Analyzing the Integration of Fourth Industrial Revolution Skills in Fourth-Grade Cambridge Science Curriculum: Perspectives of Curriculum Supervisors and Teachers in Oman

Aisha Al – Sulaitni & Mohammed Y. M. Mai
Department of Curriculum, University Pendidikan Sultan Idris, Malaysia

Abstract
Problem: The current study aimed to analyze the integration of the skills of the Fourth Industrial Revolution in the Cambridge Science curricula for the fourth grade from the point of view of curriculum supervisors and teachers in Oman, in light of the development of the current era in various fields in the light of the skills of the Fourth Industrial Revolution, it was necessary to consider and analyze the curricula to know the extent to which the skills of the Fourth Industrial Revolution are integrated to develop curricula in light of the need for the skills of the Fourth Industrial Revolution. **Approach**: The study used the descriptive analytical approach to answer the study question, and the study population included all supervisors and first teachers in the Sultanate of Oman responsible for the science curriculum in the fourth grade, and the Thompson equation was used to calculate the study sample. The study used the Industrial Revolution skills questionnaire as a study tool, and afterensuring its validity and stability, it was directed to the first teachers and supervisors, and data was collected on the extent to which the skills of the Fourth Industrial Revolution were integrated into the curriculum. The data were analyzed statistically using frequencies and percentages across the SPSS program **Findings:** The results showed that the level of integration of the skills of the Fourth Industrial Revolution into the science curriculum is generally low, and the level of integration of each area in the curriculum was also low, and the field of digital skills was the least low, followed by the field of soft skills, then the field of learning and creativity skills, and the field of functional life skills was the highest included in the curriculum, but it did not exceed the low level as well. Conclusion: **Conclusion:** The study recommended reconsidering the curriculum and working to integrate the skills of the Fourth Industrial Revolution, especially digital skills, and suggested analyzing the integration of the skills of the Fourth Industrial Revolution into the science curriculum for the upper grades.
Keywords: Fourth Industrial Revolution, Fourth Industrial Revolution Skills, Cambridge Curriculum.

Introduction

Many landmarks and trends in life have changed due to the Fourth Industrial Revolution, as it has made the world in a great technological and knowledge revolution, and the use of technology of all kinds has become of great importance and the requirements of the Fourth Industrial Revolution have become essential in various areas of life, especially the field of education (Elayyan, 2021). The Economic Forum Report, 2016), introduced the Fourth Industrial Revolution, its importance, and requirements, and the statistics of the report indicated that approximately (65%) of school students will work in jobs that do not exist today and that (47%) of the current jobs will be non-existent in the next decade. And that its percentage (50%) of the content of the graduate degree will be below its value in the coming years.The curricula must keep pace with the Fourth Industrial Revolution, its skills and requirements, and the importance of integrating its principles into the educational process, the most important of which is the principle of the knowledge system, which includes several skills, including creativity, flexibility, realism and participation, and the principle of the technical system, which has become a life system and includes a number of technical skills, including dealing with the transfer and production of knowledge through technology. The development of the individual's level in various skills does not occur without training and practice, striving to acquire their own knowledge and experience and to acquire students These skills and experiences must be included in the educational content provided to them (Sabry, 2020).

Embedding the skills of the Fourth Industrial Revolution in the curricula is of great importance in various subjects, and one of the most important curricula that can ensure the skills of the Industrial Revolution is the science curricula for their great contribution to the development of several skills through practical activities and scientific experiments, in addition to that the inclusion of the skills of the Fourth Industrial Revolution and its requirements in science curricula is normal and important at the same time, as the skills required by the Industrial Revolution are consideredThe fourth is an integral part of the science curriculum and objectives that it wants to impart to students (Yang & Cheng, 2018). The analysis of the curriculum is the accurate scientific method through which it is possible to know the standards on which any method or scientific material is based, and Taima (2004) stressed that the process of analyzing the curriculum is a process that is similar to seeing something with the naked eye, and then it is examined through a microscope until the distinctions and divisions it contains are discovered. Thus, the analysis provides new knowledge that is added to previous knowledge. From this point of view, we find that the analysis of the content of the curriculum allows us to know what we want to know, and what we seek to know through this study (Taima, 2004)).

Study problem

Since the curriculum is one of the most important basic elements in the educational process, it must keep pace with the developments of the times so that there is no information gap between what is offered to students and what is in reality, and because the Fourth Industrial Revolution is one of these developments that have brought about many changes in various fields, the most important of which is the field of education, where it imposed on education many and varied methods, methods, skills and requirements that did not exist previously. The Sultanate's trend toward developments and changes in curricula Planning for it began after the low level of outputs in the results of the international study (TIMSS), which showed in (2019) a sub-average level, as the Sultanate obtained (average = 435) points in science in the fourth grade. (TIMSS 2019 U.S. Results, 2019), the latest results released to evaluate the international study (TIMSS).

In addition, the results of many studies conducted in the Sultanate of Oman stressed the importance of integrating the requirements of the Fourth Industrial Revolution in education and curricula, as the Al-Sairiya study (2022), which aimed to identify the extent to which the Sultanate keeps pace with the Fourth Industrial Revolution in various educational sectors, stressed the importance of providing students with the skills of the Fourth Industrial Revolution, to improve the educational environment, and employ the technologies of the Fourth Industrial Revolution. Elayyan (Elayyan, 2021) in his study on the impact of the Fourth Industrial Revolution on education in the Sultanate of Oman, that the impact of the Industrial Revolution and its requirements is very large on education, and pointed out that the integration of the revolution and its requirements of skills in education will improve learning opportunities in the future, and suggested seeking to implement transformations in educational programs, curricula, learning environment and educational skills activities, to deal with the requirements of the Fourth Industrial Revolution. Studies such as (Lieu, 2018; Yang & Cheng, 2018;Penprase, 2018; Butler- Adam, 2018; Fomunyam, 2019; Gleason, 2018; Menon, 2019) in addition to the study (Al-Shehri, 2018; Zeidan, 2020; Abdul Latif, 2021; Mahmoud, 2021; Abdul Hamid, 2021) that the inclusion of the skills of the Fourth Industrial Revolution in the curricula has a significant impact on providing students with the skills of the Fourth Industrial Revolution, which will reduce the gap between the physical and digital world, and work to provide students with the skills required in the era of the Fourth Industrial Revolution, which students will need in their future lives.

Study Questions

The current study seeks to analyze the integration of the skills of the Fourth Industrial Revolution in the Cambridge Science Curriculum for the fourth grade: the perspectives of curriculum supervisors and teachers in Oman, and from this point of view, this study seeks to answer the following main question:

What are the skills of the Fourth Industrial Revolution included in the science curricula in the first cycle from the point of view of supervisors and first teachers in basic education schools in the Sultanate of Oman?

Objectives of the study

From the questions of the previous study, the main objective of the current study is to:

Identify the skills of the Fourth Industrial Revolution included in the science curricula in the first cycle from the point of view of specialists from the first supervisors and teachers in the first cycle schools in the Sultanate of Oman.

Study Methodology

The current study followed the descriptive and analytical approach to identify the extent to which the skills of the Fourth Industrial Revolution were integrated into the Cambridge Science Curriculum for the fourth grade: the perspectives of curriculum supervisors and teachers in Oman. The descriptive analytical approach was chosen as the appropriate approach for this study because it seeks to investigate the phenomenon through description and analysis, then explain the phenomenon, and identify relationships between events and prevailing practices, (Al-Sulaitni, 2019). Similar studies in the content analysis have been based on the descriptive analytical approach, such as those (Al-Barbari and Qasim, 2023; Abu Dahab, 2022; Al-Dahshan, 2021; Al-Sisi, 2021; Al-Fuhaid, 2021;Luqman, 2021; Al-Shahrani, 2020).

Study Tool

To achieve the objectives of the study, a special list of skills of the Fourth Industrial Revolution was built after reviewing previous studies and literature related to the subject of the study and reviewing the educational literature related to curricula and skills required for the future in light of the requirements of the Fourth Industrial Revolution. Many studies have contributed to building this list, including (Nawar, 2022; Abu Dahab, 2022; Zeidan, 2022; Sisi, 2021; Al-Shahrani, 2020; Penprase, 2018; and Menon, 2019) The study tool in its final form consisted of a questionnaire consisting of four areas (the field of digital skills, the field of learning and creativity skills, the field of personal skills and the field of functional life skills) and the list included (41) skills distributed over the four areas, which can be summarized in Table 2

Table 2: Areas of the Fourth Industrial Revolution Skills List

Domain	Number of skills
Digital Skills	11
Learning and creativity skills	9
Interpersonal skills	10
Functional skills	11

Results

The study's main question is what skills of the Fourth Industrial Revolution are included in the science curricula in the first cycle from the point of view of supervisors and early teachers?

The study aimed to analyze the integration of the skills of the Fourth Industrial Revolution in the science curricula in the fourth grade in the Sultanate of Oman, from the point of view of supervisors and first teachers, and the average scores and standard deviations were obtained for each area of the Fourth Industrial Revolution skills as shown in

Table 6: Arithmetic averages and standard deviations of respondents' responses to the study tool

Skill	Average	Standard deviation	Level	Order
Digital Skills	1.527	.415	low	4
Learning & Creativity	1.582	.372	low	2
Personality	1.550	.325	low	3
Functional	1.595	.336	low	1
Overall average	1.563		low	

It is clear from the table that all four areas have obtained an average between (mean = 1.527.-1.595) and this value expresses a low level in the integration of the curriculum of the skills of the Fourth Industrial Revolution in the four areas in general, where we find that the overall average of the four areas (average = 1.563),which is at this value is at the low level, and this gives a general impression that the integration of the curriculum for the skills of the Fourth Industrial Revolution is low and needs to be reconsidered in the curricula to keep pace with the Fourth Industrial Revolution and its skills.

For details, we begin by presenting the results of each area separately, where the following pages present the results of the averages and standard deviations for each area of the Fourth Industrial Revolution skills.

First: The field of digital skills

We will start by presenting the mean and standard deviations for the field of digital skills, which are shown in Table (7**)** and the order of each item from the highest arithmetic mean to the lowest arithmetic average.

Table 7: Arithmetic averages, standard deviations, and item order for the field of digitalskills

	Sub-skills emanating from the digital skills field	Average	Deviation Normative	Level	arrangement Skills
1	The curriculum includes tasks done using digital environments such as browsing the Internet	1.583	.512	low	3
2	The curriculum guides students to obtain information from trusted digital sources.	1.457	.508	low	10
3	The curriculum directs students towards a critique of the digital information available in it.	1.390	.541	low	11
4	The curriculum contains the skills to transform ideas into digitally applicable projects.	1.64 1	.648	low	2
5	Students can use the digital information available in the curriculum to address the problems they face.	1.55 6	.515	low	4
6	The curriculum includes the skill of self-assessment of digital knowledge.	1.484	.696	low	9

7	The curriculum includes the skills of communicating information through different digital media.	1.645	.674	low	1
8	The curriculum employs some of the applications of the Fourth Industrial Revolution in its activities, such as robotics.	1.493	.584	low	8
9	The curriculum includes digital problem-solving skills.	1.506	.649	low	7
10	The curriculum includes group work activities via digital technologies.	1.515	.663	low	6
11	The curriculum involves digital engagement with a variety of cognitive domains.	1.533	.605	low	5

It is clear from Table (7) that the number of digital skills is (11) skills, and we find that all skills fell within the low level and were limited between (average = 1.645-1.390). This underscores the great need to include digital skills in the curriculum**.** Skill No. (7) Was the most included skill, and skill No. (3) Was the least included skill in the curriculum, and the difference between their averages was (difference = 0.255).

We find that despite the availability of all the skills of the digital field at a low level, there is a difference in the percentages of their inclusion in the curriculum, where skill No. (3) Is the least included skill (average = 1.390) and has stipulated (the curriculum directs students towards criticizing the digital information available in it), which confirms to us that the skill of criticism in the curriculum needs to be included and integrated into the curriculum more. Skill No. (2) Comes after it in the skill least included c, which stated (the curriculum directs students to obtain information from reliable digital sources), and its arithmetic mean was (arithmetic mean = 1.457), which is a difference between it and the least available skill that does not exceed (difference = 0.067). Then skill No. (6) followed them in third place in the least integrated and included skills in the curriculum, which stipulated (the curriculum includes the skill of self-assessment of digital knowledge), as it was average included (average = 1.484), and this skill includes digital self-dealing, and the skill of evaluation for this skill, and its low inclusion confirms to us the gap in the curriculum when heading towards digital dealing and self-j.This indicates that the skill of self-evaluation of digital knowledge is among the skills that the curriculum needs to include more, due to the lack of good availability of digital knowledge in the curriculum and therefore the curriculum does not directly go to evaluate it due to its lack of integration into it.

In general, these results lead us to say that the curriculum needs to include the skills of the Fourth Industrial Revolution more to allow students to acquire digital experiences, which are very much needed and important in the era of the Fourth Industrial Revolution**.** What we conclude from the previous results is that the curriculum needs to include digital skills to a large extent due to the presence of low arithmetic averages that indicate a low inclusion of these skills in the curriculum.

Second: The field of learning and creativity skills

Table (8) will present the arithmetic averages and standard deviations of skills for learning and creativity.
Table 8: Arithmetic Averages, Standard Deviations, and Item Order for the Learning Skills and Creativity Field

	Sub-skills emanating from the field of learning and creativity	Average	Deviation Normative	Level	arrangement Paragraphs
12	Students produce new and useful digital information from the information available in the curriculum.	1.587	.622	low	3
13	The curriculum provides opportunities for students to create worthwhile products.	1.565	.564	low	8
14	The curriculum contributes to the development of the skill of evaluating the ideas it contains.	1.578	.530	low	4
15	The curriculum helps to come up with unfamiliar solutions to various digital problems.	1.609	.640	low	2
16	The curriculum involves employing innovative ideas in new situations.	1.556	.524	low	9
17	The curriculum addresses critical thinking skills in digital learning situations to which it is exposed.	1.574	.563	low	7
18	The curriculum includes assessing the progress of learning in light of what is expected to be achieved.	1.623	.623	low	1
19	The curriculum addresses digital self-learning skills.	1.578	.645	low	5
20	The curriculum deals with the skill of creative thinking.	1.565	.540	low	6

We find through the previous table that the number of learning and creativity skills is (9) skills, and all of them were at a low level of integration into the curriculum, and this confirms to us that learning and creativity skills need to be more integrated and included in the curriculum, and the arithmetic average of skills in the field of learning and creativity was limited between (1.556-1.623), the most available was still No. (18) and the least available was skill No. (16) and the difference between their averages did not exceed (difference = 0.067). Skill No. (16) stipulates (the curriculum includes the employment of innovative ideas in new situations) where the arithmetic mean was (arithmetic mean = 1.556) and standard deviation (standard deviation = .524), and we find that the result of this skill is very low and this may be due to the stipulation of the employment of ideas all, and the application of those ideas in new situations, and the curriculum does not directly address innovations and the possibility of employing them. Skill No. (13) comes next at the least included level, which states (The curriculum provides opportunities for students to create worthwhile products.) and its arithmetic mean (arithmetic mean = 1.565) and standard deviation (standard deviation = .564), which confirms the importance of having guidance from the curriculum opportunity for this by setting goals in this regard to be achieved. Followed by skill No. (17) After that in the least integrated skills in the curriculum at a low level, the arithmetic mean was (arithmetic mean = 1.574), and its standard deviation reached (standard deviation = .563), and the phrase stated (the curriculum addresses critical thinking skills in digital learning situations that are exposed her). This result confirms that the digital required by the curriculum is essential in addition to other skills such as critical thinking, and the low results may also be due to digital skills that merge with creativity skills. . These results guide us toward the availability of learning and creativity skills in the curriculum and their lack of integration into the curriculum, which underscores the importance of rethinking curricula in this area of skills.

Third: The field of personal skills

Table 9 shows the arithmetic averages, standard deviations, and item order for the soft skills domain.

Table 9: Arithmetic averages, standard deviations, and item order for the area of soft skills

	Sub-skills emanating from the soft skills area	Average	Deviation Normative	Degree of perception	arrangement Paragraphs
21	The curriculum deals with the skill of positive acceptance of different situations.	1.614	.572	low	2
22	The curriculum includes the use of students' criticism of their self-development.	1.466	.517	low	8
23	The curriculum directs students towards scientific honesty when dealing with data.	1.466	.559	low	9
24	The curriculum develops the skill of searching for facts.	1.757	.523	medium	1
25	The curriculum develops the skill of using analysis tools in smart environments.	1.574	.555	low	4
26	The curriculum develops the skill of effective communication among students in different environments (regular and digital).	1.574	.617	low	5
27	The curriculum develops the skill of social adaptation in different environments (regular and digital).	1.542	.558	low	6
28	The curriculum develops the skill of emotional intelligence in digital interaction.	1.408	.552	low	10
29	The curriculum develops the skill of positive behavior when using data in the surrounding environment.	1.583	.546	low	3
30	The curriculum helps students determine their priorities in life.	1.515	.535	Low	7

The above table shows us the number of personal skills, which are (10) skills, all of which were within the low level except for one skill that was included in the intermediate level, which is skill number (24). The average in this area for all skills was limited between (average = 1.408 - - 1.757). The highest included skill was skill No. (24) that received the average inclusion and the lowest skill No. (28), and the difference between their averages was (difference = 0.394). We note that skill No. (28) is the least integrated skill in the curriculum at an average level of (average = the curriculum develops the skill of emotional intelligence in digital dealing), and its standard deviation (standard deviation = .552), and it has stipulated (the curriculum develops the skill of emotional intelligence in digital dealing), and we note that the low inclusion of this skill requires digital dealing, and the integration of intelligence emotional with digital interaction at the same time, and this may be attributed to the low level of inclusion of it, followed by skill No. (23), which was the average (average = 1.466), (standard deviation = .559), which stipulated (the curriculum directs students towards scientific honesty when dealing with data), and we find that the low level of integration has This skill in the curriculum may be due to the requirement to deal with data, which we find few in the curriculum, then skill No. (22) came at the least integrated level in the curriculum after the previous skills, which stipulated (the curriculum includes the employment of students' criticism of the extent of their self-development) and the arithmetic mean was (arithmetic mean = 1.466) and standard deviation (standard deviation = .517), and then skill No. (30) came in the next place in the least available within the personal skills where (arithmetic mean = 1.515), and (standard deviation = .535), which also indicates the need for the curriculum to include this skill that stipulated (the curriculum helps students determine their priorities in life), and these results all point here towards a general judgment

on the level of integration of soft skills into the curriculum, which is a low level that needs to reconsider the curriculum and develop it to include personal skills more.

Fourth: The field of life and functional skills

Table (10) presents the arithmetic averages, standard deviations, and the order of items in the field of life and functional skills.

Table 10: Arithmetic Averages, Standard Deviations, and Item Order Life and Functional Skills Area

	Sub-skills emanating from the field of life and functional skills	Average	Deviation Normative	Level	arrangement Paragraphs
31	The curriculum develops students' working skills in virtual environments.	1.452	.542	low	10
32	The curriculum develops students' work skills in non-virtual environments.	1.560	.532	low	6
33	The curriculum develops the skill of preparing action plans in digital environments.	1.448	.541	low	11
34	The curriculum develops the skill of implementing action plans.	1.726	.608	medium	3
35	The curriculum allows for the opportunity to tackle multitasking goals in numbered environments at the same time.	1.529	.567	low	7
36	The curriculum develops the skill of managing educational projects virtually among students.	1.515	.527	low	8
37	The curriculum develops decision-making skills within work teams in light of the necessary information.	1.605	.574	low	5
38	The curriculum develops leadership skills to work in digital environments.	1.511	.535	low	9
39	The curriculum provides students with the opportunity to find new ways to solve existing problems in teamwork.	1.650	.514	medium	4
40	The curriculum includes activities to efficiently manage working time.	1.784	.482	medium	1
41	The curriculum develops students' social communication skills.	1.766	.536	medium	2

The above table shows life and functional skills, and it shows that the number of skills in the field of functional and life skills is (11) skills, and the level of integration of seven of them in the curriculum was within the low level of inclusion, and three of them within the inclusion of the intermediate level, but the level of general inclusion of the skill area as a whole is low, and the arithmetic average of the skills of this field fell between (average = 1.784-1.44). Skill No. (40) was the most included skill, and skill number (33) was the most included skill. Skill No. (33) Stipulates (the curriculum develops the skill of preparing action plans in digital environments) and the arithmetic mean was (arithmetic mean = 1.448) and its standard deviation (standard deviation = .541), and from the formulation of the skill we note that the skill here requires work in digital environments, which is rarely included in the curriculum, then skill No. (31) then came at a low level of integration into the curriculum with an arithmetic average of (arithmetic

mean = 1.452), and (standard deviation = .542), and this skill stipulated (the curriculum develops work skills in students' virtual environments), and we note that this skill requires working in virtual environments, despite a large number of Worksheets and practical activities that abound in the curriculum However, not all requirements are directed towards virtual or digital environments. From these results, it becomes clear that the curriculum needs to include more life and job skills, and with it needs to reconsider and develop the curriculum.

Discussion of Finding

What skills of the Fourth Industrial Revolution are included in the science curriculum in the first cycle from the point of view of supervisors and early teachers?

The results of the analysis of integrating the skills of the Industrial Revolution into the science curriculum in the fourth grade indicated that the level of integration of skills into the curriculum is low in the general average, which indicates the need for the curriculum to include these skills in its four areas. When discussing the level of integration of each domain, it became clear that the level of integration of the skills of the Fourth Industrial Revolution differed between the fields in digital value, but they all fell within the low level. Digital skills were the lowest skills in the level of inclusion, followed by personal skills, learning and creativity skills, and then functional skills, and therefore we find that the most skills that the curriculum needs to include are the field of digital skills, and the low inclusion of them is due to the digital requirement required by the field in all the skills included, the curriculum is almost devoid of any guidance for students towards using the information network to search for facts or information until it acquires the research and investigation skills that qualify it for many Other skills, and there is no guidance towards training in the use of digital data, finding solutions to digital problems, or using applications and technologies that enhance the use of digital data, or the use of applications and technologies that enhance the use of digital data.

Then the field of personality comes in second place with a low level of integration into the curriculum as well, and this low inclusion is due to the presence of some skills that were not addressed by the curriculum, including (the skill of emotional intelligence, social adaptation and criticism, especially in smart and digital environments), and this is attributed to the low integration of this skill, which confirms to us the need for the curriculum to integrate more personal skills that contribute to the preparation of strong outputs capable of dealing with various problems and future challenges in light of The era of the Fourth Industrial Revolution effectively.The low inclusion of this field is due to the lack of guidance in the curriculum forstudents to obtain new digital information from the basic knowledge it has, and the lack of inclusion in the curriculum that would develop students' ability to evaluate existing ideas, or employ these ideas. In addition, students have little opportunity in the curriculum to create products that can be worthwhile. The low availability of this field is also due to the lack of guidance of the curriculum to students to self-learning skills associated with creative thinking skills, through creativity and innovation using modern and digital programs and technologies.In the end, functional skills were the most included skills from the point of view of the sample members, although their inclusion did not exceed the low level, due to the presence of skills of great importance and within the field of functional skills that were not included in the curriculum, including (the skill of working in virtual environments, the skill of dealing with multitasking goals in digital environments, the skill of managing educational projects virtually among students, leadership to work in digital environments. Leadership skills to work in digital environments.Skill Leadership to work in digital environments), and the low inclusion of these skills in the curriculum is what is attributed to the low availability of the skill at its overall average.

The study of Abu Dahab (2022), which emphasized the great importance of including these skills in the curriculum, has confirmed the great importance of including these skills in the curriculum. Al-Sisi's (2021) study also indicated that this area of skills is of great importance, especially at present, and that the way to acquire it for students is to add their skills to the curriculum. The results of the current study in this aspect agreed with several studies, including (Abu Dahab, 2022; Elayyan, 2021; Al-Hujaili and Al-Tunisi, 2020; Allam and Rehab, 2020; Menon, 2019; Mohammed, 2018; Abu Ajwa, 2018).

The results of the current study differed from the results of the study of Al-Dahshan and Samhan (2020), whose results confirmed that the availability of skills, in general, is average, which differs from the results of the study, in which general average appeared within low availability. All skill areas in the study of Dahshan and Samhan fell

within the high and intermediate levels, while the current study did not obtain any of the skills on high inclusion or medium inclusion for the analysis, as all skills fell within the low level. The results of the current study also differed from the study of Malik and Asim (2019. It also differed from the results of the current study in including personal and functional skills at an average level in the study of Malik and Asim, while for the current study, the results of the analysis indicated a low inclusion of personal and functional skills.

Conclusion

Based on the results of the current study, it is clear to us that the current curricula need to be more integrated with the skills of the Fourth Industrial Revolution represented in (digital skills, learning skills, creativity, soft skills, and functional skills), and accordingly, the current study recommends the following:

1) Integrating the fields of the Fourth Industrial Revolution into the science curriculum in the fourth grade in all its four fields.
2) Highly incorporate digital skills as they are the least included skills in the curriculum.
3) Paying more attention to the content provided to students increases students' awareness and awareness of the Fourth Industrial Revolution, its requirements, and skills.

Study proposals

1) Conducting studies in science curricula aimed at developing the science curriculum in other stages of study.
2) An experimental study through which the proposed development in the current study is applied to know its effectiveness.

References

1. Abu Dahab, Faqi Ahmed. (2022). Evaluation of the physics curriculum for the first grade of secondary school in light of the standards of the Fourth Industrial Revolution. *Journal of the Faculty of Education (Assiut), 38(1.2), 393-442.*
2. Barbarian, Said and Qasim, Metwally. (2023). A proposed program to develop the skills of using digital geography applications and the professional ambition of geography teachers at the secondary stage in light of the requirements of the Fourth Industrial Revolution.*Journal of the Faculty of Education (Assiut*), *39*(2), 168-225.
3. Dahshan, Ali Khalil and Samhan, Fathi. (2020). Skills to prepare for future professions and jobs to keep pace with the Fourth Industrial Revolution and the requirements of its development. *Educational Journal of the Faculty of Education in Sohag* 80(*80*), 1-149
4. Sisi, Gamal Ahmed. (2021). The skills of the Fourth Industrial Revolution are necessary for high school students from the point of view of experts. *Journal of Educational and Human Studies, 13*(4), 19-72.
5. Al-Fuhaid, Suleiman bin Ibrahim. (2021). Evaluation of educational activities for the My Eternal Language course for the third intermediate grade in light of twenty-first-century skills. *Journal of the Faculty of Education (Assiut*), *37*(5), 196-250.
6. Al-Sulaitni, Aisha Ali. (2019). Perceptions of the teachers of the second field on the Cambridge curriculum in the Governorate of North Batinah in the Sultanate of Oman. College of Education, Sohar University. *Muscat Press*.
7. Sa'iriya, flares. (2022). The Role of Fourth Industrial Revolution Technologies in Achieving Sustainable Development in Higher Education Institutions in the Sultanate of Oman: The Role of Fourth Industrial Revolution Technologies in Achieving Sustainable Development in Higher Education Institutions in the Sultanate of Oman. Journal of Arts and Social Sciences *13*(1) 79-94.
8. Luqman. (2021). Analysis of the content of science books for the upper grades of basic education in Sudan in the light of twenty-first-century skills. *Al Jazeera Journal for Educational Sciences and Humanities, 17*(2), 7-31.
9. Sabri, Mr. (2020). A proposed program based on two learning theories for the era of the Fourth Industrial Revolution using digital learning strategies and measuring its effectiveness in developing mathematical prowess and enjoying and appreciating learning among preparatory year students. *Educational Journal of the Faculty of Education in Sohag* 73(*73*), 441-540.

10. Zidane, Murad Al-Murad. (0)202. Labor market skills are necessary for students of industrial technical secondary schools in Egypt in light of the Fourth Industrial Revolution and the requirements for its development. *Educational Journal of the Faculty of Education in Sohag* 85(*85*), .273-334
11. Butler-Adam, J. (2018). The fourth industrial revolution and education. *South African Journal of Science*, *114*(5-6), 1-1.
12. Elian, S. (2021). The future of education according to the fourth industrial revolution. *Journal of Educational Technology and Online Learning*, *4*(1), 23-30.
13. Fomunyam, K. G. (2019). Education and the Fourth Industrial Revolution: Challenges and possibilities for engineering education. *Int. J. Mech. Eng. Technol. (IJMET), 10*, 23-25.
14. Lieu, T. T. B., Duc, N. H., Gleason, N. W., Hai, D. T., & Tam, N. D. (2018). Approaches in developing undergraduate IT engineering curriculum for the fourth industrial revolution in Malaysia and Vietnam. *Creative Education*, *9*(16), 2752-2772
15. Menon, K., &Castrillón, G. (2019). Reimagining curricula for the Fourth Industrial Revolution. *The Independent Journal of Teaching and Learning*, 14(2), *6-19*.
16. Penprase, B. E. (2018). The fourth industrial revolution and higher education. *Higher education in the era of the fourth industrial revolution*, *10*, 978-981. TIMSS 2019 U.S. Results, (2019).
17. Yang, P., & Cheng, Y. E. (2018). Educational mobility and trans nationalization.In *Higher education in the era of the fourth industrial revolution* (pp. 39-63). Palgrave Macmillan, Singapore.