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THE EXTENT OF INCLUSION OF KNOWLEDGE ECONOMY'S CONCEPTS AND SKILLS IN THE EDUCATIONAL POLICY DOCUMENTS IN THE SULTANATE OF OMAN

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Abstract:
The study aimed to identify the extent to which the contents of the general educational policy documents in the Sultanate of Oman contain the concepts and skills of the knowledge economy, as the concepts were divided into the four knowledge economy indicators, which are: First: the information and communication technology system (ICT), second: the research, development and innovation system, and third: the institutional system For countries, and fourth: the system of research, development and innovation, While the skills consisted of five general skills, namely: basic knowledge skills, digital skills, knowledge production skills, professional and life skills, followed by a set of basic and then sub-skills. The results showed that the highest percentage of inclusion was for the concepts of the fourth Indicator (The Education and Training System) in the National Education 2040 Strategy, and that the lowest percentage of inclusion was for the concepts of the first indicator: the information and communication technology system. The results also indicated that the concepts of the fourth Indicator: The Education and Training System are the concepts most included in all general educational policy documents and that the concepts of the first indicator: the information and communication technology system are the concepts that are the least included in all these documents. In addition, the results indicated that the highest coverage rate was for basic knowledge skills in the educational evaluation document for the social studies curriculum, and that the lowest coverage rate was for digital skills in the educational philosophy document, and the results indicated that basic knowledge skills are the highest inclusion among all skills and digital skills are considered the least inclusion among all knowledge economy skills. The study recommended the necessity of a kind of

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sequence and logical arrangement in including knowledge economy skills in these documents according to their importance and their inclusion from the general to the specific. Furthermore, there is a need for updating inclusion of these concepts and skills constantly in line with the developments and changes of the age and undertaking more renewed and continuous research.

Keywords: knowledge economy, educational policy documents, Sultanate of Oman, social studies education

1. Introduction

The concept of cognitive (knowledge) economy is used to describe trends in which the creation, generation, and use of knowledge in production is a factor of increasing importance (Hogan & Seidman, 2011), which is achieved through the adoption and generation of new knowledge through both scientific research and technological advancement (Dahlman, et al., 2006). It is also seen as synonymous with a shift to new, high-performing skills and a flexible way of working in response to global changes and developments (Cairney, 2000).

The OECD defines the knowledge economy as that economy which expresses a description of the trends of advanced economies that depend heavily on knowledge, information and high levels of skills that are employed in the government sector and the labor market (OECD, 2005, 28). Moreover, the Business Dictionary defines it as that economy, which is based on the creation, evaluation, and trade of knowledge (Business Dictionary, 2018). It is also defined pedagogically by Dinmmock and Goh (2011, 219) as: "*Empowering individuals to obtain, participate in, produce and use knowledge in order to improve the quality of human life*."

The knowledge economy is characterized by a set of characteristics and features, including its dependence on investment in human capital as its basic value (Peters, 2001), and its dependence on cognitive production, which is one of the most important production factors in all areas, represented in goods, products or knowledge services (Houghton & Sheehan, 2000), its dependence on virtual, intangible networked work through modern technology as well as the new means of communication and the free flow of information (Afuna, 2001), and its superior ability to regenerate and fully communicate with other economies (Al-Qaralah, 2009), and its ability to create intellectual and new cognitive and non-cognitive products that the market has not known before through investment in scientific and technical production (Arundel, 2005).

The knowledge economy is also based on a set of requirements and foundations, which were represented in its four indicators that most organizations, and relevant literature and research studies have agreed upon, namely: (1) the institutional system of the state that promotes the effective use and development of knowledge and resources; (2) the education and training system that provides educated individuals and skilled workers who are able to generate, exchange and use knowledge; (3) the research,

development and innovation system that enables keeping pace with the knowledge revolution and benefiting from the increasing stock of global knowledge as well as assimilating and adapting it to local needs; and (4) the information and communication technology (ICT) system, which facilitates effective communication between institutions and the dissemination and processing of knowledge and information, through which the building of knowledge economy within any country is achieved (Mohammed bin Rashid Foundation, et al., 2016; Tocan, 2012: European Commission, 2008; World Bank, 2007: Chen & Dahlman, 2005; Cooperation, et al., 2000), the enhancement of which leads to an increase in the quantity and quality of the body of knowledge available; this leads to an increase in productivity, and consequently the economic growth of countries (Tocan, 2012).

The global interest in the issue of knowledge economy has been reflected on the educational side through many economic and cultural activities that have clearly affected educational systems, especially with regard to the philosophy of these systems, their policies, curricula and performance strategies (Al-Namrawi, 2014). Among these are the general educational policy documents on which education is based in any society and defining its general framework and its various systems, which the state proposes for the establishment of education conditions in it with its technical and administrative apparatus in accordance with the foundations, rules and regulations governing its completion (Al-Sahli, 2018) in which the knowledge economy imposes the necessity of giving priority to the qualitative rather than the quantitative development of education, and keeping pace with the wide and rapid technological development on the one hand, and the development of economic activity on the other (Boulsabaa, 2013).

Due to the importance of educational policy documents and the role they play in the educational decision-making process and building educational curricula at the community level, and the recommendations of many national approaches and visions, seminars, conferences and studies in the Sultanate related to the subject of study, such as the Oman Vision 2040, which focused on raising the quality of school education, higher education and curriculum as well as the educational system development so that graduates of the educational system become qualified to enter the local and international labour markets with capabilities, potentialities and competing skills that meet the levels of productivity and competitiveness required to build a knowledge economy (Supreme Council for Planning, 2018). Moreover, the International Conference for the Fourth Industrial Revolution and its impact on education recommended the need to apply the culture of innovation, change and development in schools, faculties, administrative and educational leaderships in order to prepare a generation capable of keeping pace with developments in various fields (General Directorate of Education in North Al Batinah Governorate, 2019), and a study by Al Balushi and Al Maamari (2020d) to radically review the educational system with all its components and make various organizational changes related to the rest of the elements of the education system. This study is intended to reveal the extent to which the concepts and skills of knowledge economy are included in the general educational policy documents in the Sultanate of Oman in light of the list

developed by Al-Balushi and Al-Maamari (2020a) and Al-Balushi and Al-Maamari (2020b), which included the concepts and skills of knowledge economy that should be available In education in the Sultanate of Oman, by answering the following main question: *To what extent are the concepts and skills of knowledge economy included in the educational policy documents in the Sultanate of Oman?*, which is branched into two sub-questions:

- To what extent are the concepts of knowledge economy included in educational policy documents in the Sultanate of Oman?
- To what extent are knowledge economy skills included in the educational policy documents in the Sultanate of Oman?

2. Importance & Significance of the Study

There are many considerations that give importance and significance to the present study:

- The importance of knowledge economy as a topic which is currently attracting attention both nationally and internationally.
- The lack of literature and previous research studies dealing with the topic of study in the analysis of public educational policy documents at the international level in general and their scarcity at the national level.
- The study comes in line with the directions of the Sultanate of Oman to implement the Oman 2040 Strategy, in which the development of educational curricula is one of the most important national priorities for comprehensive and sustainable education.
- The value of the data that will be disclosed about the inclusion in educational policy documents of the concepts and skills of the knowledge economy , which can be used by decision-makers in the educational sector in building the Omani curriculum and they are now on the verge of starting the implementation of the future Oman 2040 vision.

2.1 Research Terms

- *Knowledge economy :* An economy that expresses a description of trends in advanced economies that rely heavily on knowledge, information and high levels of skills that are employed in the government sector and the labor market (OECD, 2005, 28).
- *General Educational Policy Documents:* It refers to documents that outline and define the general framework for the course of the educational system in all its fields, to reform and develop education conditions in any society. The current study is to deal with the following documents: the Education Philosophy Document, the National Education 2040 Strategy, the General Concepts Document in the Curricula in the Sultanate of Oman, and the Educational Evaluation Document for the Social Studies Curriculum.

3. Methodology

3.1 Research Methodology

To achieve the objectives of the study and answer its questions, the qualitative/interpretative approach was used to analyze educational policy documents through the Knowledge economy Concepts Model (Baluchi & Al Maamari, 2020a), and the Knowledge economy Skills Model (Baluchi and Al Maamari, 2020b). Table (1) represents the distribution of general educational policy documents that will be tackled and employed by the current study:

Table 1: Distribution of educational policy documents – Second Research Sample

S.N	Name of Educational Policy Documents	No	Place of Issue
1	Educational Philosophy	1	Education Council
2	National Education Strategy 2040	1	Education Council
3	Document of general concepts in school curricula in Sultanate of Oman	1	Ministry of Education
4	Document of educational evaluation of Social Studies Curricula	1	Ministry of Education
5	Total	5	

The following is a brief summary of each of these documents:

A. The Philosophy of Education Document

The Education Philosophy document is defined as a set of principles and objectives that combine contemporary authenticity and are directed towards building and developing all elements of the educational system. These principles are based on a set of religious, scientific, national and international sources and foundations. The Education Philosophy document is a main reference for drawing education policies and plans in the Sultanate and a drive towards achieving its major goals and general objectives. It also represents a guide for the continuous development of the education system at all levels and levels. It is also a solid base for the educational system in the Sultanate. The education philosophy document is divided into two main topics: (1) Sources of the Philosophy of Education in the Sultanate of Oman, and (2) Principles and Objectives of the Philosophy of Education in the Sultanate of Oman (Education Council, 2017).

B. The National Education Strategy 2040

The draft National Education Strategy 2040 comes as a basic guide for the policies and plans for developing the education sector in the Sultanate in the future five-year plans, which were built on a set of foundations represented in: (1) Adopting a new framework for education, (2) Educational capacity building in the system, (3) Transferring responsibilities to institutions, and (4) Adopting an approach based on outputs. The strategy includes five sub-strategies: (1) Education Management, (2) Student Enrollment and Progress through Educational Stages and Work Sectors, (3) Building Quality in

Education, (4) Scientific Research and Development, and (5) Financing Education (Education Council, 2018).

C. The document of general concepts in the school curricula in the Sultanate of Oman

This document is a response to the vital demands that have emerged in the educational field that accompanied the urgent changes associated with the tremendous developments in science and its applications through the selection of general concepts derived from global changes, which are a fundamental pillar of the school curriculum and a guiding reference that informs members of the curriculum in introducing general concepts into the curriculum, a guide to help teachers distinguish general concepts, their activities, methods of teaching and evaluation, and a source for educators to study and research. It dealt with general concepts, the methodology for building them, their importance, general purpose, procedures for employing them and their fields, as well as a matrix of general concepts, methods of introducing them, and models for their employment (Ministry of Education, 2019)

D. The educational evaluation document for the social studies curriculum

This document is considered a primary reference for the social studies curriculum, in which it deals with the main topics related to the subject represented in: (1) the pillars and principles of the social study curriculum, and its general objectives for the different academic stages of the classes. (3-12), in addition to the general and special objectives for each academic grade separately, (2) the range and sequence matrix for grades (3-12), and (3) the study plan for the subject distributed according to grades, curricula, teaching methods, and continuous evaluation methods used in the subject (Ministry of Education, without a year of publication).

3.2 Research Results & Discussion

To answer the main research question of the study, which states: "To what extent are concepts and skills of knowledge economy included in educational policy documents in the Sultanate of Oman?", from which two sub-questions emerge, which are:

The first question: To what extent are the concepts of knowledge economy included in the educational policy documents in the Sultanate of Oman?

To answer this question, the percentages of the knowledge economy concepts were extracted according to the list of knowledge economy concepts for each document separately. Table (2) shows the results related to the percentage of including knowledge economy concepts in public educational policy documents:

The results of the analysis showed, in general, that the highest percentage of inclusion was for the concepts of the third indicator (the institutional system in the educational evaluation document for the social studies curriculum), and that the lowest percentage of inclusion was for the concepts of the first indicator (the information and communication technology system in the national education strategy 2040). Results also indicated that the concepts of the third indicator (the institutional system) are the most included concepts in all general educational policy documents and that the concepts of

the first indicator (the information and communication technology system) are the least included concepts in all of these documents.

Table 2: The percentage of inclusion of knowledge economy concepts in general educational policy documents

S.N.	Documents / Inclusion of concepts according to indicators%	Education Philosophy	National Education Strategy 2040	Document of General Concepts in Curricula	Document of Educational Evaluation of Social Studies Curriculum	%Means of Frequencies of Concepts in all Documents
1	First Indicator: Information Technology & Communication System	33.1%	1.5%	15.3%	15%	6.8%
2	Second Indicator: Research, Development & Innovation System	23.2%	12.1%	12.7%	0	12.9%
3	Third Indicator: Institutional System	29.6%	10.8%	52.5%	75%	16.9%
4	Fourth Indicator: Education & Training System	14.1%	75.6%	19.5%	10%	63.4%

The results of the analysis showed, in general, that the highest percentage of inclusion was for the concepts of fourth Indicator (Education and Training System in the National Education 2040 Strategy), and that the lowest percentage of inclusion was for the concepts of the first indicator (the information and communication technology system in the national education strategy 2040). Results also indicated that the concepts of the fourth Indicator (Education and Training System) are the most included concepts in all general educational policy documents and that the concepts of the first indicator (the information and communication technology system) are the least included concepts in all of these documents.

The results also showed that the highest percentage of inclusion for the first indicator (the information and communication technology system) (ICT) came in the education philosophy document (by 33.1%), then the two documents of general concepts of the curriculum in the Sultanate of Oman and the educational evaluation of the social studies curriculum (by 15.5%) and (15%)% respectively, then the National Education Strategy 2040 (by 1.5%). As for the second indicator (the research, development and innovation system), the highest percentage of inclusion in the education philosophy document was 23.3%, followed by the General Concepts of Curriculum Document in the Sultanate of Oman and National Education Strategy 2040 (by 12.7%) and (12.1%)

respectively. However, the educational evaluation document for the social studies curriculum does not include any of the concepts of this indicator.

Results also indicated that the highest percentage of inclusion for the third indicator (the institutional system) after the educational evaluation document for the social studies curriculum, which came at a rate of 75%, followed by the general concepts document in the curricula at a rate of 52.5%, then the document on education philosophy at a rate of 29.6%, followed by the national strategy for education 2040 by 10.8%. As for the fourth indicator (the education and training system), the highest percentage of inclusion in the national strategy for education 2040 was 75.6%, followed by the general concepts of curricula in the Sultanate of Oman document, the philosophy of education document, and the educational evaluation document for the social studies curriculum at a rate of 19.5%, 14.1% and 10% respectively.

As for the most embedded concepts according to the indicators and requirements of the knowledge economy , the results of the analysis indicated that the concepts of the forth indicator (the education and training system) are the most included concepts in all public educational policy documents (the research sample) by 63.4%, followed by the third indicator (the institutional system of the state) with a percentage of 16.9%, Then came the second indicator (the research, development and innovation system) by 12.9%, and finally the first indicator (the information and communication technology system) (ICT) system by 6.7%.

The second question: To what extent are the knowledge economy skills included in the educational policy documents in the Sultanate of Oman?

To answer this question, the percentages of general knowledge economy skills were extracted according to the list of knowledge economy skills for each document separately. Table (3) below shows the results related to the percentage of including knowledge economy skills in public educational policy documents:

Table 3: The percentage of inclusion of knowledge economy skills in general educational policy documents

S.N.	Documents / %for inclusion of general knowledge economy skills	Education Philosophy	National Education Strategy 2040	Document of General Concepts in Curricula	Document of Educational Evaluation of Social Studies Curriculum	%Means of Frequencies of Concepts in all Documents
1	**Basic Knowledge Skills**	34.4%	29.3%	5.4%	51.9%	28.9%
2	**Digital Skills**	0	1.6%	29.2%	14.8%	15.5%
3	**Life & Professional Skills**	50%	23.6%	22.2%	11.1%	20.6%
4	**Cognitive Production Skills**	9.4%	31.7%	10.1%	11.1%	15.9%
5	**Communication Skills**	6.2%	13.8%	33.3%	11.1%	19.1%

The results of the analysis showed, in general, that the highest rate of inclusion was for basic knowledge skills in the educational evaluation document for the social studies curriculum, and that the lowest rate of inclusion was for digital skills in the education philosophy document. Moreover, results also indicated that basic knowledge skills are the skills that are the highest included skills among all skills and that digital skills are the least included skills of all the knowledge economy skills.

The results of the analysis also indicated that the highest percentage of inclusion of basic knowledge skills after the educational evaluation document for the social studies curriculum at 51.9% came the Education Philosophy document at 34.4%, followed by the National Education Strategy 2040 with 29.3%, and then the general concepts document in the curriculum in the Sultanate of Oman at a rate of 5.4%. As for digital skills, the general concepts document in the curriculum in the Sultanate of Oman included the highest inclusion rate (29.2%), followed by the educational evaluation document for the social studies curriculum at 14.8%, then the national strategy for education 2040 with 1.6. And do not include the document on education philosophy for digital skills.

As for professional and life skills, the Education Philosophy Document included the highest rate of inclusion with a percentage of 50%, followed by the National Education Strategy 2040 and the general concepts document in the curricula in the Sultanate of Oman by 23.6% and 22%, respectively. Then the educational evaluation document for the social studies curriculum by 11.1%. As for knowledge production skills, the National Education Strategy 2040 included the highest inclusion rate (31.7%), then the educational evaluation document for the social studies curriculum, the general concepts document in the curricula in the Sultanate of Oman and the education philosophy document at 11.1%, 10.1% and 9.4% respectively, while general concepts in the curricula in the Sultanate of Oman included the highest percentage of inclusion of communication skills with a percentage of 32%, then came the National Education Strategy 2040 educational by 13.8%, then the evaluation document for the social studies curriculum at 11%, followed by the Education Philosophy document at 6.2%.

The results also indicated that basic knowledge skills constituted the skills that are most included in the knowledge economy skills by 28.9% in all educational policy documents representing the research sample, then came professional and life skills by 20.6%, followed by communication skills by 19.1%,, then knowledge production skills and digital skills at 15.9% and 15.5%, respectively.

4. Discussion of Results

The results of the study showed that the concepts of the (The Education and Training System) constituted the highest percentage of inclusion out of all concepts of knowledge economy concepts out of the total sum of all public policy documents, and basic knowledge skills constituted the highest percentage of inclusion among all knowledge economy skills for all public policy documents constituting the research sample. However, the concepts of the first indicator (the information and communication

technology) (ICT) system and digital skills formed the lowest inclusion rate among all concepts and skills of knowledge economy , with a proportion of the total number of all public policy documents, respectively, of the study sample, despite the fact that the information technology infrastructure is one of the necessary pillars of knowledge economy that contribute in increasing technological development and promoting knowledge production. The results of this study are similar to the results of the study by Al-Belooshi & Al-maamari (2020), whose results indicated that the least degree of inclusion in the basic information and communication technology (ICT) system indicator in the content of Social Studies Curriculum for grades (3-12) in the Sultanate of Oman, and the results of the study by Al-Belooshi and Al-Maamari (2020c), whose results indicated that the highest degree of inclusion of knowledge economy skills was for knowledge skills in the content of all curriculum textbooks with regard to the inclusion of skills, which indicates a gap between the contents of educational policy documents and the national trends related to digital transformation, which confirms that developing the capabilities of society. People skills are one of the pillars of the Digital Oman 2030 strategy through the Omanis possessing of the necessary skills and capabilities to develop and prosper in the technical future, and to include technology in the educational curricula, where everyone has a general technical knowledge base provided by the education system (The Official Portal of e-Government Services, 2020).

The results of the study also indicated that there is no kind of coherence and logical sequence in including the concepts and skills of the knowledge economy if the public policy documents are arranged from the general to the private, starting from the education philosophy document and ending with the educational evaluation document for the social studies curriculum and if they are also arranged according to the chronology of the issuing date, as it is noticed that there is a kind of dispersion in the order of including these skills, despite the inclusion of the educational evaluation document for the social studies curriculum - which was issued without a year of publication - the highest rate of inclusion of the concepts and skills of knowledge economy in general, and it is a less gradual document after the document on the philosophy of education and the National Strategy for Education 2040 and the General Concepts Document in Curricula in the Sultanate of Oman. But it did not include any of the concepts of the third indicator (the system of research, development and innovation).

Although all of these documents - with the exception of the educational evaluation document for the social studies curriculum - were issued in a recent era, all of them were issued after the Oman Vision 2040 document, and this may explain the lack of correlation between these documents in their inclusion of the concepts and skills of knowledge economy, as It would have been possible for the construction of these documents to be integrated and interconnected with the directions and vision of the state in the transformation towards the knowledge economy and the fourth industrial revolution, and these documents would have been drafted in light of Oman 2040 vision and in a way that achieves the objectives and vision of the Sultanate. These results may reflect what the OECD report, "Knowledge economy competencies", states, which indicated that

public policy directions are less clear in improving educational foundations in light of the knowledge economy and that more research is needed to justify and direct fundamental changes in their context in order to develop new competencies and skills that require knowledge production, employment and dissemination in light of the knowledge economy (OECD, 2001).

The results also showed that there is a difference in the order of distribution of concepts and skills of cognitive or knowledge economy from the point of view of Delphi experts in the studies by Al-Belooshi and Al-Maamari (2010a) and Al-Belooshi and Al-Maamari (2020b), where the information and communication technology system inicator came first from The viewpoint of Delphi experts in the study of Al-Belooshi and Al-Maamari (2010a) regarding the most important concepts of knowledge economy. Meanwhile, the results of the analysis in this study showed that the concepts of this indicator were included with the lowest percentage of inclusion in all educational policy documents. The current study sample - with the exception of the general concept document in the curricula in the Sultanate of Oman - and this also applies to the concepts of the forth indicator (the Education and Training System), and basic knowledge skills, which came with the highest inclusion rate for all educational policy documents, the current study sample, although that the results of the study by Al-Belooshi and Al-maamari (2020) in Including all social studies curriculum books for all grades for the third indicator concepts, and study by Al-Belooshi; and Al Maamari, (2020c) that came in agreement with the results of this study in including all social studies curriculum books for all grades for basic knowledge skills. Also, the results of this study may direct the officials' attention to the importance of a kind of linkage and gradualness in including concepts and skills of knowledge economy in particular and other topics in general when making educational policies and that this will be reflected in educational curricula to reflect a kind of relationship between them. The study by Al-Mahdi and Al-Shanfari (2014) indicates the weakness of the relationship between educational research and educational policy-making in the Sultanate of Oman and the inadequacy of educational policy-making institutions and mechanisms in the Sultanate from benefiting from educational research, and supporting and developing it to serve the scientific application. Whereas the knowledge-based economy policy is important for understanding the links between policies and practices in the context of global competition to obtain a competitive advantage represented by the continuous comparison between national education systems, which translates into a set of policies and practices that start at the early stages of schooling (Lauder, et al., 2012), the shift in education policies, therefore, has become evident in the rhetorical processes through key concepts such as 'employment', 'competencies' and 'lifelong learning', emphasized and measured through comparative surveys (PISA, TIMSS, and PIRLSS) and country reports and performance indicators (Krejsler, 2018) to produce educational policies related to the performance of the national economy in general and the knowledge economy in particular. This study directs the attention of officials and decision-makers in building and updating educational policies to the necessity of formulating educational policies in chronological and logical order in

terms of their importance in building the rest of the general educational policy documents in light of the visions and trends of the national state in the transformation towards a knowledge economy, most notably the Oman Vision 2040 document, which promises education, learning, scientific research and national capabilities in it are one of the most important national priorities through a strategic orientation based on comprehensive and sustainable education and scientific research that leads to a knowledge society and competitive national capabilities by focusing on raising the quality of school education and higher education and developing educational curricula so that graduates of the educational system become qualified to enter the local and international labor markets with competing capabilities and skills that meet the levels of productivity and competitiveness required to build a knowledge economy (Supreme Council for Planning, 2019).

4.1 Recommendations

- Taking into account the sequence and logical order in including the concepts and skills of the knowledge economy according to the gradation of the importance of these documents and taking this into account while building relevant educational curricula in the Sultanate of Oman.
- The necessity that the general educational policy documents in the Sultanate of Oman proactively keep abreast of the state's orientations and its strategic plans for transformation and integration in the era of knowledge economy as these documents are considered a reflection and mirror of the trends of countries and societies, which are also reflected in their curricula, the levels of their students, and their educational outcomes.
- The necessity of updating the general educational policy documents in the Sultanate of Oman, evaluating, and developing them continuously, and relating them to the educational curricula and reality in the Sultanate in order to achieve the intended goals.

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