Turkish Journal of Computer and Mathematics Education Vol.12 No 13 (2021), 5223-5232

Research Article

Analysis of Science Book Content for Middle First Grade According to International TIMSS Standards

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Article History: Received: 5 April 2021; Accepted: 14 May 2021; Published online: 22 June 2021

Abstract: The current research aims to analyze the content of the science book for the first intermediate grade in accordance with the international (TIMSS, 2019) standards, a list of (TIMSS) standards has been built that must be available in the content of the science book for the first intermediate grade to achieve this goal, and after reviewing a set of literature, studies and research, a list of TIMSS standards was reached in its initial form, which consisted of two dimensions: after the content, which includes four main requirements: (Biology - Chemistry - Physics - Earth Sciences) where it included the requirements of Biology (6) main criteria, the requirements of chemistry include (3) main criteria, physics requirements include (5) main standards, and Earth sciences include (4) main standards, the list was presented to a group of arbitrators and specialists in curricula and teaching methods, thus, the final list consisted of (18) criteria as a total sum of the criteria of the four main requirements, as for the cognitive dimension: which included three areas (knowledge - understanding - application), the field of knowledge included (3) standards and the field of understanding (8) standards and the field of application (5) standards, and a final total of (16) standards for the three areas.The researcher analyzed the content of the science book for the first intermediate grade in the light of the list that was built, and the idea was adopted as a unit for recording, and repetition as a unit for enumeration, they unanimously agreed on the validity of the analysis, and using the Holsti equation, the stability of the analysis was calculated in agreement with external analysts and with the researcher himself, thus the results of the content dimension analysis of the science book for the first grade average were as follows:The content of chemistry appeared in the first rank with a percentage (49.15) of (115) iterations, and the physics content came in the second place with a percentage of (25.64) and (60) iterations, and the content of biology came in the third place with (59) iterations with a percentage of (25.21), as for the content of earth sciences, the percentage was (0) zero. As for the results of the areas of the cognitive dimension in the science book for the first intermediate grade, the field of understanding outperformed in the first rank with a percentage of (42.89), with a rate of (293) recurrences, the field of knowledge ranked second with a rate of (41.72) and (285) recurrences, and the field of application ranked third with a rate of (15.39) and (105) recurrence, in light of these research results, the researcher reached a number of conclusions, recommendations and suggestions.

Keywords: Content Analysis, TIMSS Standards

1. Chapter one: Introduction to research

The problem of studying

By informing the researcher of the reports of the International Trends in Science and Mathematics Study (TIMSS) and the analysis of the results of the international assessments (TIMSS) in the Arab countries, provided by the United Nations Development Program (UNDP) on the results of the participating Arab countries and their ranking at the international level in the (TIMSS) tests for the years (2003)), (2007), (2011), (2015) (2019) It was noted that Iraq did not participate as an Arab country in these tests, as well as the low results of the participating Arab countries, and this makes it important to look for the reasons for this failure.

The absence of Iraq among the Arab countries participating in these tests, which affected the low level of education and development of curricula, this is what made it important to search for the reasons for this decline and failure, and to search for solutions to such problems, which is to carry out studies and research to analyze and evaluate the content of books (science), if the educational literature agrees on the importance of analyzing and evaluating curricula because it is closely related to the educational process in all educational stages, as well as addressing it through the analysis of (science) books in the light of the international (TIMSS) standards.

From the above, the research problem appears in the following main question:

To what extent is the content of the science book for the first intermediate grade included in the curricula of the Republic of Iraq for the requirements of (TIMSS2019)?

From this main problem, the following sub-questions emerge:

1- To what extent does the content of the science book course for the first grade average include the content dimension (biology, chemistry, physics, earth sciences) for the requirements of the project (TIMSS 2019) based on content analysis?

2- To what extent does the content of the science book course for the first grade average include the cognitive processes dimension (knowledge, understanding, application) for the requirements of the TIMSS 2019 project based on content analysis?

2. Importance of studying

The international trends in studies and research on the science and mathematics curricula that took place in accordance with the (TIMSS) program are among the most important and leading studies globally, as it focused on educational policies and systems, and studying the analysis of the effectiveness of the curricula and applied and showing the extent of their effectiveness in the practical application of them, as well as the assessment of achievement (TIMSS and PRILS, 2011, P1).

The importance of this study is highlighted in the following points:

This study highlights the extent to which the science course content for the first intermediate grade is included in the international standards (TIMSS 2019).

2- The strengths and weaknesses of the science course in the Iraqi Republic appear, through the analysis of the prescribed books and the extent to which they are included in the international standards (TIMSS 2019)).

Study Objectives: The objectives of this study (TIMSS 2019) are summarized as follows:

1- Identifying the extent to which the science course for the first intermediate grade includes the international requirements of the TIMSS 2019 project.

2 Identifying the extent to which the science course content for the first intermediate grade includes the content dimension (biology, chemistry, physics, earth science) and the cognitive processes (knowledge, understanding, application) in accordance with the international requirements of TIMSS 2019

Study Limits: This study was limited to analyzing the science course for the first intermediate grade in the Republic of Iraq in its two semesters (first and second) edition (2018).

3. Study terms

Content Analysis.

Defined (Fakhro, 2006: 189) as "a research method that aims to describe the apparent content of the educational material in an objective, systematic, quantitative manner according to pre-defined criteria."

TIMSS 2019 Standards

(Ryan, 240, 2015) defines TIMSS standards as “a set of conditions or simulations that take into account the requirements of studying academic trends in mathematics and science for the eighth grade, in the content and cognitive levels dimensions, and it is a global test administered by the International Association for the Evaluation of Educational Achievement (IEA).

4. Chapter Two: Theoretical framework and previous studies

The first axis / content analysis

The paramount importance of the content analysis method in education is evident when it is used in the field of curricula in particular, finally, we aim by analyzing the content of some of the prescribed curricula to make judgments about the extent to which these curricula are in line with some general curricular standards. (Teema, 2004, 82).

It was defined (Martinez - Gracia, Quilez and Osada, 2006, p.5) as "the evaluation of a group of communication materials (textbooks) in order to evaluate their effectiveness in communicating the study material."

The researcher defines it procedurally as the content analysis is (detailed treatment of the topics of the scientific material included in the science course book for the intermediate stage in part (the first and second) for the year in which the analyst describes the quantitative, objective, and organized content of the paragraphs of the written content of the science course for the intermediate stage in the Republic of Iraq).

The second axis: reform projects in the teaching and development of science, and the TIMSS project

The development and reform of science curricula has made many efforts, especially in the United States of America, by setting modern goals to enhance scientific culture in accordance with national standards, in addition

to a number of global projects such as the movement to reform science curricula in light of the interaction between science, technology and society, the (2016) project of the American Association for the Advancement of Science, the National Standards Project for Scientific Education, and the Scope, Continuity and Consistency Project (Al-Shaya and Al-Aqeel, 2006).

TIMSS Project

It is an international assessment study aimed at monitoring international trends in mathematics and science for students in the fourth and eighth grades of basic education, and by monitoring the implementation of curricula and programs related to these two subjects, which helps to identify promising educational practices across the world, the International Association for Evaluation (IEA) is responsible for supervising the completion of the study in its various stages, in cooperation with other centers such as the International Study Center in Stone, the Center for Data Analysis in Hamburg and the Educational Testing Service in New Delhi, the first launch of this international evaluation study, which is carried out periodically (every four years) in 1995, was the first session, then the second session followed in 1999, then the third session in 2003, the fourth session in 2007, the fifth session in 2011, the sixth session in 2015, and finally the last session, the seventh session 2019. (Samida and Grace, 2014)

The Arab Regional Office defined the TIMSS project as

The largest and most extensive study at the global level to assess global trends, the achievement of fourth and eighth grade students in science and mathematics, and measure the effectiveness of teaching these two subjects in the schools of the participating countries, and compare them in that, and monitor the distinguished systematic application of promising educational practices around the world, with the aim of helping them to Carrying out educational reforms based on objective and holistic evaluation, leading to knowledge-based societies in the world, as organized by the International Association for the Evaluation of Educational Achievement (IEA) on a regular basis every four years" (Al-Kharousi, 2010, p. 10).

TIMSS 2019 Dimensions

Through what was stated in the theoretical framework of the study of TIMSS2019, a rhetorical study (2018), a study of al-Hamami (2015) and a study of Dahman (2014), it is possible to identify two dimensions of the study of TIMSS 2019 in relation to the subject of science, which are:

First / Content Domain

This dimension focuses on the scientific knowledge and skills that the learner acquires when studying the science subject for the first intermediate grade, and the content is determined as follows: the topics are divided based on their branches (life sciences, chemistry, physics, and earth science)

Second: Knowledge Domain :which includes: (knowledge, understanding, application)
The dimension of mental operations (the cognitive dimension) can be explained as follows:

-Knowledge: refers to the knowledge base that students possess with regard to information, concepts, scientific facts, and tools that help them participate successfully in more complex educational activities, it includes: remembering information - identifying - diagnosing - defining - describing and illustrating with examples.

-Application: It refers to the application of knowledge directly in different cases, and to show relationships in cases of learning scientific concepts. It includes comparison - contrast - classification - linking concepts - using models - interpreting information and explanation.

-Understanding: Refers to providing scientific justifications for solving problems, providing explanations, reaching conclusions and making decisions, expanding scientific knowledge, and paying attention to more complex scientific tasks, including: analysis - synthesis - prediction - formulating questions - planning - evaluation - abstracted conclusions - generalization - justification. (Abd, 2016, 6).

Previous studies

1- The study of Khatatbeh, Muhammad Ibrahim (2003): This study aimed to determine the requirements of TIMSS 2015)) and the extent to which they are included in the science book for the fourth grade, and the study method is descriptive and analytical, and the study sample was the science book for the fourth grade, as for the

study tools, the first was a list of the requirements of (TIMSS2015) and the second was a questionnaire to measure the science teachers' view of the cognitive processes dimension, the statistical means were the SPSS program, measures of central tendency, arithmetic mean, repetitions and percentages, the results of the study showed a medium degree to include the content of the Jordanian science book for the fourth grade in the dimension of cognitive operations in the light of the requirements of (TIMSS 2015).

2- JUNG - CHIH and WANG TING (2009): The study aimed to compare academic achievement among students for grades (1-8) in three countries, namely Singapore, Taiwan and Japan in light of the requirements of (TIMSS), and the research method is descriptive and analytical, and the study sample was books Science for grades (1-8), as for the study tool, the analysis card was used, and repetitions, percentages, and arithmetic mean were used, the results showed that the content of the American curricula is completely different from the content of science curricula for grades (1-8) for Asian countries.

5. Chapter Three: Research Methodology and Procedures

First: Research Methodology:

The researcher relied in his research using the descriptive analytical method, which is the method of content analysis as one of the survey methods, because of its importance in revealing the extent of interest in the content (Al-Assaf, 2006, 236).

Second: Research Procedures

1- Determining the research community: The research community included science books for the first intermediate grade in Iraq, and all subjects in the science book for the first intermediate grade approved for the academic year (2019-2020),

2- Determining the research sample: The research sample consisted of all chapters of the science book for the first intermediate grade (parts one and two).

Third: Content analysis tool: The content analysis tool is defined as the form prepared by the researcher, to collect data and monitor the repetition of phenomena digitally, in the materials whose content he analyzes (Al-Mutlaq, Yahya, 2013,149).

1 - Obtaining international standards in English and translated into Arabic from the attached website

2 - The researcher presented a list of TIMSS international standards in its initial form to ensure its validity and suitability for education and the Iraqi environment, through a group of arbitrators and specialists in the field of science teaching methods, curricula, measurement and evaluation.

The researcher adopted the face validity, and it was estimated by relying on the sincerity of the arbitrators and specialists in an appendix, and the researcher adopted the percentage of agreement (80%) among the arbitrators to keep the standards, delete them or modify them, and thus the tool became valid and consists of two dimensions: the content dimension and the cognitive dimension.

- Validity of the analysis tool

To ensure the validity of the existing analysis tool, the researcher presented it in its initial form to a group of arbitrators specialized in curricula and methods of teaching science, in order to express their opinions on the formulation of the analysis paragraphs and the accuracy of the controls of the analysis process, the researcher considered the validity of the arbitrators to be the logical validity of the list of requirements, the amendments were made in light of the opinions of the majority of the arbitrators, whose opinions agreed to amend the wording of some items, and none of the arbitrators indicated adding other requirements, since these requirements were prepared by the International Association for the Evaluation of Educational Achievement (IEA), and thus the researcher was able to judge the validity of the Analyze and reach its final form.

- Stability of the analysis tool

Stability was calculated through the stability of analysis over time and consistency across individuals, where the extent of agreement between the results of the analysis reached by the researcher and the results of the analysis after a period of three weeks was calculated, and between the results of the analysis reached by specialists in the field of science education, where two of Analysts specializing in the field of science teaching methods.

The researcher calculated the number of points that each of the researcher agreed upon with himself after the passage of time, the researcher and the analyst (1), the researcher and the analyst (2), and the analyst (1) and the analyst (2), and then extracted the reliability coefficient of Holstey.

C.R = 2C / C1 + C2

whereas :

C.R = Stability coefficient

C = number of ideas agreed

C1 + C2 = the total number of ideas in the two analysis times (Imam, 1990, 186).

And the reliability coefficient was (0.87), which indicates the stability of the researcher's analysis, and the coefficients of agreement obtained by the researcher when calculating the stability of the analysis are sufficient, to ensure confidence in the stability of the analysis, if the stability of more than (70 percent) is good (Al-Sudani and Abbas 2011,123)

Table (1) shows the stability of the analysis

Analysts	Agreement points	Points of difference	Total score	Stability coefficient
Analyzer after time	49	4	53	0.92
Researcher and Analyst 1	45	8	53	0.85
Researcher and Analyst 2	46	7	53	0.87
Analyzer 1 and Analyzer 2	45	8	53	0.85
				0.87

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6. Chapter Four: Presentation and Interpretation of Results

This chapter includes the presentation and interpretation of the results reached by the researcher, which achieve his goal, in order to verify the goal of the research, which states (to what extent does the content of my science book for the first intermediate grade in the curricula of the Republic of Iraq include the requirements of the TIMSS project, 2019).

It also deals with the statistical treatments of the results of applying the content analysis tool, interpreting the results and writing recommendations and suggestions in the light of these results. To interpret the results, the researcher formulated the following main question:

What is the list of requirements for the (TIMSS, 2019 international project) that must be provided in the course content of the science book for the first intermediate grade based on content analysis?

To answer the question:

The researcher has reformulated the list of international standards (TIMSS, 2019), which is a list of (14) main standards distributed into four main requirements, namely (Biology - Chemistry - Physics - Earth Sciences), the International Association for the Evaluation of Educational Achievement (IEA) has set spoken percentages for the content of science books, and these were: biology (35%), chemistry (20%), physics (25%) and earth sciences (20%).

Content analysis results for the science book for the first intermediate grade

First: the main requirements of the Biology

The researcher analyzed the content of the science book for the first intermediate grade and the topics of biology units, which consisted of (66) analyzed pages out of the total number of pages of the book amounting to ((170) pages, which includes (6) six main areas with (35) criteria that must be met in the content of the science book for the first intermediate grade, the field (cells and their functions) was in the first place with the highest percentage than the rest of the other fields, with a rate of (26) recurrences and a percentage of (44.06%), in the second place, the field of (human health) with (14) recurrences and a percentage of (23.72%), and in the third place is the field of (life cycle of living organisms, reproduction and heredity) with a number of (12) recurrences and a percentage of (20.33%), in the fourth place, the field (the field of characteristics of living organisms and the biological processes that they perform) was a total of 7) and with a percentage (11.86%), as for the fields of (Biodiversity, Similarities and Differences) and (Environmental Systems), their share was zero in terms of repetitions and percentage, and the following table illustrates this.

Table No. (2) shows the repetitions and percentages of the main fields of biology requirements in the content of the science book for the first intermediate grade.

Field	Repetition	Percentage	Rank
1 - Characteristics of living organisms and the biological processes that they carry out	7	11.86	4
2- Cells and their functions	26	44.06	1
3- Life cycle of living organisms: Reproduction and heredity	12	20.33	3
4- Biodiversity, similarity, difference and adaptation	0	0	5
5 – Ecosystems	0	0	5
6- Human health	14	23.72	2
Total	59	100	

Chemistry major requirements

The requirements of chemistry included three (3) main areas, with (23) standards, which must be provided in the science book for the first intermediate grade, and to know the extent to which the content of the science book for the first grade includes an average of these standards:

After conducting the process of analyzing the content of the science book for the first grade, the average units of chemistry topics, which reached the number of pages analyzed (67 pages out of the total book of (170) pages, which included three main areas, namely (the composition of matter, properties of matter, chemical changes). The field of material composition ranked first as the number of repetitions reached (67) recurrences, with a percentage of (58.26) with (67) recurrences, as for the field of chemical changes, it came in the second place with a rate of (25.21%) and a rate of (29) iterations, while the field of material properties appeared in the third rank with (19) iterations and a percentage of (16.52%), and the following table shows that.

Table No. (3) shows the repetitions and percentages of the main fields of chemistry in the content of the science book for the first intermediate grade

Field	Repetition	Percentage	Rank
Material composition	67	58.26	1
Material properties	19	16.52	3
Chemical changes	29	25.21	2
Total	25	100	

From the foregoing, it appears that the percentages of the fields in the content of the analyzed textbook are not balanced, if the book focuses on the field of material composition in the first place, then in the second place the field of chemical changes, then the field of properties of the substance in the third place, and that these results indicate an interest on the part of the content The science book in the field of (composition of matter) with the topics of chemistry units for the first intermediate grade according to the requirements of TIMSS, 2019)), as shown in the following figure (2):

3- Basic Physics Requirements

The researcher analyzed the content of the science book for the first intermediate grade, topics of physics units, which amounted to (37) analyzed pages out of the total book pages of (170) pages, which included (5) main areas and (26) criteria, namely (physical states and changes In matter), the field (energy transformations and transfers), the field (light and sound), the field (electricity and magnetism), and the field (forces and motion), the field (forces and motion) ranked first with (27) recurrences and a percentage (45%), which is a low percentage, followed by In the second place, the field of (physical states and changes in matter) at 17 recurrences and a percentage of (28.33%), which is a low percentage, and the field (energy transformations and transfers) was in the third place with (16) recurrences and a percentage of (26.66%), which a low percentage, as for the fields of (sound and light) and the field of (electricity and magnetism), they were in the last rank, with a total of repetitions and a percentage (0%) of

zero, and this is an indication of the neglect and non-observance of the book in this field, as shown in the following table:

Table No. (4) shows the main fields of physics requirements in the content of the science book for the first intermediate grade.

Field	Repetition	Percentage	Rank
1- Physical states and changes in matter	17	28.33	2
2 - Energy transformations and transfers	16	26.66	3
3- Sound and light	0	0	
4- Electricity and magnetism	0	0	
5 - Force and Motion	27	45	1
Total	60	100%	

From the above table, it is clear that there are different and unbalanced ratios, and there is a total neglect on the part of the book of the fields (electricity and magnetism) and the field (sound and light), where their ratio and repetitions were zero (0).

4- Earth Science Requirements

After the process of analyzing the content of the science book for the first and second grades, an average for the content dimension, the results of analyzing the content of earth sciences were zero (% 0), as the book neglected this requirement to a large extent, and did not take into account the important earth sciences topics for the student

The researcher reached the results and the sum of the repetitions and percentages of the four main requirements (Biology - Chemistry - Physics - Earth sciences) by conducting a content analysis process in the science book for the first intermediate grade and it was as follows explained in the following table:

Table No. (5) shows the repetition and percentages of the requirements (Biology - Chemistry - Physics) within the content of the analyzed science book for the first intermediate grade.

S	First: the requirements of the living	Repetition	Percentage
Fields			
1	Characteristics of living organisms and the biological processes that they carry out	7	11.86
2	Cells and their functions	26	44.06
3	Life cycle of living things, reproduction and heredity	12	20.33
4	Biodiversity, similarities, differences and adaptation	0	0
5	environmental systems	0	0
6	human health	14	23.72
Total		59	25.21
Second: Chemistry requirements			
Fields			
1	material composition	67	58.26
2	Material properties	19	16.52
3	chemical changes	29	25.21
Total		115	49.15
Third: Physics Requirements			
Fields			
1	Physical states and changes in matter	17	28.33
2	Energy transformations and transfers	16	26.66
3	sound and light	0	0
4	Electricity and magnetism	0	0

5	force and motion	27	45
Total		60	25.64
The total number of iterations and the percentage of requirements criteria.		234	100%

It is clear from the above table that each requirement obtained a percentage within the content of the analyzed science book for the first grade average, where the percentage of biology requirements within the content of the science book was (25.21%), and the percentage of chemistry requirements was (49.15%), which is the highest percentage of requirements the other, the percentage of the physics requirement was (25.64%), which is

And the answer to the question (to what extent does the science book course content for the first grade include an average dimension of cognitive processes (knowledge, understanding, application).

The International Association for the Evaluation of Educational Achievement (IEA) determined the percentage of the fields of mental operations that should be available in science books, so the percentage of knowledge (35%), the percentage of understanding ((30%), and the percentage of application (35%), after the process of analyzing the content of the science book for the first intermediate grade, the researcher reached To the following results in Table No. (6).

Table No. (6) shows the repetition and percentages of criteria for the domains of knowledge in the content of the analyzed science book for the first intermediate grade:

S	Standards	Repetition	Percentage
A	Knowledge field		
1	Remember and identify	172	60.35
2	Describe	97	34.03
3	Provide examples	16	5.61
Total		285	41.72
B	Understanding field		
1	Analysis	9	3.07
2	Composition	42	14.33
3	Formulating questions and predictions	121	41.29
4	Planning	37	12.62
5	Evaluation	45	15.35
6	Result abstracted	24	8.19
7	Circular	3	1.02
8	Justification	12	4.09
Total		293	42.89
C	Application field		
1	Compare_Rating	18	17.14
2	connect concepts	11	10.47
3	Use forms	25	23.8
4	Interpretation of information	38	36.19
5	Explanation	13	12.38
Total		105	15.39

The total number of iterations	683	100%

It is evident from the above table that the field (understanding) in the content of the science book for the first grade average, has obtained the highest number of repetitions at (293) iterations and a percentage (42.89%) in the first rank, which is higher than the percentage determined by (IEA) where it was (30%), as for the field (knowledge), whose total recurrences were (285) and with a percentage of (41.72) in the second place, and this percentage is higher than the percentage determined by (IEA) where it was ((35%), and the field (application) which reached a total of Its repetitions (105) and a percentage of (15.37%) in the third rank, which is less than the percentage determined by (IEA), and this means that the science book for the first grade average focuses primarily on memorizing and recalling information, and in the second degree on understanding, and in the third degree the field of application.

7. Discuss the results

It was found that there is a difference between the ratios of the results of the content analysis of the science book for the first intermediate grade for the content and knowledge dimensions and the spoken ratios determined by the International Association for the Evaluation of Educational Achievement (IEA), where the content analysis ratios appeared as follows:

The Biology obtained a percentage of (25.21), which is lower than the percentage set by (IEA), which is (35%), as for chemistry, he scored (49.15), which is higher than the percentage determined by (IEA), which is (20%), and the percentage of physics appeared (25%), which is equal to the percentage determined by (IEA), as for the percentage of earth sciences, it was zero (0), and the percentage determined by (IEA) (20%), as for the percentages of the cognitive dimension analysis, it appeared as follows: The field of knowledge obtained a percentage (41.72), which is higher than the percentage determined by (IEA) (35%), as for the percentage of understanding field, it got (42.89), which is higher than the percentage of (IEA) (30%), as for the percentage of the field of application, it got (15.39%), which is less than the percentage determined by (IEA) (35%).

8. Conclusions

1- The percentage of chemistry requirements is superior to the percentage of biology and physics requirements, which were equal.

2- The field of knowledge is superior to the field of understanding, and the field of understanding is superior to the field of application.

9. Recommendations

1- Iraq's participation in the Study of International Trends in Mathematics and Science (TIMSS) to identify the real level of Iraqi students compared to students of other countries.

2- Paying attention to the science books for the intermediate stage, especially the inclusion of the various cognitive processes in a balanced manner.

10. Suggestions

1- Conducting an analytical study of the book of Biology, Chemistry and Physics for the third intermediate grade.

2- Conducting an analytical study comparing the curricula of Iraq and countries of the world according to the current results of (TIMSS 2019).

References

1. Al-Kharousi, Huda bint Saif bin Harith (2010). Analysis of the content of the science book for the eighth grade in the Sultanate of Oman in light of TIMSS standards, a master's thesis at Mutah University
2. Al-Sudani, Abdul-Karim Abdul-Samad and Abbas Fadel Al-Masoudi (2011). An analytical study of biology books in the light of life skills, Al-Qadisiyah volume on literature and educational sciences, volume 10, number (3-4).
3. Al-Shaya, Fahad Suleiman and Muhammad Abdul-Aziz Al-Aqeel (2006). The extent to which content standards (5-8) are achieved in the National Standards for Scientific Education (NSES) project in science books in the Kingdom of Saudi Arabia, Journal of Studies in Curricula and Teaching Methods, p. (117).
4. Al-Mutlaq, Farah Suleiman and Yahya Awad Al-Amarin (2011). Reference in Curriculum Analysis, Damascus University Publications, College of Education.

5. Al-Assaf, Saleh bin Hamad (2006). Introduction to Research in Behavioral Sciences, Obeikan Printing Company, Riyadh.
6. Arani, J. A. . (2021). Appraising the Learning protocol of English Writing as a Fraction of English for Medical Purposes (EMP) in Faculty Members. Middle Eastern Journal of Research in Education and Social Sciences, 2(2), 27-36. https://doi.org/10.47631/mejress.v2i2.229
7. Imam, Mustafa and others (1990). Calendar and Measurement, Dar Al-Hikma for Publishing, Baghdad.
8. Dabesa, F., & Cheramlak, S. F. . (2021). Practices, Opportunities, and Challenges Of SIP in Primary Schools of Ilu Gelan Woreda, West Shoa Zone, Oromia Regional State. Middle Eastern Journal of Research in Education and Social Sciences, 2(2), 58-84. https://doi.org/10.47631/mejress.v2i2.162
9. Ryan, Adel Attia (2014). The extent to which TIMSS standards are achieved in the mathematics textbook for eighth grade students in Palestine, Journal of Educational and Psychological Sciences, Volume 16, Number 4, Al-Quds University, College of Education.
10. Somaida, Hikma and Najwa Grace (2014). Analysis of the results of the international assessments TIMSS 2011 in the Arab countries, the Arab Organization for Education, Culture and Science.
11. Taima, Rushdi Ahmed (2004). Content analysis in the human sciences, 1st ed., Dar Al-Fikr Al-Arabi, Cairo.
12. Abd, Ihsan Hamid (2016). Evaluating the content of the science book for the fourth grade of primary school according to TIMSS standards, Journal of the College of Basic Education, University of Babylon, No. 26.
13. Martin, Z. Garacia, M. V., Gil, Quillez, M. J. and Osada. (2006). Analysis Of Moleclar Genetics Content in Spanish Secondary School Textbook . Journal of Biological Education, 40(2)-53-06.
2. Martin,M.O. and Mullis,L,S. (2013). TIMSS and PIRLS 20011: R Relationships Among Reading, Mathematics and Science Achievement at the Fourth Grade Impactions for Early Learning. TIMSS and PIRLS International Study Center, Boston, Chest-nut