

Available online at <http://www.ijims.com>

ISSN - (Print): 2519 – 7908 ; ISSN - (Electronic): 2348 – 0343

IF:4.335; Index Copernicus (IC) Value: 60.59; UGC Recognized -UGC Journal No.: 47192. 1<sup>st</sup> July

## **A study of impact of new secondary level mathematics curriculum and text book of WBBSE of West Bengal on students, teachers and conscious parents**

Kartik Chandra Sarkar

Officer-in-Charge, Govt. Teachers' Training College, Malda, West Bengal, India

### **Abstract**

After the publication of the National Curriculum Framework-2005 and National Curriculum Framework 2009 and the Right to Education Act 2009 a drastic change in the syllabus of all subjects has been taken place in West Bengal. To maintain the exact form of the government policy or the suggestions of the Expert Committee on School Education the West Bengal Board of Secondary Education itself published the text books of mathematics of secondary level. The new style of writing text book has been followed. The writer or writers have tried to make the students practice mathematics as a language so that the students can easily understand which method is to be followed or which formula is to be applied to solve the given problem. Moreover the language of the text book has been written in such a manner that the students do not feel pressurized to solve the problem but they feel that the solving problem is his own work. The mathematical problems are presented to the students connecting the problems of day to day life so that they can relate mathematics with daily life problems and they feel mathematics a fun. Undoubtedly the text books of West Bengal Board of Secondary Education are the outcomes relentless labour of the writers. The researcher made a survey to investigate the views of the students, teachers and conscious parents about the syllabus of mathematics and text books of mathematics of West Bengal Board of Secondary Education and different types of response are obtained.

**Keywords:** Mathematics Curriculum , Secondary level, WBBSE, Text book

### **Introduction**

Mathematics is a most powerful tool to be learned and to be skilled in applying this tool in various situations of practical life. This subject helps the students in developing reasoning and rational thinking in solving complex problems and make informed decisions. Without mathematical knowledge it is impossible to communicate with the fields of the modern scientific and technological world. So the deeper understanding of mathematics is needed for all students of secondary level. To develop the mathematical base among the students step by step the National Curriculum Framework-2009 has divided the mathematics curriculum upto secondary level into five forms depending on the aims of learning. These are Form-I, Form-II, Form-III, Form-IV and Form-V. Form I to Form-III are included in the curriculum of lower secondary level and its main objective is mathematical literacy among the students whereas the Form-IV and Form-V are included in the curriculum of upper secondary level and its main objective is development of mathematical skill to solve complex mathematical problems and feel the power of mathematics. After completion of the secondary level of education the students will be able to use mathematical language in communication and investigation. The students will be skilled to apply mathematical knowledge in

various mathematical situations. They will be able to appreciate the pattern, structure and power of mathematics. Logical reasoning will be developed in them and they will be able to appreciate interdependence of mathematics with other subjects. There will be developed intellectual curiosity to creative work depending on mathematical logic in the students. Keeping in view of all of these West Bengal Board of Secondary Education introduced text books of mathematics for secondary level based on the curriculum and suggestion of the Expert Committee on School Education formed by the government. In this paper the investigator tried to survey the view of the students, teachers and parents about the new syllabus and the text books of mathematics published by West Bengal board of Secondary Education.

**Objectives of the study :** The main objectives of the study is

- (i) To study the impact of the new curriculum and text book of West Bengal Board of Secondary Education on students
- (ii) To study the impact of the new curriculum and text book of West Bengal Board of Secondary Education on teachers
- (iii) To study the impact of the new curriculum and text book of West Bengal Board of Secondary Education on parents

### **Methodology**

Descriptive survey method was followed for this study. For this study a sample of 341 students of class VIII and IX was taken from two randomly selected schools of Malda district. A sample of 97 mathematics teacher was taken by purposive sampling and a sample of 134 parents was taken by incidental sampling. For this study three questionnaire were prepared by the investigator, one for students, one for the teachers and one for the parents. All these questionnaires contain both open ended and closed ended questions on mathematics syllabus of west Bengal and mathematics text book published by the West Bengal Board of Secondary Education. The data thus collected are used for analysis and discussion of the study.

### **Result and Discussion**

The Preamble to the constitution of India is now mandatory to be written in the beginning of the text book. As a result the text book of mathematics also contains the preamble to the constitution of India at the beginning of the text book. The first question to the students was that whether they have read the page containing the preamble to the constitution of India ( showing them the page the question was asked). 4% of the students said that they have never read that page, 93% of them said that they have read once or twice but they have never read in the later times and 3% of them said that they have read several times but not understood what that means. So the purpose of including preamble at the beginning of the text book is great but it bears a little significance to the students. The text books of WBBSE are written in such a language that the students feel that solving the problems are of their own work and they are not pressurized to solve the problems. The languages are written not like “ Solve this problem” instead of it is written as “I am solving this problem”. As for example, the problem is not written as “Rambabu went to market with 50 rupees and bought 2kg of rice in 44 rupees. How many rupees is in his hand now ?”. Instead of that it is written as “Rambabu went to market with 50 rupees and bought 2kg of rice in 44 rupees. I shall now calculate how many rupees he has in his hand”. The researcher has a curiosity to know how these types of language affect their

learning. So, the researcher investigated and the result shows that though there is written that “ I shall now calculate how many rupees he has in his hand “ , but they always start to solve the problem thinking that “How many rupees is in his hand now ?”. The solved problems of the text book are also written in first person but 73% of the students told that they do not read the solved problem at all. So, what language has been written in the solved problem of the text book has little effect on the students. The students are tested about their creativity of problem solving by various types of creative mathematical problems, because one of the main purposes of the mathematics curriculum is to produce creative mathematical thinking among the students. The result shows that 31% of the students have high power in solving creative mathematical problems, 27% have low power of solving creative problems and the rest 42% have medium capacity. So, it may be said that the development of creative thinking is as per expected level. Development of ability of mathematical communicative power, that is, the ability to speak and understand mathematical language is tested and the result shows that 28% of them have high communicative power 39% of them have medium and the remaining 33% have low mathematical communicative power. The only subject which has strong power of developing reasoning is mathematics. It develops the logical mind of the students and makes the habit of logical thinking among the students and the students always applies this logical thinking in all practical situations. The students are tested whether this types of reason and logical habit have been developed among them. The result shows that the curriculum has served this purpose. 34% of the students have high logical power, 37% have medium and the rest 29% have low logical power. It is tested whether the curriculum have capacity to develop the power of application of mathematics to other subjects and different practical situations. The result shows that 29% have high power, 44% have medium and the rest 27% have low power of applying mathematics in different mathematical situations. Thus it may be stated that the new curriculum of mathematics serves the purpose well. The teachers are asked open ended questions about the curriculum of mathematics of West Bengal and 77% of the teachers told that the curriculum is good enough, 12% of the teachers told that the curriculum is of average quality and only 11% told that the curriculum is not proper. The teachers are asked about the text book and they show mixed reactions. 79% of the teachers told that the gifted students do not read the solved examples of the text book and they only pick the question of the solved examples and solve the problem themselves. So what types of language have been used in solving the problem have a little significance to them. On the other hand the backward students have no interest in reading the solved problems at all. So, they also have no significance of the style of language used. The gifted children feel solving of mathematical problem as entertainment and so they always searches for more and more problems in the text book. But the number of exercises provided in text book is insufficient to them. So the book cannot satisfy their need. The parents are also asked open ended questions about the curriculum and it is seen that 43% of them told that the curriculum is good enough, 29% of them gave no reaction and 17% told that curriculum is of average quality and only 11% told the curriculum is not proper. The parents are also asked about the text book. 79% of the conscious parents told that they read and use the solved examples to solve the exercises when they teach their child at home. 54% of the conscious parents told that the text books contain many a pictures and diagrams to make mathematics simple but to the parents the pictures and diagrams are burden at the time of teaching their child at home. The conscious parents also iterated that there should be more exercises in the text books so that the book may satisfy the need of their gifted child.

### Conclusion

The above discussion reveals that the curriculum of mathematics of West Bengal designed by the Expert Committee on School Education is undoubtedly good enough as per teachers, students and parents. The curriculum serves almost all the purposes of mathematics curriculum. In the text book the objectives of the inclusion of the preamble to the constitution of India at the beginning of the text book is great but the students take a little heed of that. So it is the duty of the teachers to make the inclusion of the preamble a success. The text book contains insufficient numbers of mathematical problems and so it fails to satisfy the need of the gifted children. According to the conscious parents the solved examples provided in the text book is very helpful to the parents who has not sufficient knowledge in mathematics but the gifted students and the teachers only pick the question and solve themselves. So the languages of the solved examples became insignificant to those students. The languages of the mathematical problems are written in first person, but the students, while solves the problem thinks in interrogative sentence. So, the purpose of writing the questions in first person and assertive sentence instead of writing in interrogative sentence become fruitless.

### References

1. West Bengal Board of Secondary Education, Ganit Prabha (Class-VIII), 2<sup>nd</sup> Edition, 2014.
2. West Bengal Board of Secondary Education, Ganit Prakash (Class-IX), 1<sup>st</sup> Edition, 2015.
3. Ministry of Education, Culture and Human Resources, National Curricular Framework-2009
4. Ministry of Education, Culture and Human Resources, National Curricular Framework-2005
5. Abedi, J., Lord, C., & Hofstetter, C. (1998). Impact of selected background variables on students' NAEP math performance. Los Angeles, CA: UCLA Center for the Study of Evaluation/National Center for Research on Evaluation, Standards, and Student Testing. Achieve, (2008).
6. Achieve, (2008). The building blocks of success: Higher level math for all students. Retrieved from [www.achieve.org/files/BuildingBlocksofSuccess.pdf](http://www.achieve.org/files/BuildingBlocksofSuccess.pdf).
7. Bhatt, R., & Koedel, C. (2012). Large-scale evaluations of curricular effectiveness: The case of elementary mathematics in Indiana. *Educational Evaluation and Policy Analysis*, 34(4), 391-412.
8. Clements, D. H., & Sarama, J. (2004). Learning trajectories in mathematics education [Special issue]. *Mathematical Thinking and Learning*, 6(2).
9. Corcoran, T., Mosher, F. A., & Rogat, A. (2011). Learning progressions in mathematics: A foundation for standards, curriculum, instruction, and assessment (Research Report #RR-63). Philadelphia, PA: Consortium for Policy Research in Education.
10. Dewey, J. (1902). *The child and the curriculum*. Chicago, IL: University of Chicago Press.
11. Dreher, M., & Singer, H. (1989). Friendly texts and text-friendly teachers. *Theory into Practice*, 28, 98–104.
12. Heller, P. A., Post, T. R., Behr, M., & Lesh, R. (1990). Qualitative and numerical reasoning about fractions and rates by seventh-and eighth-grade students. *Journal for Research in Mathematics Education*, 21, 388–402.