development. All concerned with education know that the human resources of a nation can be development by making investments in education on a scale commensurate with the nature and dimension of the task. The provision of educational expenditure is important under the state activities for economic development.

Throughout the history of independent India, the Indian government has strived to work for educational development and thereby to increase productivity and economic development. A lot has been achieved in the past five decades. Hence, an attempt is made in this study to analyse the educational development and the relationship between educational development and economic development.

### **OBJECTIVES**

The specific objectives of the study are given below:

1. To study the size, composition and growth of educational expenditure;
2. To study the growth of educational infrastructure facilities and attainments; and

3. To study the interrelationship between educational development and economic development.

### **SOURCES OF DATA**

The secondary data were collected for Gross Domestic Product at factor cost, population, wholesale price index, educational expenditure and its components, educational institutions, teachers in schools, enrolment by levels of education and literacy by age and sex from Indian Public Finance Statistics, Indian Economic Survey, Socio-Economic Indicators-India, Women and Men in India, Man Power Profile-India Year Book and Educational Statistics at a Glance.

### **PERIOD OF THE STUDY**

The data regarding educational expenditure and its components, educational infrastructures and attainments and economic development were collected for 24 years, i.e., from 1981-82 to 2004-05. The total period was divided into two sub-periods, viz., 1981-82 to 1990-91 and 1991-92 to 2004-05 in order to make a comparative analysis between pre and post New Economic Reform Policy periods.

### **TOOLS OF ANALYSES**

The secondary data were collected and the analytical tools such as the percentage analysis, Chow test, growth analysis, test for difference between means, elasticity of educational expenditures, ADF test and Granger's causality test were used. Before calculating percentage values, the expenditure in current year value was converted into constant year value taking 1993-94 price as the base year.

### **SCOPE AND LIMITATION OF THE STUDY**

This kind of study will unfold the involvement of central and state governments for the allocation of educational expenditures, exhibit the growth of educational infrastructure facilities and the attainments in them and the relationship between educational development and economic development.

There is a need for rising trend in educational expenditure by the governments and private sector. But the data for private sector educational expenditures are not available. Therefore, the study has to be limited to educational expenditure by the governments.

### **EMPIRICAL ANALYSIS**

#### **Growth of Educational Expenditure**

Expenditure on education improves the knowledge and skill of the people. Hence, as attempt is made to analyse the size, composition and growth of educational expenditure in this section. The major educational components are elementary, secondary and university education as shown in Table-1. The size of expenditure on elementary, secondary and university education was Rs. 4598 crores, Rs. 3431 crores, and Rs. 1853 crores respectively in 1981-82, which increased to Rs. 11727 crores and Rs. 5426 crores in 2004-05. It shows that the expenditure on

education increased in both the periods. This uptrend was confirmed by large mean values in period II than in period I for all the components of educational expenditure. The 't' test values for the difference between means of period I and period II was statistically significant at one per cent level. The C.V value for most of the components was comparatively less in period II than in period I, showing relatively less instability during the post-economic reform period.

The compound growth rate was less for all the components in period II than in period I. it was again due to the reason that the base for the estimation of growth rate was large in period II than in period I. Hence, one could observe that there was an increasing trend in the educational expenditure during post-economic reform period in order to serve the increasing educational needs of the people.

Therefore, the general inference was that governments had allocated more funds for educational improvement during the post-economic reform period. There was more stable uptrend in educational expenditure, even though the growth rate was comparatively smaller in period II. Thus, it could be inferred that the uptrend in expenditure on education of governments during post-economic reform period had welfare implication.

The estimated 'F' values of the different components of educational expenditure of combined, union and state governments for the Chow test are given in Table-2. It shows that all the estimated 'F' values are statistically significant. It indicates that there was a structural

Table 1  
Educational Expenditure (Rs. 100 crores)

Years	Elementary	Secondary	Adults	Technical	University	Others	Total
<i>Period I</i>							
1981-82	45.98	34.31	1.06	05.66	18.53	4.57	110.11
1982-83	55.37	38.96	1.32	06.57	20.11	4.90	127.24
1983-84	58.51	41.38	1.77	06.57	20.97	5.59	134.78
1984-85	60.10	43.23	1.13	07.41	22.85	6.62	141.34
1985-86	74.98	51.16	2.71	10.38	26.65	5.59	171.46
1986-87	79.95	55.78	3.00	10.82	29.69	6.54	185.78
1987-88	91.89	61.96	3.08	12.43	30.02	5.45	204.83
1988-89	99.82	72.70	4.09	12.28	36.33	6.09	231.32
1989-90	114.54	79.67	4.13	12.58	39.58	6.71	257.21
1990-91	117.27	83.14	4.92	13.12	36.97	6.17	261.59
Mean	79.84	56.23	2.72	9.78	28.17	5.82	182.57
C.V	31.69	31.21	50.60	29.88	26.99	12.54	030.07
C.G.R	11.21*	10.82*	19.29*	10.74*	09.27*	3.02*	10.59*
<i>Period II</i>							
1991-92	113.65	82.45	3.61	12.47	34.66	5.75	252.59
1992-93	114.74	81.86	3.52	12.79	34.60	7.08	254.59
1993-94	120.82	83.58	4.39	13.49	33.82	11.56	267.65
1994-95	124.17	86.34	4.50	13.70	33.62	9.66	271.99
1995-96	133.70	94.43	5.02	14.61	34.88	6.54	289.18

1996-97	149.79	105.23	5.73	16.04	35.99	6.49	319.26
1997-98	161.57	111.85	6.50	18.51	38.74	6.97	344.14
1998-99	191.05	133.70	8.27	20.72	42.68	7.38	403.80
1999-00	225.31	159.16	10.30	23.74	45.81	7.70	472.02
2000-01	214.22	150.81	10.04	22.77	42.14	6.00	445.97
2001-02	221.65	163.52	10.55	24.15	46.15	6.85	472.87
2002-03	235.45	169.45	10.82	26.45	49.23	7.26	498.66
2003-04	242.36	178.45	11.05	27.15	51.24	9.45	519.70
2004-05	256.85	186.23	11.45	30.12	54.26	10.25	549.16
Mean	178.95	127.65	7.55	19.77	41.27	7.78	382.97
C.V	29.66	30.92	40.77	30.47	17.21	22.44	28.38
C.G.R	07.44*	07.70*	10.92*	07.59*	03.92*	00.94*	07.03*
t(m)	-05.45*	-05.33*	-04.62*	-04.83*	-04.23*	-03.33*	-05.34*

Note: C.G.R – Compound growth rate.

C.V - Coefficient of variation.

\* - Statistically significant at one per cent level.

@ - Statistically significant at five per cent level.

t(m) - 't' test values for the difference between means of two periods.

change or structural instability between period I and period II in the different components of educational expenditure for all the governments.

### Elasticity of Educational Expenditure

In order to estimate the elasticity of the components of educational expenditure, a log-linear function ( $\ln Y_t = \hat{a}_0 + \hat{a}_1 \ln X_t + u_t$ ) was used, with the assumptions of the Classical linear regression model. The dependent and independent variables are different components of educational expenditure ( $Y_t$ ) and GDP ( $X_t$ ).

Table 2  
Chow Test for Educational Expenditure

Sl. No.	Details	$S_5$ Value	$S_4$ Value	F Value
1.	Elementary	1815.37	3116.10	17.17*
2.	Secondary	1045.24	1967.33	18.82*
3.	Adult	8.12	17.59	21.66*
4.	Technical	22.43	60.68	27.05*
5.	University	90.73	166.96	18.40*
6.	Others	41.40	1.93	0.47@
7.	Total	7309.19	13589.46	18.59*

Note:  $S_1 = RSS_T, S_2 = RSS_1, S_3 = RSS_2$

$S_4 = (S_1 + S_2), S_5 = (S_1 - S_4)$

RSS – Residual sum of squares

\* - Statistically significant at one per cent level.

\$ - Statistically significant at five per cent level.

@ - Statistically not significant at five per cent level.

The elasticity of educational expenditures with respect to GDP is presented in Table-3. The elasticity of total educational expenditure and its components was less in period II than in period I. Thus, the elasticity of educational expenditure with respect to GDP was relatively less for education during the post economic reform period.

**EDUCATIONAL INFRASTRUCTURE AND ATTAINMENT**

For an overall development of the economy, development of education is important. Hence, the effect of educational expenditure in terms of educational infrastructure development and educational attainment is discussed in this section. Number of schools per lakh population and teacher in school per 10,000 students were taken as the educational infrastructure development. Enrolment by level of education and male and female literacy was taken as the education attainment.

The number of primary and secondary schools per lakh population was an indicator of educational infrastructure development and therefore the details are given in Table-4. As seen in Table-4, the number of primary schools per lakh population declined by six schools in period I and by eight schools in period II. The fall was higher in period II. But the number of secondary schools per lakh population increased by 0.37 in period I and by eight schools in Period II.

Table 3

**Elasticities with Respect to GDP (%)**

<i>Sl. No.</i>	<i>Details</i>	<i>Period I</i>	<i>Period II</i>
1.	Elementary Education	1.91	1.33
2.	Secondary Education	1.87	1.30
3.	Adult Education	3.18	2.06
4.	Technical Education	1.80	1.26
5.	University Education	1.61	0.52
6.	Total	1.82	1.20

*Note:* All the values of the elasticity values are statistically significant at one per cent level.

I – Period I (1981-82 to 1990-91).

II – Period II (1991-92 to 2004-05).

The mean value was significantly lesser for secondary schools and large for primary schools in period II. The compound growth rate was negative for primary schools and positive for secondary schools, but the negative growth rate was relatively lesser in period II. The C.V was relatively smaller for primary schools and larger for secondary schools in period II compared to period I.

Therefore, the number of primary schools declined at a lesser rate and secondary schools per lakh population was at a higher rate during the post-economic reform period. The inference is that the number of primary schools had increased slower than the population and that was inconsistent with the goals of universal education and 100 per cent enrolment. Addition in investment by the governments and encouragement of private investment in

Table 4

**Number of Schools per Lakh Population**

<i>Years</i>	<i>Primary Schools</i>	<i>Secondary Schools</i>
--------------	------------------------	--------------------------

	<i>Period I</i>	
1981-82	72.80	17.68
1982-83	71.15	17.42
1983-84	70.42	17.48
1984-85	70.32	17.57
1985-86	70.05	17.86
1986-87	68.84	17.90
1987-88	68.40	18.09
1988-89	67.41	17.98
1989-90	66.68	17.90
1990-91	66.86	18.05
Mean	69.29	17.79
C.V	02.88	01.35
C.G.R	-00.93*	00.37*
	<i>Period II</i>	
1991-92	66.21	18.22
1992-93	65.51	18.18
1993-94	63.95	18.25
1994-95	64.48	18.55
1995-96	63.95	18.77
1996-97	63.81	19.06
1997-98	64.23	19.26
1998-99	63.76	19.35
1999-00	64.11	19.78
2000-01	62.68	20.24
2001-02	61.56	21.26
2002-03	60.25	23.15
2003-04	59.46	25.56
2004-05	58.21	26.48
Mean	65.62	19.34
C.V	05.82	12.67
C.G.R	-00.80@	01.36*
t(m)	03.06*	-2.35*

*Note:* C.G.R - Compound growth rate.  
 C.V - Coefficient of variation.  
 \* - Significant at one per cent level.  
 \*\* - Significant at five per cent level.  
 t(m) - 't' test values for difference between means of two periods.

primary schools should be the policy. It would call for further increase in secondary schools also to discourage drop-out at that level.

Number of teachers in primary and secondary schools per 10,000 students was taken as another indicator of educational infrastructure. It is shown in Table-5. It could be seen that the number of teacher per 10,000 students in primary schools declined in period I from 190 teachers in 1981-82 to 166 teachers in 1990-91. But in period II, the number of primary schools teachers increased from 163 to 177, i.e., by 15. It increased relatively more in period II than in period I.

In the secondary schools also number of teachers per 10,000 students. In period II, there was a marginal increase by 14 teachers per lakh population.

Table 5  
Teachers in Schools per 10,000 Students(No.)

Years	Primary Schools	Secondary Schools
	<b>Period I</b>	
1981-82	189.73	438.92
1982-83	179.05	381.32
1983-84	174.92	355.58
1984-85	173.44	354.60
1985-86	171.17	354.58
1986-87	172.33	363.21
1987-88	170.44	352.48
1988-89	170.36	347.14
1989-90	169.43	339.05
1990-91	166.02	315.59
Mean	173.69	360.25
C.V	03.81	08.97
C.G.R	-01.06*	-02.34*
	<b>Period II</b>	
1991-92	162.93	303.09
1992-93	165.76	318.18
1993-94	167.32	331.09
1994-95	160.61	317.58
1995-96	161.90	317.87
1996-97	162.20	314.96
1997-98	165.28	313.16
1998-99	171.69	317.12
1999-00	168.93	308.31
2000-01	166.61	309.81
2001-02	169.45	311.26
2002-03	172.23	312.45
2003-04	174.23	314.23
2004-05	177.45	316.75
Mean	167.61	314.70
C.V	02.99	02.03
C.G.R	-00.57*	-0.09@
t(m)	02.56*	05.18*

Note: C.G.R - Compound growth rate.  
C.V - Coefficient of variation.  
\* - Significant at one per cent level.  
\*\* - Significant at five per cent level.  
t(m) - 't' test values for difference between means of two periods.

The mean value for teachers in primary and secondary schools was significantly lesser in period II. The negative growth rate of teachers in primary schools in period I became positive in period II. The negative growth of teachers in secondary schools in period I became less negative

in period II. The C.V value was for primarily relatively smaller in period II than period I. The results revealed the need to employ more teachers in the years to come, if the spread on education had to be sustained, in its present expansion stage, in India.

Table 6  
**Enrolment by Levels of Education (Million)**

Years	Primary			Secondary			High/Higher		
	M	F	T	M	F	T	M	F	T
<b>Period I</b>									
1981-82	46.77	29.39	76.16	14.67	7.28	21.94	8.93	3.61	12.55
1982-83	48.66	30.87	79.53	15.63	7.51	23.13	9.81	3.94	13.75
1983-84	50.31	32.24	82.55	16.59	8.59	25.17	10.22	4.26	14.48
1984-85	51.96	33.72	85.68	17.14	9.03	26.17	10.84	4.63	15.47
1985-86	52.20	35.20	87.40	17.70	9.60	27.30	11.50	5.00	16.50
1986-87	51.73	35.43	87.16	17.80	9.65	27.45	11.47	5.17	16.65
1987-88	53.62	36.91	90.53	18.81	10.43	29.25	10.87	4.95	15.82
1988-89	53.85	37.36	91.22	19.22	10.71	29.93	10.98	5.27	16.25
1989-90	54.33	38.05	92.37	19.77	11.10	30.88	11.72	5.64	17.36
1990-91	57.00	40.40	97.40	21.50	12.50	34.00	12.80	6.30	19.10
Mean	52.04	34.96	87.00	17.88	09.64	27.52	10.91	04.88	15.79
C.V	05.65	09.80	07.29	11.33	16.82	13.26	09.90	16.45	11.82
C.G.R	01.82*	03.29*	02.41*	03.77*	05.70*	04.44*	02.98*	05.49*	03.74*
<b>Period II</b>									
1991-92	58.60	42.30	100.9	22.00	13.60	35.60	13.50	06.90	20.40
1992-93	57.90	41.70	99.60	21.20	12.90	34.10	13.60	06.90	20.50
1993-94	55.10	41.90	97.00	20.60	13.50	34.10	13.20	07.50	20.70
1994-95	60.00	45.10	105.10	22.10	14.30	36.40	14.20	07.90	22.10
1995-96	60.90	46.20	107.10	22.70	14.80	37.50	14.60	08.30	22.90
1996-97	61.40	46.80	108.20	22.90	15.20	38.10	16.30	08.70	25.00
1997-98	62.30	48.00	110.30	23.60	15.90	39.50	16.10	09.30	25.40
1998-99	62.70	48.20	110.90	24.00	16.30	40.30	17.30	10.50	27.80
1999-00	64.10	49.50	113.60	25.10	17.00	42.10	17.20	11.00	28.20
2000-01	64.00	49.80	113.80	25.30	17.50	42.80	16.90	10.70	27.60
2001-02	65.12	50.23	115.35	25.85	17.84	43.69	17.26	11.02	28.28
2002-03	66.45	51.42	117.87	26.12	18.25	44.37	18.56	11.85	30.41
2003-04	67.85	52.32	120.17	27.56	18.63	46.19	19.85	12.05	31.90
2004-05	69.42	52.89	122.31	28.14	19.12	47.26	20.74	13.26	34.00
Mean	62.56	47.60	110.16	24.08	16.06	40.14	16.38	9.71	26.09
C.V	06.35	07.93	06.98	09.68	12.81	10.88	14.42	21.15	16.81
C.G.R	01.46*	01.90*	01.65*	02.26*	03.11*	02.59*	03.38*	05.22*	04.05*
t(m)f	-07.08*	-08.20*	-07.80*	-06.77*	-08.20*	-07.40*	-06.80*	-07.05*	-06.95*

*Note:* C.G.R - Compound growth rate.  
 C.V - Coefficient of variation.  
 \* - Significant at one per cent level.  
 t(m) - 't' test values for difference between means of two periods.



Enrolment of students is a measure of immediate attainment in education. The enrolment of males and females at different levels of education is presented in Table-6. The enrolment of students in primary, secondary and high/higher secondary schools was 76.16 million, 21.94 million and 12.55 million respectively in 1981-82. It increased to 97.4 million, 34 million and 19.1 million and 19.1 million in 1990-91 and 122.31 million, 47.26 million and 34 million in 2004-05. It showed that there was a steady increase in the total enrolment in schools. The mean values were significantly larger with relatively lesser C.V value in period II. It was relatively larger for primary schools in period II. But the growth rate was lesser for the enrolment in primary and secondary schools in period II. It was higher for high/higher secondary schools in period II. Thus, the enrolment in schools showed an uptrend with large mean values and smaller C.V and CGR value during the post-reform period.

The analysis of enrolment of male and female students in primary, secondary and higher secondary also showed similar results as seen in the total enrolment of students. Thus, the enrolment in schools showed a significant increase with larger mean and relatively lesser C.V and CGR for period II as compared to period I, the inference being that during post-economic reform period the enrolment significantly increased in schools, especially in high/higher secondary schools.

The literacy rate is an important indicator of educational attainment. The details are given in Table-7. The total literacy rate increased in period I by 6.02 per cent and in period II by 16.78 per cent. Male and female literacy rates also increased by 9.34 per cent and 4.51 per cent on period I and 15.94 per cent and 17.98 per cent on period II. It indicated that the increase literacy was less for females than that for males in period I, but it was reversed largely in period II. Thus, the literacy rate, especially for females increased largely during the post economic reform period.

### **EDUCATIONAL ATTAINMENT AND ECONOMIC DEVELOPMENT**

Given the other resources, the economic development of a country mostly depends on the development of human resources through education and training and health. Therefore, the relationship between educational attainment and economic development was studied for their strength and the direction of causality. That is, the impact of education attainment (proxied by the proportion of the population allocated to higher education institutions, i.e., number of students enrolled per capita in general education, engineering education and medical education) of the level on growth rate of GDP per capita at constant (1993-94) prices was studied.

In order to test causality between education attainment and economic development, two different sets of variables for education were used. Firstly, the causality link between the number of students per institution enrolled in higher education (education attainment in general education-GEN, engineering education-ENG and medical education-MED) and GDP per capita at (1993-94) constant prices. The focus here is on the relationship between the intensity of the

efforts made by a society concerning educational attainment and their level on economic development. Secondly, the link between the rates of growth of these variables (GRGEN, GRENG and GRMED) and GDP per capita was attempted. The focus here is to examine the causality between increase in education attainment and economic growth. The data used for this purpose was for a period of 24 years, from 1981-82 to 2004-05.

Table 7  
Male and Female Literacy Rates (%)

<i>Years</i>	<i>M</i>	<i>F</i>	<i>T</i>	<i>F/M Ratio</i>
<b><i>Period I</i></b>				
1981-82	54.50	29.75	43.56	54.59
1982-83	55.63	30.25	43.85	54.38
1983-84	56.35	30.65	44.10	54.39
1984-85	56.93	21.41	44.75	37.61
1985-86	58.08	31.65	45.02	54.49
1986-87	59.24	31.90	45.94	53.85
1987-88	60.39	32.34	46.85	53.55
1988-89	61.54	32.98	47.76	53.59
1989-90	62.69	33.62	48.67	53.63
1990-91	63.84	34.26	49.58	53.67
<b><i>Period II</i></b>				
1991-92	64.00	39.00	52.00	60.94
1992-93	68.00	43.00	56.00	63.24
1993-94	69.00	44.00	57.00	63.77
1994-95	69.00	46.00	58.00	66.67
1995-96	70.00	47.00	59.00	67.14
1996-97	71.60	50.00	60.85	69.83
1997-98	72.50	52.30	61.25	72.14
1998-99	73.45	53.45	62.45	72.77
1999-00	74.15	53.94	63.65	72.74
2000-01	75.85	54.16	65.38	71.40
2001-02	77.67	55.25	66.12	71.13
2002-03	78.52	55.96	66.95	71.27
2003-04	79.75	56.25	67.56	70.53
2004-05	79.94	56.98	68.78	71.28

The Augmented Dickey Fuller (ADF) test was carried out for the actual data and growth rates (in percentage values). The results showed that there is stationarity both in the actual data and growth rates. Hence, the test for causality between educational attainment and economic development was carried out directly within the Classical frame work of Granger (1969) for actual data and growth rates.

The results obtained from the Granger's causality test are given in Table-8. The results also confirmed the presence of causality link between education attainment and economic development. The causality link was one directional between GED and GDP both in actual data and growth rates. It means that economic development contributed to general education but the reverse was not so. There was bi-directional causal relationship between engineering education and economic development and medical education and economic development, both in actual data and growth rates. It confirmed the presence of causality link from engineering and medical education to economic development and from economic development to engineering and medical education. It suggested the presence of a long-run stable liner relationship between education attainment and economic development. Even for GED to GDP, there was a long run liner relationship but that relationship was not significant as found in actual data growth rates.

The results of causality analysis suggested that educational attainment increased the labour productivity and thereby contributed to economic development, even though the line between

Table 8  
Results of Bi-Variate Granger's Causality Test

Equations	Dependent Variable	Causal Variable	'F' Statistic for Causality Test
1.	GDP	GED	F (2, 15) = 57.26*
	GED	GDP	F (2, 15) = 4.15@
2.	GDP	EED	F (2, 15) = 38.11*
	EED	GDP	F (2, 15) = 9.48*
3.	GDP	MED	F (2, 15) = 61.33*
	MED	GDP	F (2, 15) = 34.77*
4.	GRGDP	GRGED	F (1, 17) = 12.04*
	GRGED	GRGDP	F (1, 17) = 4.32@
5.	GRGDP	GREED	F (1, 17) = 83.69*
	GREED	GRGDP	F (1, 17) = 54.58*
6.	GRGDP	GRMED	F (1, 17) = 11.21*
	GRMED	GRGDP	F (1, 17) = 33.72*

Note: Lag length for the variables of actual data and growth rate (GR) were two and one respectively for independent variables.

- \* - Significant at one per cent level.
- \$ - Significant at five per cent level.
- @ - Not significant at five per cent level.

education attainment and economic development was complex. Intuitively, one would come to the conclusion from empirical results that, education attainment through expansion of general education, engineering education and medical education and educational attainment contributed to economic growth during the period of the study.

### SUMMARY OF FINDINGS

The issues pertaining to educational development are receiving increasing attention from academicians as well as policy makers. Hence, an attempt was made in this study to analyses the relationship between educational development and economic development in India. The inferences derived from the date analysis are summarized in this section.

- The expenditure on education revealed a steady increase but at lower rate during post-economic reform period. There was structural change between the two periods in the different components of education expenditure.
- The elasticity for the different components of educational expenditure with respect to GDP declined for all governments in period 2.
- Number of primary schools and secondary schools per lakh population also increased but primary schools had not increased consistently with the increase in size of population, as a reflection of priority in education policy.
- Number of teachers per 10,000 students showed a steady increase in primary schools but at lesser rate in secondary schools. It was because the governments had accorded priority to increase the number of teachers in primary schools, with the goal of enrolling all eligible students at that level.
- The enrolment of males and females in primary, secondary and high/higher secondary schools showed an uptrend, especially in high/higher secondary schools during the post economic reform period.
- The male and female literacy had increased in both periods but at a higher rate in period II, showing that the new economic reform policy increased the literacy rate, especially for females during post economic reform period.
- The Granger's causality test proved that there was a stable and precise relationship between educational attainment and economic development in India during the period of the study, viz., 1981-82 to 2004-05. This might be attributed to increase in labour productivity by educational attainments.

### **CONSLUSION :**

This study analysed the growth of educational expenditure of the governments. This expenditure was analysed for its impact on infrastructural development and attainment and thereby economic development ultimately. There was bi-directional causality between educational development and economic development. The comparative study of pre and post reform periods showed that the NERP had a positive impact on educational development as well as on economic development are complementary to each other.

As educational development and economic development are interacting and impacting on each other, the economic growth has become a necessary condition for educational development and gender parity in development. The emphasis on attaining eight per cent to ten per cent annual growth in real GDP (economic growth) is a right policy and efforts to achieve the target have to be intensified.

### ***References***

- Barrera, Albina (1990), "The Role of Maternal Schooling and its interaction with Public Health Programs in Child Health Production", *Journal of Development Economic*, Vol. 32, No. 1.
- Ghosh, Arun (1992), "Education for all-the Financing Problem", *Economic and Political Weekly*, April 4.
- Chaubey, P.K. and Chaubey, Geeta (1998), "Gender Equity Sensitive Literacy Rates: An Alternative Approach" *Anvesak*, Vol. 28, No. (1).
- Gosal, (1964), "Inequalities in the Levels of Literacy: A Regional Analysis", *Occasional Paper* (4): NIEPA, New Delhi.

- Hussain, M.A. (1981), "Continuing Education and its Role in Human Resource Development in India", *Journal of Higher Education*, Vol. 7, No. 1.
- Pulparampil, John (1999), "Educational HRD", *New Frontier in Education*, 24(4).
- Bhatty, Kiran (1998), "Education Deprivation in India – A Survey of Field Investigations", *Economic and Political Weekly*, Vol. 23, No. 28.
- Karlekar, Malavika (2000), "Girl's Access to Schooling: An Assessment", *The Gender Gap in Basic Education* (ed) RakhaWazir, (New Delhi: Sage Publications).
- Mehrotra, Santosh (2006), *The Economics of Elementary Education in India: The Challenge of Public provisioning and Household Costs*, (New Delhi: Sage Publication).
- Nambissan, Seetha B. (1996), "Equity in Education? Schooling of Dalit Children in India", *Economic and political Weekly*, Vol. 31, No. 16 & 17.
- Haldar, Sisir Kumar (1969), "Public Expenditure on Education – The Search for Criteria", *Yojana*, July 27.