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Content Analysis of Statistics and Probability in the Intermediate Stage Mathematics Textbooks in Saudi Arabia in the Light of Common-core Mathematics Standards

By

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ABSTRACT

This study aimed at the content analysis of statistics and probability according to Common Core Standards (CCSSM) in Mathematics textbooks assigned for the intermediate stage in Saudi Arabia. To achieve this goal, a descriptive methodology was utilized through a content analysis approach. The population and the sample of this study included mathematics textbooks of both seven and eight grades in Saudi Arabia. To answer the study questions, the frequencies, percentages, and Chi-Square were used to compare the sub-standards of statistics and probability in each and both textbooks.

The analysis reveals that the grade seven mathematics textbook represented Statistics and probability standards with different percentages; the substandard "*Represent sample spaces for compound events using methods such as organized lists, tables, and tree diagrams*" represented the highest rank with 39.5%, while the sub-standard "*Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions*" was completely neglected in that textbook.

For the grade eight mathematics textbook, the analysis reveals that the textbook represented only one grade eight statistics and probability standard as well as four grade seven standards in a deeper discussion. Generally speaking, there were variations in representing the standards when grade seven textbooks compared to grade eight textbooks.

According to the results, the researcher recommended that textbook authors have to be aware of the new common core standards and try to include them when modifying the textbooks.

Key Words:(CCSSM, Common Core, mathematics, Content Analysis, Statistics and Probability, Grades seven and eight).

Introduction:

In recent decades, there have been many studies in the field of math textbooks, since mathematics is of great importance in all spheres of life. It has moved from traditional mathematics, which has been a tool for natural scientists to modern mathematics, which is a component of other sciences. Educational are also interested in giving learners a greater chance to learn mathematics in ways that are consistent with what is necessary to prepare an individual as an active member of their society.

The process of curriculum review, analysis, and evaluation is ongoing, permanent, and endless, especially in light of the rapid and successive developments we are witnessing today. Dodoye (2003) affirms that content analysis has three fundamental dimensions: first, after information, it refers to the fields of mathematical content (numbers and processes), engineering and measurement, statistics and data analysis and reparation) and its concepts, generalizations, and skills. Second, after conduct, it is intended to determine the relationship between that content and possible changes in student behavior, and the cognitive abilities, thinking skills, and problem-solving reflected in such behavior. Third, following the design of educational attitudes and activities appropriate to this content, the three levels of knowledge growth (sensitive, semi-sensitive, and abstract) are responsible for changing students ' behavior and achieving education goals. One of the most important tasks of the bodies and bodies responsible for educational decisions is the development of school curricula. The current age in which we live requires us to quickly begin to take rapid steps to re-evaluate our curricula and textbooks, in the light of recent and successive scientific changes and developments that make it difficult to keep pace with them. Although the curricula are numerous and varied, they may contain shortcomings and problems that sometimes seem obvious, and we see some subjects in the math curriculum that are repeated, and some of the lessons are almost present in two rows with the same examples and questions. Hence, the importance of formulating a set of criteria adopted, which can be applied to the content of the curriculum, to identify its strengths or weaknesses (Abu Zina, 2003).

In light of the growing interest in reviewing mathematics curricula, there is a need to evaluate the content, considering that evaluation is the first step towards developing content and curricula in general, and to address the criticism of curricula and content. The National Council of Mathematics Teachers (NCTM) issued its first document in 1989 entitled "Platform and Calendar Standards for School Mathematics, and since then there has been increased interest in those standards by educators and school athletes. The latest document of the National Council of Mathematics Teachers (CNMA) in 2000 is divided into content-specific criteria and covers the following areas: numbers and processes, algebra, engineering, measurement, data analysis, and probability. There are process-specific criteria that include: problem resolution, thinking and proof, sports connectivity, communication, and sports representation. California ' s standards, which were based on the standards of the American National Council of Mathematics Teachers, reflected the importance of regulation and focus as guidelines for mathematics education, which were built on the California educational system to ensure skills education and evaluation that supported students ' commitment to principles, and called for learning the mathematical content of the reality of the real world by using mathematics to solve complications and develop "psychological skills" to adopt content and understanding. Standards from the lower to the eighth grades prepare students for advanced mathematics that

reflect the knowledge and skills needed to equip students for universities, professions, and good citizenship, time and effort are needed to apply the standards, but at the same time, they will - provide a new and interesting opportunity to ensure that California students will have high and global expectations with their peers that meet the challenges of the 21st century through innovation and leadership (CCSM, 2013).

Study problem and questions:

There is no doubt that the Mathematics book occupies a great place in school textbooks, especially since many students are aware of the difficulty of mathematics. That is why many countries of the world, particularly the Arab countries, have moved towards updating and developing curricula, including Qatar, Saudi Arabia, the United States, and others. The Jordan Future Education Forum also emphasized the development of curricula to promote students ' intellectual, spiritual, cultural, and cognitive development through a comprehensive review of curricula, including math curricula, and the preparation of a national document to identify expected competencies, levels of proficiency and standards in each class and research (Ministry of Education, Jordan, 2003).

From her experience in teaching as a teacher and educational supervisor, the researcher believes that the standard of statistics and prospects must have a vital place in the content of the textbooks of mathematics for the various levels of schooling, one of the criteria listed in the Common Basic Standards Document (CCSSM), as it is important to represent and describe the world we live in an orderly and unmistakable manner.

Students need to learn mathematics substantively by focusing on ideas, concepts, and meaningful learning. Here we can ask whether the approaches in our hands meet these aspirations. To answer this question, it should be noted that the most important work of the curriculum is to evaluate the tools for its implementation, specifically its textbook, as one of the main tools in the teaching and learning process, as well as the learning process tool, which is the student ' s capacity to study. The problem of the study is to answer the following questions:

(1)To what extent does the Mathematics book for the first medium grade in Saudi Arabia take into account the criterion of statistical content and probability following common basic standards (CCSSM))?.(

(ii) To what extent has the Mathematics book for Saudi Arabia's second medium grade taken into account the standard of statistical content and probability following common basic standards (CCSSM)?

(3)Is there a difference in the degree of observance of the criterion of statistical content and probability depending on the difference in the first and second intermediate grades according to common basic criteria (CCSM)?

Objective of the study:

Based on the importance of working on the analysis and evaluation of math curricula and textbooks with a view to their development and improvement, the present study is aimed at detecting the availability of common basic standards (CCSSM) in the context of statistics and

prospects in math textbooks at the intermediate level of education for the first and second grades of Saudi Arabia.

Significant of the study:

The Mathematics book is the main source of the content of the math curriculum for math teachers, and it is an essential source on which the student relies and draws his or her information, but the book will be able to perform all the educational functions required of him or her only if it has a set of characteristics and standards (Al qudah, 2012). This requires the provision of many specialized and prohibited learning sources for math subjects for students and making the textbook one of these sources.

Therefore, the process of analyzing books following global standards is important in the process of assessing and reviewing school mathematics curricula, as attention has begun to the content and process standards of American standards, at the expense of the old standards of introduction, artistic production, target levels, and the level of calendar questions contained in the textbooks and others. Therefore, the analysis of school math books is an urgent need for math curricula to play the role assigned to them, and therefore the researcher analyses the content of the school math books for the intermediate level in Saudi Arabia in the light of common basic standards (CCSSM, 2013). To identify the availability and prospects of the statistical standard in these books, by building a model for analysis according to these criteria.

The present study is gaining relevance through the content I have addressed, which is the standard of statistics and prospects that enhances students' different skills in collecting, summarizing, representing, and interpreting data and finding conclusions for sound decision-making. This study is also important because of the importance of common basic standards for mathematics since it keeps pace with recent developments in the field of mathematics education and education through the adoption of a standard of statistical content and probability which emphasizes the ability of students to think and look at the beauty and consistency of mathematics (CCSSM, 2013). Moreover, the current study is important in that mathematics books in Saudi Arabia have been developed to keep pace with global development. Hence, the researcher has undertaken this study to demonstrate the extent to which she has met the common basic standards (CCSM) in the standard of statistical content and probability. The curriculum and curriculum development educators have emphasized that the content of the curriculum must be continuous, structured, coherent, and connected, in line with global documents and standards in the development of math curricula in particular. As far as the researcher is aware, there were no Arab studies on common basic standards (CCSSM) until the preparation of the study.

Study terms and procedural definitions:

1 - Content analysis: A scientific research method or tool used to analyze scientific material; to describe the apparent content of the material in terms of form and content in response to research needs formulated in the light of research questions; and to assist the analysis in arriving at conclusions and conclusions that contribute to the analysis process regularly according to methodological bases and objective criteria (Hassin, 1983).

It is defined procedurally: a method used to determine the compatibility of the statistical content and the probability in the mathematics books of the first and second intermediate grades

of Saudi Arabia with the 2013 common basic standards of the statistical and probability standard, as the categories of analysis, and to consider the idea contained in the content as a unit of analysis.

2 - Benchmark: A calendar that describes what students can learn from mathematics, and defines slavery, 2004 as "what students should know, what mental and practical skills they can perform, and what values and behavior they acquire." It is defined procedurally: they are calendar terms derived from common core standards (CCSSM) of statistical content and probability, used to judge the availability of knowledge and skills that must be included in the statistical content and probability of mathematics books for the first and second intermediate grades of Saudi Arabia.

3 - Common Basic Standards for Mathematics: They are descriptions of what should be used to teach mathematics and enable students to know and do it. These common standards are a basis for teaching materials, for a more focused and coherent evaluation that measures students ' understanding of mathematics and their acquisition of thinking habits, as well as fluency in computational skills, as set out in the Common Basic Standards for Mathematics in the United States of America (COMMON CORE MATHEMATICS STANDARDS), approved and applied by the California State Board of Education (45) states in America, and include content standards that change grade and practice standards of eight across all stages.

4 - The statistical standard and probability: is one of the content criteria, a set of expectations that have been translated into subcriteria, and must be found in the content of the statistical topics and prospects as contained in the Common Basic Criteria for Mathematics in the United States of America (The California Common Core State Standards Mathematics, 2013).

5 - Middle level: The middle stage between primary and secondary education is three years of education, from the first middle to the third middle grade..

6 - School math books: The set of school math books for the first and second intermediate grades of the middle school, which are taught in Saudi Arabia in the 2014/15 school year.

Study Limits and limitations:

The results of the study can be circulated in the light of the following limitations and limitations::

1 - This study was limited to the school math books for the intermediate level (first and second intermediate grades) issued by the Ministry of Education of Saudi Arabia for the academic year 2014-2015, which are equivalent to grades 7 and 8 of the common basic standards (CCSM). The present study does not cover the third intermediate grade, which is equivalent to the ninth grade in the Common Basic Standards Document (CCSM), since it falls within the standards of the upper level.(12-9).

2 - The analysis was limited to the student ' s book without the teacher ' s guide or any instruction circulars or leaflets for the teacher.

3 - The study was limited to one of the content criteria of the COMMON CORE MATHEMATICS STANDARDS (2013), which is concerned with the California State Standard of Statistics and Prospects.

Theoretical framework.

Human thought is a vast source and source of education in all fields through educational thinking in the various humanities and natural sciences. The facts and theories of these sciences are a renewed source of educational science in the effort to achieve a more comprehensive vision in the educational development process. As a result, the teaching material offered to students is based on sound scientific standards that contribute to attracting learners and achieving the goal of their education. Mathematics is concerned with the study of numerical quantities and relationships between them, as well as the dissemination of such relationships. The study of these quantities requires their precise definition based on their particular characteristics, using specific logical laws to determine the relationships between the same quantities and previously obtained ones (Ibrahim, 1997).

The evaluation of curricula and textbooks, including math books, has become necessary, especially when they are constantly developed by the relevant institutions, through the observation and follow-up of curricula and textbooks during their implementation, or through analysis of curricular publications, textbooks, and teachers ' guides based on certain grounds (Abu Zina, 2003). The analysis and evaluation of textbooks can be seen as both diagnostic and therapeutic, leading to curriculum development and the improvement of textbooks, either through deletion, addition, or modification. The analysis process may be useful in understanding the content of books and clarifying their means and activities, thereby increasing the effectiveness of their use in the teaching process (Abuzina, 2010), (Al-Douri, 2005).

Importance of statistical science:

Statistics is one of the important branches of mathematics with wide applications, which is concerned with collecting, summarizing, and representing data and finding conclusions from the available data set, making it of great importance in all sciences, especially in the human sciences, and playing an important role in politics and the economy. Statistical science is defined as the set of methods used to analyze available statistical data and to make wise decisions in the face of the random phenomena surrounding us (Summer, 2007). There is no doubt that society cannot be effectively managed based on speculation or the principle of attempt and error away from any consistent approach and that the world of trade and economy depends in large part on the analysis of digital information. What applies to the wider world applies to research in this vast world, and the ability to use statistics in research studies is of great benefit. Once the language of statistical science and some of its methods can be absorbed and mastered, this contributes to making the study understandable, as well as to increasing knowledge and understanding that will enable the researcher to deal with the information he meets in his daily life in all its forms. (Brown and Saunders:2010).

What are the criteria?

To clarify what the criteria are, it is necessary to clarify the meaning of the criteria by combining a standard, and the criterion in language: "What is measured by others is the model that is the realization of what should be."(v) Educational standards have multiple definitions, including:

-What an educated person should know, what practical and mental skills he or she can perform, and what values and behaviors he or she acquires (Abbad, 2004).

The criteria are the basic determinants and requirements for redressing the phenomenon, whatever its nature or nature (Ibrahim, 2005).

-A term used to obtain the quality of the curriculum, teaching method, calendar methods, or professional development programs for teachers (Mahmoud, 2006). The criteria in this study are calendars drawn from the common core criteria (CCSSM) for statistical content and probability, used to judge the availability of knowledge and skills that must be included in the statistical content and probability of mathematics books for the first and second intermediate grades of Saudi Arabia.

It states (Abed, 2004) that standards for the development of math curricula in education and learning must be available: they are strong and competitive worldwide, they build high levels for all students, they develop employability skills, and are prepared for continuous learning, they include the most important knowledge and skill aspects of the field for which math has been developed in our lives, they are implementable, they can be managed in the specific schedules for the study of the subject, and they are clear and relevant to the interests of the learners.

Thus, many educational researchers emphasize that it is essential that experts and specialists from university faculty, researchers, teachers, representatives of parents, and educators interested in education build standards; it is a national responsibility and not just that of the Ministry of Education. This confirms that the content standards of many subjects have been developed by professional associations or specialized centers, including math standards prepared by the National Council of Mathematics Teachers (NCTM) of the United States, as well as common basic standards developed jointly by a large working group composed of some 60 individual mathematicians, distinguished and experienced teachers, as well as sports associations.

Common Core State Standards: Mathematics are the common basic standards for mathematics, which is the framework of national curricula designed to raise the quality of students ' educational mathematics, transform their ideas into instructions that help students achieve their grade level goals, and common basic mathematics standards require that all students have access to high-quality mathematics education, provide them with opportunities to learn mathematical concepts and procedures, and deal with techniques that broaden and deepen their understanding of mathematics, thus meeting their personal aspirations and practical goals in a constantly changing world. The framework of these standards began in December 2010-2012 for the educational districts of California and was launched as the new math framework, and was fully implemented in the new math framework (2012- 2013). Forty-five American states have adopted it.

The Action Team consisted of some 60 experienced mathematicians and teachers. The National Council of Teachers of Mathematics, the National Council of Mathematics Supervisors of Mathematics, the National Council of Mathematics Supervisors of Mathematics, the State Association of Mathematics Supervisors (ASSM) Assessment Standards for School Mathematics, the Association of Mathematics Educators and the American Sports Society (AMS) American Mathematical Society, all of which participated in the development of a framework for those standards (CCSM)). The implementation of this framework of common basic standards ensures that all students and professional colleges achieve a high level of education. These standards are seen as a call for improving the education of mathematics through the achievement of the CCSSM standards and the transformation of students ' experience, performance, and abilities; a measure of the extent to which CCSSM has been achieved has been established in the States applying these standards and is evaluated with the new evaluation system; to ensure that the curriculum and student level has evolved significantly under these standards (by the California Department of Education, 2013).

These common basic standards focus on the principles of math reform, and the reform of math education emphasizes: the understanding of students as math learners, conceptual understanding, principles of structural learning and communication, active learning where students apply skills, understanding in solving real-world problems, cooperation and problem-solving and knowledge-sharing. These standards also focus on critical thinking and analysis rather than heart-keeping, the idea being to ensure that students generally learn the same things in government schools across the country. Some of the key components emphasized by CCSSM are the following: - Sports Content Standards (Content); - Sports Practice Standards (Processing Standards) The California Department of Education, 2013). (

Content standards:

The mathematical content standards have been designed to capture the standards that involve procedures for classes from kindergarten to eighth, and content standards are regulated at individual levels. Then, at each stage, standards are regulated in areas and divided into sub-bands, which are referred to as clusters. The content standards for secondary school students are not regulated through grade levels but instead are organized into six conceptual categories. The conceptual classification provides a coherent view of secondary math; to include all grades 9 to 12: (number, quantity, reparation, jobs, modeling, engineering, statistics, and prospects). The standard criteria for secondary school determine that all students must study mathematics to qualify for university and career studies. Students must study additional math curricula to prepare for advanced curricula such as calculus, advanced statistics, and pure mathematics. All curricula that do not contain a plus + should fall within the regular math curriculum to prepare students for university and career studies.

Standards of sports practice:

These are general sports habits and mentalities that should be implanted in students during their sports careers (The California Department of Education, 2013).

Understanding problems and continuing to solve them. Thinking abstractly and quantitatively. Building applicable arguments and criticism of reason among others.

Preparation of a model using mathematics. strategically use appropriate tools. Attention to accuracy. Search for and benefit from the installation.

Research and expression of order in the repeated conclusion (search for public methods and shortcuts).

They also emphasize the need for curriculum designers, evaluations, and development to link content and practice standards from the beginning of primary, middle, and secondary school; because these standards grow with sports experience; in other words, they are cumulative and not independent of each other. (California Department of Education, 2013 by the). The standards used at the kindergarten level up to the eighth grade prepare students for advanced mathematics and serve as the basis for knowledge of mathematics. The criteria for advanced mathematics prepare students for university and professional life and productive citizenship.

Griffin (2013) emphasized that the Common Core Standards (CCSM) had three characteristics: focus, accuracy, and coherence, and in the light of these criteria, the mathematics included six shifts: focus and coherence, divorce, deep understanding, application and dual intensity in training to focus on concepts and to provide high-quality education. By looking at the content of the statistics and the prospects in the math curriculum in Saudi Arabia, we conclude that it begins from the fourth-grade primary book to the end of the third-grade secondary book and that the first-grade secondary book lacks the content of the statistics and the prospects.

Previous studies:

This part of the study dealt with a series of studies and research that constitute literature in the context of research, to take advantage of it and identify the results of these studies, which are linked to the analysis and evaluation of math books.

Researchers developed models of analysis derived from the algebra standard, the criteria of correlation, and mathematical representation contained in the standard document issued by the National Council of Mathematics Teachers of the United States of America. The researcher used the qualitative analysis methodology to determine the degree to which the three criteria used in the study had been met. One of the most notable results was that, for the algebra standard, there had been varying representation from one sub-criteria to the other five books covered by the analysis sample in its four areas. For the standard of mathematical representation in its three areas, it was noted that there had been different representations from one sub-criteria in the five math books in the analysis sample ranging from average to a few to zero.

A 2008 study entitled: Analysis of the content of the engineering units in the mathematics books for the intermediate stage in Saudi Arabia in the light of the standards of the National Council of Mathematics Teachers (NCTM) and the sample of the engineering units in the math books for the intermediate grade (I, II and III) during the school year (2007-2008). A model of analysis derived from the engineering standard contained in the United States National Council of Mathematical Teachers Standard Document (2000) was adopted. One of the main findings of the study showed that the math book for the first medium grade and the math book for the second medium grade varied in the employment of the engineering standard. The results of the study also revealed that the engineering standard associated with the third medium grade was highly employed.

A study (Consuelo, 2012) entitled: Analysis of statistical content in middle-grade math textbooks, aimed at analyzing statistical concepts in four intermediate-level math books (Glink Book in Mathematics, Prentiss Mathematics Hall, related math project, Chicago School Mathematics Project). The study tool consisted of defining the mathematical concepts and components of the courses, determining the level of knowledge required of students to complete the training solution, and the results showed that mathematical concepts such as measures of centralism are repeated in several degrees, although common basic standards (2010) emphasized non-recurrence, also that most of the statistical content was found in the chapter at the end of the book, as well as the required exercises showed a reduction in the student level's knowledge demand for the completion of the pieces of training, which hindered the development of a deep understanding of the concepts. The results indicated that the curricula did not apply the common basic standards as they were recent, with the results showing differences in the statistical content of the study sample.

(Nathan, 2013) Analysis of Common Basic Standards, Content of Mathematics (09S) and Requirements of Algebra at University of Wisconsin, Milwaukee. The study presented the content of the algebra article and whether it conformed to the common basic standards of mathematics. It showed that the content of math (09S) corresponds to simple micro-clusters at the secondary level in terms of numbers, quantity, algebra, and unions. The study then presented a sample of duties and evaluation items from a traditional mathematics lecture and compared them to the evaluation items published by The Smarter Balanced Assessment.

A study (Langton, 2014) entitled: A Case Study to Measure Attitudes Towards Common Basic Math Standards at the Primary Level (CCSSM) indicated that 45 educational services have adopted the application of common basic math standards in the United States of America and emphasized that the criteria included a reformulation to avoid ambiguity and rigidity in the translation of duties for primary math teachers who usually do not have a deep understanding of math education. Otherwise, teachers have to fully understand the school plans so that they can apply them, which in general is not available. This study showed how three third-grade primary-grade teachers learned and understood the above criteria. The study also showed that the teacher ' s sense of reform depended on the teacher ' s experience, beliefs, information, and behavior, as well as on the social context of the teacher, and how the reform message was interpreted. Data were obtained from three class teachers, one retired teacher, and three professional development administrators. One of the most important findings of the study was the experience of class teachers in reforming mathematics during professional development, which provided them with the standards they wanted. Teachers received a few simple messages to help them understand the standards. The development of teachers was inappropriate and inadequate, as well as the foreign terminology used in the standards disrupted their sensory work, which gave them a superficial understanding of the reform of mathematics curricula.

A study (2014 Ertl) entitled Analysis and Comparison of Basic Common Standards in Mathematics with that of Singapore guides preparatory and secondary education in both the United States and Singapore. By analyzing and comparing common basic standards in mathematics and Singapore under the Mathematics curriculum, she stressed that common international standards (CCSSM) were only a framework of standards and topics in Singapore's curriculum. The results also showed that CCSSM showed higher ratios of standards that

required more advanced levels of knowledge, i.e. demonstrating conjecture/analysis, and solving non-routine problems, and that standards (CCSSM) required higher levels of performance than standards in Singapore. The results of this study also confirmed that the CCSSM standards are often clear in anticipating what students need to know and start with words such as "understand, represent, develop, apply, and interpret." In addition to the CCSSM standards, it provides a general framework adapted to the subjects of mathematics and cognitive requirements to Singapore ' s mathematical standards (SMCF) Singapore Mathematics Curriculum framework.

A study (Catalano, 2014) entitled: Teachers ' perceptions of the effects of common basic standards on student achievement. The study aimed to reveal how teachers felt about the impact of new common basic standards on students ' achievement. The researcher analyzed teachers ' perceptions of the K-6 class in West New York, who taught math, English language, and arts subjects for this class, using the survey curriculum. The study tool was simple questions for teachers based on how they felt about the implementation of teaching on common basic standards and the implications of student achievement. The results of the study showed that Common Core standards had a positive impact on students ' academic attainment at a high level, while a small percentage of the study sample responded that they did not have a positive impact on students ' educational attainment. The results also confirmed that common basic standards help students to think critically, make them able to work on the world market and that there is also a divergence of views in the study sample that these common basic standards are at the beginning of their implementation, and there are no studies at that time to compare their findings.

A general comment on previous studies and the location of the present study among these studies:

In all previous studies, there has been a growing interest in the world in using NCTM standards in the analysis of math books because of the importance of those books, Nathan, 2000. Some studies have also focused on addressing content standards (Nakki, 2008). The results of most of these studies also show that NCTM standards have not been met for the most part in school math textbooks and there is a disparity between the extent to which they are represented in these books by large, average, weak, and non-existent (Nataki, 2008). Also, the results of previous studies have shown that the CCSSM standards are often clear in predicting what students should know, as in Artell's study. (2014). Teachers ' professional experience also contributes to the development of education through the application of common basic standards, as well as their sense of educational reform as noted by the Langton study. (2014, Langton). The Consuelo study (2012) also indicated a repetition of statistical topics in the curriculum, and the Catalano study (2014) emphasized the importance of common basic standards in assisting students in their education, helping students with critical thinking, and making them able to work on the global market.

From previous studies, it is clear that:

There is a growing interest in the use of school mathematics standards, and most of these studies analyzed the content of engineering and reparations in the light of NCTM 2000. The Consuelo study (2012) dealt with the criterion of statistical content and probability; the Nathan study (2013), the Langton study (2014), and the Artell study (2014) dealt with the CCSSM

standards in general. Most of these studies focused on the use of qualitative and quantitative studies. The results of previous studies have shown that there is a disparity in the degree of representation of standards in math textbooks, ranging from weak to very good. The present study of previous studies differed in terms of the subject matter, the criteria used, and the sample of the study. To the knowledge of the researcher, there are no Arab studies that have studied common basic standards (CCSM), except for foreign studies, as they are modern and developed as in a study (Artell, 2014). This study - with God's permission - will be a seed for the studies that follow and will shed light on the common basic criteria that prepare the student for future practical life. This study has benefited from previous studies on how content is analyzed according to global standards and how the study tools are built.

Method and procedures

The present study is based on the descriptive approach, the method of analyzing the content appropriate to the nature of the study, in which the content of statistics and the prospects in mathematics books for the first and second intermediate grades of Saudi Arabia are analyzed, to determine its compatibility with the common core criteria (CCSSM) for statistical content and probability, using the qualitative method, which is concerned with determining whether or not the standard is available in content and the quantitative method by calculating the number of repetitions of the standard in content. Ahmad and Hamadi, 1988 distinguished between the quantitative and qualitative manner in which a qualitative method is concerned with the existence of the phenomenon or its non-existence in the content and the number of repetitions or non-existences. The quantitative method is concerned with the existence of the phenomenon and the calculation of the number of repetitions.

Study community:

The study community consists of the textbooks of mathematics for the first and second intermediate grades in the first and second grades of the 2014/15 academic year in Saudi Arabia. These are drawn from four modern books developed in Saudi Arabia and the following table (1) shows the subjects for the first and second intermediate grades.

Table (1)

Distribution of statistical and probabilities lessons to the first and second intermediate grades in mathematics books in Saudi Arabia.

Percentage of topics of statistics and prospects	Number of topics of statistics and prospects	Number of topics of the curriculum	Class
15%	9	60	Seventh grade
18.4%	14	76	Eighth grade

Table 1 shows that the number of subjects in the first grade of the average math book in the Kingdom of Saudi Arabia was 60. Statistics and prospects accounted for 15 percent, while in the second grade, the average was 76. Statistics and prospects accounted for 18.4 percent, which is close to the two grades.

Study sample:

The study sample consists of the topics of statistics and the possibilities contained in the math books for the first and second intermediate grades of the first and second grades of the fourth grade, which are taught during the 2014/15 school year. These classes are equivalent to the seventh and eighth grades of the Common Basic Standards (CCSSM).

Study tool:

After looking at the educational framework relating to the problem of study, and referring to previous studies on the subject of content analysis, the researcher translated the criteria for the content of statistics and prospects for grades 7 and 8 of the 2013 Common Basic Standards (CCSSM) in preparation for the construction of the tool and then derived the sub-standards. To verify the validity of the tool, the arbitration of the tool was identified and then presented to a group of 13 arbitrators from several universities. The opinions of the arbitrators referred to the validity and clarity of the tool.

Validation of the study tool: To verify the validity of the study tool, the initial list of criteria was presented to a group of specialists in math teaching curricula and methods, as well as to a group of specialists in mathematics teaching, as well as to specialists in statistics teaching, for their views and observations on the content of the list. The identification included the request from specialists for an opinion regarding the validity of the instrument for the criteria for statistical content and the possibilities contained in the CCSSM document for the seventh and eighth grades, the clarity of the formulation of the sub-criteria, the clarity of the vocabulary and terminology, the relevance of the sub-criteria to the general standard, and the existence of paragraphs that could be deleted, amended or added.

After the arrival of the copies of the arbitrators, the researcher made some of the required adjustments based on the observations received, namely, that some of the sub-criteria had been reformulated to make them clearer, thus obtaining the apparent sincerity of the instrument according to the views of the specialists from the Arbitration Commission.

Persistence of analysis: consistent analysis is intended to yield comparable results if the analysis is done several times following the same rules and procedures (Ahmed and Hamadi, 1988), and to ensure consistency of analysis, the researcher used the method of reanalysis. This method is considered to be one of the appropriate methods for calculating persistence in content analysis studies. This method is in two forms: the researcher analyses the same content twice apart, or two or more researchers analyze the content (Teemah 1987).

To verify the consistency of the analysis, the researcher used the consistency of the analysis for the researcher herself, in which the same researcher re-analyzed it by a three-week time difference. The researcher also used the consistency of the analysis among researchers, using another master ' s analyst in mathematics curricula and methods; the analysis of the statistical content and prospects for the first and second intermediate grades, using the rules and analytical procedures relied upon by the researcher; and the Holsty consistency factor was calculated to calculate the consistency of the analysis. The results of the consistency of the analysis over time are shown in table 2:

Persistence coefficients for the two analysis processes performed by the researcher at the time of the analysis of statistical content and probability

Class	Standard	Researcher first analysis	Researcher second analysis	Agreement between both analysis	Persistence coefficient
Seventh grade	**1 – 7**	**10**	**9**	**9**	**94.7%**
	2 – 7	**1**	**1**	**1**	**100%**
	3 – 7	**14**	**14**	**14**	**100%**
	4 – 7	**32**	**34**	**32**	**96.6%**
	1 – 8	**28**	**28**	**28**	**96.3%**
	Total	**83**	**86**	**84**	**99.4%**
Eighth grade	**1 – 7**	**53**	**53**	**54**	**99.0**
	2 – 7	**18**	**18**	**19**	**%97.3**
	3 – 7	**23**	**23**	**23**	**%100**
	4 – 7	**10**	**11**	**10**	**95.2%**
	1 – 8	**31**	**31**	**32**	**98.4%**
	Total	**135**	**136**	**138**	**98.5%**

The analysis factors in Table (2) are acceptable for the present study, and the results of the consistency of the analysis across persons (researcher and another analyst) as shown in Table (3) are as follows:

Table(3)

Persistence coefficients for the researcher ' s and other analyst ' s analysis of statistical content and probability

Class	Standard	Researcher first analysis	Researcher second analysis	Agreement between both analysis	Persistence coefficient
Seventh grade	**1 – 7**	**9**	**9**	**9**	**100%**
	2 – 7	**1**	**1**	**1**	**100%**
	3 – 7	**14**	**13**	**13**	**96.3%**
	4 – 7	**34**	**33**	**33**	**98.5%**
	1 – 8	**28**	**27**	**27**	**98.1%**
	Total	**86**	**83**	**83**	**98.2%**
Eighth grade	**1 – 7**	**53**	**53**	**53**	**100%**

	2 – 7	**18**	**17**	**17**	**97.1%**
	3 – 7	**23**	**22**	**22**	**97.8%**
	4 – 7	**11**	**11**	**11**	**100 %**
	1 – 8	**31**	**30**	**30**	**98.3%**
	total	**135**	**136**	**138**	**98.8%**

The analysis factors in Table (3) are acceptable for the present study and reflect a high agreement between analysts.

Analysis procedure: The researcher in the analysis process carried out the following actions

-Identification of the unit of analysis, where the unit of thought has been selected for analysis because it is the closest unit to the nature, problem, and objectives of the study. Ahmed and Hamadi (1988) stressed that the unit of thought contains one or more sentences to express something, and the idea may exist independently or with other ideas.

-Identification of categories of analysis, which were cited as the main or secondary elements in which the analysis units are developed (word, theme, or values). The categories of analysis in this study refer to the set of criteria derived from the CCSSM standards in the area of statistics and prospects.

-Identification of the topics of statistics and prospects in math books in the study sample, reading the topics to identify the basic ideas contained in the written material and identifying the ideas contained in these subjects;

-To analyze the topics of statistics and prospects in math books for the first (seventh) and eighth (eighth) grades by the criteria derived from the standards of statistical content and the probability of common core standards (CCSM).

-The researcher has discharged the repetitions of each sub-criteria into the tables and calculated its percentages.

Study procedure:

This study is divided into two sections:

Section I: Theoretical study of common basic standards (CCSM, 2013), in particular on the standard of statistics and prospects as one of the content criteria, and identification of research and studies on the current field of study.

Section II: This section considers the field side to the following steps:

* Identification and designation of the study community.

-*Preparation of the study tool, which is derived from the common core standards (CCSSM) for the statistical standard and prospects for grades 7 and 8.

-*The unit of analysis: the use of the unit of thought in the process of analysis in both types: express, which is the full meaning, which can be separated from other terms and be a simple

sentence or several full meanings directly referred to as a desired goal or criterion of governance, and implicit, which is the unit of analysis of the idea invisibly, but which can be derived from a series of successive terms (Douiri, 2005).

-*Carrying out the analysis of the books by the researcher and re-analyzing after some time, as well as re-analyzing by another person.

-*The calculation of the agreement coefficient for previous analyses and the calculation of the Holstical coefficient to verify the consistency of the analysis.

-*To release and statistically process data using the SSS program, to produce results; to answer questions of study.

-*Disaggregating, interpreting, and commenting on the results as they relate to the questions of the study.

Put findings and recommendations in the light of those findings *

Statistical methods:

The researcher used the following statistical methods:

1 - I have relied on the use of repetitions and percentages to describe the availability of the standard of statistics and the probability of content for the first and second intermediate grades.

2 - Use of Kai Boxes to detect differences in representation ratios in the two books; the Mathematics Book for the first grade and the Mathematics Book for the second grade.

Results

This chapter presents the results of the study, which was aimed at identifying "the availability of common basic standards" in the context of statistics and prospects in the textbooks of mathematics at the intermediate level of the first and second grades of Saudi Arabia. The results will be presented per the questions addressed in the study.

First of all, the results of the first question: How far does the book of mathematics for the first medium grade in Saudi Arabia take into account the standard of statistical content and probability according to common basic criteria (CCSM)?

To answer this question, repetitions, percentages, and the rank of sub-criteria for statistics and prospects were calculated in the Mathematics book for the first intermediate grade, as shown in Table 4

Table (4)

Repetitions, percentages, and ranking of sub-criteria of statistics and prospects in the Mathematics book for the first medium grade in Saudi Arabia

Number	Subcriteria in statistics and prospects for grades 7 and 8	Comparisons		
		Recurrence	Percentage	Grade
1-7	Use of random sample to deduce evidence of society	9	%10.4	4
2-7	The general comparative reasoning of two different deduced societies	1	%1.2	5
3-7	Analyzing prospects and developing, utilizing, and assessing possible models	14	%16.3	3
4-7	use simulations, lists, tables, and tree drawings to identify potential outcomes for complicated situations.	34	%39.5	1
1-8	examination of correlation patterns between factors and data	28	%32.5	2
Total		86	%100	

Table 4 shows that the Mathematics book for the first intermediate grade has taken into account the four common basic criteria of statistics and prospects, as set out in the common basic criteria, and one of those for the second intermediate grade in the common basic criteria, which is included in the Mathematics book for the first intermediate grade in Saudi Arabia, although it appears in the second intermediate grade in the Common Basic Standards document. Sub-criteria (7-4) on finding potential for complex events using tree lists, tables graphics, and simulations was first (39.5%) and then sub-criteria (8-1) for the second intermediate grade according to the common base criteria document (32.5%) while sub-criteria (7 · 2) on the conclusion of the general comparative reasoning of two different societies was last and(%1.2)

Concerning the sub-indicators of each sub-criteria in probability and statistics, the researcher calculated the repetitions, percentages, and ranking of the subcriteria of statistics and probability in the math book of the first intermediate grade as follows::

Sub-indicators of the criterion ((vii) /1) for the use of the random sample to derive evidence of society.

Table 5 shows the sub-indicators for sub-criteria (7 ' 1/) on the use of the random sample to derive the evidence of society, its frequency, percentages, and levels

Num		Comparisons

.

	Sub-indicators in sub-area 7 . 1 on the use of random sampling to deduce evidence of society.	**Recurrence**	**Percentage**	**Grade**
1	**sample types identification**	**2**	**%22.2**	**2**
2	**Differentiating between an unrepresented and representative samples**	**1**	**%11.1**	**3**
3	**The use of statistical data from the representative sample in identifying some of the statistics for society.**	**6**	**%66.7**	**1**
4	**Generating multiple samples to measure variation in estimates and forecasts of society**	**0**	**%0**	**-**
Total		**9**	**%100**	

statistical

the representative sample in identifying some of the statistics for society ranked data first in terms of repetition, while the sample identification index ranked second.

The Mathematics book for the first grade omitted the indicator for generating multiple samples to measure the variation in estimates and forecasts of society.

Second sub-indicators of the criterion ((vii) /2) for the conclusion of general comparative indices of two different societies.

Table 6 sets out the sub-indicators for sub-criteria ((7 ' 2) on the conclusion of the general comparative indices of two different societies and their frequency, percentage, and respective levels.

Table (6)

Repetitions, percentages, and ranking of sub-indicators of sub-criteria (7 ' 2) in the Mathematics book for the first medium grade in Saudi Arabia

Num		**Comparisons**

	Sub-indicators in sub-area 7 . 2 on the use of random sampling to deduce evidence of society	**Recurrence**	**Percentage**	**Grade**
1	**Examine two distinct data distributions for the identical observed variable.**	**1**	**%100**	**1**
2	**Measurement of differences between measures of centralism of samples from both communities**	**0**	**%0**	**-**
3	**Use the measures of centralized numerical data from random samples to access comparisons around two communities**	**0**	**%0**	
4	**Use of dissipation measures for random samples to reach comparisons around two communities**	**0**	**%0**	**-**
Total		**1**	**%100**	

From the previous table, it is noted that this criterion was only one indicator, with only one repetition, which is a comparison of two data distributions for the same observed variable, and none of the other indicators were represented where they were never addressed.

Third: Sub-indicators of criterion 7 (iii) for the study of opportunities and the creation, use, and evaluation of models of probability.

Table 7 shows the sub-indicators for sub-criteria (7.3) on the study of opportunities and the creation, use, and evaluation of models of probability, frequency, percentage and grade levels

Table (7)

Repetitions, percentages, and ranking of sub-indicators of sub-criteria ((7) in the Mathematics book for the first medium grade in Saudi Arabia

Num	Sub-indicators in sub-area 7. 3 on the use of random	Comparison		
		Recurrence	Percentage	Grade

	sampling to deduce evidence of society.			
1	**Knowing that the probability is between zero and one**	**1**	**%7.12**	**3**
2	**Knowing that the greater the probability of the event, the greater the chance of it happening**	**1**	**%7.13**	**3**
3	**The experimental probability of an event in an experiment is approximated through relative repetitions**	**0**	**%0**	**-**
4	**Develop a standard probability model for events with equal opportunities and use it to create potential**	**7**	**%50**	**1**
5	**Develop a standard probability model for unequal events and use it to create the probability of the event**	**5**	**%35.7**	**2**
6	**Comparing the experimental probability with the theoretical probability**	**0**	**%0**	**-**
Total		**14**	**%100**	

Table 7 shows that, of the two sub-indicators "rounding up the experimental probability of an event in an experiment through relative repetitions," none were represented. In contrast, the sub-indicator "Developing a standard probability model for events with equal opportunities and using it to create the probability of occurrence" received first grade and 50% representation. Comparison of the experimental probability with the theoretical probability.

Fourth: using lists, tables, tree drawings, and simulations, sub-indicators of criteria 7.4 are used to determine the possibility for composite events.

For sub-criteria (7.4) on "Finding potential for composite events using lists, tables, tree drawings, simulations, repetitions, percentages, and respective grades," Table 8 displays the sub-indicators

Table (8)

Repetitions, percentages, and ranking of sub-indicators of sub-criteria (7-4) in the Mathematics book for the first medium grade in Saudi Arabia

Num	**Sub-indicators in sub-area 7 .4 on the use of**	نواحي المقارنة		
		Recurrence	**Percentage**	**Grade**

	random sampling to deduce evidence of society.			
1	**Expression of sample space for composite events using organized lists**	**1**	**%2.9**	**4**
2	**Expression of sample space for composite events using tree painting**	**11**	**%32.4**	**2**
3	**Express sample space for composite events using tables**	**13**	**%38.2**	**1**
4	**Understanding that the probability of a composite event was a proportion of the in-kind space in which it occurred to the in-kind space**	**1**	**%2.9**	**4**
5	**Finding potential for complex accidents using menus, tables, tree drawings, and simulations**	**7**	**%20.6**	**3**
6	**Designing simulation models to deduce the expected repetitions of the composite event**	**1**	**%2.9**	**4**
Total		**34**	**%100**	

According to Table 8, the sub-indicator "expression of sample space for composite events using tables" came in first place and the sub-indicator "expression of sample space for composite events using tree drawing" came in second place. These two indicators, together accounting for 70.6% of the total, have supplanted the repeated indicators of this criterion. With only one repetition, the indicator "Find potential for composite accidents using rosters, tables, tree drawings, and simulations" was ranked third out of all the indicators.

Sub-indicators of the criterion (8.1) for examining patterns of correlation between variables and data come in fifth.

The sub-indicators of sub-criteria (8.1) for the investigation of data correlation patterns with the two variables, together with their frequency, percentage, and level, are displayed.

(9)Table

Repetitions, percentages, and ranking of sub-indicators of sub-criteria (8.1) in the Mathematics book of the first medium grade in Saudi Arabia

Nom	Sub-indicators in sub-criteria 8 - 1 on the study of patterns of correlation between data with two variables	Comparison		
		Recurrences	Percentage	Grade
1	Determining the dispersion costs for quantitative data containing variables in order to analyze their correlation.	4	%14.3	2
2	Explanation of dispersive fee for quantitative data with two variables.	14	%50	1
3	Being aware that linear relationships between two quantum variables can be represented by straight lines.	3	%10.7	4
4	Distinction between non-linear and textual relationships.	4	%14.3	2
5	Differentiate between positive and negative associations.	3	%10.7	4
6	Solve the problems using the linear model's equation, then use the echo axis to understand the slope and cut.	0	%0	-
7	Knowing that relationship patterns for disaggregated data can be seen by presenting relative repetitions and duplications in tables with two dimensions.	0	%0	-
8	Explanation of two-way tables (two dimensions) of data collected from two classification variables.	0	%0	-
9	Use the relative repetitions calculated in the two-way tables to describe the possible correlation between the two classification variables.	0	%0	-
Total		28	%100	

Table (9) indicates that the "interpretation of the dispersion fee for quantitative data with two variables" ranked first among the nine sub-indicators of this criterion, followed by the two

indicators "establishment of the dispersion fee for quantitative data with two variables to examine the relationship between them" and "distinction of the linear and non-linear relationship," where the latter was occupied. The sub-indicators for "using the equation of the linear model to solve issues and interpret the slope and intersection with the echo axis," "presenting and interpreting the data in two-way tables" and "using the relative repetitions to describe the possible correlation between the two taxonomic variables," none of which was represented in the math book for the first intermediate grade.

CONCLUSIONS RELATING TO QUESTION 2:

How far does the Mathematics book take Saudi Arabia ' s average second grade to the standard of statistical content and probability according to common basic standards (CCSM)?

To answer this question, repetitions, percentages, and the rank of sub-criteria for statistics and prospects were calculated in the Mathematics book for the second intermediate grade, as shown in table (10) :

Table (10)

Repetitions, percentages, and ranking of sub-criteria for statistics and prospects in the Mathematics book for the second medium grade in Saudi Arabia

Nom	Sub criteria in statistics and prospects for grades 7 and 8	Comparision		
		Recurrences	Percentage	Rank
1-7	Use of random samples to deduce evidence of society	53	%38.9	1
2-7	The general comparative reasoning of two different societies is deduced	18	%13.24	4
3-7	Analyzing prospects and developing, utilizing, and assessing possible models	23	%16.9	3
4-7	Finding possibilities for complex events using lists, tables, tree drawings, and simulations	11	%8.1	5
1-8	investigating trends in the association between factors and data	31	%22.8	2
Total		136	%100	

Table 10 shows that the Mathematics Book for the second intermediate grade has taken into account the common basic criteria of statistics and prospects of one of those for the second intermediate grade as set out in the common basic criteria and four of those for the first intermediate grade in the common basic criteria contained in the Mathematics Book for the second intermediate grade in Saudi Arabia, although they appear in the first intermediate grade in the original Common Basic Standards Document. Sub-criteria No. (7-1) for "the use of random sample for the conclusion of the evidence of society" was first (38.9%) and then sub-criteria No. (8-1) for the middle second row according to the original common basic criteria document (22.8%) was second, while sub-criteria No. (7.4%) for "the creation of possibilities for composite events using tree lists, tables, and drawings and simulations in the latter place" was eighth 1% .

Concerning the indicators for each sub-criteria in probability and statistics, the researcher calculated the repetitions, percentages, and ranking of the subcriteria of statistics and probability in the math book for the second intermediate grade as follows:

Sub-indicators of criterion 7.1 for the use of random sampling to derive evidence of society.

Table 11 below shows the sub-indicators for sub-criteria (7.1) on the use of the random sample to extract, repeat, percentage, and level of evidence of society.

Table (11)

Repetitions, percentages, and ranking of sub-indicators of sub-criteria (7.1) in the Mathematics book of the second medium grade in Saudi Arabia

Nom	Sub-indicators in sub-criteria 1 - 7 regarding the application of random sampling to obtain social proof	Comparison		
		Recurrences	Percentage	Rank
1	Identification of sample types	11	%20.8	3
2	Discrimination between a representative or unrepresentative sample	12	%22.6	2
3	The use of statistical data from the representative sample in identifying some of the statistics for society	27	%50.9	1
4	Generating multiple samples to measure variation in estimates and forecasts of society	3	%5.7	4
Total		53	%100	

Table 11 shows that, by percentage (50.9%), the sub-indicator "Use of statistical data from the representative sample for some statistics on society" has been ranked first. The sub-indicator "Discrimination between the community's representative sample or the non-represented sample" has been ranked "second by a percentage (22.6%), the latter by several samples to measure the variation in estimates and forecasts of society" and by a percentage.(%5.7)

Sub-indices of the 7-2 standard are used as the second step to determine the general comparative indices of two distinct cultures.

The frequency, percentage, and level of the sub-indicators of sub-criteria (7.2) for the conclusion of the general comparison indices of two distinct societies are displayed in Table 12.

Table (12)

Nom	**Sub-indicators in sub-criteria 7 -2 on the conclusion of general comparative indices of two different societies**	**Comparison**		
		Recurrences	**Percentage**	**Rank**
1	**Compare two data distributions for the same observed variable.**	**10**	**%55.6**	**1**
2	**Measurement of differences between the measures of centralism of samples of the two communities.**	**3**	**%16.7**	**2**
3	**Use the measures of centralized numerical data from random samples to access comparisons around two communities.**	**3**	**%16.7**	**2**
4	**Use of dissipation measures for random samples to reach comparisons around two communities**	**2**	**%11.1**	**4**
Total		**18**	**%100**	

Table 12 shows that the sub-indicator "Comparison of two distributions of data for the same observed variable" ranked first in terms of percentage (55.6%), while the sub-indicators "measured differences between the centralization measures of samples of the two communities" and "use of the numerical centralization measures of random samples to reach comparisons around two communities" ranked second and third, respectively, with an

estimated percentage of 16.7%. The indicator "Use of the dispersion measures of the numerical data from random samples to reach comparisons around two communities" received a fourth-grade rating.

Third are sub-indicators of criterion 7.3 for opportunity analysis and the development, use, and assessment of probability models.

For sub-criteria (7.3) on opportunities and the development, application, and assessment of probability, frequency, percentage, and grade level models, Table 13 provides the sub-indicators.

Table (13)

Repetitions, percentages, and ranking of sub-indicators of sub-criteria (7. iii) in the Mathematics book for the second medium grade in Saudi Arabia

Nom	Sub-indicators in sub-criteria 7 - 3 on the study of opportunities and the creation, use, and evaluation of potential models	Comparison		
		Recurrences	Percentage	Rank
1	Knowing that the probability value is between zero and one	1	%4.3	5
2	Knowing that the greater the probability of the event, the greater the chance of it happening	1	%4.3	5
3	The experimental probability of an event in an experiment is approximated through relative repetitions	10	%43.5	1
4	Develop a standard probability model with equal opportunities and use it to create the potential events	3	%13	3
5	Develop a standard probability model for unequal events and use it to create the probability of the event	6	%26.1	2
6	Compare the experimental probability with the theoretical probability	2	%8.7	4
Total		23	%100	

Table 13 indicates that the indicator "Approximation of the experimental probability of an event in an experiment through relative repetitions" has attained first grade and percentage (43.5%), and the sub-indicator "Development and use of a standard probability model for uneven events to create the probability of an event" has received second grade by percentage (26.1%) and the remaining sub-indicators have received low repetitions compared to these two indicators.s

Fourth: sub-indicators of criterion 7.4 for finding potential for composite events using lists, tables, tree drawings, and simulations.

Table 14 sets out the sub-indicators of sub-criteria ((7 · 4) on finding potential for composite events using lists, tables, tree drawings, simulations, repetitions, percentages, and levels of each of them

Table (14)

Repetitions, percentages, and ranking of sub-indicators of sub-criteria (7 - 4) in the Mathematics book of the second medium grade in Saudi Arabia

Nom	Sub-indicators in sub-criteria 7 - 4 on finding potential for complex events using lists, tables, tree drawings, simulations	Comparison		
		Recurrences	Percentage	Rank
1	Expression of sample space for composite events using organized lists	0	%0	-
2	Expression of sample space for composite events using tree painting	7	%63.6	1
3	Express sample space for composite events using tables.	2	%18.2	2
4	Understanding that the probability of a composite event was a proportion of the in-kind space in which it occurred to the in-kind space	2	%18.2	2
5	Finding probability for complex accidents using rosters, tables, tree drawings, and simulations	0	%0	-
6	Design simulation models to deduce the expected repetitions of the composite event	0	%0	-
Total		11	%100	

Table 14 indicates that the "expression of sample space for composite events using tree painting" received the first grade by percentage (63.6%), and other sub-indicators occupied low repetitions compared to this indicator.

Fifth: sub-indicators of the criterion (8.1) for the study of patterns of correlation between data with variables.

Table 15 shows the sub-indicators of sub-criteria (8.1) for the study of patterns of correlation between data with two variables and their frequency, percentage, and respective levels.

Table (15)

Repetitions, percentages, and ranking of sub-indicators of sub-criteria (8.1) in the Mathematics book of the second medium grade in Saudi Arabia

Nom	Sub-indicators in sub-criteria 8 - 1 on the study of patterns of correlation between data with variables	Comparison		
		Recurrences	Percentage	Rank
1	Establishment of dispersion graphics for quantitative data with variables to examine the relationship between them	2	%6.5	4
2	Explanation of dispersive graphic for quantitative data with two variables	7	%22.65	2
3	Knowing that straight lines can be used to draw linear relationships between two quantum variables	4	%12.9	3
4	Differentiation of written and non-linear relationships	8	%25.8	1
5	Differentiate between associations that are favorable and negative	2	%6.5	4
6	Use the equation for the linear model to solve the issues and interpret the slope and cut with the echo axis	8	%25.8	1
7	Knowing that relationship patterns for disaggregated data can be seen by presenting relative repetitions and	0	%0	-

	duplications in tables with two dimensions			
8	**Explaining two-way tables (two dimensions) of data collected from two classification variables**	**0**	**%0**	**-**
9	**Use the relative repetitions calculated in the two-way tables to describe the possible correlation between the two classification variables**	**0**	**%0**	**-**
total		**31**	**%100**	

Table 15 notes that the sub-indicators "Discrimination of linear and non-linear relationships" and "Use of the equation of the linear model to solve questions and interpret the slope and cut with the echo axis." The indicator "Explanation of the dispersive fee for quantitative data with two variables" was ranked as a percentage by grade I (25.8%) and the sub-indicator "Explanation of the dispersive fee for quantitative data with two variables" was ranked as a percentage by grade II (22.65%). The rest of the indicators were low or not represented at all.

CONCLUSIONS RELATING TO QUESTION 3

Is there a difference in the degree of observance of the standard of statistical content and probability depending on the difference in the first and second intermediate grades according to the CCSSM criteria?

In response to this question, the repetitions, percentages, and cay squares of the areas of statistics and prospects were calculated in the first and second intermediate grades as contained in the common core criteria document (CCSSM). The results are summarized as follows:

Table (16)

Repetitions, percentages, and cay squares in the fields of statistics and prospects contained in the textbooks on mathematics for the first and second intermediate grades of Saudi Arabia

Standard nom	**Standard**	**Comparison**	**Grade**	
			Seventh grade	**Eighth grade**
1- 7	**Use of random sample to deduce evidence of society**	**Recurrence**	**9**	**53**
		Percentage	**10.4%**	**38.9%**
		x^2 For standard (1)	**31.222**	
		Significance level	**0.000**	

Standard nom	Standard	Comparison	Grade	
			Seventh grade	Eighth grade
2 – 7	Deduce general comparative reasoning of two different societies	Recurrence	1	18
		Percentage	1.2%	13.24
		x^2 For standard (2)	15.211	
		Significance level	0.000	
3 – 7	Examination of opportunities and creation, use and evaluation of potential models	Recurrence	14	24
		Percentage	16.3%	16.9%
		x^2 For standard (3)	2.189	
		Significance level	0.139	
4 – 7	Finding possibilities for complex events using lists, tables, tree drawings, and simulations.	Recurrence	34	11
		Percentage	39.5%	8.1%
		x^2 For standard (4)	11.756	
		Significance level	0.001	
1 – 8	Study patterns of correlation between data with variables	Recurrence	28	31
		Percentage	32.5%	22.8%
		x^2 For standard (5)	0.153	
		Significance level	0.696	

Table 16 lists statistical function differences that demonstrate, at a significant level (0.05 =.05), the inclusion of criteria for each of the criteria (7-1, 7-2) in the first and second intermediate row books. The second medium-grade book was the beneficiary of these differences, and the first medium-sized book was the subject of a statistically significant D difference (0.05) for the criterion..(4–7)

There is no statistically significant difference (* = 0.05) for either of the two criteria (7.3 and 8.1), indicating that the two books represent these subcriteria in the same way as the other criteria in the analytical tool.

Discussion of findings and recommendations

I. DISCUSSION OF THE CONCLUSIONS ON THE FIRST QUESTION

The study's initial query is as follows: To what extent does the mathematics textbook consider the average first grade in Saudi Arabia concerning the CCSSM standards for statistical content and probability?

The findings showed that, to varied degrees, the first intermediate-grade mathematics book considered common basic criteria of probability and statistics, such as the first grade's use of tree lists, tables, simulations, and tree drawings to create possibilities for composite events (39.5%). Content for the eighth-grade standards and 32.5% of the material for the study of patterns of correlation between data and variables were covered in the first medium-grade book. This outcome is a reflection of the fact that current textbooks have not been changed to separate the standards unique to each class into a single list that is represented in that class book, as required by the Common Core Standards (CCSSM).

Although this criterion is specific to the first medium grade as stated in the common basic criteria (CCSSM), the results showed a low representation of the criterion for the conclusion of the general comparative indices of two different societies in the Mathematics book for the first medium grade. Although there were differences between the two studies in the realm of standards covered, overall, the present study's results were compatible with those of the Hebei (2004) study.

DISCUSSION OF THE CONCLUSIONS ON THE SECOND QUESTION.

The second question of the study reads as follows: How far does the book of mathematics take Saudi Arabia ' s second intermediate grade into account the criterion of statistical content and probability according to the CCSSM criteria?

The results indicated that the Mathematics Book for the second intermediate grade took into account the common criteria of statistics and prospects of one sub-criteria for the second intermediate grade, as set out in the common basic criteria and four subcriteria for the first intermediate grade in the common basic criteria. (CCSSM). This indicates a lack of commitment on the part of math writers to the development of standards and the adjustment of textbooks to common basic standards, which set out a list of standards for each class or subject area of mathematics at the higher levels.

That result is supported by the occupation of the sub-standard for the use of the random sample for the conclusion of evidence of society in the first place (38.9%) in the Mathematics book of the second intermediate grade, a criterion for the first intermediate grade in the list of common basic criteria (CCSM), which was much higher than the representation of the only criterion for the second medium grade.

This finding is in line with the results of the Nathan 2013 study, which showed that math (09S) corresponds to simple sub-clusters at the secondary level in terms of numbers, quantity, algebra, and function. There is a lack of a balanced representation of all the criteria in the same book. The current finding about mathematics books in Saudi Arabia was explained by their reliance on NCTM standards, which may not have been updated following common basic standards>

DISCUSSION OF CONCLUSIONS ON QUESTION 3.

The third question of the study reads as follows: Is there a difference in the degree of observance of the criterion of statistical content and probability depending on the difference between the first and second intermediate grades according to the criteria (CCSM)?

It can be said from the findings of this question that the textbooks in the classroom were different and different from one class to another, and this can be explained as follows: the gap and differences between the statistical and probabilities criteria contained in the textbooks of school mathematics and the common basic standards (CCSM) are widening. This suggests the need to narrow this gap and to try to adapt it to the requirements of these standards. Although school math books have been developed and updated from time to time, much of the research has shown criticism and lack of consistency with standards issued by the United States National Council of Mathematics Teachers (NCTM, 2000), such as a study (absolute, 2004) or those of common basic standards (CCSM) as a study. (Nathan,2013).

Also, when looking at the ratios of achievement of some sub-criteria, we see that there is an over-use of some of the criteria and under-representation of other sub-criteria, for example, given the sub-criteria of two-way scales (the two dimensions) that do not appear in both the first and the second intermediate grades. This is an indication of the need to review the content of the statistics and the probability. We also find that some of the criteria have been achieved in both grades in close proportion, indicating that there is repetition in subjects in the content of the curricula. This requires attention and attention, especially from the curriculum developers of the first and second intermediate grades, to avoid repetition. This is consistent with the Consuelo study, 2012, the results of which show that there is a repetition of mathematical concepts and centralization measures, which may be attributed to the fact that some school math writers did not have access to these criteria during the planning of mathematics curricula, the lack of lists of standards by author committees, and the absence of dialogues between curriculum designers and author committees.

Recommendations:

Based on the above, the study recommends that:

1 - Other studies on the content of statistics and prospects in math books for other stages in Saudi Arabia in the light of common basic standards(CCSSM).

2 - To urge curriculum developers to take care of the content of statistics and the possibilities of math curricula by distributing it to all classes and by taking care of the practical aspect.

3 - The need to use common core standards (CCSM) in developing math curricula to keep pace with global curricula, and for all students to have access to high-quality education.

4 - Conduct comparative studies between the content of mathematics books to be taught in Saudi Arabia and the content of global mathematics based on CCSSM standards to identify strengths and shortcomings in current math books.

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