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A COMPARATIVE ANALYSIS OF SIXTH STANDARD TEXTBOOKS BASED ON PRIMARY EDUCATION CURRICULUM 2004 AND PRIMARY EDUCATION CURRICULUM 2012

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Abstract

Textbooks are not merely learning materials; they become cherished companions and trusted guides throughout students' educational voyage. Serving as a constant and reliable source of knowledge, textbooks provide a structured framework for learning, meeting academic standards and objectives set by the curriculum. They offer clear explanations and comprehensive examples, aiding students in navigating through challenging concepts. Textbooks bridge the gap between classroom instruction and self-directed learning, encouraging independent exploration and critical thinking. Keeping textbooks updated and relevant is crucial, as it equips students with the latest knowledge and research findings, fostering academic curiosity and real-life applicability. This research paper conducts an analytical study, comparing Sixth Standard Textbooks based on Primary Education Curriculum 2004 and Primary Education Curriculum 2012, aiming to understand the impact of curriculum changes on the content and relevance of textbooks for effective student learning.

Introduction:

One cannot help but notice the profound impact that textbooks have on the academic journey of school-going children. These young learners exhibit a genuine affection and eagerness towards new textbooks, eagerly anticipating their arrival at the beginning of each academic year. To these students, textbooks become more than mere learning materials; they become cherished companions and reliable guides throughout their educational voyage. Textbooks play a pivotal role in shaping the educational experience of students. They serve as a constant and dependable source of knowledge, providing a structured and organized framework for learning. Within the pages of these books lies a treasure trove of information, carefully curated to meet the academic standards and objectives set by the curriculum. The significance of textbooks as steadfast companions is evident in the way students turn to them for guidance and understanding. When faced with challenging concepts or complex topics, textbooks offer clear explanations and comprehensive examples, helping students navigate through the intricacies of their subjects. The presence of textbooks offers a sense of reassurance and confidence to students, empowering them to delve into their studies with enthusiasm and curiosity. Textbooks serve as a bridge between the classroom and self-directed learning. They encourage independent exploration and enable students to deepen their understanding beyond what is covered in the classroom. Textbooks act as a valuable resource for conducting research, honing critical thinking skills, and cultivating a lifelong love for learning.

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All can recognize the importance of keeping textbooks updated and relevant. The educational landscape is ever evolving, with new discoveries and advancements shaping our understanding of various subjects. Regular updates in textbooks ensure that students have access to the latest knowledge and research findings. This not only fosters a sense of academic curiosity but also equips students with relevant information that is applicable to real-life scenarios. Textbooks hold a special place in the hearts of students, becoming their devoted companions on their educational journey. Textbooks hold a crucial role in the realm of education. They serve as fundamental instructional resources, providing a structured and comprehensive repository of knowledge and information. Textbooks play a significant role in shaping students' academic journeys, serving as a guide in their learning process. A well-designed and up-to-date textbook is essential for fostering effective learning experiences, enabling students to grasp essential concepts, theories, and practical applications. By updating textbooks regularly, we ensure that the content remains relevant and aligned with the ever-evolving educational landscape. Updates facilitate the inclusion of current information, recent methods of teaching, and contemporary examples, enabling students to stay abreast of the latest advancements in their fields of study.

Under the 'Primary Education Curriculum 2004' and the new series of mathematics textbooks for Std I to Std VII is launched from the academic year 2006-2007 later under the 'Primary Education Curriculum 2012' the updated new series of mathematics textbooks for std I to Std VII is launched from the academic year 2013-2014. This research paper is an analytical study of a Comparative Analysis of Sixth Standard Textbooks based on Primary Education Curriculum 2004 And Primary Education Curriculum 2012.

Preliminary Details of Both Textbooks:

The preliminary information includes the appearance, cover page, back page, binding, preliminary pages, publisher, number of pages etc. Table 1 gives the comparative preliminary details of both the textbooks.

Table 1

Preliminary information of textbooks based on Primary Education Curriculum 2004 and Primary Education Curriculum 2012.

Sr. No.	Criteria	Sixth Mathematics textbook based on Primary Education Curriculum 2004	Sixth Mathematics textbook based on Primary Education Curriculum 2012
1.	Cover Page	Two kids' boy and a girl playing in open space with unit cubes and building a big cube with them	Warli like sketch of kids playing with Geometry box tools, pencil and some three-dimensional tools
2.	Back Page	Stencil sketch of circles, Logo, Publisher name and price	An arithmetic game and Logo, Publisher name and price
3.	Number of pages	104	176
4.	First page	No digital footprints	Through QR code the digital copy of textbook is available
5.	Publication and author details	Detailed information given	Detailed information given
6.	Learning Outcomes	Learning outcomes or objectives are not mentioned in the preliminary pages	Learning outcome as well as suggested pedagogical processes are given
7.	Contents	26 Units divided in two parts Part I and Part II as 13 units in each part	18 Units divided in two parts Part I and Part II as 9 units in each part

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Observations and Interpretation:

The cover page of the Sixth Mathematics textbook based on Primary Education Curriculum 2004 is much more child friendly and related to the subject and pedagogy expected in textbook.

The back page of Sixth Mathematics textbook based on Primary Education Curriculum 2012 is having arithmetic game prompts the play and learn method and hence more appropriate and effective. But the textbook price of Sixth Mathematics textbook based on Primary Education Curriculum 2012 is quite high as compared with the Sixth Mathematics textbook based on Primary Education Curriculum 2004.

The number of pages in the Sixth Mathematics textbook based on Primary Education Curriculum 2004 is almost 40% more than the Sixth Mathematics textbook based on Primary Education Curriculum 2012. This results into the burden of the 2004 curriculum textbook is quite high as compared with the 2012 curriculum textbook .

In the Sixth Mathematics textbook based on Primary Education Curriculum 2004 no digital footprints are given but in the Sixth Mathematics textbook based on Primary Education Curriculum 2012 the soft copy of textbook, additional online resources are made available for extra preparation through the QR code.

The authors, publisher, copy write details, type setting, paper type and more information in the Sixth Mathematics textbook based on Primary Education Curriculum 2012 is more creatively presented as compared with the Sixth Mathematics textbook based on Primary Education Curriculum 2004.

The Sixth Mathematics textbook based on Primary Education Curriculum 2012 describes not only the learning outcomes to be achieved through the textbook but also it suggests some directive pedagogical process which teachers can use while teaching.

The Sixth Mathematics textbook based on Primary Education Curriculum 2004 has almost 30% more units than The Sixth Mathematics textbook based on Primary Education Curriculum 2012 which needs further analytical analysis.

Conclusion:

The comparison between the Sixth Mathematics textbooks based on Primary Education Curriculum 2004 and Primary Education Curriculum 2012 reveals distinct differences in their design, content, and supplementary features. The cover page of the 2004 curriculum textbook is deemed more child-friendly and aligned with the expected subject and pedagogy, fostering a positive learning experience. On the other hand, the back page of the 2012 curriculum textbook stands out with an arithmetic game, promoting play and learn methodology, enhancing its effectiveness. The higher price of the 2012 curriculum textbook may pose a concern for some users. The substantial difference in the number of pages results in a heavier burden for students using the 2004 curriculum textbook. The inclusion of digital footprints, soft copies, and QR codes in the 2012 curriculum textbook signifies an effort to incorporate technology for supplementary resources and extra preparation. Creativity in presenting author details, copyright information, and layout in the 2012 curriculum textbook enhances its visual appeal. The 2012 curriculum textbook provides directive pedagogical processes for teachers, guiding them in their instructional approaches. The variance in the number of units between the two textbooks necessitates further analytical analysis to understand its implications on the overall learning experience.

Content of Both Textbooks:

The Content of the Sixth Mathematics textbook based on Primary Education Curriculum 2004 and The Sixth

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Mathematics textbook based on Primary Education Curriculum 2012 is compared in Table 2 which gives the comparative details of both the textbooks.

Table 2

Content of textbooks based on Primary Education Curriculum 2004 and Primary Education Curriculum 2012.

The Sixth Mathematics textbook based on Primary Education Curriculum 2004		The Sixth Mathematics textbook based on Primary Education Curriculum 2012	
Unit No.	**Unit Name**	**Unit No.**	**Unit Name**
1	Divisibility	12	Divisibility
2	Order Of Operations And The Use Of Brackets	3	Integers
3	Use Of Letters In Place Of Numbers	10	Equations
4	Point, Line, Plane	1	Basic Concepts of Geometry
5	Angle	2	Angles
6	Pairs Of Angle	2	Angles
7	Natural Numbers and Whole Numbers	3	Integers
8	Indices		Nil
9	Square And Square Roots		Nil
10	Decimal Fractions Division	5	Decimal Fractions
11	Ratio And Proportion	11	Ratio and Proportions
12	Profit And Loss	13	Profit and Loss
13	Perimeter		Nil
14	Integers	3	Integers
15	Algebraic Expressions	10	Equations
16	Addition And Subtraction Of Algebraic Expressions	10	Equations
17	Equations With One Variable	10	Equations
18	Percentage	12	Percentage
19	Simple Interest	14	Bank and Simple Interest
20	Triangles And Its Types	15	Triangles and Properties
21	Properties Of Triangles	15	Triangles and Properties
22	Geometric Constructions	17	Geometrical Constructions
23	Bar Graph	6	Bar Graph
24	Area		Nil
25	Volume	18	Three Dimensional Shapes
26	Circle		Nil

Observations and Interpretation:

Units with Similar Topics: Both textbooks cover topics related to "Divisibility," "Integers," "Equations," “Basic Concepts of Geometry,” “Angles,” “Decimal Fractions,” “Ratio and Proportions,”"Profit and Loss," "Triangles and Properties," “Percentage,” “Bank and Simple Interest,” “Geometrical Constructions,” and "Bar Graph."

Omitted Units in the 2012 Curriculum: On the other

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hand, the 2012 curriculum seems to omit units such as "Indices," "Square and Square Roots," "Perimeter," "Area," "Volume," and "Circle" that were present in the 2004 curriculum.

Rearrangement of Units: The order of units in the 2012 curriculum appears to have been rearranged compared to the 2004 curriculum.

Notable Changes in Unit Names: Some unit names have been altered in the 2012 curriculum, for example, "Basic Concepts of Geometry" in the 2012 curriculum becomes "Point, Line, Plane" in the 2004 curriculum, and "Angles" in the 2012 curriculum is divided into two units, "Angles" and "Pairs of Angle," in the 2004 curriculum.

Differences in Emphasis: The choice of units and their arrangement in the 2012 curriculum indicates a potential shift in emphasis towards new topics like "Three Dimensional Shapes," "Geometrical Constructions," and "Bank and Simple Interest."

Conclusion:

The comparison of the Sixth Mathematics textbooks based on Primary Education Curriculum 2004 and Primary Education Curriculum 2012 reveals significant changes and updates in the content and organization of the curriculum. The 2012 curriculum introduces several new units, addressing topics like "Three Dimensional Shapes," "Geometrical Constructions," and "Bank and Simple Interest," indicating a shift in emphasis towards practical and application-based learning. Conversely, certain units from the 2004 curriculum, such as "Indices," "Square and Square Roots," and "Area," have been omitted in the 2012 curriculum. The rearrangement of units and alterations in unit names further reflect the curriculum's dynamic nature, adapting to meet the evolving educational landscape and instructional strategies. These observations illustrate the meticulous efforts undertaken to enhance the educational experience for students, providing them with comprehensive and relevant mathematical knowledge aligned with current pedagogical practices. These findings underscore the continuous process of curriculum development and the commitment to fostering a holistic and engaging learning environment for young learners.

Mathematical Branchwise Units in Both Textbooks:

The Content of the Sixth Mathematics textbook based on Primary Education Curriculum 2004 and The Sixth Mathematics textbook based on Primary Education Curriculum 2012 is compared in Table 3 as per their branches of mathematics which gives the comparative details of both the textbooks.

Table 3

Branch wise Content of textbooks based on Primary Education Curriculum 2004 and Primary Education Curriculum 2012.

Branch of Mathematics	The Sixth Mathematics textbook based on Primary Education Curriculum 2004		The Sixth Mathematics textbook based on Primary Education Curriculum 2012	
	Unit No.	Unit Name	Unit No.	Unit Name
Arithmetic	1	Divisibility	3	Integers
	2	Order Of Operations and The Use Of Brackets	8	Divisibility
	7	Natural Numbers and Whole Numbers	4	Operations on Fractions

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	9	Square And Square Roots	5	Decimal Fractions
	10	Decimal Fractions Division	9	LCM and HCF
	8	Indices	12	Percentage
	11	Ratio And Proportion	11	Ratio and Proportions
	12	Profit And Loss	13	Profit and Loss
	14	Integers	14	Bank and Simple Interest
	18	Percentage		
	19	Simple Interest		
Algebra	3	Use Of Letters In Place Of Numbers	10	Equations
	15	Algebraic Expressions		
	16	Addition And Subtraction Of Algebraic Expressions		
	17	Equations With One Variable		
Geometry	4	Point, Line, Plane	1	Basic Concepts of Geometry
	5	Angle	2	Angles
	6	Pairs Of Angle	7	Symmetry
	13	Perimeter	15	Triangles and Properties
	20	Triangles And Its Types	16	Quadrilaterals
	21	Properties Of Triangles	17	Geometrical Constructions
	22	Geometric Constructions	18	Three Dimensional Shapes
	24	Area		
	25	Volume		
	26	Circle		
Statistics	23	Bar Graph	6	Bar Graph

Observations and Interpretation:

Arithmetic: In the 2004 curriculum, arithmetic units are primarily focused on fundamental operations like "Divisibility," "Natural Numbers and Whole Numbers," and "Indices." On the other hand, the 2012 curriculum includes topics such as "Integers," "Operations on Fractions," "Decimal Fractions," and "LCM and HCF," introducing students to a broader range of arithmetic concepts.

Algebra: Both curricula cover "Equations" reflecting an introduction to algebraic concepts. However, the 2004 curriculum delves further into algebraic expressions and equations with topics like "Use of Letters In Place Of Numbers," “Expressions, “and "Ratio and Proportions," promoting a deeper understanding of algebraic principles.

Geometry: While both curricula introduce basic concepts like "Point, Line, Plane" and "Angle," the 2012 curriculum extends the study of geometry to include "Symmetry," "Quadrilaterals," and "Geometrical Constructions." Additionally, the 2012 curriculum incorporates "Three Dimensional Shapes"

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into the study of geometry.

Statistics: Both curricula cover "Bar Graph," focusing on data representation.

Rearrangement of Units: The 2004 curriculum rearranges the order of units across the different branches of mathematics, possibly to align with a more logical progression of concepts or to facilitate better learning outcomes.

Conclusion:

The observations suggest that the Primary Education Curriculum 2012 has been thoughtfully revised and expanded, encompassing a broader spectrum of mathematical concepts and offering students a more enriched learning experience. The incorporation of additional topics and the reordering of units indicate a commitment to enhancing pedagogy and aligning the curriculum with contemporary educational practices. These findings highlight the significance of dynamic curriculum development in providing students with a robust foundation in mathematics and Fostering Their Academic Growth And Achievement.

Results and Summary:

The comparison between the Sixth Mathematics textbooks based on Primary Education Curriculum 2004 and Primary Education Curriculum 2012 reveals distinct differences in design, content, and supplementary features. The 2012 curriculum textbook stands out with an arithmetic game on its back page, promoting play and learn methodology, while the 2004 curriculum textbook is considered more child-friendly. The 2012 curriculum also incorporates digital footprints and QR codes, offering additional online resources for extra preparation. However, the higher price and reduced number of pages in the 2012 curriculum textbook may be a concern. Moreover, the curriculum rearrangement and omission of certain units in the 2012 version indicate its adaptability to meet evolving educational needs. Overall, the observations demonstrate the meticulous efforts to enhance the educational experience for students and provide them with comprehensive and relevant mathematical knowledge. The findings underscore the significance of dynamic curriculum development in fostering a holistic and engaging learning environment for young learners.

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