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## Elementary education and library system in India: the symbiotic model based on Bloom's Taxonomy

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# Elementary education and library system in India: the symbiotic model based on Bloom's Taxonomy

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# Elementary education and library system in India: the symbiotic model based on Bloom's Taxonomy

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## **Abstract**

Bloom's taxonomy has been utilized in many branches of disciplines and several user and nonuser study has been conducted by researchers to find out the reasons of degradation of library usage. But the application of Bloom's taxonomy in elementary education in order to flourish the reading habit and library usage has not been done much. This paper outlines the lacunas of elementary education systems in India to indicate the primary deficiency of ability to make a library-oriented community and listing the antecedents of learning to read as well as draws a relationship model between education and library system and a symbiosis model among elementary education, library usage and Bloom's Taxonomy have been given.

## **Keywords**

Elementary education, Library usage, Bloom's Taxonomy, Antecedents of learning to read

## **1 Introduction**

Very significantly library users are decreasing day by day, which has a horrible impact upon our society as well as upon the library science profession. To find out this reason, a handful of users and non-user study and various research works have been done, which offers us several points i.e. changing trend of publications and information need, lack of knowledge to use the library resources, lack of time, ultra-modern lifestyle etc. But one basic and fundamental point is ignored by majority of works that, these are not evaluating the impact of the fundamental education upon the library use. The present paper investigated very minutely the invisible but a strong relation between a good library user and the fundamental education. How the fundamental education is being regarded the prerequisite to produce a sensitive and knowledge thirsted user community of the library that is analysed by the paper. And also, a possible solution is given by establishing a symbiotic reciprocation model among the preliminary education, library usage and Bloom's Taxonomy.

## **2 Objectives**

This paper is depending upon the following objectives;

- To investigate the relation between the library use and academic attainment at primary level;
- To determine whether the quality of education creating and increasing the reading habit of the students, who shall be the potential library user in future;
- To find out the lacunas in elementary level regarding the development of reading habit among students.
- To investigate the present scenario of library facilities in elementary levels;
- To investigate the phonetic, linguistic and language learning ability at primary level;
- To list out the antecedents of learning to read;
- To introduce a symbiotic model between elementary education and library usage on the basis of Bloom's taxonomy

## **3 Relation between elementary education and library usage**

There is an indirect but keen relation is existing between the elementary (primary and pre-primary education) and library usage. It is nothing but the education (formal or informal) can beget knowledge by providing information, on the first hand which generates consciousness, strengthening the reasoning power and wiseness and on the other hand it breeds the thirst of knowledge and generates several queries. Very significantly a strong bonding (two ways) is lying between (a) the generated knowledge (Which is the creation of education) and libraries (storehouse of those knowledge) and (b) the generated thirst of knowledge or queries (Which is also the creation of education) and libraries (Knowledge offered). The expressed embodied thoughts and knowledge are called document, which are acquired by the libraries and by using these resources it can satisfy one's information need and thirst of knowledge. The knowledge expression, embodiment, acquisition and circulation and the vice versa is an interlinked and rotational process, which is rotating upon the axis of education, that is also standing on the pillar of elementary education.

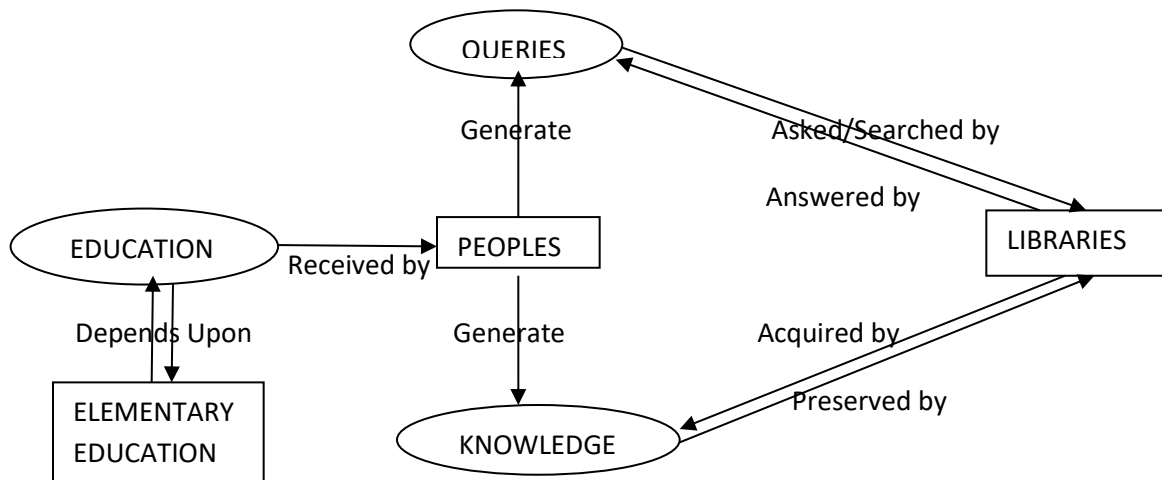


Figure 1: Graphical presentation of the relation between elementary education and library usage

#### 4 Reading skill in the context of library usage

Reading skill strengthens the reading habit and reading habit creates an enthusiastic reader who must go to a library to satisfy his knowledge desire. Here, in strengthening the reading habit elementary education plays a very crucial role. For example, **Juel (1988)** and **Lundberg (1984)** found that those children, who performed poorly in reading in the first stage, were likely to continue to remain poor readers at the end of primary school. Second, there is some evidence that individual differences in reading skills increase across time. For example, **Williamson et al. (1991)** found that, after the first grade, differences in reading abilities among children tended to become larger. Finally, there is also another research suggesting that the initial level of reading performance is closely associated with the subsequent amount of increase in reading performance. This reading performance promotes the reading habit, which urge bring a person towards library.

The first aim, of the present study was to investigate the following questions: What is the present status of reading habit of the elementary school children? Which are the antecedents of learning to read and how do children’s reading skills develop during the preschool year and the first primary school year? In response to the first question the following points are launched;

#### 5 Present scenario of reading habit of the elementary school children

Appropriate elementary education is the prerequisite to build up the reading habit. The present study minutely examines the present elementary education status and library facility offered by that level of schools. The investigation is depending on the data available in UDISE and ASER reports and extracted the following points;

##### 5.1 Lacunas

Lacunas in the library facilities and reading skills in elementary education system of India are showed as following according to UDISE and ASER report;

### 5.1.1 According to UDISE Report

- In primary level 79.61% of schools in India and 75.59% schools in West Bengal having library. (UDISE)
- Only 22.41% primary schools in India having pre-primary section. (UDISE)
- Net enrolment ratio at elementary level is 85.8%. (UDISE, 2016-2017)
- Only 78.6% (Govt aided) and 85.4% (Govt.) schools have offered library facilities. (UDISE, 2016-2017)

### 5.1.2 According to ASER Report

- About 25% of the age group 14 to 18 still cannot read basic text fluently in their own language. (ASER report, 2017)
- 53% of all 14-year-olds in the sample can read English sentences. For 18-year-old youth, this figure is closer to 60%. Of those who can read English sentences, 79% can say the meaning of the sentence. (ASER report, 2017)
- Even among youth in this age group 14 to 18 who have completed eight years of schooling, a significant proportion still lack foundational skills like reading and math. (ASER report, 2017)
- Of those who have currently completed 8 years of schooling or are currently enrolled in school or college, about 58% can read and understand instructions. But only 22% of those who are currently not enrolled can do so. (ASER report, 2017)
- As it has noted in previous reports, while the productivity of the government school system has declined overall, the effectiveness of the private schools has not changed as dramatically. In 2008, 68% Std V children in private schools could read a Std. II level text. This went down to 61% in 2012 and then went up again to 65% by 2018. (ASER report, 2018)
- Only 65% class 5 students studying in private schools can read class 2 level text and 44.2% in government schools, which is 2.5% more than 2016. Due to the poor reading ability in class 5 the overall ability to deal with textbooks in higher standards has lowered. (ASER report, 2018)
- For class 8, which is the last year of compulsory education under RTE, one in every four children is without basic reading skills. This number has not changed since 2016. (ASER report, 2018)
- In 2018, the lowest reading ability is from Jharkhand with only 29.4%. (ASER report, 2018)
- According to ASER report-2018 only 74.2% libraries in school has books.
- 33.2% male and 36.8% female students of the age group 8-10 can read the std. – II level text. (ASER report, 2018)

### 5.1.3 Others

- In most school systems, classroom teaching is guided by the need to cover an ambitious curriculum. Keeping pace with children's learning, especially struggling learners, is seldom prioritised (Banerji, 2017). Children who lag behind in early grades are usually not offered a chance to catch up.
- New estimates from UNESCO Institute for Statistics (UIS) 4 show that 617 million children and adolescents worldwide are not achieving minimum proficiency levels in reading.

## 5.2 Status of reading ability in India

Reading ability is the basic prerequisite of a reader and this ability is building up from childhood through a continuous process and cultivation. But the present study shows on the basis of the data of ASER report-2018, how, gradually the reading ability is decreasing day by day in the elementary level students.

Year	Not even letter	Letter	Word	Std. 1 text	Std. 2 text	Total
2010	6.5	19.9	31.2	25.7	16.8	100
2011	10.1	25.3	29.4	20.5	14.7	100
2012	14.8	29.3	23.6	15.7	16.7	100
2013	15.9	28.7	28.8	16.7	15.9	100
2014	19.2	28.8	20.3	14.5	17.2	100
2016	17.1	27.8	20.3	15.5	19.3	100
2018	15.7	26.0	21.5	15.9	20.9	100

Table 1: Percentage of enrolled Children, who able to read at different levels (Std III, Government schools)

The table 1 shows the reading ability of the enrolled children of std. III in Govt. School. Among the total number of students only 20.9% can read Std. II level text, 15.9% can read Std. I level text, 21.5% and 26.0% can read only word and only letters respectively. And the remaining number of students (15.7%) cannot read even a letter in 2018.

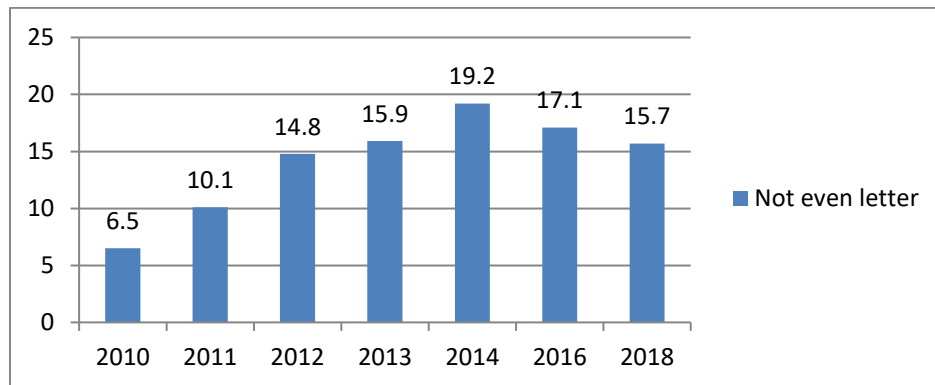


Figure 2: Growth rate of percentage of students, who cannot read even a letter

The figure 2 vividly visualise the present status of the poor education system, which has no ability itself to produce such a community with at least reading ability. How the percentage of the students without any reading capability is increasing, that is shown by the figure 1. This horrible growth rate of this percentage, which attains three times more in 2018 than 2010, begets a question that those community who have not the minimum reading quality then how they can be a good reader in future? If the growth rate is continuing then in near future, we get almost a reader less society. But the slight decreasing growth rate gives a hope of light.

**5.3 Percentage of enrolled children in government schools in Std. V who can read Std. II level text, 2008-2018: (Country, state and year wise fluctuation percentage)**

The following table give a scope to glimpse on the present reading status of the enrolled children in Govt schools in Std. V, who can read Std. II level text.

Areas	Years wise percentage					
	2008	2010	2012	2014	2016	2018
India	53.1	50.7	41.7	42.2	41.7	44.2
Kerala	73.3	74	59.9	61.3	63.3	73.1
Maharashtra	74.3	71	55.3	51.7	63.1	66
Punjab	61.3	68.7	69.5	60.9	64	68.7
Uttarakhand	64.6	63.7	52.2	52	55.9	58
Haryana	61.1	60.7	43.5	53.9	54.6	58.1
Chhattisgarh	74.1	61	44	47.1	51	57.1
Assam	40.9	42.6	33.3	30.6	32.2	33.5
<b>Madhya Pradesh</b>	<b>86.8</b>	<b>55.2</b>	<b>27.5</b>	<b>27.5</b>	<b>31.4</b>	<b>34.4</b>
Karnataka	42.9	42.9	47.2	45.7	41.9	47.6
Himachal Pradesh	73.6	75.7	71.2	71.5	65.3	74.5
Odisha	59.6	45.5	46.1	49.1	48.8	56.2
Uttar Pradesh	33.4	36	25.6	26.8	24.3	36.2
<b>Jharkhand</b>	<b>51.9</b>	<b>48.4</b>	<b>32.5</b>	<b>29.1</b>	<b>31.4</b>	<b>29.4</b>
West Bengal	45.2	54.2	48.7	51.8	50.2	50.5
Gujarat	43.8	43.5	46.3	44.6	52.3	52
Rajasthan	45.1	44.2	33.3	34.4	42.5	39.1
Tamil Nadu	26.7	30.9	30.2	49.9	49.4	46.3
<b>Bihar</b>	<b>62.8</b>	<b>57.9</b>	<b>43.1</b>	<b>44.6</b>	<b>38</b>	<b>35.1</b>

Table 2: Percentage of enrolled children in government schools in Std. V who can read Std. II level text (Based on the data of ASER report-2018)

The state wise fluctuation percentage shows the maximum number of states (11 out of 18 states) are suffering from low reading abilities of the students and this ability is decreasing gradually from the year 2008 to 2018. Out of the 18 states Madhya Pradesh (decreased from 86.8% in 2008 to 34.4%) is in the worst position, which is followed by Bihar and Jharkhand. However Tamil Nadu achieved a high improvement and is followed by Punjab and Uttarakhand. All over India the scenario is also very hopeless.



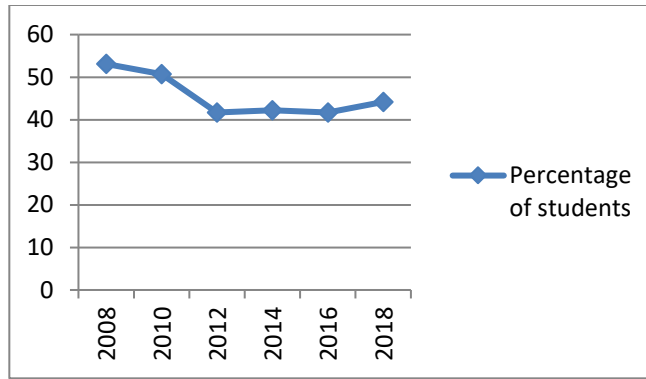


Figure 3: Decreasing rate of Percentage of enrolled children in government schools in Std. V who can read Std. II level text (National level)

The figure 2 portrays the decreasing rate of the reading ability of Std. V in all India level (decreasing from 53.1% in 2008 to 44.2% in 2018). This result also has a negative influence on library use.

#### 5.4 Trends of library use in schools

The ASER report-2018 draws a picture of data on those schools, having libraries but no books being used by children on day of visit: (W.B. Rural):

Year	2010	2014	2016	2018
Percentage of students	17.8	22.7	12.2	27.7

Table 3: Percentage of students, in different years, is not used libraries on the day of visit

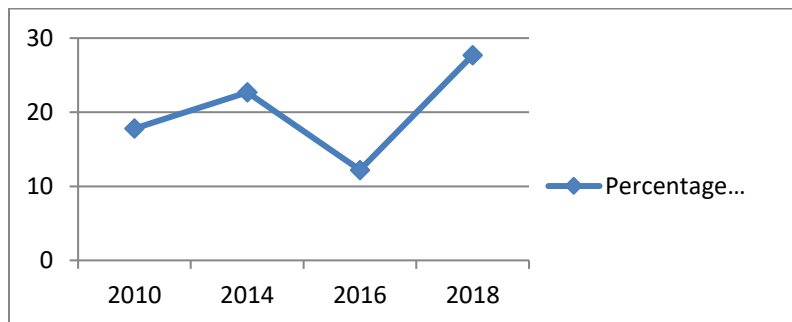


Figure 4: Growth rate of Percentage of students, who are not, used libraries on the day of visit

This figure clearly shows that the love towards reading as well as to library is decreasing day by day. And especially after 2016 to 2018 the growth rate of Percentage of students, who are not used libraries on the day of visit. This scenario is an indicator of omission in the field of library use.

So, the above discussed points give birth a question that if the society wants to achieve a library-oriented user community then which steps should be needed? This problem is solved only by improving the reading quality of the community. The present study analyses about the antecedents of learning to read and how do children's reading skills develop during the preschool year and the first primary school year.

## **6 Antecedents of learning to read**

There are several prerequisites, which help to create efficient reader by sharpening his/her reading skill. These are as follows;

### **6.1 Phonological ability:**

One of the major prerequisites of reading skills is a child's phonological ability. It has been found to be a relevant variable in cross-sectional (e.g., Liberman, Shankweiler, Fischer, & Carter, 1974) and longitudinal (e.g., Juel, 1988) studies. That is, previous phonological awareness has been found to be associated with subsequent reading ability. Similarly, phonological awareness training has been shown to contribute to children's reading performance (e.g., Bradley & Bryant, 1983). Phonological awareness is determined by two methods;

- a) Recognizing the Initial Sound of a Word
- b) Naming the Initial Sound of a Word

A score for phonological awareness was calculated by adding the correct answers given across these two tests.

### **6.2 Letter Knowledge:**

Another important antecedent is letter knowledge, which has been shown to provide a basis for understanding the alphabetic principle. For example, orthographic skills, which are required in the process of letter naming, have been found to predict later reading skills (e.g., Bowers & Wolf, 1993; Stahl & Murray, 1994). This factor also creates a good reader.

### **6.3 Listening Comprehension:**

It has also been suggested that listening comprehension is an important prerequisite of learning to read. For example, Curtis (1980) found that listening comprehension skills were significantly associated with subsequent reading performance. Each education especially language learning has four basic objectives; to develop the four skills successively;

- a) Listening skill
- b) Reading skill
- c) Speaking skill
- d) Writing skill

If a good reader is expected than the elementary education must emphasize to build up the listening skill properly.

### **6.4 Visual-motor skill:**

It has also been suggested that more general factors contribute to learning to read. Firstly, the visual-motor skills, such as automatic shifting of attention, have been shown to be related to reading skills (Facoetti, Paganoni, Turatto, Marzola, & Mascetti, 2000). The slower readers are not orienting attention automatically.

**6.5 overall intelligence:**

Second, overall intelligence (Ackerman, Dykman, & Gardener, 1990) has been found to be related to reading performance.

**6.6 Mathematical ability:**

It is founded that the children’s mathematical abilities is associated with learning to read. Light and Defries (1995) found that phonologically based problems in reading were associated with difficulties in arithmetic.

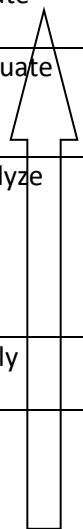
**6.7 Family-related factors:**

It has also been shown that several family-related factors, such as parents’ education (especially mother’s education), correlate to children’s reading development. For example, Adams (1990) suggested that the socioeconomic status of a family was related to activities promoting the development of pre-reading skills, such as phonological awareness.

**7 Symbiosis reciprocation between elementary education and library usage on basis of Bloom’s Taxonomy**

Bloom’s Taxonomy is a cognitive skills taxonomy which is given by Benjamin Bloom, in 1956, in his book *Taxonomy of Educational Objectives: The Classification of Educational Goals*. The cognitive domain is fragmented into six levels of objectives in the original version of the taxonomy which is revised in 2001. The revised version also has the six levels but has a slight difference. The present study is based upon the revised version of Bloom’s Taxonomy. If the following six levels of objectives are applied in an education system then these should produce the following skills and abilities as the table depicts.

Revised Bloom’s Taxonomy Hierarchy	Broad Concepts	Application in Education to Create Following Skills & Abilities
Create	Produce unique and original work and begat queries	Invent, Plan, Compose, Construct, Design, Imagine, Synthesis
Evaluate	Hypothesizing or justify a decision or state	Decide, Choose, Rate, Recommended, Justify, Prioritize, Hypothesizing, Checking, Critiquing, Arguing
Analyze	Implicit visualization of interrelations among ideas	Explain, Compare, Contrast, Examine, Identify, Investigate, Categorize, Organize, Structuring, Outlining, Integrity, Relate, Distinguish, Question, Differentiate,
Apply	Use information or understandings in new situation	Show, Complete Use, Classify, Illustrate, Solve, Implementing



Understand	Understand ideas or concepts	Compare, Discuss, Restate, Predict, Summarizing, Interpreting, Execute
Remember	Recall facts and basic concepts	Describe, Relate, Find, List, Recognize, Name, Identify, Memorize, Repeat

Table 4: Revised Bloom’s taxonomy and its application in Education

These skills are based upon one another; if the former is feeble then the later also follow it.

### 7.1 Justification of Figure 1 By applying Bloom’s Taxonomy

The relation between elementary education and library use is designed in the Figure1, which is justified by the following table which has vividly represented hierarchical how and which antecedents of learning to read are influenced by which skills and abilities.

Skills & Abilities	Hierarchy of Prerequisites of learning to read
Create Compose Invent Synthesis Design Construct	Cognitive Ability Overall/Intelligence (Produce Reading ability, new or original work and Question)
Solve Implementing Relate Complete Use	Mathematical Ability
Discuss Interpreting	Listening Skill
Understand Discuss Execute	Visual – Attention ability
Identify Memorize List Find	Letter Knowledge
Recognition (Sound) Naming (Initial sound of word)	Phonological Ability

Table 5: Hierarchy of Prerequisites of reading ability and their relation with the skills build up with the application of Bloom’s Taxonomy

The skills and abilities, the products of formal education, are governed by the Bloom’s taxonomy. The antecedents of learning are also developed one after another as the table depicts. At the top of the hierarchy the overall intelligence and cognitive ability has a direct relation with the library system by

producing new work and thirst of knowledge. Bu strengthening the reading skill the remaining prerequisites also promote library usage.

## 7.2 Re-Revised Bloom’s Taxonomy in library usage context

The present research has developed a re-revised hierarchy cognitive model in the context of library usage, based on revised bloom’s Taxonomy. The present model also has six level of cognitive domain: Library awareness, Thirst of knowledge/Queries, Search, Analyze, Selection and Generation.

Bloom’s Taxonomy	Revised hierarchy in Library Usage Context	Elaboration of Revised hierarchy in Library Usage Context
Create	Generation	Satisfy the need Create and express new ideas Begat new question
Evaluate	Selection	Select the right one or more Prioritize according to relevancies
Analyse	Analyse	Interpreted the finding results Explain and compare existing results
Apply	Search	Connecting these terms build up a question Put search
Understand	Thirst of knowledge / Queries	Realise the need Find the proper terminology to express it Create a relational mapping among the terms
Remember	Library awareness	Prior knowledge and awareness about library and its use

Library awareness is on the bottom of hierarchy but it plays the role of a pillar on which the later are sleeping. The prior knowledge about something can easily draw the attention on it. The library awareness is the basic knowledge to snatch one’s attention on it, which is followed by the thirst of knowledge or queries. The realization of need leads one to search the remedies, which are sought out from the multiple findings by interpretation and selection of the intended one or more. The satisfaction of thirst of knowledge gives a pleaser to the user which is one the major functions of public libraries. The dissatisfaction of the searcher leads him for further research, which creates unique documents which are regarded as the resource of the library. Again, the Figure 1 also justified by the re-revised taxonomy model.

### Limitation and Scope:

Because of lack of primary document, the paper is only based on the secondary data, retrieved from UDISE and ASER, which has several limitations and the application of Bloom’s taxonomy in the elementary or primary education is not appropriate properly. A symbiotic model, which is unique in nature, is developed upon the secondary data. One can extend the topic with the ground level survey data and turn the conceptual model into an empiric model.

## **Suggestions and Conclusion:**

After scrutinizing the above-mentioned prerequisites and lacunas regarding to be an efficient and enthusiastic library user the several suggestions have been given, which may help to create a library loving community in the upcoming future.

- The above analysis shows the reading skill is depending upon listening skill, so, If the students are offered to listen stories then their listening skill must be developed. To turn this point in reality schools should allot at least a story telling class every day.
- There is a strong need of a rule in the Govt. level to set up and offer the library services complimentary by Each and every school library.
- To draw the attention of the children, school libraries must be attractive in design and decoration.
- The under-funded libraries have to be appropriately funded to purchase the appropriate reading materials for children.
- Mother is the first teacher of a child, so, a mother should be well educated herself.
- Children are learning by imitating, so, the guardians are requested to maintain well family environment, where each member of the family have more or less reading habit.
- Parents should often purchase several kinds of picture, story and cartoon books for their children.
- Adequate teacher education should be provided to the teachers, who possess interest towards library and also create interest among the students.
- At last but not the least, it must be a duty of the parents to keep distance their children from TV and other electronic gazettes.
- In the most recent World Development Report, the World Bank (2018) highlights that learning outcomes will not change unless learning is used as a guide and metric. The importance of assessments is emphasised by the fact that assessing learning is visualized as the first step in a 3-step strategy to tackle the learning crisis.<sup>6</sup> The other two being:
  - 1) Acting on evidence collected from learning assessments; and
  - 2) Aligning all actors to make the system of education work for learning.
- In an article published in Times of India on January 1, 2019, Raghuram Rajan and Abhijit Banerjee lay out eight things that India needs to do in 2019. For education, they say "The Right

to Education Act focuses on input requirements for schools that have little bearing on learning outcomes, which have deteriorated alarmingly. Learning must be our central focus, with all schools, public and private, responsible for delivering a minimum level of basic skills to every child. Bringing those falling behind up to par through remedial teaching will be critical."

Unless we ensure that our young people reach adulthood with the knowledge and skills of reading, till then we cannot expect a library-oriented community.

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