Empowering economic development: Integrating economic-related issues into secondary school curricula

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In today's rapidly evolving global economy, it is essential to equip young learners with the necessary skills and knowledge to thrive in the workforce and contribute to economic development. Education is a vital driver of human capital and development in countries, and the effectiveness of any educational system depends heavily on its curriculum. This article studies the pivotal role of the curriculum in shaping education and its contribution to economic development. We examined four components (objectives, content, teaching-learning methods, and evaluation) of secondary school curricula in G7 countries (Canada, France, Germany, Italy, Japan, UK, USA) and Iran to present a set of proposed concepts for the Iranian curriculum with a focus on economic features. A comparative strategy with four qualitative stages (description, interpretation, juxtaposition, comparison) was used. The proposed concepts are arranged in three layers: the first includes improvement of scientific skills; technical skills; and process skills. The second includes study of world history and geography, and other countries' languages and cultures. The third includes altruism for others, and health and environment. Our study serves as an introduction to the skills and abilities needed by Iranian students to compete in the real world. It also provides a concise outline of some of the essential competencies for tomorrow's society and workplaces.

Introduction

As a driver of nations and a crucial element of countries' human capital, education improves the skill sets of students and helps the economy benefit from skilled and qualified workers (WEF, 2016). According to the World Economic Forum (2016), education improves a country's economy because (1) it improves the skill set of people to handle existing and future tasks and careers; (2) it transfers the new and required knowledge to a successor generation, especially students in secondary schools (Barro & Lee, 2010); and (3) it should lead each country to create unique knowledge, technologies, etc.

The core of each educational system is its curriculum (Priestley & Philippou, 2019) and is a powerful lever for preparing and improving students' performance to have a successful future (OECD, 2020). As the curriculum embraces the overall learning experiences both inside and outside of the school, the curriculum of each society must adapt to the needs of that society (Kranthi, 2017). The term curriculum can be considered the result of the intersection of schools, government, and society (Wahlström, 2023). Some research has proven that the curriculum is conceptually challenging, and there is no single definition or general agreement about it (OECD, 2020). Although every country has its curriculum and approach for its students, almost all educators agree on objectives, content, methods, and evaluation as key elements of the curriculum (Toghyani Khorasgani et al., 2023). On the other hand, if the educational system of a country cannot equip students with sufficient

skills and qualifications, even if that country has many natural resources (such as Iran), its economy will not grow (Haseeb et al., 2021).

The economic recession due to the Covid-19 pandemic added urgency to the task which is accompanied by more unemployment and a rise in the need for workers with more advanced abilities. However, while most scholars stress the decreasing of school failure as a goal, Iran has showed little consistency in its policies and procedures to help low-performing disadvantaged schools and students. No changes have occurred to the curriculum except for conducting school in a virtual format instead of in person during the pandemic. As a result, there are still difficulties in determining the optimum sorts of policies and procedures to apply (Mahmoudi, 2023; Khojasteh et al., 2021; Mirarab et al., 2019).

A rich body of research shows that human capital and investment in education lead to a country's economic development (UNESCO, 2012; Woessmann, 2016; Hanushek et al., 2017; Bradley & Green, 2020). Knowledge of economic issues is accepted as one of the skills needed in daily life, and in this regard, educational institutions in some countries plan their educational programs in a way that, in addition to teaching basic and necessary skills such as reading and writing literacy, economic development for the future of those countries is achieved after the students finish their education (Klapper et al., 2015). According to IIASA (2008), most economically developed countries see secondary education as playing a major role in economic growth. Although there is a wealth of evidence showing the link between education and economic growth, there is little research on curriculum elements as a powerful lever to improve the economic future of a nation.

The purpose of the present study is to examine four elements (objectives, content, teaching-learning methods, and evaluation) of the formal curriculum in secondary schools in the Islamic Republic of Iran and 7 countries (Italy, France, Germany, Japan, Canada, UK, and the United States) with a particular focus on economic features, to propose concepts required for inclusion in the Iranian national high school curriculum based on economic development. Our research questions focused on:

1. How G7 countries dealt with the economic features and market needs in their secondary school curricula?
2. What new concepts should be included in the Iranian national secondary school curriculum to enable its students to compete better in international markets?

Method

This research embraces a qualitative approach. According to Aspers & Corte (2019), qualitative research aims to consider a fact in its natural environment, which leads to profound knowledge about the studied fact. Our study examined and compared the four elements (objectives, content, teaching-learning methods, evaluation) of the curriculum in G7 countries and Iran, focusing particularly on economic features, to propose needed concepts for the Iranian national secondary school curriculum. We used a comparative

strategy identified in the literature as *Brady's model* (description, interpretation, juxtaposition, comparison), for example by Asgari et al. (2019), although the origins of this identification are uncertain (Adick, 2018).

The three criteria for choosing G7 countries for this study were primarily their gross domestic product (GDP). According to World Bank data (2022), all 7 countries are among the top 10 countries by GDP ranking.

Table 1: Countries by GDP (current US$), year 2022

USA	UK	Japan	Italy	Germany	France	Canada	Iran
25.44 trillion	3.09 trillion	4.26 trillion	2.05 trillion	4.08 trillion	2.78 trillion	2.16 trillion	413.5 billion

Appendix 1 illustrates the procedure for obtaining these data from https://data.worldbank.org/

Secondly, access to the sources and documents of these countries (Appendix 2 shows the list of web addresses to access resources). Finally, the unemployment levels in these countries with intermediate education are shown in Table 2. According to the *International Standard Classification of Education 2011* (ISCED, 2011), intermediate education contains upper secondary and non-higher education.

Table 2: Unemployment with intermediate education

USA	UK	Japan	Italy	Germany	France	Canada	Iran
5%	4% (2019)	3% (2020)	8%	3%	8%	7%	10%

Notes: % of total labour force with intermediate education, 2022 (except UK, Japan).
Appendix 3 illustrates the procedure for obtaining these data from https://data.worldbank.org/

Four elements of objectives, content, teaching-learning methods, and evaluation were collected from the sources. Using *Brady's model* (Asgari et al. 2019; Adick, 2018), a descriptive comparative analysis was carried out. Four stages of description, interpretation, juxtaposition, and comparison are used to identify the economic-oriented elements in the studied countries. In the next step, after extracting economic-related components of the curriculum in G7 countries and Iran, these elements were put into a questionnaire and sent to a group of experts (5 men and 8 women) to calculate the agreement coefficient (Table 3). The Delphi model is utilised to collect the opinions of experts and gain consensus. The Delphi model was run for two rounds to gain consensus.

Table 3: Calculations of Kendall's coefficient of agreement for two rounds of Delphi

No of experts	Kendall's correlation coefficient	Significance level
13	0.909	0.001

The proposed concepts were then sent to some professors, postgraduate students of curriculum planning, and secondary school teachers (400 participants) to confirm their feasibility. All the collected responses (321) were positive, indicating that the proposed

concepts are related to economic development and can be taught in secondary school classrooms.

After extracting the required information from the sources, the obtained information was categorised and analysed based on *Brady's model*. In the first stage, description, the elements of objectives, content, teaching-learning methods, and evaluation were studied for all G7 countries with a focus on economic features. In the second stage, interpretation, the studied elements of the curriculum G7 countries were checked and interpreted. In the third stage, juxtaposition, the data related to the studied elements of the curriculum for each country came together so that similarities and differences could be easily compared in the next and final stage, comparison. Based on the data of the previous stage, data juxtaposition, the similarities and differences of objectives, content, teaching-learning methods, and evaluation of the curricula in the G7 countries were identified (Table 4), to propose needed concepts for Iran.

Table 4: Similarities and differences of objectives, content, teaching-learning methods and evaluation in the secondary schools of G7 countries
(focusing on economic development)

Similarities in objectives	Differences in objectives
Developing individual, physical, intellectual, and emotional abilities; Economic growth and development; Attention to human values and virtues; Strengthen self-confidence; Flourishing creativity and talents; Developing occupational skills and readiness to enter the labor market; Acquiring knowledge and social skills; Attention to freedom, cultural diversity.	Readiness to enter university; Set tasks and strengthen taking responsibility; Respect the work.
Similarities in content	Differences in content
History, mathematics, art, economy and geography; Hygiene and health; Familiarity with computers, information and communication technology; Occupation empowerment, job-related learning; Second or more foreign languages; Religion and morality; Education on environmental and resource protection.	Handicrafts; Local beliefs; Technical studies; Chemistry and physics; Internship in business or medical professions; Organised and accumulated knowledge, terms and information; Focused textbook, subject-oriented and in the form of separate courses.
Similarities in teaching-learning methods	Differences in teaching-learning methods
Working groups (teamwork) and cooperation between students; Encouraging participation and involvement in classroom tasks; Family cooperation and involvement with school programs; Providing collaborative techniques, training and familiarisation with the work environment practically; Offering extra-curricular practical activities; Providing an internship in an institution or company; improving basic work and life skills; Using the information and communication technologies and its tools.	Education through the fun and games of students in schools; holding the same training courses during compulsory service for all teachers; Creating opportunities in sync with each student's interests to promote learning motivation.

Similarities in evaluation	Differences in evaluation
Descriptive evaluation system, continuous evaluation, regular control and evaluation of educational activities by teachers and consultants, participation in academic aptitude tests and participation in national and international standard tests.	Evaluation of individual discipline, evaluation of perseverance, patience, patience and internal discipline of the student, mainly descriptive exams, existence of long exams to enter commercial or medical fields.

The four elements of the curriculum in secondary school according to its "Fundamental Reform Document of Education" are shown in Table 5.

Table 5: Elements (objectives, content, methods, evaluation)
of Iran's secondary curriculum

Curriculum element	Explanation of element
Objective	Flourishing human nature, realistic and appropriate to the ability and time and place conditions; Realisation of a pure and pleasant personal and social life (*hayat tayyaba*); Student's reasoning-centred educational course; Strengthening human virtues; Setting tasks according to the correct standards of communication; God-centred; Integrated intellectual, religious, practical and moral training of students; Understanding and ability to continuously improve personal and social situation.
Content	Accumulated knowledge, terms, information, facts, laws, principles, methods, concepts, generalisations, phenomena, problems related to each lesson; Collection of concepts; A coherent set of opportunities, basic learning experiences and competencies based on values and creating the background for the flourishing of the divine nature (in the form of connected and centred on the relationship with God); Similar textbook and subject-oriented for all secondary students; Emphasis on necessary knowledge to enter the university; Titles of content: Islamic wisdom and knowledge, Quran and Arabic, Persian language and literature, culture and art, health and physical education, work and technology, humanities and social studies, mathematics, experimental sciences, foreign languages, life skills and family foundation.
Method	37 weeks of training and exams from the first of October to the end of June; The average weekly working hours of secondary school in Iran is 50 hours; The time allocated to each session and the rest time between them is a total of 60 minutes, and the combination of two lessons is not allowed; The second secondary course has three branches: theoretical, technical, professional and associate; Counseling and educational guidance is mandatory in all academic courses; Intelligent use of new educational technologies and using them with a strengthening and complementary view; Interaction of students with teachers, peers and earning environments; Understand and interpret phenomena, events, and relationships in real situations; Understanding and making decisions about the issues that students face in different situations by observing the Islamic standard system; Creating opportunities to acquire needed competencies; Creating opportunities to link opinion and action, combine previous knowledge and experiences with new learning materials.

Evaluation	The basis for selection, passing academic courses and permission to higher grades for students; Maintaining the human dignity of students; Designing and implementing a result-oriented evaluation system; Grading system and GPA with a maximum score of 20; based on national curriculum to provide descriptive and judgmental information with quantitative and qualitative results; Continuous monitoring (diagnostic, formative and final).

Discussion

One of the primary tasks of any educational system in a country is to efficiently educate students with the necessary skills to enter the labour market after finishing school (Haskell & Jenkins, 2003). Since the curriculum is regarded as the foundation of every educational system (Priestley & Philippou, 2019), curriculum elements are key levers for making students ready for the present and future needs of society. Studying the curriculum of other countries and benefiting from their experiences and knowledge can help curriculum planners and educational policymakers make correct decisions and choose the right path. In the present study, the curriculum elements of 7 countries with high GDP were examined to understand how they dealt with the economic features and market needs in their secondary school curricula. The reviewed literature showed that there is not much emphasis on economic features and market needs in the elements of the curriculum in the Iranian secondary education system, as it is not an economically developed country (Mahmoudi, 2023; Khojasteh et al., 2021; Mirarab et al., 2019).

In this research, new concepts that needed to be considered for addition to the current concepts in the Iranian national secondary school curriculum to enable Iranian students to compete in international markets were identified in three layers (Figure 1).

Layer 3: Paying attention to moral virtues (altruism), health, and the environment, and looking ahead to the effects of these things on human societies		
Layer 2: Getting to know more about the history and geography of the world as well as the culture and language of other nations		
Layer 1: Improving the level of scientific, technical, and process skills	Scientific skills	Sciences
		Applied mathematics
	Technical skills	Technology literacy
		General profession
	Process skills	Problem-solving
		Systematic thinking

Figure 1: Proposed concepts for the Iranian secondary curriculum
with a particular focus on economic development

The first layer includes improving the level of three categories of essential skills, including scientific skills (applied mathematics and sciences), technical skills (general profession and technology literacy), and process skills (systematic thinking and problem-solving). The second layer includes getting to know the history and geography of the world as well as the language and culture of other countries. The third level includes paying attention to

moral virtues (altruism of fellow humans), health, environment, and looking ahead to the effects of these things on human societies. These three layers are explained in detail below.

Layer 1: Improving the level of scientific, technical, and process skills

A. Scientific skills: Applied mathematics and sciences

Almost all Iranian students complain about the lack of relevance of course subjects to the real world and the abstract nature of school subjects. Many topics seem abstract and cannot be applied or transferred to the workplace and society (Zinser & Poledink, 2005). It depends on the teacher's skills to make the connections explicitly or to arrange topics in a way enabling students to discover the connections and usefulness. Students should be able to answer this question: "Why should I learn this?". When students connect what they are learning to their potential occupations of interest, their drive to study improves. Ideally, courses should be taught in applied or practical settings, which emphasise connections between topics and real-world experience.

As a learning strategy, the REACT model contains five components, relating, experiencing, applying, cooperating, and transferring, to help students relate mathematics and science materials to everyday life and solve problems in real-world life (Crawford, 2001). This model begins with "relationship" or linking the new concepts with new real-life contexts, experiences, or problems. The next component is "experience", which means students' understanding and achievement through discovery and solving real problems. "Applying" is the third step, and this strategy enhances students' understanding through relevant meaningful activities that engage students in learning. Following this is "Cooperation," or learning by sharing, communicating, and working with others. Finally, "transferring" is the use of skills in a new situation or context that was not studied in class (Khatimah & Fatmah, 2021). The REACT strategy leads students to acquire skills needed to enter the real-world context and competitive market by learning to explore their knowledge and skills, defining the learning process as lifelong learning, improving communication skills, and solving new emergent problems (Musyadad & Avip, 2020). Therefore, for mathematics and sciences, a more effective learning approach, such as the REACT strategy, should be used in Iranian secondary schools.

B. Technical skills

General vocational skills include preparation for a profession, job or at least one career path (OECD, 2011). At the secondary school level, the goal is to provide students with the necessary skills and knowledge for a successful transition to both the market and university. Approximately two-thirds of jobs in the market require some form of secondary education, and almost all careers demand ongoing learning. Most American high schools offer students work-based learning opportunities for those who may seek employment directly after secondary school (OECD, 2011; Kis, 2011).

Future awareness indicates that many of the vocations and professions that today's students will pursue have not yet been created, as the current ones did not exist a decade ago. Therefore, the notion of preparing for a broad professional path—rather than a single career—may be the greatest method of educating today's students (Mann et al., 2020).

Therefore, instead of looking for a specific job that may be changed or eliminated by global developments (e.g., the banking industry, with the emergence of new technologies and cryptocurrencies), young people should gain a broad understanding of career paths and the labour market (Akkermans et al., 2021; Cole et al., 2014).

It is preferable for many pupils to achieve some early success before continuing. The concept of career paths-equipped students with the necessary professional skills and qualifications for postsecondary school, whether they choose to continue their education at higher levels or directly enter the labour market. Regardless of the selected option (some students may modify their choice later), students learn valuable skills that are transferable to a new position and prime them to move forward in any occupation (Van Rooij et al., 2017).

The rapid development of knowledge and the dominant role of technology in accelerating its development is guaranteed. According to Churchill (2020), it is essential to develop digital literacy in the 21st century. In a study, *A Nation at Risk*, the US recognised the need for technology literacy, particularly computer technology, to be included in the secondary school curriculum (National Commission on Excellence in Education, 1983, p. 26). Technology literacy is a concept that includes grasping the fundamental principles (design and functioning) behind various technologies, as well as comprehending their effects on both society and the environment. The positive impact of technology on the economy is broadly acknowledged. In 2009, the United Nations Educational, Scientific and Cultural Organization highlighted the importance of technology skills for entering the labor market. Moreover, the US in the *Partnership for 21st Century Skills* recognised technology skills as pivotal skills for effective participation in society and the workforce (Partnership for 21st Century Skills, 2010).

In an ever-advancing technological landscape, there is a concern that only a handful of individuals will grasp the intricate workings of complex systems, leaving the majority with the mere ability to switch devices on and off. The underlying argument is that everyone should possess the skills to effectively "use, manage, evaluate and understand technology" (ITEA, 2000, p. 1). In today's fast-paced technological world, students are taught a valuable lesson that the newest technology may not always be the most suitable option. They grasp the significance of selecting appropriate technology based on specific situations, rather than simply opting for what is trendy or popular.

Iranian educators should answer the call for technology skills by creating national standards as well as developing a curriculum in a way that technology literacy is included in secondary education. As technical skills are crucial for effective participation in the

competitive labour market, the full range of technology competencies should be included in national educational standards.

C. Process skills

Systems thinking is essential in poorer countries that use education as a key factor in reducing poverty. Systems thinking helps students feel comfortable with paradoxes and uncertainty. This leads students to see the whole, a holistic approach instead of the parts and patterns of isolated events. Unlike linear or mechanistic cause-and-effect systems, complex systems can involve many internal and external variables and interactions and often have temporally and spatially delayed consequences, hence it may be difficult to understand the connections. To facilitate adjustments and improvements, systems thinking employs a set of guidelines and instruments (Hynes et al., 2020).

Senge (1990) identified common patterns called "systemic archetypes" to help train people in systems thinking. For example, learning to detect delays in a system, when the impact of one variable on another variable is not immediately observed, helps to avoid rapid reaction while waiting for the desired outcome. Another example is caution about short-term solutions, which may have some benefits but can simply delay the inevitable problem because the root was not addressed. While short-term solutions may seem appealing and effective in addressing immediate issues within a particular system, it is important to consider their potential unintended negative consequences. These consequences can arise either in another part of the system or even at a later time. Therefore, it is crucial to carefully evaluate the long-term impact of any solution before implementing it, ensuring holistic and sustainable outcomes for the entire system.

Students may not naturally grasp this way of thinking, which is why it is crucial to introduce it through a variety of engaging methods such as problem-solving, real-life events, and case studies. To understand a system, students can create a diagram of its components and interactions. The diagram may look like an iceberg, for example, starting with the visible part of actual events (the small part) and reaching the lower parts as hidden conditions and behaviours (the large part). A more complex system may require causal loops in two or three stages to detect its patterns. By incorporating case studies into their learning process, students can analyse systems to identify the root causes of problems and then propose various solutions to improve the system. Young individuals have the incredible ability to constantly question established theories, delve into assumptions, and scrutinise generalisations that are often made about specific countries or cultures.

Problem-solving skills are a subset of systems thinking but can be applied more broadly. Problem-solving should be a regular and orderly process that usually follows a step-by-step procedure such as analysis, design, development, implementation, and evaluation. Students quickly learn that there are often many possible solutions to a problem, each with different benefits, costs, impacts, etc., so students learn to use appropriate strategies to find solutions to the problems (Dwivedi & Srivastava, 2021). This process also develops related skills such as communication (listening, negotiation) and teamwork skills

(valuing different perspectives). According to Rossman (1993), by using problem-solving skills, students should learn how to face challenges and have an active role in dealing with problems or events.

Computer simulations have recently been used as a tool to solve a problem, possibly increasing its complexity. Simulated problems allow students to change the pace of action, isolate or eliminate variables, and reverse decisions—all in a safe environment so that the effects of each variable can be studied. In educational settings, we can include non-final answers or need for improvement as opposed to the fixed "answers" at the end of the book. In fact, the learning process is more important than solving specific problems, which leads to competence and a sense of comfort in facing problems or events that at first seem unsolvable or challenging (Ferreira & Trudel, 2012; Ezeddine et al., 2022).

Process skills are useful for almost every job and profession. A course in "critical thinking" immerses students in systems thinking and problem solving and can be implemented in secondary school. Therefore, the curriculum should be planned in a way that supports students in acquiring systems thinking and problem-solving skills, and applying them in real-life situations.

Layer 2: Getting to know more about the history and geography of the world as well as the language and culture of other countries

A. World history and geography

Studies of world history and geography embrace knowledge of the world and historical timelines, comprehending civilisations, and global migration. Ideally, this course would also include political dynasties and wars and the history of art and science. The current generation grew up in school with computers and digital media, not realising that these technologies are relatively new inventions. On a bigger scale, the three living generations have experienced industry and automation, not realising that historically these are relatively recent phenomena, and that humankind has survived for thousands of years without them. Studying geography and history can help to understand the evolution of civilisations. These subjects need to be covered in secondary school courses. The teacher is aware of many cultures and enjoys teaching globally (Ontario Ministry of Education, 2004; Barbier, 2015).

Past events have displaced families and groups of people and changed regions. Such events have also created new systems of government that have endured for generations after their inception. All these affect every person alive today. For example, the great economic recessions in the world, which left many people worldwide unemployed and countless families homeless, caused governments to learn how to help and support their citizens. This effort led to the creation of a variety of insurance systems to cover almost all residents, as well as government support programs in times of emergency.

History is based on a list of chronological events. When studying the changes in a culture or country, one learns what key events contributed to this and why they were so important. Therefore, they understand what is important to a culture and country and what actions are needed to bring about change. These changes can include a wide range, from changing the attitude of the business environment to continuing to compete in a specific field to larger changes such as changing values and distrust of citizens toward the policies of a government (Harari, 2022).

The challenges around the world including those related to energy, food security, migration, poverty, urban planning, climate change, and natural disasters, are increasing (Favier & van der Schee, 2014). These challenges exist at different range of sizes from local to global, are divided between natural and human systems, and include a number of interrelated factors that are dynamically changing. Although difficult to comprehend, forecast, and overcome, these challenges are crucial to our future.

One of the primary aims of teaching geography in secondary schools is to provide students with the skills necessary to address the difficulties they see or read about in a more comprehensive knowledge (Committee for Economic Development, 2006). Students must learn to reason about and make judgments about solutions to these challenges so that they are capable of making wise decisions in their daily lives and future careers. A growing number of educators around the world are convinced that the ability to think about these issues is the key to developing these competencies, and teaching geography can help develop spatial thinking (Kerski, 2008; Lee & Bednarz, 2009).

Spatial thinking refers to the knowledge, skills, and mental habits related to the use of spatial concepts, spatial representation tools, and spatial reasoning processes (Bednarz & van der Schee, 2006). Committee on Support for Thinking Spatially (2005) discussed "ways to incorporate spatial thinking into the K–12 curriculum" (p. 94), recommending that "instruction should be infused across and throughout the curriculum ... instruction should create skills that promote a lifelong interest in spatial thinking." (p. 109). Futhermore, Huynh and Sharpe (2013) argued that spatial thinking is the core of the theoretical and practical underpinnings of geography.

B. Language and culture

Learning the language and culture of another country, ideally from a different continent, is another important aspect of the curriculum (Sadr et al., 2022). Students learn that every culture has challenges, that there is more than one way to overcome any challenges, and that there is no universal consensus ('silver bullet') on how to face similar challenges. Studying about another nation enables students to transcend egocentric and ethnocentric viewpoints. This prepares students to "compete" in global markets. In secondary school, students must show "global literacy" (Committee for Economic Development, 2006, p. 26), which means proficiency in at least a foreign language and knowledge of global issues, such as history, geography, economic development, cultures and poverty.

Schools may have to provide teachers with professional development opportunities to add an international perspective to all the subjects they teach. Teachers should include the topic of internationalisation in their preparation programs (Roberts, 2007). Governments can integrate international content into secondary schools' curricula. Schools can also use innovative technologies like immersion programs and simulations so that students can connect with other nations. Leaders in politics, business, education, and the media must emphasise the importance of global literacy (Committee for Economic Development, 2006). Business leaders and educators in Iran should do their best to identify the required knowledge and skills to actively participate in the global market and business, as well as step up their efforts to help curriculum improvement and promote student exchange, arts and culture.

In general, the study of geography and history assists students in becoming responsible and contributing members of today's complex society, which is marked by sophisticated and fast economic, technological, social, and political change.

Layer 3. Paying attention to moral virtues (altruism), health, and the environment and looking ahead to the effects of these matters on human societies

A. Moral virtues and human values (altruism)

One of the few cross-cultural notions is altruism. This concept is commonly interpreted to mean an interest in others' welfare and is frequently taught to students through service-learning initiatives in their communities. In addition, altruism for the planet ('Earth altruism') means positive attention to all communities, species, and ecosystems (Österblom & Paasche, 2021). Third, people should feel responsibility and sacrifice toward future generations, which will definitely be affected by current decisions. It is an extension of the 'Golden Rule' (Neusner & Chilton, 2008), which states that people should treat others as they would like themselves to be treated (morality and human virtue), a version of which appears in many religions and philosophies. This does not imply that, in order to receive good treatment, one must also give good treatment to others (a conditional statement). Instead, it implies that how people treat others, which is altruistic, is a reflection of how they desire to be treated.

Although there may not be consensus on the teaching of values and ethics in all districts and schools, altruism has the potential to go beyond debates about what should be taught. Students need to be socialised by teachers and adult role-playing, to develop the cognitive ability to understand others' points of view.

Students should have the chance in the classroom to interact with one another, offer assistance to one another, discuss and write about the actions and moral quandaries of fictional characters, and recognise their own and others' feelings. According to researchers, it is possible to develop values by showing how positive behaviour improves relationships and solves group problems (Robinson & Curry, 2005). Higher education

usually focuses on extrinsic values, such as career development, rather than building students' personalities, but secondary school curricula can provide a combination of both (Birnik & Billsberry, 2007).

Altruism for the Earth is a concept that becomes very important when we realise that - on a global scale - all people use the same air and water. Earth is the origin and the main common source among all humans. It should not be exploited by the people of a country or ethnic group for short-term gain (for which all humans pay the long-term cost). Therefore, students at this level of education should be ecologically literate, which is "understanding the principles of organization, common to all living systems, that ecosystems have evolved to sustain the web of life" (Capra, 2002, p. 230).

The term "interdependence" refers to the relationship between the welfare of one species and the welfare of all species. The needs of the group are more important than the needs of the individual, yet the individual develops as the group thrives (MacPherson, 2005). From this perspective, all living beings have an equal right to live on earth and survive. Economic values are often the default basis of international negotiations and should, along with altruism (global ethics), become a common ground for communication and a criterion for decision-making.

B. Health and environment

Human health occupies a key position on Maslow hierarchy of human needs (for an example of this hierarchy, see McLeod, 2024). One of the most important international documents in the field of health that includes children up to the age of 18 is the *United Nations Convention on the Rights of the Child* (UNICEF, n.d.). To date, 193 countries have joined this international document, and the Islamic Republic of Iran is also a member of this international convention. In this convention, several articles clearly mention the right to health for children and the role of educational institutions. According to Nairn and Smith (2003), health is a term in which different organisations are involved and different dimensions are hidden in it. Different dimensions of health include physical, mental, and environmental health. The fact that schools can play a major role in health promotion has been recognised by the World Health Organization (WHO, 1997) under the title of *Health-Promoting School Initiatives* (HPS) (Nader, 2000). Schools' health promotion initiatives focus on a comprehensive idea of health and wellness in the context of everyday life in the community rather than providing services to the sick and those in need of care (Raeburn & Rootman, 1998). Generally, citizens of countries with stronger economies are in much better condition in terms of physical, emotional, spiritual, and mental health than those of countries with weak economies. Economically leading countries include health and hygiene topics in the content of their curriculum from elementary school and emphasise it (Smith et al., 2004).

Clearly, with the physical and cognitive growth of students, these materials can be updated with more detailed information. Mental and emotional health causes students to have better and healthier social relationships with each other at school and with family, which eventually leads to the growth of these relationships in the larger local communities and

ultimately the global community (Booth & Samdal, 1997). The healthier people in society are in terms of physical and mental health, the more government costs to support the sick will be reduced, and as a result, a healthier living environment for citizens will lead to economic growth (Ridhwan et al., 2022).

The oldest definition of environmental education may be from William Stapp, a professor at Michigan University, in 1969 (Fang et al., 2022). Stapp defined environmental education:

> ... as a process producing a citizenry that is knowledgeable concerning the biophysical
> environment and its associated problems, aware of how to help solve these problems,
> and motivated to work toward their solution (Stapp et al. 1969, p. 30)

Today, the teaching of environmental literacy may be done through interdisciplinary studies such as economic development with the topic of ecology (Singh & Yadav, 2021). For example, in secondary school, students can study the waste stream to understand that waste is not "thrown out" but rather "in a landfill, in the ocean, in the forest, on the planet." They should know the economic value of waste segregation and learn about fertiliser production. Investigating the relationship between increasing environmental quality and economic growth will be useful for policymakers to design and implement effective policies such as changes in educational policies to achieve sustainability goals (Singh & Yadav, 2021).

Conclusion

One of the main responsibilities of the school is to prepare students for rapid social, economic and environmental changes, future jobs, technologies and problems (Akkermans et al., 2021; Mann et al., 2020, Cole et al., 2014; Kis, 2011; Shobeiri et al., 2007). Education aims to address the present and future needs of society along with individual growth. Previous studies have emphasised that the educational goals of each country have a professional and economic aspect in addition to the social aspect. Education is an important factor in economic development and improving living standards (Howells, 2018).

Secondary schools are essential for preparing students for the economic challenges of the future. By implementing an economics-oriented curriculum, schools can contribute significantly to economic development. Investigating the secondary school curricula of 7 countries with high GDP and the national secondary school curriculum of Iran in this research shows that the G7 curricula are more economics oriented, which has led to better preparation and performance of students for the labour market.

If Iran wants to prepare its secondary school students for the current and future society and labour markets, it should redesign its curriculum with the help of relevant stakeholders to bridge the skills gap, foster an entrepreneurial mindset, encourage partnerships between schools and local industries, and integrate focused subjects needed for economic development. Iranian secondary schools should provide opportunities for

students to connect their learning to the real world. This requires collaborative and interdisciplinary learning as well as mastery of discipline knowledge.

It is important to note that while these 7 studied countries have successfully implemented an economics-oriented curriculum in secondary schools, each system has unique characteristics and may not be directly replicable in any context. However, studying these examples can provide valuable insights and inspiration for countries seeking to enhance their own curriculum. Therefore, the predetermined national curriculum of Iran's secondary schools should be changed to an adaptive curriculum and be aligned effectively with evolving social and economic requirements (Toghyani Khorasgani et al., 2023).

Overall, this research supports the findings of previous studies related to countries' curricula, such as Iran, that the curriculum is ideologically oriented and does not pay enough attention to economics, environment, and foreign language study (Saparudin & Salim, 2023; Mahmoudi, 2023; Toghyani Khorasgani et al., 2023; Gholaminejad & Raeisi-Vanani, 2021; Khojasteh et al., 2021; Mirarab et al., 2019, Shobeiri et al., 2007).

Despite its novelty, the current research has limitations that must be acknowledged. Some of the studied countries, such as Germany, the UK, the USA, and Canada, have multiple curricula for secondary schools (the UK has four separate curricula; Germany has 16 federal states and 4 different types of schools with a curriculum unique to each), but Iran has only one national curriculum for its secondary schools, even in different regions. This kind of diversity imposes a limitation upon generalisations, but it also indicates opportunities for further research into integrating economic-related issues into secondary school curricula, and how such integrations may help empower economic development.

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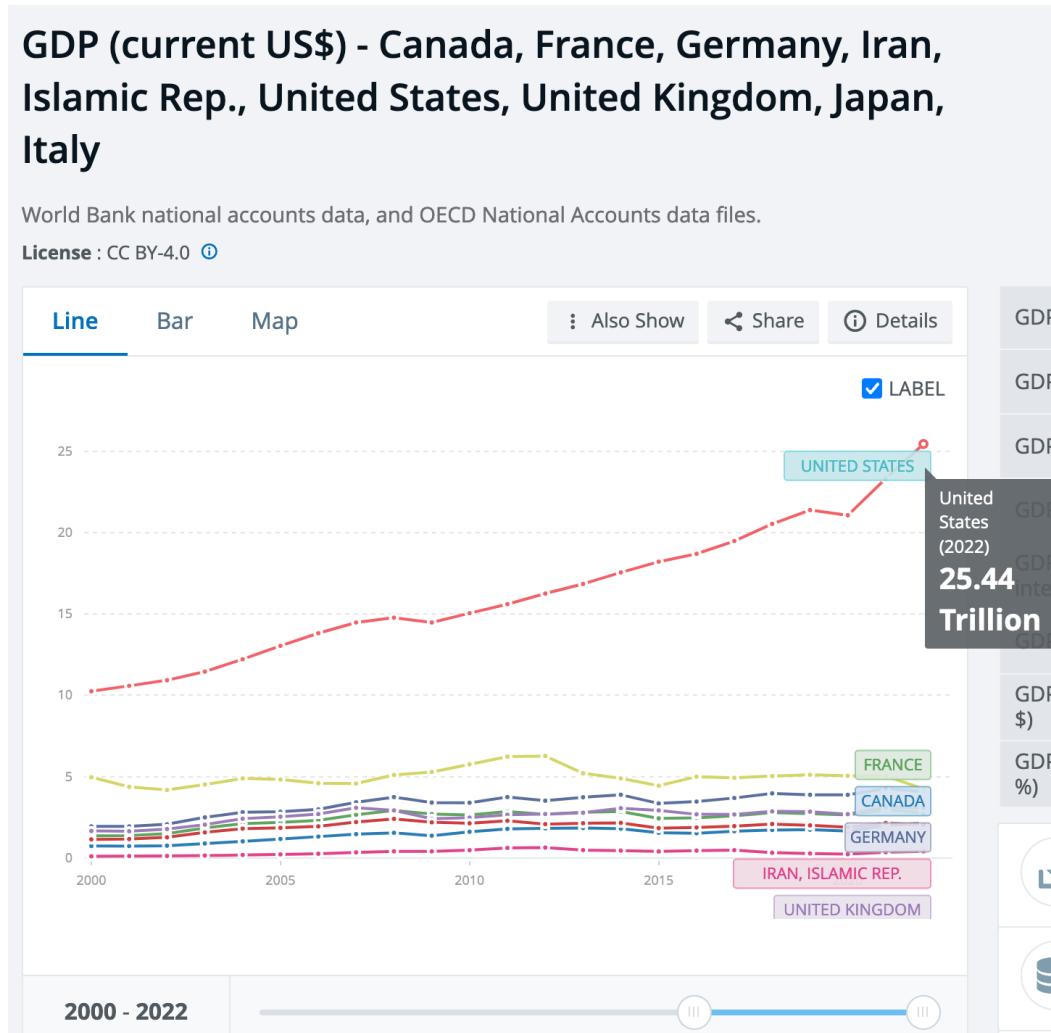
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Appendix 1: Procedure for obtaining Table 1 from worldbank.org

Screen picture obtained from web address:
https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?end=2022&locations=CA-FR-DE-IR-US-GB-JP-IT&start=2000

Appendix 2: List of web addresses to access resources

Country	Web address
Canada	https://www.educanada.ca/programs-programmes/secondary-secondaire.aspx?lang=eng http://www.edu.gov.on.ca/eng/curriculum/secondary/ https://www.cmec.ca/Publications/Lists/Publications/Attachments/64/Education-in-Canada2008.pdf https://www.edcan.ca/?gclid=EAIaIQobChMIo7bO--7s_wIVGtF3Ch05wQrCEAAYASAAEgK4gvD_BwE
France	https://eurydice.eacea.ec.europa.eu/national-education-systems/france/france https://eurydice.eacea.ec.europa.eu/national-education-systems/france/secondary-and-post-secondary-non-tertiary-education https://www.oecd.org/education/policy-outlook/country-profile-France-2020.pdf https://www.adek.gov.ae/Education-System/Private-Schools/Curriculum/French-Curriculum
Germany	https://eurydice.eacea.ec.europa.eu/national-education-systems/germany/germany-overview https://eurydice.eacea.ec.europa.eu/national-education-systems/germany/secondary-and-post-secondary-non-tertiary-education https://www.datenportal.bmbf.de/portal/en/G287.html
Italy	https://eurydice.eacea.ec.europa.eu/national-education-systems/italy/italy https://eurydice.eacea.ec.europa.eu/national-education-systems/italy/secondary-and-post-secondary-non-tertiary-education https://www.google.com/books/edition/The_Educational_System_of_Italy/4rGSAAAACAAJ?hl=en&kptab=overview
Japan	https://education.stateuniversity.com/pages/746/Japan.html https://www.japaneducation.info https://spice.fsi.stanford.edu/docs/daily_life_in_japanese_high_schools https://education.stateuniversity.com/pages/740/Japan-SECONDARY-EDUCATION.html https://www.mext.go.jp/en/policy/education/overview/index.htm https://www.nis.ac.jp/learning/high-school/high-school-curriculum-overview
UK	https://www.gov.uk/government/publications/national-curriculum-in-england-secondary-curriculum https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/840002/Secondary_national_curriculum_corrected_PDF.pdf https://www.goodschoolsguide.co.uk/
USA	https://world-schools.com/american-curriculum/ https://www.goodschoolsguide.co.uk/international/curricula-and-exams/american-curriculum https://www.aralia.com/helpful-information/american-high-school-curriculum/ https://files.eric.ed.gov/fulltext/ED497134.pdf
Iran	*Fundamental Reform Document of Education* in the Islamic Republic of Iran approved by the Supreme Council of the Cultural Revolution - December 2011. http://en.oerp.ir/sites/en.oerp.ir/files/sandtahavol.pdf http://rahbord-mag.ir/fa/Article/42106 [Persian] https://mlseojournal.ctb.iau.ir/article_683723_77edbfc36d3010a92fca1e741cc860d8.pdf [Persian] http://ensani.ir/file/download/article/20120426185710-5200-189.pdf [Persian]

Appendix 3: Procedure for obtaining Table 2 from worldbank.org

Screen picture obtained from web address:
https://data.worldbank.org/indicator/SL.UEM.INTM.ZS?locations=IR-US-GB-FR-IT-JP-DE-CA&start=2015
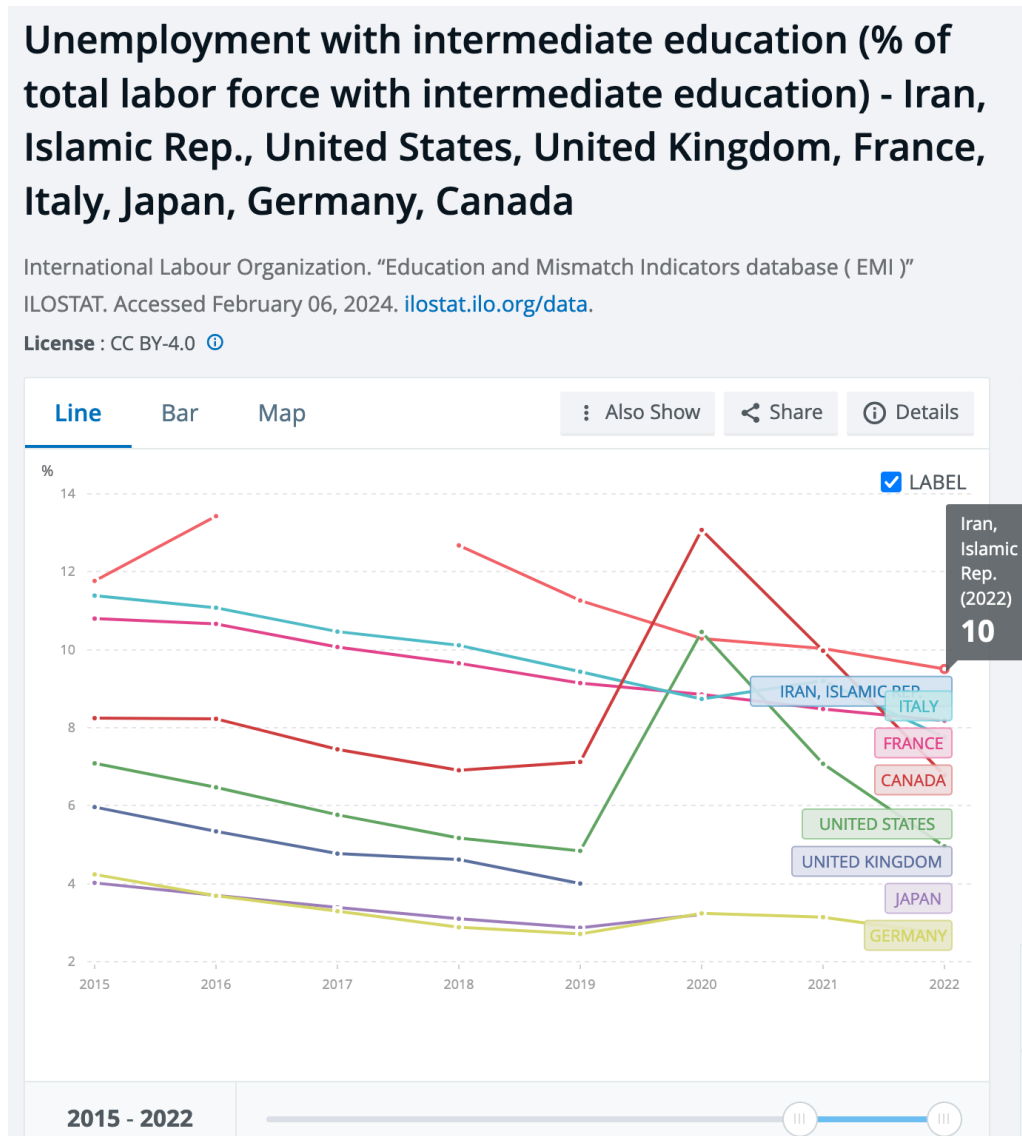
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