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Comparative studies "Effect of educational policy on artificial intelligence in the countries of America, Singapore and Iran

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ABSTRACT

Artificial intelligence under the paradigm of the fourth industrial revolution has become one of the fateful trends of societies in such a way that university education methods, as one of the most important social constructions, have influenced the advancement of technology. Undoubtedly, educational policy has changed the speed, depth and extent of artificial intelligence technology

Artificial intelligence is one of the most important emerging technologies, which today has caused huge changes in all areas, including educational policymaking, at a high speed. Among the important applications of artificial intelligence in educational policymaking, we can mention the prioritization of issues based on the real needs and demands of the society and the diagnosis of problems based on the existing conditions, which will lead to the design and formulation of macro-educational policies.

The use of methods such as neural networks, natural language processing, and machine learning algorithms makes the process of policy making more intelligent and dynamic, and as a result, the role of policymakers in the application of this technology becomes more efficient. Today, new technologies such as artificial intelligence, sensor networks, blockchain are changing aspects of everyday life.

The study of artificial intelligence began in the 1940s and in recent years it has overshadowed the government departments of a large number of countries, of which e-government is one of the examples.

One of the topics that is analyzed in the discussion of educational policy is the effect of content on artificial intelligence. In other words, understanding the complexities of decision-making processes as well as the importance of the actors involved in such processes, has undoubtedly influenced artificial intelligence and is influenced by it.

This article is designed as a review and library method and it examines the educational policies of Iran, America and Singapore in the field of artificial intelligence with an exploratory view.

Introduction

Higher education and its operational level, i.e. educational policy-making, is always one of the fields that have seen many challenges and issues in front of it. Rapid social and cultural changes such as the internationalization of higher education, the marketization of higher education, the role of higher education in national development on the one hand, and the ever-increasing demands of higher education applicants, on the other hand, have turned this field into something that requires deep studies. . The problem in this research is the comparative studies of educational policies in the countries in question, which continue to exist in the current conditions of the age of knowledge and information.

One of the important challenges that worries the trustees is the relationship between educational policy and artificial intelligence, which is considered the most important concern in its own right, in this article, the dimensions, components and important themes of educational policy and its relationship with intelligence Artificial has been subjected to comparative research. Educational policy refers to raising the level of people's operational skills, providing expert forces, developing the culture of education, strengthening creativity and creating the spirit of research. Emerging technologies such as artificial intelligence will have a transformative, decisive and potential impact on strategic competition and more broadly on global politics. (Johnson, 2019)

Theoretical foundations and research background

1- Artificial intelligence and its subcategory technologies

John McCarthy was the first to introduce the term artificial intelligence and defined artificial intelligence as the science and engineering of making intelligent machines. Although artificial intelligence as a term has been explored for decades, no universal definition is yet available. (Frank et al., 2019)

Definitions	References
Artificial intelligence is based on the assumption that basically all aspects of learning or other features of intelligence can be described so precisely that a device can be built to simulate it.	(McCarthy et al. 2016)
Artificial intelligence is a field of computer science that is dedicated to creating machines and computing systems that perform operations similar to human learning and decision making.	(Castro and New,2016)
Artificial intelligence can be defined as "the capacity of a machine to perform cognitive functions related to the human mind, such as perception, reasoning, learning, interacting with the environment, solving problems and even being creative."	(Manyika et al, 2017)
Artificial intelligence is a branch of computer science that studies the computational requirements for tasks such as perception, reasoning, and learning to enable the development of systems that perform this capability.	(Russell and Norvig, 2016)
"[...]"programs that are able to learn, adapt, be creative and solve problems.	(Rosa et al 2016)
An artificial intelligence system is capable of performing high-level operations. Artificial intelligence can act close to, at the same level or beyond the capabilities of a human. This concept is further divided into weak and strong artificial intelligence.	(Thierer et al. 2017)
In simple words, artificial intelligence can be defined as machines or computers that imitate the cognitive functions that humans associate with their minds, such as learning and problem solving.	(Schalkoff 1990)

2. Researches in the field of artificial intelligence

Findings	subject	reference	Row
The important challenges of artificial intelligence are problem diagnosis, issues related to data, lack of validity, stability and trustworthiness, confidentiality, .controllability and predictability, etc	An introduction to the challenges of artificial intelligence	Saghiri, t.al,2022	1
The important challenges of artificial intelligence in the education sector: are challenges related to research in the field of education, challenges related to policy-making, and challenges related to the connection of educational institutions and .universities with the industry	The challenges of applying artificial intelligence in the education sector	Luan, et.al, 2020	2
Decrease in employment, increase in decision-making errors, negative behavioural changes in society, threatening military systems, democracy and economic .challenges	Threats caused by the unbridled growth of artificial intelligence	Pietikäinen, Silvén. 2021	3
Different dimensions of security, accuracy and validity of data, system reliability and predictive analysis of the relationship between artificial intelligence and .cyberspace	Different dimensions of security, accuracy and validity of data, system reliability and predictive analysis of the relationship between artificial intelligence .and cyberspace	Soni, 2020	4
Decrease in employment, increase in decision-making errors, negative behavioral changes in society, threatening military systems, democracy and economic .challenges	Responsible Artificial Intelligence: Requirements and Challenges	Ghallab, 2019	5

3- Educational policy making

In almost every experience in life from the cradle to the grave, educational policy is considered the most important pillar. Educational policy is a process that guides the important actions of governments and provides accountability between the government and citizens.

(Frank, et al.2019)

The idea of modeling the educational policy process in terms of stages was first proposed by Laswell, which includes seven stages.

The seven steps include identifying the problem, setting the agenda, formulating the policy, making decisions, implementing, evaluating and concluding the service.

)Howlett, M., Ramesh, M., & Perl, A. 2009(

4- Educational policy making and artificial intelligence

Today, artificial intelligence has become a major priority in the agenda of various countries around the world. Artificial intelligence may lead to transformative applications in a wide range of industrial, intellectual, and social applications that go far beyond those created by the previous industrial revolution. Artificial intelligence helps humans in making decisions, understanding, extracting and linking complex big data. (Valle-Cruz, D. et al. 2020)

One of the fields that has a lot of interest to interact and connect with artificial intelligence is

educational policy. (Craglia, M., Hradec, J., & Troussard, X. 2020)

Influential research in the field of educational policy and artificial intelligence

Objective and findings	The title of the research	Author/year	Row
Presenting a research agenda for the use of intelligence Artificial in public governance, as well Investigating the effective implementation of government strategies The use of artificial intelligence in the public sector	Implications for the use of artificial intelligence in public governance: A systematic literature review and research agenda	Anneke Zuiderwijk a, Yu-Che Chen, Fadi Salem (2021)	1
This research brings together the insights of a group of leading experts to highlight the important opportunities, realistic assessment, impact, challenges, and potential research agenda arising from the rapid emergence of artificial intelligence in business and management, government, the public sector, and science and technology. Provide significant and timely insight into AI technology and its impact on the future of industry and society .at large	Artificial Intelligence: Multidisciplinary Perspectives on Challenges, Opportunities, and Agendas for Research, Implementation, and Policymaking	Yogesh K. Dwivedi et al. (2021	2
Providing an in-depth review and analysis of the policy and management literature on the role of big data and artificial intelligence in the public sector, as well as proposing a future .research agenda	Big Data and Artificial Intelligence Transforming Government: So, What's Next for ?Research	Irina Pencheva, Marc Esteve, Slava Jenkin Mikhaylov (2020)	3
An overview of how to use artificial intelligence in different government departments	Artificial intelligence and effective governance: review, critique and research agenda	Gagan Deep Sharma, Anshita Yadav, Ritika Chopra (2020)	4
Investigating the current trend of artificial intelligence in the public sector and identifying future implementation areas for this trend	An overview of artificial intelligence in government and its potential from a public policy perspective	David Valle-Cruz Edgar A. Ruvalcaba-Gomez Rodrigo Sandoval-Almazan J. Ignacio Criado (2019)	5

This conceptual study discusses the use of artificial intelligence in public management structures in relation to their risks and side .effects	An integrated artificial intelligence framework for public management	Bernd W. Wirtz & Wilhelm M. Müller (2019)	6
A report on tackling the challenges of poor quality government service delivery in China with the help of artificial intelligence	Intelligent Human Resource Services: An Artificial Intelligence Platform for Improving Government Service Delivery	Yongqing Zheng, Han Yu, Lizhen Cui, Chunyan Miao, Cyril Leung, Qiang Yang (2018)	7
Government managers are not prepared for the challenges they have to face to deal with this non-increasing and exponential change. Many existing government structures and processes that have evolved over the last few centuries will probably become irrelevant in the near future. This article examines .some of these challenges	Public management challenges in the world of artificial intelligence and robots	P. K. Agarwal (2018)	8
This article has a broad perspective on big data trends, which is rooted in the literature of public management and public policy, and provides examples from different policy areas, such as health, education, climate .change, and disaster management	Big data for policy making: a fleeting or rapid trend	Sarah Giest (2017)	9
Providing a different policy framework for AI technologies and ensuring that innovation continues uninterrupted and that problems, if they arise, can be .fixed later	Artificial intelligence and public policy	Adam Thierer, Andrea Castillo O'Sullivan and Raymond Russell (2017)	10

Conceptual model

Effects of educational policy on artificial intelligence

The educational policy-making process includes policies, actions and functions that help the government institution in the field of education. The field of policymaking is important because educational policies and strategies largely determine the performance quality of educational institutions. The educational policy of a democratic society, with appropriate economic growth, seeks to strengthen committed citizens, globalism, world-building,

responsibility and participation. Educational policy-making includes four functional, structural, behavioral, and contextual areas, and without a doubt, artificial intelligence should not be neglected in this field, and in the four mentioned areas, the use of artificial intelligence and the world of virtual space is considered. takes Educational policies lead people to the global village, and the citizen-centered becomes a world-centered person. (Karimi and Enayati, 2019: 63)

Research method:

Re-examining the structures, processes and policies of higher education and the education system in the three countries of America, Iran and Singapore requires searching and collecting documents that are extremely difficult to access. On the other hand, the comparative study of documents requires a lot of time to reach desirable and important results. The current basic research was done using the library method and has a promotional scientific nature. This research has been done with the aim of creating a bridge between policymakers and computer science experts for progress in the emerging field of artificial intelligence. The purpose of this research is comparative studies that can reach positive results and establish the position of the small global village and interactions between civilizations one after the other.

To collect data, the necessary data has been obtained by referring to library sources, academic research and using the latest statistics and information on the Internet.

Comparative comparison of concepts, dimensions, components of educational policy on artificial intelligence in the countries of Iran, America and Singapore (Giroux, H. 2020)

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Singapore	America	Iran	content	Row
group oriented	individualist	individualist	Attention to individualism versus groupism	1
quality	quantity	quality	Quantitative versus qualitative	2
average	low	average	Low power distance vs. high power distance	3
risk averse	risk taker	risk averse	Risk taking versus risk aversion	4
Ruler of the environment in an almost dominant manner	Absolute ruler of the environment	Ruler of the environment in a relative manner	How to deal with the surrounding environment	5
Contemplative	futuristic	retrospect	Look at the time	6
a group	solo	solo	Look at the place	7
First priority	First priority	Secondary priority	Look at the activity	8
Positive attitude	Neutral attitude	Positive attitude	Look at human nature	9

Decentralized	Concentrated	Centralized and decentralized integration	Looking at collaborative decision making	10
monthly	Seasonally	Annually	Content update	11
Perpetual and continuous needs	Continuous and permanent needs	Basic and vital needs	Look at information technology	12
A combination of virtual and physical	A combination of virtual and physical	A combination of virtual and physical	Holding classes	13
It is an integral part of the components of life	It is one of the important dimensions of bio-social	It is acceptable as a common and customary matter	Development of social capital based on virtual space	14
Continuously	as always	sometimes	Attention to the ten skills to live	15
First priority	First priority	Second priority	Look at the economy	16
It is sometimes taken care of	Sometimes it is noticed	It is important	Looking at political development	17
moves upwards	It is average	It is extremely high	Coefficient of social cohesion	18
The percentage of realization is medium and high	The percentage of realization is medium and high	Low realization percentage	Smart teacher	19
It is achievable	It is achievable	It is achievable	Smart assistant	20
There is an access level for everyone	There is an access level for everyone	It is almost evenly distributed	Smart tool	21

Conclusion:

As you can see, the traditional world and the industrial age have passed and we are entering the post-industrial and post-modern era. A world that has brought the internet revolution, the digital revolution and the entrepreneurial revolution. Considering that artificial intelligence is considered as a main axis in the field of educational policies, in the future, traditional jobs will disappear from the scene of the times, and some businesses will re-engineer processes based on artificial intelligence. It is that new jobs are formed which are considered in biological, digital and physical fields. So that educational policy should move towards ultra-modern businesses. Otherwise, the outputs and achievements of such an educational system cannot provide tangible and intangible services and products in the field of global competition. In short, all countries without exception follow a universal model in education policy, but the important point is that in today's conditions, those who can create opportunities based on rich knowledge and communication tools are more successful. It will lead to the creation of more

wealth value, and even those who adopt the best decision-making methods in the field of content and structure, and give employees and leaders knowledge to the society, can own the future.

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