Knowledge industry for children

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Abstract:

The acquisition and production of knowledge is currently a crucial goal for countries aspiring to leadership and progress, both in the present and in the future. Starting from childhood in this field is considered a fundamental step towards sustainable development. The children's knowledge industry is characterised by efforts to prepare children scientifically and skilfully so that they are able to adapt to their environment, engage in quality production, provide the necessary added value and face constantly evolving challenges. This industry manifests itself in the educational content and its alignment with the indicators of the knowledge economy, as well as in the abundance of cultural products in the environment that are suitable for children of different stages and age groups. It is also based on the investment climate and specialised scientific research in the field, as well as the level of cooperation with leading institutions.

Keywords: knowledge economy, knowledge content, children, digitalization

Introduction:

In light of the extensive digital orientation, several significant gaps have emerged in the design of knowledge content for children. These gaps relate to media and the need to consider the quality of content and its treatment. What are these gaps and how can they be addressed to minimise their impact?

The concept of intellectual capital has become widely accepted as a true representation of a country's and companies' ability to compete and succeed. Before this era, natural resources represented their true wealth. This necessitates the pursuit of the creation or discovery of intellectual capital[i]. However, this stage can only be reached after this knowledge has been understood and used to solve societal problems and develop individuals and resources.

In the information age, knowledge is considered the fourth pillar of the production process, surpassing the other three pillars (land, capital and labour) in terms of importance. This has led to the emergence of knowledge management, the knowledge economy and the knowledge industry. If the motto used to be "no learning, no work", the motto today is "no knowledge, no chance to compete"[ii].

The research revolves around defining the standards of the knowledge industry aimed at children in the digital wave and its accompanying repercussions, known as the knowledge economy. It also aims to diagnose the reality of this industry in Arab countries and its achievements. Through studying, analysing and observing this industry in other countries, the research seeks to approach methods of development and bridge the existing gaps in Arab countries in this field.

Chapter 1: Conceptual framework

This chapter includes an introduction that discusses the points presented in this chapter, divided into requirements.

Requirement 1: The concept of knowledge

Knowledge, in its linguistic connotations, refers to partial or simple perception, while science is said to be comprehensive or complex perception. Some have defined knowledge as information or facts that a person's mind possesses about something. It has also been defined as acquired experience and skill, derived from the verb "to know", and to know something is to perceive it through one of the senses[iii].

On the other hand, some argue that knowledge has broader, more inclusive and more far-reaching boundaries and implications than science. In its comprehensiveness, knowledge includes both scientific and non-scientific knowledge. The distinction between the two types is based on the rules of methodology and ways of thinking that are followed in the acquisition of knowledge. If the researcher follows the rules of the scientific method to understand things and uncover phenomena, then knowledge becomes scientific knowledge[iv].

In its procedural sense, knowledge is defined as "information that can be communicated, understood and comprehended by experts". Therefore, if information is not subjected to use and application, it is not considered knowledge. From this perspective, information is not enough to be useful; it should be used in a meaningful way[v].

Knowledge, according to experts, is built on both data and information. Data refers to a collection of elements or values that have no clear meaning because they are unprocessed, unordered, or not organised in a way that facilitates understanding. After data is analysed and structured to extract indicators, relationships, correlations, rates and other elements, it becomes information. Once information has been analysed and placed within a conceptual framework, it becomes knowledge. A person with knowledge knows how to use information effectively. Only then does knowledge become valuable because it can be transformed into goods and services that people are willing to purchase[vi].

The second aspect: Knowledge Management

Knowledge management involves the definition of available and required knowledge assets and associated processes, and the subsequent planning and control of activities to develop both the assets and the processes to achieve the desired objectives. Knowledge management is not limited to the management of knowledge assets alone; it goes beyond that to the management of the processes that take place on those assets. These processes include knowledge development, knowledge preservation, knowledge utilisation and knowledge sharing. Knowledge assets include

knowledge about the market, products, technologies and organisations that is owned or needs to be owned in order to drive organisational development, increase profits, achieve goals and add value[vii].

The third aspect:

The knowledge economyThe knowledge economy refers to the economics of knowledge processes themselves, such as knowledge production, knowledge generation, research and development.It includes the costs associated with knowledge processes, such as research and development costs, as well as the costs of managing business activities, such as consultancy or expert preparation and training.It also considers the returns or revenues generated by these knowledge processes as pure economic activities, similar to the economics of service industries such as tourism or hospitality[viii].

The knowledge economy focuses on two fundamental aspects:First, knowledge production, which includes innovation, acquisition, dissemination, use and storage.

It also considers the returns or income generated by these knowledge processes as pure economic activities, similar to the economics of service industries such as tourism or hospitality[2].Second, the knowledge industry, which includes education, training, consultancy, conferences, publications, writing, research and development. These are examples of activities that are central to knowledge industries[ix].

Rapid advances in science and technology have transformed the production of knowledge into an industry. This has led to a significant increase in intellectual output, its diversification, its sources and its different forms and languages.

Theme Four: The knowledge-based economy

The knowledge-based economy has a broader and more inclusive meaning than the knowledge-based economy. It encompasses the size of the knowledge and information sectors and investments in the economy, as well as the degree of penetration of knowledge and technology in productive activities[x].

It represents an advanced stage of the knowledge economy, meaning that it is based on the application of the knowledge economy to different economic and social activities. For example, the integration of information technology into various sectors makes the economy based on knowledge and science. Major industrialised countries that have benefited from the achievements of the scientific and technological revolution and applied them in industries that generate new knowledge, discoveries and advanced technologies have reached the stage of a knowledge-based economy or a post-knowledge economy[xi].

Theme Five: The knowledge economy

Knowledge can be seen as a commodity like any other. It can be produced, processed, packaged in various forms, marketed and used. What distinguishes it from other goods, however, is that it does not diminish or deplete with use, but rather grows and renews itself over time. Moreover, knowledge is not a consumable good that is used up, but a productive good that needs to be nurtured and provided with an environment for its growth through sharing, use and

development. We can therefore view knowledge as a resource with the potential to create value and contribute to economic and social progress[xii].

The culture industry falls under the umbrella of the knowledge industry, which is based on the reproduction or transmission of cultural products using industrial methods. This contributes to the popularisation of culture on a mass scale. "At the beginning of the 20th century, access to cultural creations was limited to the sale of books, libraries, theatres and music halls. Today, however, cultural products such as books, films, records and television programmes reach millions of people, whereas before they were restricted to intellectuals, the wealthy and certain segments of society"[xiii].

Nariman Motawalli defines the knowledge industry as all activities related to the production of information and the provision of services. The researcher classifies this industry as one of the areas that define the post-industrial society and as one of the pillars of national production[xiv].

In this context, Zakie Elwardi and Mujbil Al-Maliki argue that "investment in the knowledge industry is a significant and profitable investment due to its contribution to national income. For example, in the European Common Market countries, the knowledge industry contributes about $544 billion to national income"[xv]. It has been shown that the information sector generates about half of the national income in the United States and about 40% of the national income in advanced European countries[xvi].

According to the researcher Machlup Rubin, the knowledge industry comprises occupations and jobs that produce, design, process, distribute and disseminate information[xvii]. It consists of five main sectors: education, research and development, media and communications, information technology and information services[xviii].

Libraries and information centres have recently focused on the knowledge industry, including the establishment of various information systems and databases, the development and adaptation of technological programs, the use of technology in the provision of various information services, the adoption of research and development programs and consultations, education and training programs, support for authoring, translation, printing, publishing, and other activities that fall under the broad concept of the knowledge industry. They serve as the basic structure and facilities for this vital industry, indicating that these institutions have moved beyond the stage of organisation and processing and successfully entered the stage of knowledge industry, and have achieved tangible results in this regard[xix].

In both the public and private sectors, institutions in the industry focus on different aspects. Some institutions focus on the acquisition of intellectual property rights from authors and others and work on processing them in various ways. There are other institutions that focus on knowledge dissemination, while a third type of institution focuses on knowledge processing through the production of hardware and software. Not surprisingly, this industry, with its processes of collection, production, processing and distribution, is becoming an important economic resource in various countries around the world, especially in major industrialised nations. It is expected to become a primary economic resource in the coming years[xx].

The second theme: The Knowledge Industry in the Arab World

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The knowledge industry for children in the Arab world is part of the broader fabric of the knowledge industry in general. This industry is a crucial prerequisite for the transition to a knowledge-based economy in terms of economic, cultural, scientific and developmental returns. However, there are several obstacles that hinder the transformation of Arab economies into knowledge-based economies, including the digital divide, electronic illiteracy, incomplete flow of information to all members of society, and lack of emphasis on research and development.

While advanced countries and some developing countries are reaping the benefits of the knowledge society, Arab countries are still struggling to keep up within their modest capacities, with significant disparities among them in terms of knowledge industries, production and investment[xxi]. There are several reasons and difficulties for this lag, including:

- The Arab world is still classified as information and technology poor.

- Current technology applications focus on commercial and administrative aspects, while neglecting scientific and cultural aspects.

- Weak integration of modern technology into the educational process.

- Superficial and general coverage of knowledge industry issues by most Arab media.

- Lack of strategic planning and coordination between relevant institutions.

- Weak progress in scientific research.

In this regard, Abu Bakr Al-Hawsh points out several factors that hinder the progress of the knowledge industry in the Arab region, the most important of which are[xxii]:

- Economic disparities between countries in the region, with some wealthy nations able to acquire the latest information technology systems, while poorer countries struggle to provide such technology as they prioritise more pressing issues.

- Clear differences in the level of science and technology among these countries.

- Differences in concepts and meanings related to information technology, lack of standardisation and regulation.

- Weak role of Arab specialised organisations in the field of information technology.

- Limited role of national information centres available in Arab countries.

- Lack of qualified personnel to handle modern information systems.

In spite of all this, some Arab countries have made considerable efforts to enter the knowledge society by adopting national strategies for information technology that ensure its free circulation within defined legislation, qualifying human resources to face new changes, promoting information literacy, cooperating with the private sector, implementing the concept of an information society that enables genuine societal participation in development based on digital electronic means, and adopting a national information policy.

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As some of these countries have turned towards adopting a number of technological projects that contribute to the development of society in various fields, among the most important are e-government projects, development and economic reform projects, scientific city projects, and the establishment of centres for the production and development of information systems and programs. The aim is to reach advanced stages in developing the role of the Arab region in the industry of these programmes, accelerating the transfer of technology and developing technological capabilities in the region.

Among the most prominent factors that will contribute to the development of the knowledge industry sector in Arab countries are:

- Investing in the latest technologies for infrastructure.

- Expansion of information technology education.

- Development of advanced infrastructure in the field of telecommunication.

- Development of the computer software market.

- Government support for the information industry.

- Opening the field to foreign investors in the software and hardware industries.

It has already been mentioned that the knowledge industry in Arab countries is still in its early stages and is currently focused on two types: software industry and information network communication. As for microelectronics and computers, it relies on import or custom assembly after importing components from global markets. Therefore, it cannot be said that the Arab world has a real knowledge industry in its general concept. However, Arab libraries and information centres are showing promising signs of contributing to it, as they have begun to use technology in the production and provision of some reference and bibliographic services, current awareness services and the design of local information databases.

The Third Theme: Knowledge Economy for Children

Acquiring and developing knowledge is now a key focus for countries striving for leadership and progress. Starting from childhood in this area is essential for sustainable development[xxiii].

The knowledge industry for children refers to efforts to prepare children scientifically and skilfully so that they can adapt to their environment, engage in quality production, face new challenges and make the necessary contributions. This industry manifests itself in educational curricula and their orientation towards knowledge-based economic indicators. It also includes the modernisation of educational media, the availability of appropriate cultural products for children of different ages, and the investment climate for research and specialised scientific development in this field. In addition, the existence and quality of partnerships between relevant institutions contribute to the success of the sector, as does the extent of exchanges with leading institutions[xxiv].

It should be noted that the wealth of knowledge for children is not the strength alone; the power lies in the ability to access, process and retrieve it. This requires mastery of information technology tools such as computers, software, the Internet and modern communication devices.

But technology alone is not enough. Attention must also be paid to science and the human element, represented by users, engineers, technicians, to societal awareness of the importance of the transition to a knowledge-based society, and to decision-makers' awareness of the need for the necessary policies and acceptance of the transformation process[xxv].

Therefore, it is necessary to invest in knowledge for children, develop it and use it to serve the proper development of children in various fields.

Its true value lies in its use by the target audience (actual or potential children in Arab countries).

In other words, in order for knowledge to be useful, it needs to be optimally invested by processing and utilising it in child development projects. This investment or use requires the preparation of knowledge in the form of products or services through the use of technology.

The Fourth Theme:Sectors of the knowledge industry for children

The knowledge industry for children can be divided into three main divisions[xxvi]:

First Division: Knowledge Content Industry

Institutions in the public and private sector produce knowledge content or intellectual property through authors and creators in different fields.They sell their children's productions to publishers, distributors and production companies, which then process the information in various ways before selling and distributing it to beneficiaries.

The Second Topic: Knowledge Delivery Industry

This section specialises in the process of broadcasting, delivering or disseminating knowledge products aimed at children. It includes the establishment of long-distance communication companies, satellite broadcasting and television channels. Some institutions, such as libraries and children's cultural centres, use these and other channels to distribute knowledge content.

The Third Theme: Knowledge Processing Industry

The Knowledge Processing Industry relies on hardware and software manufacturers. They are responsible for the design, manufacture and marketing of computers, electronics, remote communications equipment, operating systems and application packages.

The Fifth Topic: Factors Influencing Children's Knowledge Economy

This section focuses on the factors that contribute to the acquisition of knowledge and the generation of new knowledge in different areas, including[xxvii]:

First factor: Availability of research and development centres

This factor refers to the number and quality of child research centres in the country, their distribution, working hours and flexibility. Ideally, there should be multiple and diverse research centres spread across all regions, open 24 hours a day to all interested parties, staffed with qualified personnel and equipped with the necessary resources. Research centres are therefore a positive factor in the production and generation of knowledge aimed at children.

Second factor: Availability of qualified human resources

This factor emphasises the presence of scientifically and technically qualified people capable of carrying out experiments and scientific research. The greater the number of qualified individuals capable of conducting experiments and scientific research, the greater the production and generation of knowledge. This factor also indicates that countries can take certain measures to attract skilled immigrants.

Third factor: Availability of sufficient financial support

There is a direct relationship between the quality and quantity of research and scientific experiments and the availability of the necessary financial support, holding other relevant factors constant. Increased financial support leads to an increase in the quantity and an improvement in the quality of research and scientific experimentation. Financial support affects the provision and training of human resources, the availability of necessary equipment and the expenditure on scientific experiments and research.

Fourth factor:

Incentives, both moral and material

The availability of incentives has a positive impact on the generation and production of new knowledge. It also helps to attract skilled migrants and encourage them to return and work in their home countries.First - creativity:

It is necessary for the production of knowledge and the achievement of new innovations. It is essential to develop the necessary plans to foster creativity and train innovators.

Second - Educational institutions in all their forms and stages:

These institutions include curriculum plans, educational materials, teaching methods and the quality of teachers and students. They require a system that transforms education from the transmission of information to the application of knowledge in scientific fields.

Thirdly, the political, social and economic environment:

Because they contain content that contributes to supporting knowledge and providing the necessary facilities.

Chapter Six: Criteria for the content of knowledge directed at children

From time to time there are educational trends that call for a re-evaluation of the content of knowledge directed at children. This is because every generation, when it finds itself unable to achieve a secure future, works to prepare children for it. This is done by trying to shape children's personalities according to their wishes and by bringing their behaviour closer to that of adults. Many educators or authors of children's books, as well as the general public, remain very much tied to the culture of their generation[xxviii].

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In order to avoid all this, there are standards that should be respected by any knowledge content aimed at children, with the aim of providing them with a healthy and balanced education. The most important of these standards are[xxix]:

- To create knowledge in children that is compatible with the times and in line with the desired aspirations for the future.

- Educators should not aim to impart knowledge as a whole, but rather to select and enrich its positive elements, and to adapt values, standards and meanings that are appropriate for the child and in line with the aspirations of society.

- To seek to build a complete and balanced personality in the child. While the aim is to build a personality for the child that is compatible with society and derived from his or her culture, it is also important to allow the child to retain many aspects of his or her personal identity so that he or she can better cope with life.

- The aim of cognitive communication with children should be based on providing them with the methods and means that enable them to absorb the content of planned communication and prepare them to acquire knowledge themselves. They should be encouraged to engage in thought processes that enable them to solve the problems they encounter in their lives, away from superstitious, authoritarian or erratic thought patterns.

- Linking the content of the children's knowledge to the communication system and its purpose. The communication system arises first from the desired style of thinking. Any knowledge content can be a form of preserving meanings and rules, while the thinking style remains sterile and the art of application is absent. Both the style of thinking and the art of application have significant dangers. It has come to the point where it is said that the sciences themselves, despite their importance, cannot be useful unless they are transformed into art, that is, unless the results of the sciences are applied in an artistic way.

- The content of knowledge for children should be prepared to understand life, without focusing on the overflow of information, which is static and requires cognitive processes to move it in a logical sequence. These processes, whether thinking or imagining, require an environment. What most disturbs this environment is the transmission of rigid or authoritarian content by educational and cultural institutions. In its rigidity or authoritarianism, it serves goals or systems that have been placed in the light of the interests of adults or their institutions, without serving childhood itself.

- The content of knowledge should be constantly evolving so that knowledge does not become sterile. The emergence of various transformations and developments requires that they find a place in children's knowledge.

- The dissemination of knowledge for children should be based on enlightenment and the introduction of values and ideals based on facts rather than on ignorance and narrow-mindedness. It should be free of prejudices, illusions, fears and worries, and should move away from teaching children compliance and blind obedience.

- Presenting knowledge content to children as a complete structure, not just isolated elements.This is a prelude to the development of general perspective and general behaviour.There is no point in children receiving ideas without understanding how to translate them into behaviour, and there is no point in children being able to talk about positive values without committing to them, or without acquiring the ability to prioritise different values in specific situations.

- Educational communication should include "ideas" as essential tools for building the child's personality. Values, norms, customs and other cultural elements cannot remain fixed as long as there is constant social change.This change causes some of these elements to decline, change or die, and it also leads to the emergence of new elements.Therefore, a focus on "ideas" can enable the child to determine his or her relationship with elements that tend to fade and those that lead to life.

- The need to provide children with a broad and solid general knowledge that precedes any specialisation. Many experts warn against specialisation before the age of fifteen, considering any attempt to specialise before that age as futile.

- Communication channels should aim to reach all children with their content. Knowledge is no longer the exclusive preserve of a particular group; it must remain accessible to all.

The seventh theme: Challenges of knowledge content for children in the digital age

The tremendous scientific development of digital devices in the field of communication has transformed them from mere calculators performing logical operations to tools that encompass the ability to display text, sound, images, animation and digital video. This is commonly referred to as multimedia, which combines the characteristics of computers and television in a harmonious synergy on new media such as smartphones and electronic tablets. This scientific development has been accompanied by what is known as the digital revolution, which has increased the speed and storage capacity of computers to the point where they can handle the huge amounts of data generated by converting audio, images and videos into computer language[xxx].

The question that arises, however, is Does the spread of digital or electronic cultural literature among our children lead to the spread of a scientific way of thinking among them? Since we want our children to solve problems related to their lives and to interpret phenomena correctly, this means that we want them to think scientifically[xxxi]. Will their constant interaction with digital devices, originally based on precise logical scientific steps, lead to the spread of this way of thinking? A thinking process based on interconnected steps.

Dr Talib Imran says: "In the scientific era we live in, it is necessary to guide children towards serious and productive learning in their scientific education and to charge their imagination and ideas with stories that speak of outstanding scientific achievements and their bright future"[xxxii].

The widespread use of multimedia technologies without rationalisation will have a negative impact on the development of children's knowledge and pose a threat to their cognitive and aesthetic growth.

Printed books have been and continue to be the primary source of knowledge, and the arts, including mass communication media such as theatre, cinema, television and radio, rely on words as the primary creative tool, which is difficult to obtain from sources other than books. Undoubtedly, complaints and concerns about these risks have been frequent in educational and cultural contexts in technologically advanced countries, particularly Japan and the United States.Warnings about the proliferation of electronic books on the minds of children and young people and the numbing of their feelings and emotions, not to mention the theft of their time, before stealing their perceptions in a state of relaxation and mental laziness[xxxiii].

This means that digital culture raises educational, social and artistic concerns that may have significant consequences for the future of humanity if they are not studied seriously and scientifically. This is not to oppose the fruits of the communications revolution, but such awareness would make digital content for children a qualitative addition to their culture, contributing to the healthy development of their personalities[xxxiv].

Abdullah Al-Arwi says: "The electronic media revolution is a real revolution, with benefits that we experience every day in airports, banks, libraries and elsewhere. But as much as the educated, productive society gains in knowledge and activity, the society that lacks institutions is immersed in a mythical, consumerist mentality. This danger can only be avoided by an integrated national cultural policy"[xxxv].

When we talk about digital culture, we are talking about 21st century culture. If the prevailing belief is that culture always passes from adults to children and not the other way round, then the intelligence of the free person asks: "Don't we see that in our era, the era of the scientific and technological revolution that has reached us, children can transfer their knowledge and information to adults and explain scientific achievements and modern machines with more vitality and ability than those who are sometimes older?

Futurists have presented many visions of what the human being of the 21st century will look like and what skills and abilities he or she will need to face and overcome challenges. One of these studies is Dorothy Tunstall's study on the role and characteristics of schools in the 21st century, entitled "The School of the 21st Century". The researcher identifies the characteristics, skills and abilities that children need to acquire in order to compete in this era, with the use of computers and Internet networks being the first and most important of these skills.

Despite the wealth of research and visions and the characteristics they contain, the common denominator among them is the need to develop the following skills:[xxxvi]

- The ability to use and benefit from advanced technologies.

- The ability to think in all its forms, especially critical and innovative thinking.

- The capacity for continuous self-learning.

- The ability to solve and present problems.

Researcher Nabil Ali has identified the main objectives of using information technology for Arab children, which are:

- Developing the Arab child's ability to acquire knowledge.

- Developing the Arab child's mental skills.

- Developing the Arab child's ability to communicate with others.

The fundamental question after all this is: Have we prepared our children to participate positively in this scientific and technological revolution? Or will we leave them helpless, negative recipients of what Western societies throw at them as a result of this revolution, making them dwarfs in a world of giants?

Scientific culture is being consolidated in the culture of the Arab child, and it has become necessary for a writer of children's literature to have knowledge of science and technology and to be trained in scientific writing for children. The majority of researchers have linked scientific culture to its development in the information culture. For example, Mahmoud Qasim found that scientific culture is distributed in the following forms: simplifying sciences, scientific encyclopaedias, science fiction stories, and he believes that "scientific computer culture" is a necessary development in the path of scientific culture and should be kept up with[xxxvii].

Several Arab scholars have addressed the issue of information culture, including Abdou Mohammed, Mohammed Qurania, Mufaq Abu Touq, Abdel Tawab Youssef, Ali Ahmed Al-Deri, Al-Eid Jalouli, and others. They all recognised its inevitable development and importance. Abdou Mohammed called our era the "information age", which has become a necessary basis for any structure and work. It is important to note that the waves of information are powerful and dangerous, and those who cannot navigate them or have weak and fragile vessels will face great challenges[xxxviii].

Mohammed Qurania emphasised the importance of information, poetry, computers, novels, Internet writers, criticism and the Internet, the Internet and children's literature. His research shed light on the position of children's literature in relation to information culture. He found that children's literature, from a technological perspective, allows us to understand the level of development that this branch of human knowledge has reached. It also highlights the potential that technology offers children in terms of cultural diversity and creative expression[xxxix]. However, it's important to recognise the risks and negative aspects that exist alongside the cognitive and cultural benefits for children. These risks cannot be eliminated by parental and educational control alone, given the vast channels through which explicit and covert poisons are disseminated, such as satellite channels and the Internet. Therefore, a comprehensive approach involving both public and private entities is required to address these challenges[xl].

Mufaq Abu Touq focused on software and the need to produce Arabic software. He called for cooperation between educators, writers, technicians and linguists in the field of computers. He emphasised the importance of guiding our children to use technology properly and to extract its positive aspects while rejecting its negative ones. He also stressed the need to confront the distortion of history and heritage that can be caused by distorted programmes, as well as the importance of countering programmes that promote violence and inappropriate content that affect the personality of the Arab child[xli].

Ali Ahmed Al-Deri raised questions about the impact of information technology on children's imagination and its use in Arab children's culture. He asked how we can provide Arab children with a culture that stimulates their creativity and enables them to outperform machines. The transition to the information age will have various implications for Arab culture, including poetry, storytelling, novels and theatre. Consequently, a re-evaluation of these aspects is necessary as they move into the realm of information culture.

Al-Eid Jalouli proposed the establishment of an interactive children's literature project based on the elements of interaction and participation. This project aims to capitalise on modern critical achievements in the field of reading theory and the aesthetics of reception. It also seeks to use concepts introduced in interactive literature for adults by pioneers and theorists such as Saeed Yaktine, Fatima Al-Bariki, Mohammed Senajla and others[xlii].

This new type of literature undoubtedly offers a window of opportunity for authors to address children in a new way, with the aim of providing them with a rigorous scientific preparation to face the challenges of the new century and to keep pace with the third wave of civilisation, the Information Age, now that the world has surpassed the second wave, the Industrial Age[xliii].

The update has disrupted the process of authentic cultural discourse for Arab children, with its conflicts and harmonies with the concerns of heritage and the challenges of the age, especially the rapid advancement of technology, the communication revolution, the spread of scientific culture, the information explosion, and the pressing question now is: how do we keep up with the rapid development of the digital technology era? The pressure of this development is increasing in the fields of education and its connection to enlightenment, reason and ethics on the one hand, and the spread of deception, falsification, deceptive communication ideology and the flattening of knowledge on the other.

This widespread use of digital technology often leads to harsh educational results for children and young people, characterised by superficiality, speed, trivialisation and the indoctrination of stupidity, the neglect of critical thinking, the new algebra, the distortion of consciousness and the consumerism of knowledge, up to the disappearance of the moral and human dimension of existence as a whole, when words are replaced by images and then by numbers. This is above all an educational challenge[xliv].

Chapter Eight:

Criteria for creating knowledge for childrenFirst, it is based on a comprehensive strategy that is jointly formulated by the relevant parties:

A long-term strategy aimed at developing this industry by attracting knowledge industry centres of major global companies, conducting research and development, exporting products, establishing information service infrastructure and a communication network with the best global standards. This information development should be reflected in libraries and information centres by creating an environment that encourages the creation of knowledge aimed at children, qualifying human resources, promoting the use of information technology and adapting technology to local needs.

The main features of this strategy are[xlv]:

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- Giving greater importance to information awareness and establishing an information policy for each Arab country, in addition to establishing an Arab organisation for knowledge creation. Increasing investment in the information economy, accelerating the introduction of computer technology into formal education systems, and developing scientific plans for the development, production and optimal investment of knowledge targeted at children.

Second, work within an integrated, coherent and balanced system:

The overall goal of cognitive development is clear and defined, which is to provide the child with the opportunity to experience childhood, enjoy its blessings and pleasures, develop their personality and adapt to their society[xlvi]. This education believes in the child's freedom of thought and choice, in his or her freedom to open up to the cultures of different nations and in his or her independent perception, in order to achieve a complete and balanced personality.

The growth of certain values without others causes a disruption in the child's value system and leads to conflicts that can cause neurological disorders[xlvii].

These cognitive industries should educate the child in creativity and help him develop his human qualities so that he becomes more complete and prepared for achievement[xlviii]. They should provide social guarantees that facilitate the full expression of their talents. In addition, this value system should encourage their full participation in the life of their community and country, encouraging them to contribute to its positive development and helping them to interact voluntarily with their environment, influencing it and being influenced by it, adapting to it and becoming adaptable to it.

Thirdly, the coverage of several stages of childhood and their different categories:

Children do not form a homogeneous audience; rather, they differ in terms of their developmental stages. The values of children in early childhood, their habits, their ways of expressing their emotions, their means of satisfying their needs and their language skills are all different from those of children in later stages of childhood. This requires a balance between two dimensions[xlix]:

First dimension: Among the three age stages in terms of cognitive products, the first and second stages in particular, due to their richness on the one hand and the limitations they face in the present on the other. Each stage should provide children with appropriate cognitive resources in forms they can engage with. Gender should also be taken into account by providing materials suitable for boys and girls, in addition to shared knowledge between them.

Second dimension: Between literary and scientific content, i.e. it should be diverse rather than one-sided, encompassing practical, literary, artistic, historical knowledge, values, skills and abilities.

Fourthly, it should be geared to intellectual abilities and meet the psychological needs of childhood:

Careful consideration of the rights and multiple needs of children is essential, including their intellectual, social, emotional and physical growth, their need for a sense of community and cooperation, and their need for training in judgement, criticism, analysis, synthesis and

expression. These are fundamental aspects that should be included in the content of education for children in general.

Fifth: Meeting needs and aligning with identity standards:

Building the child's identity is the cornerstone in the process of economic, social and political development of societies that seek the well-being, progress and prosperity of their children. This requires constant attention and in-depth study.

Moreover, the role of directed knowledge for children is not limited to the formation of identity, but extends to the formation of the whole personality, determining behaviour and orientations, through the processes of growth in its various dimensions: emotional, cognitive, social, behavioural and aesthetic[l].

It is not only a process of intellectual progress and sensory refinement, but also of preparing for the future and shaping it through the generations of tomorrow. "The future depends on the process of upbringing, the level of care given to it, the fundamental orientations taken, and therefore it is not an exaggeration to say that the progress of society is linked to the importance given to childhood, how it is treated and how it is prepared"[li].

Sixth: Focus on the development of intellectual and artistic skills:

Those involved in this industry strive for diversity that includes different types of skills, including manual, physical, artistic and intellectual skills. These skills are taught in a simple and hands-on experimental way, allowing the child to learn by doing and encouraging independence, experimentation, trial and error and patience. It typically consists of three parts: an introduction that explains the scientific theory or concept to the child; the tools used, which should be simple, safe and easily accessible from the child's environment; and the working method, including detailed steps of implementation that the child can understand without adult intervention or guidance. The aim is to establish principles and clarify scientific theories through practical applications.

Seventh: Invest in the gifts of the technological age:

Today, the power of knowledge based on the development of technology is considered one of the most important forces of our time, perhaps even more important than traditional wealth or weapons. Questions arise about the real connection of Arab children with this information and scientific knowledge, such as the use of computers in education or cultural stimulation and its derivatives, including the integration of computers in educational curricula, or the introduction of computer education and its use in the cultural and daily activities of Arab children. Therefore, the development of the cultural awareness of Arab children requires an assessment of the reality of scientific, technological and information knowledge in the education and training of children, paving the way for the development of this reality to connect Arab children to the realm of scientific knowledge and information technology[lii].

Eighth: Rely on partnerships between different specialised sectors:

Depending on the type of knowledge to be produced, whether it is educational, skills-based or entertainment-oriented, experts in the field will be consulted, along with specialists in

technology, industrial engineering and those with expertise in economic matters such as feasibility studies, financing and marketing. The combined efforts of all these stakeholders, within a sound strategic framework, are capable of creating knowledge products that are highly useful, impactful and widely disseminated, contributing to sustainable development and economic gains.

In addition to the above, there are other equally important criteria for developing knowledge for children, including[liii]:

- Establish and accompany it with rigorous scientific research.

Arab intellectual output in this field is very limited, as evidenced by the low percentage of published books and the heavy reliance on foreign sources of information.

- The pursuit of deep and focused knowledge, away from superficiality.

- Emphasis on institutional work rather than individual efforts.Ninth: The reality of knowledge production for children:

An examination of the current state of knowledge production for children in Arab countries shows that it remains within the framework of overall knowledge production and development. This can be attributed to a fundamental consideration, which is that achieving development in any field requires an interconnected entity with a clear vision, sound standards and in-depth planning. This planning, in turn, must meet the conditions related to diagnosing and analysing the current situation, identifying needs, setting desired goals, organising and arranging activities into practical plans, and then implementing and monitoring them at different stages and types. If successful, such comprehensive planning can benefit different sectors and all segments of society.

Ninth: A careful examination of the reality of knowledge production for children in Arab countries leads to the following observations:

- It is based on individual or regional initiatives.

- It lacks intellectual protection (intellectual security) and is dominated by imported products.

- Traditional media (books, schools) are still dominant.

- There is a weakness in the production of child-oriented software, despite the high demand for such materials.

- It focuses more on knowledge and mental content at the expense of skill development and computer science.- Some of its products conflict with identity standards.

- There is no observatory responsible for evaluation and conformity.

- Partnerships between relevant parties are rare.

- There is a lack of statistical studies, legal protection and a plethora of legislative texts.

- There is a gap between scientific research and practice on the ground.

- There is a lack of incentives for creative initiatives.

- It deviates from global indicators of the knowledge economy, such as innovation and competitiveness.

- Insufficient expenditure and financial support for existing efforts.

- There are fluctuations and instability in curriculum development.

- The private sector is reluctant to take risks in such projects as there is no guarantee of profitability.

Conclusion: In light of the above, and with the aim of promoting the knowledge industry for children in various Arab countries, those responsible for child care must seriously consider the following suggestions and recommendations:

- Operate within a comprehensive strategy that is collectively constructed and that focuses on building a child's comprehensive and balanced development. This is because underdevelopment is mainly due to a lack of policy and vision for the future, weak organisational structures, regional disparities and lack of sharing of resources.

- Develop the education system in terms of curricula and media, and embrace digitalisation while being mindful of its vulnerabilities. This includes promoting reading initiatives and striving to increase literacy rates, as it is the key to knowledge production, and investing in practical projects.

- Establish national observatories responsible for monitoring the quality, innovation and coherence of knowledge production for children, as well as screening imported products for this category.

- Support serious research and studies that focus on improving knowledge production for children, and encourage the translation of leading knowledge industries in this field.

- Rationalise efforts, coordinate initiatives and build partnerships among stakeholders, especially in the area of digital knowledge[liv].

- Strengthen international cooperation and exchanges by attracting knowledge industry centres of major global companies, conducting research and development, and exporting products.

- Optimise investments in the digital software wave and the automation of Arabic language processing, as they are pillars of Arab unity in terms of child-oriented content.

- Focus content industry applications on educational, media, cultural and entertainment software.

- Develop libraries, especially national libraries, in cooperation with other libraries and publishers, by providing valuable information through electronic archiving systems accessible to researchers, in order to access as many sources of knowledge as possible at low cost, improve the quality of services provided and coordinate with other content providers.

- Accelerate the establishment of multiple information facilities, such as information centres, statistics, documentation, archives, scientific research and translation centres, dealing with

childhood-related information, in order to collect, organise and make it accessible to individuals and institutions through a common information portal, with the aim of contributing to the implementation of desired industrial programmes.

- Setting up working teams of researchers and specialists to diagnose the current situation of scientific and technological knowledge production for children and to develop procedural steps, including

- Database of human resources in scientific and technological fields related to the industry, made available electronically to the beneficiaries.- Regulations and Legislation Database: to build a comprehensive information database of laws, regulations and standards needed for the development of the child-oriented knowledge production industry, and to facilitate access to them through the use of information technology.

- Industrial and commercial information database: to create a database containing information on projects, used goods, production, transport, distribution and consumption.

- Intellectual production database: to be implemented by national libraries with the support of specialised scientific bodies, with the aim of categorising and identifying articles and other forms of intellectual production published in a country and in the fields of pure and applied sciences, and exploring the possibility of digitising them to make the full texts accessible through networks.

Reference

[i]- Author of the Book: Mohammad Awad:"Contemporary Trends in Knowledge Management",Published in Dar Safaa for Publishing and Distribution,Oman(2008,p: 279)

[ii]- Mohammed Khedri, "Requirements for the Transformation Towards the Knowledge Economy", University of Aleppo, Syria, 2014, p. 12.

[iii]- Mohammad ibn Ya'qub al-Firuzabadi, "Al-Qamus al-Muhit" (The Comprehensive Dictionary), Message Foundation for Printing, Publishing and Distribution, Beirut, Lebanon, 2005, p. 595.

[iv]- Sabreen Zaghloul, "Lectures on the Theory of Knowledge", Dar Al-Masriah Al-Lubnaniah, Cairo, 2012, p. 12.

[v]- Mouyad Saeed Al-Salem, "Organisation Management - A Study in Thought Development Over a Hundred Years", Dar Al-Kitab Al-Hadith, Jordan, 2002, p. 184.

[vi]- Mohammed Khedri, "Requirements for the Transformation Towards the Knowledge Economy", p. 17.

[vii]- See: Ahmed Saeed Al-Mansouri, "Administrative Delegation Issues", Master's thesis in Public Administration, Cairo University, Faculty of Economics and Political Science, 1997, p. 166.

[viii]- Abdul Khaliq Farouk, "Knowledge Economy in the Arab World: Problems and Prospects", Office of the Deputy Prime Minister for Media Affairs, United Arab Emirates, 2005, p. 26.

[ix]- Hashmat Qasim, "Information Economics", Management Library, Riyadh, 2010, pp. 29, 30.

[x]- Samia Aziz, "Lectures on the Knowledge Society and Economy", University of Guelma, Ouargla, 2015, pp. 10, 11.

[xi]- Mohammed Khedri, "Requirements for the transformation towards the knowledge economy", p. 22.

[xii]- Zaki Hussein Al-Maliki; Mjbel Lazim Al-Wardi, "Information and Society", Al-Waraq Publishing and Distribution Foundation, Oman, p. 177.

[xiii]- The same reference, p. 184.

xiv- Mutawalli, Nareman Ismail, "Information Economics: A Study of Theoretical Foundations and Practical Applications on Egypt and Some Other Countries", Academic Library, Cairo, 1995, p. 50.

xv- Zaki Hussein Al-Maliki; Mjbel Lazim Al-Wardi, "Information and Society", p. 177.

xvi- The same reference, p. 17.

xvii- Fathi Abdel Hadi Mohammed, "Foundations of the Information Society and the Pillars of Arab Strategy in a Changing World", Arab Studies in Libraries and Information Science, Issue 3, Dar Al-Arabia for Publishing, Cairo, 1999, p. 130.

xviii- Rubin, Machlup, "The Size and Scope of the Information Economy", papers presented at the State of the Art Institute, Special Libraries Association, Washington, 1990, pp. 1-6.

xix- Mohammed Khedri, "Requirements for the Transformation Towards the Knowledge Economy", p. 19.

xx- The same reference, p. 21.

xxi- Zaki Hussein Al-Maliki; Mjbel Lazim Al-Wardi, "Information and Society", p. 285.

xxii- Abu Bakr Mahmoud Al-Hawsh, "Arabs Facing the Challenges of the Information Society (Article)", Arab Libraries and Information Journal, Issue 2, Dhu al-Hijjah 1419 AH, pp. 57-58.

xxiii- Buhon Ali Saeed, "Creating Children's Culture (Lecture)", Expert Seminar: The role of the knowledge industry in sustainable development, Algerian National Library, Forum for Reading Pioneers, Algeria, 5 May 2017, p. 11.

xxiv- The same reference, p. 12.

xxv- Mohammed Khedri, "Requirements for the transformation towards the knowledge economy", p. 23.

xxvi- Fathi Abdel Hadi Mohammed, "Foundations of the Information Society and the Pillars of Arab Strategy in a Changing World", p. 129.

xxvii- Samia Aziz, "Lectures on the Knowledge Society and Economy," pp. 7-8.

xxviii- Buhon Ali Saeed, "Children's Magazines and Their Role in Cultural Upbringing", Dar Al-Ayam, Jordan, 2017, p. 58.

xxix- See: Hadi Naaman Al-Hayati, "Children's Culture", World of Knowledge, National Council for Culture, Arts and Letters, Kuwait, Issue 123, March 1988, pp. 100-104.

xxx- Buhon Ali Saeed, "Cultural Upbringing of Children (Article)", Proceedings of the "Child Culture in Algeria" Forum, University of Boumerdès, November 2014, p. 09.

xxxi- The same reference, p. 94.

xxxii- Group of Writers, "Arab Children's Literature", General Union of Arab Writers and Authors, Amman, Jordan, (n.d.), p. 123.

xxxiii- See: Abdullah Abu Hayf, "Development of Arab Children's Culture", Union of Arab Writers, Damascus, 2001, pp. 23-24.

xxxiv- Ahmed Fadl Shebloul, "Child Culture in the Era of Technology", Culture and Science Seminar, Dubai, 6 May 2003, p. 45.

xxxv- Zakia Al-Hurr, "The Arab Child and the Culture of Society", Dar Al-Hadatha, Beirut, 1984, p. 30.

xxxvi- See: Al-Aid Jalouli, "Towards Interactive Literature for Children (Article)", Al-Athar Magazine, University of Ouargla, Algeria, Issue 10, March 2011, p. 245.

xxxvii- See: Abdullah Abu Hayf, "Development of Arab Children's Culture", pp. 70-71.

xxxviii- The same reference, p. 71.

xxxix- The same reference, p. 71.

xl- The same reference, p. 72.

xli- The same reference, p. 72.

xlii- Jalouli Al-Aid, "Towards Interactive Literature for Children," p. 237.

xliii- The same reference, p. 237.

xliv- See: Abdullah Abu Hayf, "Development of Arab Children's Culture", p. 254.

xlv- See: Zaki Hussein Al-Maliki; Mjbel Lazim Al-Wardi, "Information and Society", pp. 293-295.

xlvi- See: Samar Ruhi Al-Faisal, "Children's Literature and Their Culture", Arab Writers Union, Damascus, 1998, p. 121.

xlvii- The same reference, p. 19.

xlviii- See: Magdi Wahba and Kamel Al-Muhannad, "Dictionary of Arabic Terms in Language and Literature", Lebanon Library, Beirut, 2nd edition, 1984, p. 98.

xlix- See: Samar Ruhi Al-Faisal, "Children's Literature and Its Culture", p. 124.

l- See: Faisal Abbas, "Child Psychology, Psychological and Emotional Development of the Child," Arab Thought Publishing House, Beirut, 1997, p. 55.

li- See: Mariam Salim, "Children's Literature and Their Culture," Arab Renaissance House, Beirut, Lebanon, 2001, p. 25.

lii- See: Atef Adly Al-Abd and Abdel-Tawab Youssef, "The Arab Child, Media, and Cultural Institutions," Arab Council for Childhood and Development, Cairo, 1988, p. 435.

liii- See: Buhon Ali Saeed, "Manufacturing Children's Culture (Lecture)," Experts Seminar: The Role of Knowledge Industry in Sustainable Development, National Library of Algeria, Forum for Reading Pioneers, Algeria, May 5, 2017, p. 7.

liv- See.Al-Barashdiyah, the daughter of Abdullah, Al-Saqqari Muhammad bin Nasser, participation in knowledge among industrial institutions in the Sultanate of Oman (article), Journal of Arts and Social Sciences, Sultan Qaboos University, 2010, p. 121."